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CRA EXPLORATION PTY.LIMITED

RAPID RIVER EL 1/79 NORTH WEST TASMANIA

PROGRESS REPORT ON EXPLORATION AUGUST 1983 - FEBRUARY 1984

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Date: 6 March, 1984.

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CONTENTS

	<u>Page No.</u>
1. SUMMARY	1
2. INTRODUCTION	1
3. CONCLUSIONS	2
4. RECOMMENDATIONS	2
5. GENERAL	3
5.1 Geology	3
5.2 Geophysics	4
5.2.1. Magnetics	4
5.2.2. Radiometrics	4
5.2.3. Input-EM	5
5.3 Geochemistry	5
5.3.1. Stream Sediments	5
6. 83/84 SUMMER SEASON FOLLOW-UP PROGRAMME	7
6.1 Comstaff Zinc Anomaly	7
6.2 Rapid East Aeromagnetic Anomaly/Input-EM Anomaly 2966/10440	7
6.2.1. General	8
6.2.2. Geology	8
6.2.3. Geochemistry	9
6.2.4. Geophysics	9
6.3 Rapend Aeromagnetic Anomalies	10
6.3.1. General	10
6.3.2. Geology	10
6.3.3. Geochemistry	10
6.3.4. Geophysics	11
6.4 Input-EM Anomaly 2450/10360	11
6.4.1. General	11
6.4.2. Geology and Geochemistry	11

	Page No.
6.5 Input-EM Anomaly 2477/10360	12
6.5.1. General	12
6.5.2. Geology and Geochemistry	12
6.6. Input-EM Anomaly 2465/10360	12
6.6.1. General	12
6.6.2. Geology and Geophysics	13
7. FUTURE PROGRAMME	14
8. REFERENCES	15
9. LOCATION	15
10. KEYWORDS	15
11. LIST OF PLANS	16
12. LIST OF APPENDICES	16

1. SUMMARY

Follow-up of a number of magnetic and Input-electromagnetic (Input-EM) anomalies has produced inconclusive results. Further work is required over these and a number of other newly identified priority geophysical targets.

The discovery of a magnetite-rich horizon and an anomalous gold value from a creek in the south of the E.L. warrants further evaluation.

The potential for magnesite, and possibly volcanogenic sulphide mineralisation within the Arthur Lineament has been recognised; detailed assessment is planned.

2. INTRODUCTION

Rapid River EL 1/79 located north of Savage River (Plan TASH 842) was held in Joint Venture with Geopeko until June 1983 when CRA Exploration P/L. assumed sole title.

This report supplements and continues from the First Progress Report (Flis/Clementson 1983); these reports have been prepared to accompany the renewal application for EL 1/79.

Exploration during the 83/84 season is not yet complete, progress during the early part of the season being hampered by access problems. The exploration has concentrated upon follow-up of aeromagnetic, Input electromagnetic (Input-EM) and stream sediment geochemical anomalies. A potential for magnesite occurrence within the Licence has been recognised and follow-up is being prepared.

3. CONCLUSIONS

Follow-up exploration during 1983/84 has not, as yet, discovered any obvious evidence of mineralisation within EL 1/79. However, a favourable environment for magnesite volcanogenic base metal sulphide and possibly Mittersil-type tungsten (tin) mineralisation has been recognised within the basic volcanics, volcanoclastics and chemical sediments of the Keith Beds within the Arthur Lineament.

Geophysical anomaly follow-up, particularly of the coincident magnetic and Input-EM anomalies, forms the best practical basis for exploration. Stream sediment geochemistry should also continue to be pursued. Magnesite exploration will have to rely upon interpretive geology and field mapping.

4. RECOMMENDATIONS

Follow-up of magnetic and Input-EM anomalies should continue to form the basis of exploration within the E.L. Priority targets are the RAPEND group, RAPID, RAPID WEST, RAPID EAST, SEDGE and WRIDGE anomalies.

The magnesite potential of the Arthur Lineament should be examined through evaluation of available data and extensive field checking.

5. GENERAL

5.1 Geology

Neale (1974) and Flis (1982) have presented summaries of the regional geology of the area. Regional mapping has not been attempted other than aerial photographic interpretations to delineate Tertiary basalt cover in order to recognise basalt caused geophysical responses. Landsat images and aerial photographs were also used to locate regional structural/stratigraphic trends and lineaments (Plan TASH 1469).

CRA Exploration's evaluation of the magnesite within EL 43/70, to the north of the Rapid River EL, has identified a stratigraphy within the "Arthur Lineament" which suggests that this magnesite may be broadly correlateable to magnesite at Savage River Mine. As the Arthur Lineament strikes through Rapid River there is good potential for magnesite occurrence in the Rapid River Licence. Preliminary examination of Landsat imagery, radiometrics and magnetics indicates that a recognisable "corridor" of similar geophysical and visual character to the known magnesite occurrences persists through the EL. Field examination of this "corridor" is required.

The known geology of the Arthur Lineament (or Keith Beds) appears to indicate an environment where basic volcanism, chemical and fine clastic/volcaniclastic sedimentation were predominant. In such an environment the potential for volcanogenic base metal sulphide (± Au) mineralisation, magnesite development or possibly carbonate-basic volcanic associated W (Sn) (Mittersil style) mineralisation needs evaluation.

5.2 Geophysics

5.2.1. Magnetics

The original interpretation of the 1982 survey (Flis 1982) forms the basis of current exploration. Ground follow-up of magnetic anomalies has concentrated upon the RAPID EAST and the RAPEND group of anomalies. These were selected as higher priority targets following helicopter and ground reconnaissance of a number of the originally selected anomalies (Flis/Clementson 1983).

Further interpretation of the 1982 survey data has been restricted to the production of 1st derivatives (E-W direction) from the data using a computer image processing system (Plan TASH 1651). This enhanced small changes of gradient, making geological features more discernable in areas of low magnetic relief e.g. in the east of the survey area a clearer geological pattern is visible in an area of fairly uniform gradients.

Examination of the 1st derivative plots suggests that taking the 2nd derivatives could be useful in more detailed geological interpretation.

5.2.2. Radiometrics

A grey scale contour plot of the total count radiometrics (Plan TASH 1644) was prepared. Interpretation, other than the recognition of dark areas (low counts) as Tertiary basalt, has not been productive.

5.2.3. Input-EM

A re-interpretation of the analogue charts from Esso's 1973 Input-EM survey was made; the results obtained were broadly similar to the original interpretation. The anomalies were indentified, ranked and plotted as accurately as possible on a 1:50 000 base (Plan TASH 1643).

The RAPID EAST, RAPID WEST, RAPID, SEDGE and RAPEND SOUTH magnetic anomalies were noted to have associated Input-EM anomalies and are therefore regarded as high priority follow-up targets.

Esso attributed many of the Input-EM anomalies to black (graphitic) shales some of which appear to be fairly extensive horizons. In view of the possibility of shale hosted Pb-Zn mineralisation it was decided that these anomalies in particular were also worthwhile targets for further evaluation by CRA Exploration. Follow-up of some of these, more accessible, anomalies has commenced. Results are detailed later. (Note: CRA Exploration has adopted an anomaly identification system based on fiducial/line number which is independant of Esso's system).

5.3 Geochemistry

5.3.1. Stream Sediments

All known stream sediment goechemistry for N.W.Tasmania has previously been collated and statistically evaluated by CRA Exploration (Weir, 1982).

Anomaly threshold values for various metals were determined from the total data set, these have been applied to the available geochemistry for EL 1/79. Whether these thresholds are pertinent to this particular area is uncertain, but until a sufficiently large local data set is collected they are useable guidelines.

Appendix III lists the stream sediment data; the location of samples and anomalous values are shown on Plans TASH1649 and 1650) respectively. Follow-up of the identified anomalies has commenced with the Comstaff Zinc Anomaly in the south of the Licence.

6. 1983/84 SUMMER SEASON FOLLOW-UP PROGRAMME

6.1 Comstaff Zinc Anomaly (Plan TASH1658)

Anomalous zinc values, up to 230 ppm Zn, located by Comstaff in a creek in the south of EL 1/79 during a regional sediment sampling programme were identified by CRA Exploration P/L and prompted follow-up sediment and rock sampling.

No obvious cause for the zinc anomalies was observed in the phyllites and quartz-sericite-chlorite schists found in the major creek examined. No anomalous base metal values were recorded from any of the stream sediment or rock samples collected from this creek, however a gold value of 1.1ppm Au was returned from a magnetite rich pan concentrate sample. Also found was a magnetite - plagioclase hornfels of (?) basic igneous origin (Appendix II, sample 988669) containing up to 62% Fe but no other elevated metal values.

The original Comstaff sample sites were located in a tributary to the main creek which was observed to be dominated by Tertiary basalt float but which has not yet been sampled or traversed.

Within the drainage are a magnetic anomaly, presumably reflecting the source of the magnetite-plagioclase hornfels, and an adjacent Input-EM anomaly (3379/10840). The anomalous zinc and gold geochemistry and these associated geophysical targets require further follow-up.

6.2 Rapid East Aeromagnetic Anomaly/Input-EM Anomaly 2966/10440 (Plan TASH 1653)

6.2.1. General

Following reconnaissance visits by helicopter on which no cause for the magnetic anomaly was recognised, an access track and grid was cut over the anomaly. An Input-EM anomaly (2966/10440) has been recognised to the east of the magnetic anomaly and has upgraded the prospectivity of the area.

Sampling of the grid is not yet complete; ground magnetics indicate that the current grid should be extended eastwards which would also provide coverage of the Input-EM anomaly.

6.2.2. Geology

The area is underlain by a suite of quartz-chlorite/sericite schists and phyllites. Outcrop is poor due to extensive quartz-lag and/or sheetwash gravel cover. The general strike of the metamorphic fabric is NNE-SSW and dips are steep. Bedding and facing directions are uncertain.

Initial examination suggested that these metamorphics were metasediments. However, petrological examination of a typical quartz-chlorite schist (Appendix II, sample 988648) showed that it was probably a basic lava/intrusive or pyroclastic which was thoroughly altered to quartz, chlorite and leucoxene prior to metamorphism to its present state. The significance of the pre-metamorphic alteration is unclear. As the sample was chosen as representative of the schists in general, it seems probable that many or all of these schists are of volcanic or volcani-clastic origin.

The phyllites have not been examined petrologically but appear to be meta-argillites.

6.2.3. Geochemistry (Plans TASH 1645-1646)

For that part of the grid sampled to date, power augering was required to recover C-horizon soil samples from beneath the quartz gravel cover. Samples were analysed for Cu, Pb, Zn, Co, Ag, Ni, Cr and As by A.A.S. plus Ba, Mo, Sn and W by X.R.F.

Results were disappointing (Appendix I), the only anomalous value being 180 ppm As (4350E 5000N). No elevated metal values were recorded in any of the rock or stream sediment samples collected over the grid.

6.2.4. Geophysics (Plan TASH 1647)

Ground magnetometry showed that the grid has incompletely covered the target magnetic high. Lines 4900N and 4800N require extension to the east to close-off the anomaly. The ground magnetics indicate that the anomaly is more confined than suggested by the aeromagnetics; the overall ground magnetic pattern of high frequency linear highs and lows suggests a N-S shear zone, and that the depth to the target anomaly is probably less than 50 metres.

Input-EM anomaly 2966/10440, east of the magnetic anomaly has not been investigated. Esso (Neale 1974) infer that this anomaly falls within a belt of such anomalies caused by graphitic black shales. Phyllites do occur in this area but no graphitic facies have been observed. Lines 5000N and 5100N should be extended eastwards to allow coverage of the anomaly by ground magnetics, soil and rock sampling.

6.3 Rapend Aeromagnetic Anomalies

6.3.1. General

This group of anomalies (RAPEND NORTH, RAPEND WEST, RAPEND, RAPEND SOUTH and SAVAGE RIVER NORTH) fall together in a cluster within an area of prominent lineaments visible on Landsat imagery and aerial photography. Evaluation of these anomalies has not progressed far at the time of writing. An access line (5000N) has been cut into the area and ground magnetics, rock and stream sediment sampling conducted over part of this line.

The RAPEND NORTH anomaly, an aeromagnetic low, has been examined along a line (6300E) cut to it off the access line and has been confirmed as a Tertiary basalt derived anomaly. No further work is warranted in this location.

6.3.2. Geology

The limited work conducted to date indicates that the RAPEND WEST and RAPEND anomalies occur within a suite of quartz-sericite (chlorite) schists, phyllites and minor quartzites. Strike of the metamorphic fabric is NNE-SSW to NE-SW.

6.3.3. Geochemistry (Plans TASH 1659)

Of the stream sediment and rock samples collected over lines 5000N and 6300E the only elevated metal values reported are 80 ppm W in a stream sediment (7310E 5000N) draining the RAPEND anomaly, and 40 ppm W in a panned concentrate sample (6300E 5325N) (Appendix I).

6.3.4. Geophysics (Plan TASH 1652)

Ground magnetics along part of line 5000N located the margin of Tertiary basalt cover in the west, and covered the southern part of the RAPEND anomaly. No conclusions can be drawn from the data available.

Input-EM anomaly 2642/10660 is located on the north edge of the RAPEND SOUTH magnetic anomaly and should be covered during the investigation of that anomaly.

6.4 Input-EM Anomaly 2450/10360

6.4.1. General

One reconnaissance line of soil sampling has been completed over this anomaly. No cause for the anomaly has been observed.

6.4.2. Geology and Geochemistry (Plans TASH 1654)

Augering revealed that the area of the anomaly is underlain by phyllitic slates and quartz-sericite schists. Tertiary basalts occur to the east of the anomaly; if the location of the anomaly is inaccurate, these basalts may account for the anomaly.

Soil sample analyses reported cobalt up to 70 ppm Co but no other high metal values (Appendix I). Ba, W and Sn analyses are pending. A stream sediment and pan concentrate sample collected from a creek draining the area returned slightly elevated tungsten values (20 ppm W and 40 ppm W respectively).

Additional lines of sampling are required to adequately test the anomaly.

6.5 Input-Anomaly 2477/10360

6.5.1. General

Esso attributed this anomaly to a belt of black graphitic shales. CRA Exploration established a reconnaissance grid over the anomaly; to date only the central line has been sampled.

6.5.2. Geology and Geochemistry (Plans 1657)

The anomaly is located over a button-grass ridge with quartz gravel cover and surface float of quartzites. All outcrops and augered bedrock are weathered buff-grey-green phyllites and light grey-green quartz-chlorite-sericite schists. Bedding (?) strikes N-S and dips at 40°-50° to the west. No graphitic facies have yet been located.

The only elevated metal values reported from the soil samples are 120 ppm Co, 9.81% Fe and 170 ppm As from one sample (5100E 5000N) (Appendix I). Sn, W and Ba results are pending. The remaining lines will be sampled in the near future.

6.6. Input-EM Anomaly 2465/10360

6.6.1. General

This anomaly was attributed by Esso to black graphitic shales during their follow-up programme, but no sampling was reported. To test these shales a reconnaissance grid was therefore established over the anomaly and soil samples collected.

6.6.2. Geology and Geochemistry (Plans TASH 1655,1656)

The anomaly is located over a button-grass ridge with extensive quartz gravel cover. Power augering was required to obtain suitable C-horizon samples and to provide bedrock information.

Exposures are restricted to thin quartzite units on the steeper eastern slopes of the ridge. Augering revealed that the ridge is underlain by light grey-green phyllites or slate/shales, usually sericitic and/or talcose. No evidence of a black graphitic facies was obtained. West of the ridge surficial cover thickens but it appears that quartzites dominate the sequence with subordinate phyllites. Regional strike is NNW-SSW, dip appears to be steep, westerly.

Soil samples were all analysed for Cu, Pb, Zn, Co, Ag, Mn and As, in addition Sn, W, Fe and Ba were determined in some of the samples (Appendix I). These results show elevated tungsten value of up to 130 ppm W but all other metal levels are uniformly low. Those samples for which tungsten was not determined have been resubmitted; results are not yet available.

The elevated tungsten levels, plus the lack of an observed cause for the Input-EM anomaly warrants further work in the area.

7. FUTURE PROGRAMME

Evaluation of current targets should be completed. In addition the following have been recognised as priority targets.

• SEDGE magnetic and associated Input-EM anomalies. Access to the anomaly should be established and gridding carried out to allow sampling and ground magnetics.

• RAPID and RAPID WEST magnetic anomalies. Access and a grid should be established over these, and associated Input-EM anomalies.

• WRIDGE magnetic anomaly. Further sampling is required.

• Magnesite potential of the Arthur Lineament requires assessment. Detailed interpretation of available magnetic, radiometric, photographic and imagery might identify priority areas for ground follow-up. 2nd derivatives of the aeromagnetic data should be obtained to assist this interpretation.

• Input-EM anomalies, including those indicative of black shales, should continue to be ground checked.

8. REFERENCES

- Flis, M.F. 1982 "Preliminary Report on an Airborne Geophysical Survey, Rapid River EL 1/79 North-West Tasmania. CRAE Unpub. Report 11637
- Flis, M.F./Clementson, I.M. 1983. "First Progress Report on the Follow-up of Aeromagnetic Anomalies, Rapid River EL 1/79, North West Tasmania, August 1982 to August 1983" CRAE Unpub. Report 12276.
- Neale, R.C. 1974 "EL 2/73 Pieman River, Tas. Completion Report". Esso Aust. Ltd. Unpub. Report.
- Weir, D.J. 1982 "Rocky Cape EL 1/77 Lead-Zinc Computer Study-Stream Sediments" CRAE Unpub. Report 11586.

9. LOCATION

Burnie 1:250 000 sheet SK 55-3

10. KEYWORDS

Geophysics-aeromagnetics, ground magnetics, radiometrics, Input, electromagnetics; Arthur Lineament, Keith Beds, magnesite, magnetite, Mittersil, basic volcanics; geochemistry-stream sediments, soil, gold.

11. LIST OF PLANS

<u>Plan No.</u>	<u>Title</u>	<u>Scale</u>
TASh 842	Locality Plan, Rapid River EL 1/79	1:2 000 000
TASh 1469	Rapid River EL 1/79 Aerial Photos and Landsat Interpretation of Basalt and Lineament Distribution	1:50 000
TASh 1651	Rapid River EL 1/79 1st E-W Derivative of Aeromagnetic Data Artificially illuminated from West	Photo
TASh 1644	Rapid River EL 1/79 Total Count Radiometrics	1:50 000
TASh 1643	Rapid River EL 1/79 Input-EM and Magnetic Anomaly location plan	1:50 000
TASh 1649	Rapid River EL 1/79 Stream Sediment Sample Locations (Pre 1982)	1:50 000
TASh 1650	Rapid River EL 1/79 Anomalous Stream Sediment Geochemistry	1:50 000
TASh 1658	Rapid River EL 1/79, Comstaff Zinc Anomaly Follow-up Sampling	1:5000
TASh 1645	Rapid River EL 1/79, Rapid East Aeromagnetic Anomaly. Sample Locations and Grid Plan	1:5000
TASh 1646	Rapid River EL 1/79, Rapid East Aeromagnetic Anomaly Cu Pb Zn Geochemistry	1:5000
TASh 1647	Rapid River EL 1/79, Rapid East Aeromag. Anomaly Ground Magnetics	1:5000
TASh 1659	Rapid River EL 1/79 Rapend Aeromagnetic Anomalies Follow-up Grid.	1:5000
TASh 1652	Rapid River EL 1/79 Rapend Aeromagnetic Anomalies Ground Magnetics Line 5000N	As shown
TASh 1653	Rapid River EL 1/79 Location Plan and Follow-up Lines Input-EM Anomalies 2450/10360, 2477/10360 & 2465/10360	1:25 000
TASh 1654	Rapid River EL 1/79 Input-EM Anomaly 2450/10360 Geochemistry and Geology Line 5000N	1:2500
TASh 1655	Rapid River EL 1/79 Input-EM Anomaly 2465/10360 Geochemistry and Geology Line 5000N	1:2500
TASh 1656	Rapid River EL 1/79 Input-EM Anomaly 2465/10360 Geochemistry and Geology Lines 4850N and 5150N	1:2500

11. LIST OF PLANS (CONT'D)

TASh 1657 Rapid River EL 1/79 Input-EM Anomaly 1:2500
2477/10360 Geochemistry and Geology
Line 5000N.

12. LIST OF APPENDICES

Appendix I Sample Ledgers and Results
Appendix II Petrological Reports
Appendix III Stream Sediment Sample Locations and Results
(Pre 1982)

APPENDIX I

SAMPLE LEDGERS AND RESULTS

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ROSNY PARK TAS. 7018

Page 1 of 2

Batch Number: A055-1

Contact: MR. I. CLEMENTSON

No. of Samples: 18
Date Received: 12/01/84
Date Completed: 23/01/84

Order No. DPO 30336

Sample Type: ROCK

SAMPLE NUMBER	Element Unit Method	Cu ppm G001	Pb ppm G001	Zn ppm G001	Co ppm G001	Ag ppm G001
988629	COAL	100	25	40	25	2
988651	RAPEND LINE 5000N	70	45	25	15	1
988652	" " "	20	20	35	15	1
988654	" " "	20	20	35	10	1
988655	" " "	10	25	70	15	1
988659	" " "	10	15	35	15	1
988660	" " "	10	20	25	15	1
988663	COMSTAFF Zn ANALYT	35	45	420	85	1
988664	" " "	80	45	55	65	2
988665	" " "	20	25	30	35	1
988668	" " "	20	20	15	50	1
988670	" " "	100	55	65	85	4
988673	RISING MACCK	10	15	30	35	1
988680	RAPEND LINE 6300E	10	15	35	15	1
988681	" " "	15	25	50	20	1
988683	" " "	10	10	40	15	1
988685	" " "	20	10	35	15	1
988692	RAPID EAST	10	5	40	15	1
Detection Limit:		2	5	2	5	1

Comments:



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Signatory:

I. J. Helms

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Page 2 of 2

Batch Number: A055-1

Contact: MR. I. CLEMENTSON

No. of Samples: 18
Date Received: 12/01/84
Date Completed: 23/01/84

Order No. DPD 30336

Sample Type: ROCK

SAMPLE NUMBER	Element Unit Method	Mn ppm G001	Fe % G001	Cr ppm G001	Ni ppm G001	Ba ppm XRF 1:
988629✓		300	2.65	10	30	300
988651✓		65	3.52	20	20	350
988652✓		110	3.00	20	25	260
988654✓		100	1.95	35	25	170
988655✓		135	2.34	25	30	200
988659✓		140	2.10	25	20	160
988660✓		160	2.88	15	25	320
988663✓		5000	17.8	145	50	190
988664✓		180	31.4	45	30	230
988665✓		115	7.52	150	30	120
988668✓		70	13.4	85	30	80
988670✓		440	62.0	30	700	110
988673✓		420	3.16	380	185	90
988680✓		100	2.20	30	25	240
988681✓		340	2.77	20	20	290
988683✓		130	2.56	40	25	390
988685✓		25	2.90	35	25	290
988692✓		40	2.00	10	25	320
Detection Limit:		5	0.01	5	5	10

Comments:



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Batch Number: A055-2

Contact: MR. I. CLEMENTSON

No. of Samples: 18
Date Received: 12/01/84

Order No. DPO 30336

Sample Type: ROCK

Date Completed: 23/01/84

SAMPLE NUMBER	Element Unit Method	Sn ppm XRF 1A	W ppm XRF 1A	Mo ppm XRF 1B	Pt ppb PM218	Pd ppb PM218
988629✓		<5	<10	4	<50	10
988651✓		<5	<10	<4		
988652✓		<5	<10	<4		
988654✓		<5	<10	<4		
988655✓		<5	<10	<4		
988659✓		<5	<10	<4		
988660✓		<5	<10	<4		
988663-		<5	<10	8		
988664-		10	<10	60		
988665✓		<5	<10	12		
988668✓		<5	<10	8	<50	10
988670-		<5	<10	36		
988673✓		<5	<10	<4	<50	10
988680✓		<5	<10	<4		
988681✓		<5	<10	<4		
988683✓		<5	<10	<4		
988685✓		<5	<10	<4		
988692✓		<5	<10	<4		
Detection Limit:		5	10	4	50	10

Comments:



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Signatory: *G J Helmsler*



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Page 2 of 2

Batch Number: A055-2

Contact: MR. I. CLEMENTSON

No. of Samples: 18

Date Received: 12/01/84

Order No. DPO 30336

Sample Type: ROCK

Date Completed: 23/01/84

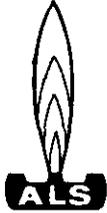
SAMPLE NUMBER	Element Unit Method	Au ppm PM209			
988629 ✓		< 0.1			
988651 ✓					
988652 ✓					
988654 ✓					
988655 ✓					
988659 ✓					
988660 ✓					
988663 ✓		< 0.1			
988664 ✓		< 0.1			
988665 ✓					
988668 ✓		< 0.1			
988670 ✓		< 0.1			
988673 ✓		< 0.1			
988680 ✓					
988681 ✓					
988683 ✓					
988685 ✓					
988692 ✓					
Detection Limit:		0.1			

Comments:



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ROSNY PARK TAS. 7018

Page 1 of 2

Batch Number: A055-3

Contact: MR. I. CLEMENTSON

No. of Samples: 17

Date Received: 12/01/84

Order No. DPO 30336

Sample Type: STREAM SEDIMENTS

Date Completed: 23/01/84

SAMPLE NUMBER	Element Unit Method	Cu ppm G001	Pb ppm G001	Zn ppm G001	Co ppm G001	Ag ppm G001
988653	RAPID LINE 5000N	10	20	45	10	<1
988656	" " "	10	20	15	15	1
988657	" " "	5	25	35	20	1
988658	" " "	5	55	75	10	1
988661	" " "	5	20	40	10	<1
988662	Regional	20	35	185	85	2
988678	RAPID LINE 5000N	<2	15	10	5	<1
988666	Control Zn Analy	25	30	95	35	1
988671	" " "	10	25	40	25	1
988674	REGIONAL SAMPLING	20	30	85	35	1
988676	" " "	40	30	120	55	2
988630	" " "	10	20	35	20	1
988632	RAPID LINE 6300E	<2	20	30	10	1
988679	RAPID LINE 6300E	<2	15	20	5	1
988682	" " "	<2	15	15	10	1
988684	" " "	<2	10	5	5	1
988690	RAPID EAST	10	20	10	15	1
Detection Limit:		2	5	2	5	1

Comments:



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Page 2 of 2

Batch Number: A055-31

Contact: MR. I. CLEMENTSON

No. of Samples: 17
Date Received: 12/01/84
Date Completed: 23/01/84

Order No. DPQ 30336

Sample Type: STREAM SEDIMENTS

SAMPLE NUMBER	Element Unit Method	Mn ppm G001	Fe % G001	Cr ppm G001	Ni ppm G001	Au ppb PM204
988653✓		85	1.70	580	25	
988656✓		160	2.48	190	45	
988657✓		620	3.42	180	40	
988658✓		165	1.97	220	40	
988661✓		80	1.17	230	35	
988662✓		780	8.53	240	185	
988678✓		35	0.65	380	40	
988666✓		1000	4.13	190	70	5
988671✓		700	2.34	105	30	5
988674✓		640	6.59	80	75	3
988676✓		1250	6.20	155	145	3
988630✓		270	2.24	160	55	5
988632✓		110	1.55	150	40	5
988679✓		35	0.77	220	30	
988682✓		55	1.15	620	65	
988684✓		50	0.91	720	55	
988690✓		175	2.30	520	60	
Detection Limit:		5	0.01	5	5	3

Comments:



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Page 1 of 1

Batch Number: A055-4

Contact: MR. I. CLEMENTSON

No. of Samples: 17
Date Received: 12/01/84
Date Completed: 23/01/84

Order No. DPO 30336

Sample Type: STREAM SEDIMENTS

SAMPLE NUMBER	Element Unit Method	Sn ppm XRF 1A	W ppm XRF 1A	Ba ppm XRF 1A	Mo ppm XRF 1B
988653✓		<5	80	90	<4
988656✓		<5	10	160	8
988657✓		<5	10	130	<4
988658✓		<5	10	120	4
988661✓		<5	20	120	4
988662✓		<5	<10	260	4
988678✓		<5	20	50	8
988666✓		<5	10	230	4
988671✓		<5	<10	150	<4
988674✓		5	<10	330	<4
988676✓		<5	<10	280	<4
988630✓		<5	<10	120	<4
988632✓		<5	10	110	<4
988679✓		<5	10	80	<4
988682✓		<5	40	70	16
988684✓		<5	30	40	16
988690✓		<5	30	90	12
Detection Limit:		5	10	10	4

Comments:

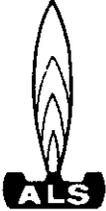


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Page 1 of 2

Batch Number: A055-5

Contact: MR. I. CLEMENTSON

No. of Samples: 8

Date Received: 12/01/84

Order No. DPD 30336

Sample Type: PAN, CONCS.

Date Completed: 23/01/84

SAMPLE NUMBER	Element Unit Method	Cu ppm G001	Pb ppm G001	Zn ppm G001	Co ppm G001	Cr ppm G001
988667	Constaff Zn Analyt	35	40	55	95	380
988672	Rising Mag Ck.	35	50	700	230	>1.0 %
988675	Regional	15	25	45	25	680
988677	Regional	30	40	100	60	1450
988686	Constaff Zn Analyt	50	45	45	115	145
988691	RAPID EAST	5	15	35	20	1050
988631	Regional	15	30	85	35	1350
988633	RAPID LINE 6300E	5	20	30	15	1300
Detection Limit:		2	5	2	5	5

Comments:



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Batch Number: A055-5

Contact: MR. I. CLEMENTSON

No. of Samples: 8
Date Received: 12/01/84

Order No. DP0 30336

Sample Type: PAN. CONCS.

Date Completed: 23/01/84

SAMPLE NUMBER	Element Unit Method	Ni ppm G001	Fe % G001	Ag ppm G001	Au ppm PM209	Mo ppm XRF 1B
988667✓		800	41.5	3	1.1	32
988672		320	12.3	4	0.1	24
988675✓		35	6.05	1	<0.1	8
988677✓		75	14.7	2	0.1	20
988686✓		940	41.8	3	<0.1	32
988691✓		25	3.30	1	<0.1	12
988631✓		120	5.93	1	<0.1	16
988633✓		40	3.09	1	<0.1	12
Detection Limit:		5	0.01	1	0.1	4

Comments:



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Page 1 of 1

Batch Number: A055-6

Contact: MR. I. CLEMENTSON

No. of Samples: 8

Order No. DPO 30336

Sample Type: PAN, CONCS.

Date Received: 12/01/84

Date Completed: 23/01/84

SAMPLE NUMBER	Element Unit Method	Sn ppm XRF 1A	W ppm XRF 1A	Ba ppm XRF 1A	S.Wt. Grams
988667✓		5	10	110	16.44
988672✓		75	20	110	23.45
988675✓		<5	10	120	33.10
988677✓		<5	20	140	11.72
988686✓		<5	<10	140	45.39
988691✓		<5	20	60	24.26
988631✓		<5	50	<10	5.86
988633✓		<5	40	70	15.08
Detection Limit:		5	10	10	

Comments:



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Page 1 of 1

Batch Number: A055-7

Contact: MR. I. CLEMENTSON

No. of Samples: 8

Order No. DPO 30336

Sample Type: SAND BET. P/CONC

Date Received: 23/01/84

Date Completed: 23/01/84

SAMPLE NUMBER	Element Unit Method	AU ppm PM209				
988667 SAND		<0.02				
988672 SAND		<0.02				
988675 SAND		<0.02				
988677 SAND		<0.02				
988686 SAND		<0.02				
988691 SAND		<0.02				
988631 SAND		<0.02				
988633 SAND		<0.02				
Detection Limit:		0.1				

Comments:



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Page 1 of 4

Batch Number: A055

Contact: MR. I. CLEMENTSON

No. of Samples: 56

Date Received: 11/01/84

Date Completed: 23/01/84

Order No. DPO 30336

Sample Type: SOIL

SAMPLE NUMBER	Element Unit Method	Cu ppm G001	Pb ppm G001	Zn ppm G001	Co ppm G001	Ag ppm G001
988687		5	20	10	5	<1
988688		<2	25	5	5	<1
988689		<2	15	5	5	<1
988693		5	10	5	5	<1
988694		10	10	15	5	1
988695		<2	15	10	5	<1
988696		<2	15	10	<5	1
988697		10	15	10	5	1
988698	LINE 5000N	<2	10	15	<5	1
988699	INPUT ANOMALY #	5	15	10	5	1
988700	2465/10360	60	25	15	10	2
988701		10	10	20	5	1
988702		5	5	10	5	1
988703		5	5	5	5	<1
988704		<2	10	5	5	<1
988705		10	10	25	10	<1
988706		<2	20	5	10	<1
988707		<2	20	5	<5	<1
988708		<2	20	10	5	1
988709		<2	20	15	5	1
988710		<2	20	10	10	1
988711		<2	15	10	10	1
988712		<2	25	35	10	1
988713		10	25	20	5	1
988714	RAPID EAST	10	20	10	10	1
988715	LINE 6000N	50	35	45	15	2
988716		5	15	40	10	2
988717		10	20	40	10	1
988718		<2	15	25	10	1
988719		5	20	10	5	1
Detection Limit:		2	5	2	5	1

Comments:



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Page 2 of 4

Batch Number: A055

Contact: MR. I. CLEMENTSON

No. of Samples: 56

Date Received: 11/01/84

Order No. DPO 30336

Sample Type: SOIL

Date Completed: 23/01/84

SAMPLE NUMBER	Element Unit Method	Mn ppm G001	As ppm G001	Sn ppm XRF 1A	W ppm XRF 1A	Ba ppm XRF 1A
988687-		25	<20	<5	20	380
988688-		20	<20	<5	10	510
988689-		20	<20	<5	10	440
988693-		45	<20	<5	50	40
988694-		65	<20	<5	90	30
988695-		65	<20	<5	80	20
988696-		50	<20	<5	60	40
988697-		100	<20	<5	130	30
988698-		45	<20	<5	60	60
988699-		30	<20	<5	10	180
988700-		30	20	<5	20	140
988701-		35	<20	<5	50	170
988702-		70	<20	<5	80	40
988703-		50	<20	<5	60	30
988704-		30	<20	<5	30	260
988705-		80	<20	<5	100	100
988706-		30	<20	<5	40	260
988707-		25	<20	<5	30	260
988708-		30	<20	<5	30	190
988709-		15	<20	<5	10	330
988710-		15	20	<5	10	340
988711-		20	<20	<5	20	240
988712-		40	<20	5	10	300
988713-		30	<20	<5	10	280
988714-		10	<20	<5	10	410
988715-		35	<20	<5	<10	360
988716-		35	<20	<5	10	300
988717-		35	<20	<5	10	260
988718-		25	<20	5	<10	420
988719		10	<20	<5	10	350
Detection Limit:		5	20	5	10	10

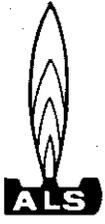
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Batch Number: A055

Contact: MR. I. CLEMENTSON

No. of Samples: 56
Date Received: 11/01/84
Date Completed: 23/01/84

Order No. DPO 30336

Sample Type: SOIL

SAMPLE NUMBER	Element Unit Method	Cu ppm G001	Pb ppm G001	Zn ppm G001	Co ppm G001	Ag ppm G001
988720		<2	20	35	15	1
988721		<2	15	20	10	1
988722		<2	15	10	5	1
988723		<2	10	5	5	1
988724		<2	15	15	5	1
988725		5	10	15	5	1
988726		5	10	10	5	1
988727		<2	15	35	10	1
988728		<2	10	10	10	1
988729		45	45	30	15	2
988730	RAPID EAST	<2	20	10	10	1
988731	LINE 5000N	<2	15	10	5	1
988732		<2	20	10	10	1
988733		<2	20	10	10	1
988734		10	20	25	10	1
988735		<2	15	15	5	1
988736		10	20	10	15	1
988737		25	30	10	15	2
988738		<2	20	10	10	1
988739		5	10	15	5	1
988740		10	15	30	10	1
988741		<2	15	10	10	1
988742		10	20	5	10	1
988743		10	15	10	10	1
988744		<2	10	10	10	1
988745		20	20	15	15	1
Detection Limit:		2	5	2	5	1

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Batch Number: A055

Contact: MR. I. CLEMENTSON

No. of Samples: 56

Date Received: 11/01/84

Date Completed: 23/01/84

Order No. DPD 30336

Sample Type: SOIL

SAMPLE NUMBER	Element Unit Method	Mn ppm G001	As ppm G001	Sn ppm XRF 1A	W ppm XRF 1A	Ba ppm XRF 1A
988720		40	<20	<5	<10	370
988721		40	<20	<5	<10	450
988722		10	<20	5	10	240
988723		20	<20	<5	<10	50
988724		15	<20	<5	<10	490
988725		35	<20	<5	<10	760
988726		15	<20	<5	<10	570
988727		90	20	<5	<10	630
988728		50	<20	5	<10	680
988729		185	<20	<5	<10	620
988730		45	<20	<5	<10	460
988731		50	<20	<5	30	80
988732		50	<20	<5	<10	790
988733		25	<20	<5	<10	260
988734		50	<20	<5	<10	640
988735		60	<20	<5	<10	740
988736		45	<20	<5	<10	1000
988737		45	180	<5	10	580
988738		20	<20	<5	<10	150
988739		30	<20	<5	10	160
988740		75	<20	<5	10	260
988741		45	<20	<5	<10	980
988742		35	<20	<5	10	1000
988743		15	<20	<5	<10	550
988744		30	<20	<5	<10	690
988745		25	<20	<5	<10	700
Detection Limit:		5	20	5	10	10

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Page 1 of 4

Batch Number: A098

Contact: MR. I. CLEMENTSON

No. of Samples: 33
Date Received: 20/01/84

Order No. DP0 30338

Sample Type: SOIL

Date Completed: 27/01/84

SAMPLE NUMBER	Element Unit Method	Cu ppm G001	Pb ppm G001	Zn ppm G001	Co ppm G001	Ag ppm G001
988639		<2	5	(30)	<5	<1
988640		<2	5	15	<5	<1
988641		<2	5	15	<5	<1
988642		<2	5	15	<5	<1
988643		<2	5	20	<5	<1
988644		<2	5	10	<5	<1
988645		<2	5	10	<5	<1
988646		<2	5	15	<5	<1
988649		<2	5	15	<5	<1
988650		<2	5	15	<5	1
988851		<2	5	35	<5	<1
988852		<2	5	30	<5	<1
988853		10	30	50	10	1
988854		10	15	55	10	1
988855	RAPID EAST	5	15	15	<5	<1
988856		<2	10	20	<5	<1
988857		5	15	20	<5	1
988858		<2	5	30	<5	1
988859		<2	5	20	<5	<1
988862		<2	10	10	<5	<1
988863		<2	10	25	<5	1
988866		<2	5	30	<5	<1
988867		<2	5	30	<5	<1
988868		<2	5	40	<5	<1
988869		<2	5	75	<5	<1
988870		<2	5	60	<5	<1
988871		<2	5	30	<5	<1
988872		<2	5	60	<5	1
988873		<2	5	20	<5	<1
988874		<2	5	10	<5	<1
Detection Limit:		2	5	2	5	1

Comments:



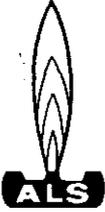
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Client: CRA EXPLORATION PTY. LIMITED
Address: P.O. BOX 138
ROSNY PARK TAS. 7018

Page 2 of 4

Batch Number: A098

Contact: MR. I. CLEMENTSON

No. of Samples: 33

Date Received: 20/01/84

Order No. DPO 30338

Sample Type: SOIL

Date Completed: 27/01/84

SAMPLE NUMBER	Element Unit Method	Mn ppm G001	As ppm G001	Fe % G001		
988639		5	<20	0.18		
988640		<5	<20	0.12		
988641		<5	<20	0.27		
988642		<5	<20	0.13		
988643		<5	<20	0.22		
988644		<5	<20	0.13		
988645		<5	<20	0.11		
988646		30	<20	0.41		
988649		<5	<20	0.13		
988650		15	<20	0.65		
988851		10	<20	0.11		
988852		20	<20	0.28		
988853		220	20	3.44		
988854		240	20	4.05		
988855		5	20	0.71		
988856		5	<20	0.14		
988857		25	20	1.08		
988858		20	<20	0.30		
988859		10	<20	0.13		
988862		20	<20	0.25		
988863		270	<20	1.80		
988866		<5	<20	620ppm		
988867		<5	<20	540ppm		
988868		<5	<20	640ppm		
988869		10	<20	950ppm		
988870		15	<20	0.19		
988871		10	<20	0.15		
988872		45	<20	0.69		
988873		30	<20	0.38		
988874		20	<20	0.27		
Detection Limit:		5	1	0.01		

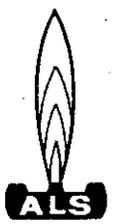
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Client: **CRA EXPLORATION PTY. LIMITED**
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Page 3 of 4

Batch Number: A098

Contact: **MR. I. CLEMENTSON**

No. of Samples: **33**
Date Received: **20/01/84**
Date Completed: **27/01/84**

Order No. **DP0 30338** Sample Type: **SOIL**

SAMPLE NUMBER	Element Unit Method	Cu ppm G001	Pb ppm G001	Zn ppm G001	Co ppm G001	Ag ppm G001
988875	RAPID EAST	<2	5	20	<5	<1
988876		<2	5	35	10	1
988877		<2	5	10	<5	<1
Detection Limit:		2	5	2	5	1

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Client: CRA EXPLORATION PTY. LIMITED
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Page 4 of 4

Batch Number: A098

Contact: MR. I. CLEMENTSON

No. of Samples: 33

Date Received: 20/01/84

Order No. DPO 30338

Sample Type: SOIL

Date Completed: 27/01/84

SAMPLE NUMBER	Element Unit Method	Mn ppm G001	As ppm G001	Fe % G001		
988875✓		30	<20	0.42		
988876✓		230	20	1.94		
988877✓		<5	<20	0.11		
Detection Limit:		5	1	0.01		

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Page 1 of 2

Batch Number: A098-1

Contact: MR. I. CLEMENTSON

No. of Samples: 6
Date Received: 23/01/84
Date Completed: 27/01/84

Order No. DP0 30338

Sample Type: ROCK

SAMPLE NUMBER	Element Unit Method	Cu ppm G001	Pb ppm G001	Zn ppm G001	Co ppm G001	Ag ppm G001
988634	REGIONAL	<2	35	30	10	1
988636		50	20	20	10	1
988647		60	20	110	30	2
988861	RAPIDEAST	<2	<5	5	5	<1
988864		<2	5	10	<5	<1
988865		<2	5	10	<5	<1
Detection Limit:		2	5	2	5	1

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Batch Number: A098-1

Contact: MR. I. CLEMENTSON

No. of Samples: 6
Date Received: 23/01/84
Date Completed: 27/01/84

Order No. DPO 30338

Sample Type: ROCK

SAMPLE NUMBER	Element Unit Method	Mn ppm G001	As ppm G001	Fe % G001	Cr ppm G001	Ni ppm G001
988634		220	<20	2.86	<5	5
988636		40	<20	2.29	5	15
988647		440	<20	8.25	30	105
988861		20	<20	0.39	<5	<5
988864		60	<20	0.84	<5	<5
988865		60	<20	0.23	20	<5
Detection Limit:		5	1	0.01	5	5

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Page 1 of 1

Batch Number: A098-2

Contact: MR. I. CLEMENTSON

No. of Samples: 6
Date Received: 23/01/84

Order No. DP0 30338

Sample Type: ROCK

Date Completed: 27/01/84

SAMPLE NUMBER	Element Unit Method	Sn ppm XRF 1A	W ppm XRF 1A	Ba ppm XRF 1A	Mo ppm XRF 1B
988634		<5	<10	610	<4
988636		<5	<10	670	<4
988647		<5	<10	90	<4
988861		<5	<10	210	<4
988864		<5	<10	320	<4
988865		<5	<10	260	<4
Detection Limit:		5	10	10	4

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Page 1 of 2

Batch Number: A098-3

Contact: MR. I. CLEMENTSON

No. of Samples: 3
Date Received: 23/01/84
Date Completed: 27/01/84

Order No. DPO 30338

Sample Type: STREAM SEDS.

SAMPLE NUMBER	Element Unit Method	Cu ppm G001	Pb ppm G001	Zn ppm G001	Co ppm G001	Ag ppm G001
988635	REGIONAL	10	10	20	10	<1
988637		<2	<5	15	<5	<1
988860	RAPID EAST	<2	5	15	<5	<1
Detection Limit:		2	5	2	5	1

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Batch Number: A098-3

Contact: **MR. I. CLEMENTSON**

No. of Samples: **3**
Date Received: **23/01/84**
Date Completed: **27/01/84**

Order No. **DP0 30338** Sample Type: **STREAM SEDS.**

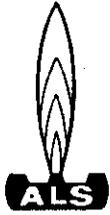
SAMPLE NUMBER	Element Unit Method	Mn ppm G001	Fe % G001	Cr ppm G001	Ni ppm G001	Ba ppm XRF 1A
988635✓		90	0.86	5	20	620
988637✓		20	0.31	175	<5	40
988860✓		40	0.45	50	5	230
Detection Limit:		5	0.01	5	5	10

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Batch Number: A098-4

Contact: **MR. I. CLEMENTSON**

No. of Samples: **3**
Date Received: **23/01/84**
Date Completed: **27/01/84**

Order No. **DPO 30338**

Sample Type: **STREAM SEDS.**

SAMPLE NUMBER	Element Unit Method	Sn ppm XRF 1A	W ppm XRF 1A	Mo ppm XRF 1B		
988635 ✓		<5	<10	<4		
988637 ✓		<5	20	<4		
988860 ✓		<5	<10	<4		
Detection Limit:		5	10	4		

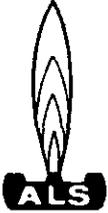
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Client: CRA EXPLORATION PTY. LIMITED
Address: P.O. BOX 138
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Batch Number: A098-5

Contact: MR. I. CLEMENTSON

No. of Samples: 1
Date Received: 23/01/84
Date Completed: 27/01/84

Order No. DP0 30338 Sample Type: PAN. CONCS.

SAMPLE NUMBER	Element Unit Method	Cu ppm G001	Pb ppm G001	Zn ppm G001	Cr ppm G001	Ni ppm G001
988638 <i>Regional</i>		<2	5	5	290	<5
Detection Limit:		2	5	2	5	5

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Page 2 of 2

Batch Number: A098-5

Contact: MR. I. CLEMENTSON

No. of Samples: 1
Date Received: 23/01/84
Date Completed: 27/01/84

Order No. DPO 30338 **Sample Type:** PAN. CONCS.

SAMPLE NUMBER	Element Unit Method	Fe % G001	Ag ppm G001	Co ppm G001	Sn ppm XRF 1A	W ppm XRF 1A
988638✓		0.37	<1	<5	<5	40
Detection Limit:		0.01	1	5	5	10

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Page 1 of 4

Batch Number: A140

Contact: MR. I. CLEMENTSON

No. of Samples: 56
Date Received: 31/01/84
Date Completed: 08/02/84

Order No. DPO 30341

Sample Type: SOIL

SAMPLE NUMBER	Element Unit Method	Cu ppm G001	Pb ppm G001	Zn ppm G001	Co ppm G001	Mn ppm G001
988746		<2	5	<2	<5	<5
988747		60	10	100	60	140
988748		105	15	125	30	20
988749		5	15	10	10	20
988750		<2	5	5	<5	5
988751		5	<5	<2	<5	5
988752		<2	<5	<2	<5	5
988753		<2	<5	<2	<5	5
988754		<2	<5	10	<5	5
988755		2	<5	2	<5	<5
988756	INPUT	<2	5	2	<5	5
988757	BLGS/10360	<2	<5	2	<5	10
988758		<2	<5	2	<5	10
988759		<2	<5	5	<5	5
988760		<2	<5	2	<5	5
988761		<2	<5	2	<5	5
988762		<2	<5	2	<5	5
988763		<2	<5	5	<5	5
988764		<2	5	5	<5	5
988765		<2	10	5	<5	5
988766		<2	<5	2	<5	15
988767		<2	<5	<2	<5	5
988768		<2	<5	2	<5	5
988769		<2	<5	<2	<5	5
988770	INPUT ANOMALY	<2	<5	<2	<5	<5
988771	2477/10360	<2	<5	<2	<5	<5
988772		<2	5	2	<5	5
988773		<2	5	5	5	10
988774		<2	5	5	5	5
988775		2	5	20	5	25
Detection Limit:		2	5	2	5	5

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Page 2 of 4

Batch Number: A140

Contact: MR. I. CLEMENTSON

No. of Samples: 56
Date Received: 31/01/84

Order No. DPD 30341

Sample Type: SOIL

Date Completed: 08/02/84

SAMPLE NUMBER	Element Unit Method	Fe ppm G001	As ppm G004			
988746		250	1			
988747		3.96 %	<1			
988748		3600	1			
988749		2650	<1			
988750		640	1			
988751		500	1			
988752		830	1			
988753		340	1			
988754		400	1			
988755		550	2			
988756		1000	1			
988757		1200	1			
988758		1200	<1			
988759		2000	1			
988760		1000	1			
988761		970	<1			
988762		630	1			
988763		550	1			
988764		1200	1			
988765		930	10			
988766		2250	7			
988767		860	7			
988768		1100	5			
988769		940	3			
988770	INPUT ANALYST	510	3			
988771	2477/10760	500	2			
988772		910	5			
988773		1750	3			
988774		1250	4			
988775		5000	3			
Detection Limit:		10	1			

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Page 3 of 4

Batch Number: A140

Contact: MR. I. CLEMENTSON

No. of Samples: 56
Date Received: 31/01/84
Date Completed: 08/02/84

Order No. DPD 30341

Sample Type: SOIL

SAMPLE NUMBER	Element Unit Method	Cu ppm G001	Pb ppm G001	Zn ppm G001	Co ppm G001	Mn ppm G001
988776		2	10	15	10	20
988777		<2	5	10	10	20
988778		<2	10	10	5	10
988779	INPUT ANOMALY 2477/10360	2	5	5	5	10
988780		75	20	65	30	45
988781		N.R.	N.R.	N.R.	N.R.	N.R.
988782		2	5	2	5	5
988783		15	15	5	120	10
988784		<2	5	5	<5	10
988785		<2	5	5	<5	10
988786		<2	5	5	<5	5
988787		2	10	20	10	20
988788		2	5	15	5	10
988789		2	10	20	5	50
988790		2	40	25	5	45
988793	INPUT ANOMALY 2480/10360	100	35	115	70	720
988794		25	20	35	30	65
988795		20	20	40	15	60
988796		20	20	70	40	75
988797		5	20	2	5	5
988798		10	20	<2	5	5
988799		20	25	2	5	5
988800		15	10	<2	<5	<5
988887		2	10	<2	5	5
988888		5	10	<2	<5	<5
988871		35	20	15	20	45
Detection Limit:		2	5	2	5	5

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Batch Number: A140

Contact: MR. I. CLEMENTSON

No. of Samples: 56
Date Received: 31/01/84
Date Completed: 08/02/84

Order No. DPD 30341

Sample Type: SOIL

SAMPLE NUMBER	Element Unit Method	Fe ppm G001	As ppm G004		
988776		1.20 %	2		
988777		6150	3		
988778		5250	3		
988779		1500	4		
988780		5250	<1		
988781		N.R.	N.R.		
988782		720	1		
988783		9.81 %	170		
988784		1500	2		
988785		1400	2		
988786		660	2		
988787		1.57 %	3		
988788		6550	2		
988789		1.89 %	3		
988790		2.26 %	2		
988793		16.2 %	<1		
988794		2.92 %	1		
988795		2.70 %	<1		
988796		1.80 %	<1		
988797		1.00 %	7		
988798		1.90 %	7		
988799		2.25 %	20		
988800		1.35 %	8		
988887		6500	1		
988888		740	<1		
988871		6100	<1		
Detection Limit:		10	1		

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Page 1 of 2

Batch Number: A140-1

Contact: **MR. I. CLEMENTSON**

No. of Samples: 1
Date Received: 31/01/84
Date Completed: 08/02/84

Order No. **DPD 30341**

Sample Type: **STREAM SEDIMENT**

SAMPLE NUMBER	Element Unit Method	Cu ppm G001	Pb ppm G001	Zn ppm G001	Co ppm G001	Mn ppm G001
988791	Went 2450/0360	5	5	30	15	140
Detection Limit:		2	5	2	5	5

Comments:



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Signatory:

G J Helmstedt



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LABORATORY REPORT

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32 Shand Street
Stafford, Q. 4053
PO Box 66,
Everton Park, Q. 4053
Phone: (07) 352 5577
Telex: ALSEV 42344

Client: **CRA EXPLORATION PTY. LIMITED**
Address: **P.O. BOX 138
ROSNY PARK TAS. 7018**

Page 2 of 2

Batch Number: A140-1

Contact: **MR. I. CLEMENTSON**

No. of Samples: **1**
Date Received: **31/01/84**
Date Completed: **08/02/84**

Order No. **DP0 30341**

Sample Type: **STREAM SEDIMENT**

SAMPLE NUMBER	Element Unit Method	Fe % G001	As ppm G001	Sn ppm XRF 1A	W ppm XRF 1A	Ba ppm XRF 1A
988791		1.65	<1	<5	20	120
Detection Limit:		0.01	1	5	10	10

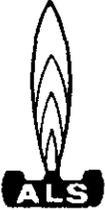
Comments:



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Client: CRA EXPLORATION PTY. LIMITED
Address: P.O. BOX 138
ROSNY PARK TAS. 7018

Page 1 of 1

Batch Number: A140-2

Contact: MR. I. CLEMENTSON

No. of Samples: 1
Date Received: 31/01/84
Date Completed: 08/02/84

Order No. DPO 30341

Sample Type: STREAM SEDIMENT

SAMPLE NUMBER	Element Unit Method	Mo ppm XRF 1B				
988791		8				
Detection Limit:		4				

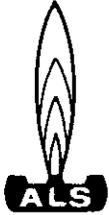
Comments:



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Page 1 of 2

Client: CRA EXPLORATION PTY. LIMITED
Address: P.O. BOX 138
ROSNY PARK TAS. 7018

Batch Number: A140-3

Contact: MR. I. CLEMENTSON

No. of Samples: 1
Date Received: 01/02/84
Date Completed: 08/02/84

Order No. DPD 30341 Sample Type: PAN. CONCS.

SAMPLE NUMBER	Element Unit Method	Cu ppm G001	Pb ppm G001	Zn ppm G001	Co ppm G001	Mn ppm G001
988792 INPUT 2450/10360		5	5	20	15	110
Detection Limit:		2	5	2	5	5

Comments:



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G J Helmsler

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Page 2 of 2

Client: CRA EXPLORATION PTY. LIMITED
Address: P.O. BOX 138
ROSNY PARK TAS. 7019

Batch Number: A140-3

Contact: MR. I. CLEMENTSON

No. of Samples: 1
Date Received: 01/02/84
Date Completed: 08/02/84

Order No. DPD 30341 Sample Type: PAN, CONCS.

SAMPLE NUMBER	Element Unit Method	Fe % G001	As ppm G004	Sn ppm XRF 1A	W ppm XRF 1A	Ba ppm XRF 1A
988792		2.00	1	<5	40	30
Detection Limit:		0.01	1	5	10	10

Comments:



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Client: CRA EXPLORATION PTY. LIMITED
Address: P.O. BOX 138
ROSNY PARK TAS. 7018

Page 1 of 1

Batch Number: A140-4

Contact: MR. I. CLEMENTSON

No. of Samples: 1
Date Received: 01/02/84
Date Completed: 08/02/84

Order No. DP0 30341

Sample Type: PAN. CONCS.

SAMPLE NUMBER	Element Unit Method	Mo ppm XRF 1B	S.Wt. Grams			
988792		<4	40.33			
Detection Limit:		4				

Comments:



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SAMPLE LEDGER KEYS

Note that two different sets of sample ledgers have been used. Each set has a slightly different code system.

Keys to both types are provided; one set is identified by "Updated June 1983" in the top right hand corner. The other set is undated.

KEY TO GEOCHEMICAL PANNED CONCENTRATE SAMPLING LEDGER

451061

SAMPLE LEDGER

CRAE 7 digit no.

LOCATION

Co-ordinates Australian Metric
Grid References in Metres

SAMPLE DESCRIPTION

Sample Type

- 1 Original Sample
- 2 Resample
- 3 Reanalysis of Original Sample

Start Weight

Initial Dry Weight of
Sample in Kilograms or
Guesstimate

End Weight

Dry Weight of Concentrate
in Kilograms

SITE DESCRIPTION

Width Width of Channel in metres

Flow

- 1 Dry
- 2 Dry with Puddles
- 3 Slow
- 4 Medium
- 5 Fast

Bank

- 1 Alluvial
- 2 Colluvial
- 3 Alluvial/Colluvial
- 4 No Defined Channel

SITE DESCRIPTION CONT'D

Catchment

- 1 Catchment Area > 100 km²
- 2 " " 50 - 100 km²
- 3 " " 20 - 50 km²
- 4 " " 10 - 50 km²
- 5 " " 5 - 10 km²
- 6 " " 2 - 5 km²
- 7 " " 1 - 2 km²
- 8 " " .5 - 1 km²
- 9 " " < 0.5 km²

Vegetation

- 1 Button Grass/Open Heathland
- 2 Eucalypt Forest
- 3 Rain Forest
- 4 Ti Tree
- 5 Cultivation

Staining

- 1 Minor Iron Staining
- 2 Major Iron Staining
- 3 Minor Manganese Staining
- 4 Major Manganese Staining
- 5 Minor Carbonate Staining
- 6 Major Carbonate Staining

Contamination

- 1 None Apparent
- 2 Urban - Houses, Rubbish etc.
- 3 Roads, Railways, Dams Etc.
- 4 Metalliferous Mine Workings
- 5 Agricultural
- 6 Natural Dilution by Banks
- 7 Logging

Site Rating

- 1 Good
- 2 Moderate
- 3 Poor
- 4 Unsatisfactory

HEAVY MINERALS

Visible

- 1 None Visible
- 2 Trace
- 3 Disseminated
- 4 Abundant

Major Heavy Minerals

- 5 CHROMITE
- 6 fluorite
- 10 PYRITE
- 15 MOLYBDENITE
- 16 bismuthinite
- 20 ARSENOPYRITE
- 25 BORNITE
- 30 CHALCOPYRITE
- 31 malachite
- 32 azurite
- 33 cobaltite
- 35 CHALCOCCITE
- 36 tetrahedrite
- 37 ternantite
- 40 PYRRHOTITE
- 45 PENITLANDITE
- 50 GALENA
- 51 cerussite
- 52 jarosite
- 55 BARYTE
- 60 SPHALERITE
- 61 smithsonite
- 62 willemite
- 65 ILMENITE
- 66 rutile
- 67 magnesite
- 70 CASSITERITE
- 71 stannite
- 75 WOLFRAMITE
- 80 HEMATITE
- 81 magnetite
- 85 SCHEELITE
- 90 MAGNETITE
- 91 goethite
- 92 siderite
- 93 limonite
- 95 GOLD
- 96 gold tellurides
- 97 native copper
- 98 native silver

Minor Heavy Minerals

Coded as per Major Heavy Minerals

ROCK TYPE

Outcrop

- 1 Fine Grained Clastic Sediment
- 2 Coarse Grained Clastic Sed.
- 3 Conglomerate
- 4 Breccia
- 5 Greywacke
- 6 Arkose
- 7 Sandstone
- 8 Siltstone
- 9 Shale
- 10 Black Shale+/Carbon/Graphite
- 11 Gravel Grey Billy/Recent
- 12 Aeolian Sands
- 13 Mudstone
- 14 Fluvial/Marine Sands
- 15 Bituminous coal
- 16 Brown Coal
- 17 Lignite/Peat
- 18 Kerogen Oil Shale
- 19 Tasmanites Oil Shale
- 20 Undifferentiated Carbonate
- 21 Limestone
- 22 Dolomite
- 23 Magnesite
- 24 Calcareous Shale
- 25 Chert
- 26 Banded Iron Formation
- 30 Undifferentiated Acid Intrusive
- 31 Granite
- 32 Porphyritic Granite
- 33 Adamellite
- 34 Aplite
- 35 Pegmatite
- 36 Syenite

- 40 Undifferentiated Intermediate Intrusive
- 41 Granodiorite
- 42 Diorite

- 50 Undifferentiated Basic Intrusive
- 51 Dolerite
- 52 Gabbro

- 60 Undifferentiated Ultrabasic Intrusive
- 61 Peridotite
- 62 Serpentinite

- 70 Undifferentiated Acid Volcanic
- 71 Undifferentiated Acid Lava
- 72 Undifferentiated Acid Pyroclastic

ROCK TYPE CONT'D

- 73 Rhyolite
- 74 Trachyte
- 75 Andesite
- 80 Undifferentiated Intermediate Volcanic
- 81 Undifferentiated Intermediate Lava
- 82 Undifferentiated Intermediate Pyroclastic
- 83 Rhyodacite
- 84 Dacite
- 85 Tuff/Tuffaceous Shale
- 90 Undifferentiated Basic Volcanic
- 91 Undifferentiated Basic Lava
- 92 Undifferentiated Basic Pyroclastic
- 93 Basalt
- 100 Quartzite
- 101 Hornfels
- 102 Marble
- 103 Slate
- 104 Phyllite
- 105 Schist
- 106 Amphibolite
- 107 Gneiss
- 110 Skarn
- 120 Greisen
- 122 Gossan
- 123 Ironstone
- 124 Laterite
- 999 Fubarite

Float

Coded as per outcrop.

LOOK

Refer to Original Ledger for Information Outside the Scope of this File

1 Refer to Ledger

055

KEY TO GEOCHEMICAL ROCK SAMPLING LEDGER

SAMPLE NO.

CRAE 7 digit number.

LOCATION

Co-ordinates Local grid or
Metric Grid reference

Exposure

- 1 Outcrop
- 2 Float
- 3 Uncertain

Sample Type

- 1 Channel Sample
- 2 Chip Sample
- 3 Grab Sample - Single
- 4 Grab Sample - Multiple
- 5 Diamond Drill Core Split
- 6 Diamond Drill Core Grind
- 7 Percussion Chips
- 8 Petrology

Width

Width of sample zone in metres

Interval

Sample interval in metres

ROCK TYPE

- 1 Fine Grained Clastic Sediment
- 2 Coarse Grained Clastic Sediment
- 3 Conglomerate
- 4 Breccia
- 5 Greywacke
- 6 Arkose
- 7 Sandstone
- 8 Siltstone
- 9 Shale
- 10 Black Shale +/-Carbon/Graphite
- 11 Gravel Grey Billy/Pacnet
- 12 Aeolian Sands
- 13 Mudstone
- 14 Fluviatile/Marine Sands
- 15 Bituminous coal
- 16 Brown Coal
- 17 Lignite/Peat
- 18 Kerogen Oil Shale
- 19 Tasmanites Oil Shale

ROCK TYPE CONT'D

- 20 Undifferentiated carbonate
- 21 Limestone
- 22 Dolomite
- 23 Magnesite
- 24 Calcareous Shale
- 25 Chert
- 26 Banded iron formation
- 30 Undifferentiated acid intrusive
- 31 Granite
- 32 Porphyritic granite
- 33 Adamellite
- 34 Aplite
- 35 Pegmatite
- 36 Syenite
- 40 Undiff. intermediate intrusive
- 41 Granodiorite
- 42 Diorite
- 50 Undifferentiated basic intrusive
- 51 Dolerite
- 52 Gabbro
- 60 Undiff. ultrabasic intrusive
- 61 Peridotite
- 62 Serpentinite
- 70 Undifferentiated acid volcanic
- 71 Undifferentiated acid lava
- 72 Undifferentiated acid pyroclastic
- 73 Rhyolite
- 74 Trachyte
- 75 Andesite
- 80 Undifferentiated intermediate volcanic
- 81 Undifferentiated intermediate lava
- 82 Undifferentiated intermediate pyroclastic
- 83 Rhyodacite
- 84 Dacite
- 85 Tuff/Tuffaceous shale
- 90 Undifferentiated basic volcanic
- 91 Undifferentiated basic lava
- 92 Undifferentiated basic pyroclastic
- 93 Basalt
- 100 Quartzite
- 101 Hornfels
- 102 Marble
- 103 Slate
- 104 Phyllite
- 105 Schist
- 106 Amphibolite
- 107 Graiss
- 110 Skarn

ROCK TYPE CONT'D

- 120 Quartz veins
- 121 Gneiss
- 122 Gossan
- 123 Ironstone
- 124 Laterite
- 999 Fubarite

ALTERATION

- 1 Argillisation
- 2 Albitisation
- 3 Carbonatisation
- 4 Chloritisation
- 5 Dolomitisation
- 6 Propylitisation
- 7 Pyritisation
- 8 Saussuritisation
- 9 Sericitisation
- 10 Silicification
- 11 Zeolitisation
- 12 Ferruginisation
- 13 Tourmalinisation
- 14 Potassic
- 15 Calc-silicate
- 16 Kaolinisation
- 17 Talcose
- 18 Weathered
- 19 Other

MINERALISATION

Visible

- 1 None visible
- 2 Trace
- 3 Disseminated
- 4 Abundant

Style

- 1 Veins /Net veining
- 2 Shear zones
- 3 Stratabound
- 4 Pipe
- 5 Stockwork
- 6 Skarn
- 7 Irregular
- 8 Planar Controlled i.e. bedding, cleavage, joints, etc.
- 9 Box-works or possible associates of Mineralisation
- 10 Place
- 11 Other

Major Ore

- 5 CHROMITE
- 6 fluorite
- 10 PYRITE
- 15 MOLYBDENITE
- 16 bismuthinite
- 20 ARSENOPYRITE
- 25 BORNITE
- 30 CHALCOPYRITE
- 31 malachite
- 32 azurite
- 33 cobaltite
- 35 CHALCOHITE
- 36 tetrahedrite
- 37 tennantite
- 40 PYRRHOTITE
- 45 PENTLANDITE
- 50 GALENA
- 51 cerussite
- 52 jarosite
- 55 BARYTE
- 60 SPHALERITE
- 61 smithsonite
- 62 willemite
- 65 ILMENITE
- 66 rutile
- 67 magnesite
- 70 CASSITERITE
- 71 stannite
- 75 WOLFRAMITE
- 76 manganese mins
- 80 hematite
- 81 maghemite
- 82 graphite
- 85 SCHEELITE
- 90 MAGNETITE
- 91 goethite
- 92 siderite
- 93 limonite
- 95 GOLD
- 96 gold tellurides
- 97 native copper
- 98 native silver

Minor Minerals

Coded as per major

Gangue

- 1 Quartz
- 2 Feldspar
- 3 Calcite
- 4 Baryte
- 5 Fluorite
- 6 Chlorite
- 7 Garnet
- 8 Epidote

LOOK Refer to original ledger for information outside the scope of this file.

1 Refer to Ledger

KEY TO CRA GEOCHEMICAL SOIL SAMPLING LEDGER

SAMPLE NO.

CRAE 7 digit no.

LOCATION

Line Ref. or Co-ordinate

Position on line or AMG

Co-ordinates

SOIL DESCRIPTION

Depth Depth of sample in metres
Colour Three digit number e.g. 115
 i.e. Light Red Brown

1 Light	1 Red	1 Red
2 Medium	2 Yellow	2 Yellow
3 Dark	3 Grey	3 Grey
	4 Black	4 Black
	5 Brown	5 Brown
	6 White	6 White
	7 Green	7 Green
	8 Orange	8 Orange
	9 Blue	9 Blue

Horizon

- 1 A
- 2 A - B
- 3 B
- 4 B - C
- 5 C
- 6 Bedrock
- 7 Gravels (Alluvial or Eluvial masking residual soils.)

Rock Percentage

Sand Percentage

Silt Percentage

Clay Percentage

- Organic
- 0 None
 - 1 Low
 - 2 Moderate
 - 3 High

Soil Type

- 1 Skeletal
- 2 Residual
- 3 Colluvial
- 4 Alluvial
- 5 Transported
- 6 Laterite

BEDROCK

Rock Type

- 1 Fine grained clastic sediment
- 2 Coarse grained clastic sediment
- 3 Conglomerate
- 4 Breccia
- 5 Greywacke
- 6 Arkose
- 7 Sandstone
- 8 Siltstone
- 9 Shale
- 10 Black Shale +/-Carbon/Graphite
- 11 Gravel Grey Billy/Recent
- 12 Aeolian Sands
- 13 Mudstone
- 14 Fluvial/Marine Sands
- 15 Bituminous Coal
- 16 Brown coal
- 17 Lignite/Peat
- 18 Kerogen Oil Shale
- 19 Tamarites Oil Shale
- 20 Undifferentiated Carbonate
- 21 Limestone
- 22 Dolomite
- 23 Magnesite
- 24 Calcareous Shale
- 25 Chert
- 26 Banded Iron Formation
- 30 Undifferentiated Acid Intrusive
- 31 Granite
- 32 Porphyritic granite
- 33 Adamellite
- 34 Aplite
- 35 Pegmatite
- 36 Syenite
- 40 Undiff. Acid Intrusive
- 41 Granodiorite
- 42 Diorite
- 50 Undifferentiated Basic Intrusive
- 51 Dolerite
- 52 Gabbro
- 60 Undiff. Ultrabasic intrusive
- 61 Peridotite
- 62 Serpentinite
- 70 Undiff. Acid Volcanic
- 71 Undiff. Acid Lava
- 72 Undiff. Acid Pyroclastic
- 73 Rhyolite
- 74 Trachyte
- 75 Andesite
- 80 Undiff. Intermediate Volcanic

- 81 Undiff. Intermediate Lava
- 82 Undiff. Intermediate Pyroclastic
- 83 Rhyodacite
- 84 Dacite
- 85 Tuff/Tuffaceous shale
- 90 Undiff. basic volcanic
- 91 Undiff. basic lava
- 92 Undiff. basic pyroclastic
- 93 Basalt
- 100 Quartzite
- 101 Hornfels
- 102 Marble
- 103 Slate
- 104 Phyllite
- 105 Schist
- 106 Amphibolite
- 107 Gneiss
- 110 Skarn
- 120 Quartz veins
- 121 Gneisen
- 122 Gossan
- 123 Ironstone
- 124 Laterite
- 999 Fubarite

Alteration

- 1 Argillisation
- 2 Albitisation
- 3 Carbonatisation
- 4 Chloritisation
- 5 Dolomitisation
- 6 Propylitisation
- 7 Pyritisation
- 8 Saussuritisation
- 9 Sericitisation
- 10 Silicification
- 11 Zeolitisation
- 12 Ferruginisation
- 13 Tourmalinisation
- 14 Potassic
- 15 Calc-silicate
- 16 Kaolinisation
- 17 Talcose
- 18 Weathered

MINERALISATION

Visible

- 1 None Visible
- 2 Trace
- 3 Disseminated
- 4 Abundant

Mineral Type

- 10 Pyrite
- 20 Arsenopyrite
- 30 Chalcopyrite
- 40 Pyrrhotite
- 50 Galena
- 60 Sphalerite
- 70 Cassiterite
- 80 Hematite
- 90 Magnetite

For full list of minerals, see Rock Ledger

LOOK

Refer to original ledger for information outside the scope of this file

1 Refer to Ledger

KEY TO GEOCHEMICAL STREAM SEDIMENT SAMPLING LEDGER

451064

SAMPLE NUMBER

CRAE 7 figure no.

LOCATION

Co-ordinates Australian Metric
Grid References in Metres

SAMPLE DESCRIPTION

Sample Type

- 1 Original Sample
- 2 Resample
- 3 Reanalysis of Original Sample

Mesh 1 Total Sample Pulverised

- 2 -10# - + 40#
- 3 -40# - + 80#
- 4 -80#
- 5 Suspension
- 6 Other

Gravel Percentage

Sand Percentage

Silt Percentage

- Organic
- 1 Low
 - 2 Medium
 - 3 High

SITE DESCRIPTION

Width

Width of Channel in Metres

Flow

- 1. Dry
- 2. Dry with Puddles
- 3. Slow
- 4. Medium
- 5. Fast

Bank

- 1 Alluvial
- 2 Colluvial
- 3 Alluvial/Colluvial
- 4 No Defined Channel

SITE DESCRIPTION CONT'D

Catchment

- 1 Catchment area >100 km²
- 2 Catchment area 50 - 100 km²
- 3 Catchment area 20 - 50 km²
- 4 Catchment area 10 - 50 km²
- 5 Catchment area 5 - 10 km²
- 6 Catchment area 2 - 5 km²
- 7 Catchment area 1 - 2 km²
- 8 Catchment area .5 - 1 km²
- 9 Catchment area <0.5 km²

Vegetation

- 1 Button Grass/Open Heathland
- 2 Eucalypt Forest
- 3 Rain Forest
- 4 Ti Tree
- 5 Cultivation

Stain

- 1 Minor Iron Staining
- 2 Major Iron Staining
- 3 Minor Manganese Staining
- 4 Major Manganese Staining
- 5 Minor Carbonate Staining
- 6 Major Carbonate Staining

Contamination

- 1 None Apparent
- 2 Urban - Houses, Rubbish etc.
- 3 Roads, Railways, Dams etc.
- 4 Metalliferous Mine Workings
- 5 Agricultural
- 6 Natural Dilution by Banks
- 7 Logging

Site

- 1 Good
- 2 Moderate
- 3 Poor
- 4 Unsatisfactory

ROCK TYPE

Outcrop

- 1 Fine grained clastic sediment
- 2 Coarse grained clastic sediment
- 3 Conglomerate
- 4 Breccia
- 5 Greywacke
- 6 Arkose
- 7 Sandstone
- 8 Siltstone
- 9 Shale
- 10 Black Shale + /Carbon/Graphite
- 11 Gravel Grey Billy/Recent
- 12 Aeolian Sands
- 13 Mudstone
- 14 Fluvial/Marine Sands
- 15 Bituminous coal
- 16 Brown Coal
- 17 Lignite/Peat
- 18 Kerogen Oil Shale
- 19 Tasmanites Oil Shale
- 20 Undifferentiated Carbonate
- 21 Limestone
- 22 Dolomite
- 23 Magnesite
- 24 Calcareous Shale
- 25 Chert
- 26 Banded Iron Formation
- 30 Undifferentiated Acid Intrusive
- 31 Granite
- 32 Porphyritic Granite
- 33 Adamellite
- 34 Aplite
- 35 Pegmatite
- 36 Syenite
- 40 Undifferentiated Intermediate Intrusive
- 41 Granodiorite
- 42 Diorite
- 50 Undifferentiated Basic Intrusive
- 51 Dolerite
- 52 Gabbro
- 60 Undifferentiated Ultrabasic Intrusive
- 61 Peridotite
- 62 Serpentinite
- 70 Undifferentiated Acid Volcanic
- 71 Undifferentiated Acid Lava
- 72 Undifferentiated Acid Pyroclastic
- 73 Rhyolite
- 74 Trachyte
- 75 Andesite
- 80 Undifferentiated Intermediate Volcanic
- 81 Undifferentiated Intermediate Lava
- 82 Undifferentiated Intermediate Pyroclastic

ROCK TYPE CONT'D

- 83 Rhyodacite
- 84 Dacite
- 85 Tuff/Tuffaceous Shale
- 90 Undifferentiated Basic Volcanic
- 91 Undifferentiated Basic Lava
- 92 Undifferentiated Basic Pyroclastic
- 93 Basalt
- 100 Quartzite
- 101 Hornfels
- 102 Marble
- 103 Slate
- 104 Phyllite
- 105 Schist
- 106 Amphibolite
- 107 Gneiss
- 110 Slat
- 120 Quartz Veins
- 121 Gneiss
- 122 Gossan
- 123 Ironstone
- 124 Laterite
- 999 Fubarite
- Float
- Coded as per outcrop
- LOOK
- Refer to Original Ledger for Information Outside the Scope of this file.
- 1 Refer to Ledger

KEY TO SOIL SAMPLE FIELD SHEET

- Sample Number** - CRAE 6 or 7 digit No.
- East** - AMG or Local Grid Co-ordinate in m.
- North** - AMG or Local Grid Co-ordinate in m.
- Zone** - AMG Zone or L for Local Grid.
- Sample Type** - Mesh Size plus Auger (A); RAB (R).
- Rock, Sand, Silt, Clay, Org** - as l.
- Depth** - of sample below surface in m.
- Colour** -
- Horizon** - A, A/B, B, B/C, C, WB.
- Soil Type** - Skeletal (S), Residual (R), Colluvial (C), Alluvial (A), Transported (T), Laterite (L).
- Exposure Type** - (ie. Bedrock) Exposed (E), Subcrop (S), None (N).
- Depth to Bedrock** - (estimated) in m.
- Rock Type** - (Bedrock) - rock type code.
- Alteration** - alteration code.
- Vis. Min** - None (N), Trace (T), Disseminated (D), Abundant (A).
- Min. Type 1 & 2** - Mineral Code.
- Look** - Other item of interest recorded in 'geological observations' column, (Y/N).

ROCK TYPE CODE

Sediments - Clastic

Sedimentary Rock	SDRC
Conglomerate	COMG
Breccia	BREC
Grit	GRIT
Sandstone	
Undiff	SSUD
Greywacke	GRGY
Arkose	ARKO
Calcareous	CLAR
Siltstone	SILT
Shale	SHAL
Calcareous	
Shale	CLSH
Black Shale/Carb/Graphite	BLSH
Oil Shale	OLSH
Lignite	LIGN
Coal-black	CLBL
Coal-brown	CLBR
Mudstone	MUDS
Marl	MARL
Clay	CLAY
Tillite	TILL

Sediments - Chemical

Carbonate	
Undiff	CRUD
Limestone	LIMS
Dolomite	DOLM
Travertine	TRAV
Argillaceous	
Limestone	ASLM
Chert	CHER
Jasperoid	JASP
Evaporite	EVAP
Phosphate Rock	PHRC
Magnesite	MGST
Iron Formation	IRFM
Miscellaneous	
Silicate	SLRT
Calcrite	CLRT
Bauxite	BAUX
Ironstone	IRST
Laterite	LATR
Gossan	GOSS
Sulphides	SULP
Quartz Vein	QTVN
Gresion	GRES
Fubarite	FUBH

Volcanics

Agglomerate	AGLM
Lapilli Tuff	LPTF
Ash Flow Tuff	AFTF
Igneimbrite	IGNH
Crystal Tuff	CRTF
Volcanic Tuff	VVTF
Obsidian	OBSD
Mudflows	MUDF
Tuffaceous	
Sandstone	TPSS
Tuffaceous	
Shale	TPSH
Basic Volc.	
Undiff	BVUD
Basalt	BASL
Basic Lava	BELV
Basic Pyroclast	BSPY
Intermed. Volc.	
Undiff	IYUD
Andesite	ANSD
Intermed. Lava	INLV
Intermed.	
Pyroclastic	INPY
Acid Volc.	
Undiff	AVUD
Rhyolite	PHYL
Rhyodacite	IODC

Dacite	DACT
Trachyte	TRAC
Acid Lava	ACLV
Acid Pyroclast	ACPY

Metamorphics

Metamorphic Rock	
Undiff	MHUD
Breccia	BREC
Mylonite	MILN
Gouge	GOUG
Marble	MARB
Calc Silicate	CLSL
Skarn	SKAR
Hornfels	HORN
Slate/Phyllite	SLAT
Quartzite	QTZT
Meta Sediment	
Fine	MSFN
Meta Sediment	
Course	MCCR
Metavolcanic	MTVL
Greenschist	GRSC
Schist Undiff	SCUD
Schist Mafic	SCMF
Schist Leuco	SCLC
Schist Amphibole	SCAM
Schist	
Andalusite	SCAN
Schist Biotite	SCBT
Schist Chlorite	SCCH
Schist Garnet	SCGR
Schist Muscovite	SCMS
Schist Mica	SCMC
Schist Pelitic	SCPL
Schist Psammitic	SCPS
Schist Sericite	SCSR
Schist Quartz	
Mica	SCOM
Schist	
Staurolite	SCST
Schist Talc	SCTL
Amphibole	AMPH
Gneiss Undiff	GNUD
Gneiss Mafic	GNMF
Gneiss Leuco	GNLC
Gneiss Amphibole	GNAM
Gneiss Augen	GNAG
Gneiss Biotite	GNBT
Gneiss Garnet	GNGT
Gneiss Granite	GNGR
Gneiss	
Sillimanite	GNSL
Gneiss	
Staurolite	GNST
Granulite	GNLT
Migmatite	GNMG

Metamorphics

Metamorphic Rock	
Undiff	MHUD
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Schist Mafic	SCMF
Schist Leuco	SCLC
Schist Amphibole	SCAM
Schist	
Andalusite	SCAN
Schist Biotite	SCBT
Schist Chlorite	SCCH
Schist Garnet	SCGR
Schist Muscovite	SCMS
Schist Mica	SCMC
Schist Pelitic	SCPL
Schist Psammitic	SCPS
Schist Sericite	SCSR
Schist Quartz	
Mica	SCOM
Schist	
Staurolite	SCST
Schist Talc	SCTL
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Gneiss Mafic	GNMF
Gneiss Leuco	GNLC
Gneiss Amphibole	GNAM
Gneiss Augen	GNAG
Gneiss Biotite	GNBT
Gneiss Garnet	GNGT
Gneiss Granite	GNGR
Gneiss	
Sillimanite	GNSL
Gneiss	
Staurolite	GNST
Granulite	GNLT
Migmatite	GNMG

Metamorphics

Metamorphic Rock	
Undiff	MHUD
Breccia	BREC
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Gouge	GOUG
Marble	MARB
Calc Silicate	CLSL
Skarn	SKAR
Hornfels	HORN
Slate/Phyllite	SLAT
Quartzite	QTZT
Meta Sediment	
Fine	MSFN
Meta Sediment	
Course	MCCR
Metavolcanic	MTVL
Greenschist	GRSC
Schist Undiff	SCUD
Schist Mafic	SCMF
Schist Leuco	SCLC
Schist Amphibole	SCAM
Schist	
Andalusite	SCAN
Schist Biotite	SCBT
Schist Chlorite	SCCH
Schist Garnet	SCGR
Schist Muscovite	SCMS
Schist Mica	SCMC
Schist Pelitic	SCPL
Schist Psammitic	SCPS
Schist Sericite	SCSR
Schist Quartz	
Mica	SCOM
Schist	
Staurolite	SCST
Schist Talc	SCTL
Amphibole	AMPH
Gneiss Undiff	GNUD
Gneiss Mafic	GNMF
Gneiss Leuco	GNLC
Gneiss Amphibole	GNAM
Gneiss Augen	GNAG
Gneiss Biotite	GNBT
Gneiss Garnet	GNGT
Gneiss Granite	GNGR
Gneiss	
Sillimanite	GNSL
Gneiss	
Staurolite	GNST
Granulite	GNLT
Migmatite	GNMG

Igneous - Intrusives

Greenstone	GRGN
Ultrabasic Intr.	
Undiff	UIUD
Eclogite	ECLE
Peridotite	PERD
Serpentinite	SERP
Anorthosite	ANOR
Gabbro	GABB
Alkali Gabbro	ALGB
Morite	MORT
Picrite	PICR
Pyroxenite	PYRX
Dunite	DUNT
Carbonatite	CARB
Kiefferite	KIEK
Coarse Basic	
Intr.	CBIN
Med Basic Intr.	MBIN
Fine Basic Intr.	FBIN
Lampophyre	LAMP
Coarse Intermed	
Intr.	CIIN

Med Intermed	
Intr.	MIIN
Fine Intermed	
Intr.	FIIN
Syenite	SYEN
Dolerite	DOLR
Diorite	DIOR
Coarse Acid Intr.	CAIN
Medium Acid Intr.	MAIN
Fine Acid Intr.	FAIN
Granite	GRAM
Aplite	APLT
Adamellite	ADAM
Granodiorite	GRDR
Quartz Porphyry	QUPR
Quartz Feldspar	
Porphyry	QPPR
Granophyre	GRPN
Pegmatite	PEGM
Glass	GLAS

ALTERATION CODE

Argillisation	ARGL
Albitisation	ALBT
Calc Silicate	CLSL
Carbonatisation	CARB
Chloritisation	CHLR
Dolomitisation	DOLM
Ferruginisation	FERG
Kaolinisation	KAOL
Potassic	POTS
Propylitisation	PROP
Serpentinisation	SERP
Silicification	SILC
Talcose	TALC
Tourmalinisation	TOUR
Zeolitisation	ZEOL
Other	OTHR

MINERAL CODE

Actinolite	ACTN
Adularia	ADUL
Agate	AGAT
Alkali Feldspar	ALFL
Albite	ALBT
Allanite	ALAW
Alunite	ALUN
Ambygonite	AMBL
Amethyst	AMET
Amphibole	AMPH
Andalusite	ANDL
Andesine	ANDE
Anhydrite	ANHY
Ankerite	ANKA
Anthophyllite	ANTH
Antimonite	AMTW
Antimony Native	AMNT
Apatite	APAT
Aragonite	ARAG
Argentite	ARGN
Arsenic	ASNT
Arsenopyrite	ARPY
Asbestos	ASBS
Augite	AUGT
Azurite	AZUR
Baryte	BART
Bastnaesite	BAST
Bauxite	BAUX
Bentonite	BENT
Beryl	BERY
Biotite	BIOT
Bismuth	BIEM
Bismuthinite	BIEM
Bitumen	BITM
Boracite	BORC
Borax	BORX

Boulangerite	BOUL
Bronzite	BRON
Brucite	BRUC
Calcite	CALC
Carbonate	CARB
Carnotite	CARN
Cassiterite	CASS
Celestite	CELS
Chalcocite	CHCC
Chalcocony	CHCD
Chalcocite	CHCT
Chalcopyrite	CHPY
Chamosite	CHAM
Chert	CHER
Chlorite	CHLR
Chrom Diopside	CHDP
Chrom Spinel	CHSP
Chromite	CHRM
Chrysothile	CHRY
Cinnabar	CIIN
Clay	CLAY
Clinopyroxene	CLPY
Clinosulphide	CLCS
Cobaltite	COBL
Collophane	COLP
Colusite	COLM
Copper	CPPT
Cordierite	CORD
Corundum	CORN
Covellite	COVL
Crocidolite	CRUC
Cryolite	CRYL
Cubanite	CUBN
Cumingtonite	CUMN
Cuprite	CUPR
Diaspore	DIAM
Digenite	DIGN
Diopside	DIOP
Dolomite	DOLM
Electrum	ELEC
Emerald	EMER
Enargite	ENAR
Enstatite	ENST
Epidote	EPID
Evaporites	EVAP
Fayalite	FAYL
Feldspar	FELD
Ferberite	FERB
Ferrodolomite	FRDL
Fluorite	FLUR
Franckeite	FRAN
Fuchsite	FUCH
Gahnite	GAMN
Galenite	GALN
Garnet	GARN
Garnierite	GRNT
Gibbsite	GIBS
Glass	GLAS
Glaucophane	GLAC
Glaucophane	GLPH
Goethite	GOET
Gold	AUNT
Graphite	GRAP
Grossularite	GRGS
Guano	GUAN
Gypsum	GYPG
Hallite	HALL
Heazlewoodite	HEAZ
Hedenbergite	HEDB
Hemite	HENT
Hornblende	HORN
Hubnerite	HUBN
Ilmenite	ILMN
Iron Oxides	FIOR
Jadecite	JADT
Jarosite	JARS
Jasper	JASP
Kaolin	KAOL
Kyanite	KYAN
Labradorite	LABR
Lepidolite	LEPD

Leucite	LEUC
Leucosene	LCXN
Limonite	LIMN
Loellingite	LOEL
Magnetite	MAGH
Magnesite	MGST
Magnetite	MGTT
Malachite	MALC
Manganite	MANG
Marcasite	MARC
Marlite	MART
Melilite	MELT
Mercury	MGNT
Mica	MICA
Microcline	MICR
Molybdenite	MOLY
Monazite	MONZ
Montmorillonite	MONT
Muscovite	MUSC
Nephaline	NEPH
Nephrite	NEPT
Nohre	NOHR
Oligoclase	OLIG
Olivine	OLIV
Opal	OPAL
Orthoclase	ORCL
Orthopyroxene	ORPX
Pentlandite	PENT
Perthite	PERT
Phlogopite	PHLG
Phosphate	PHOS
Picro-ilmenite	PCIL
Pitchblende	PITC

- 1 -

SAMPLE TYPE CODE

The following sample type codes are currently in use. So that uniformity can be maintained the same codes should be used throughout CRAE.

New sample type codes can be created upon request to the Manager Information Services only.

<u>SYMBOL</u>	<u>CODE</u>	<u>DESCRIPTION</u>
GRAVEL	001	A 40 kg Gravel sample.
-80#SS	002	The -80# fraction from stream sediment.
-40#GC	003	The -40# fraction concentrate after the Wilfley table process taken from a gravel sample.
-80#GC	004	The -80# fraction concentrate after the Wilfley table as above.
ROCK	005	A Rock sample.
GOSSAN	006	Gossan.
-40# +80#SS	007	A double sieved sample (in the designated range) from stream sediment.
LOAM	008	A Loam sample.
-40#LC	009	The -40# fraction concentrate after Wilfley table process on a Loam sample.
-80#LC	010	The -80# fraction concentrate as above.
-80#SL	011	The -80# fraction of a Soil sample.
-40# +80#SL	012	A double sieved Soil sample.
-80#PSS	013	The -80# fraction Stream Sediment, presieved in field.
-40# +80#PS	014	-40# +80# fraction Stream Sediment, presieved in field.
-80#GPS	015	-80# fraction from 40 kg Gravel presieved at Laboratory.
CHIPS	016	Drill chips collected as rocks.
PAN CON	020	Panned concentrate.

KEY TO PANNED CONCENTRATE SAMPLE FIELD SHEET

- Sample Number - CRAE 6 or 7 digit number.
- East - AMG Co-ordinate in m.
- North - AMG Co-ordinate in m.
- Zone - AMG Zone.
- Corres SS Sample - Sample number of stream sediment sample collected at the same site
- Sample Type - DSRS Code.
- Heavy Minerals
- Visible - None (N), Trace (T), Moderate (M), Abundant (A).
- Major - Mineral Code.
- Minor - Mineral Code.
- Minor - Mineral Code.
- Weight
- Start - Weight or relative volume of unconcentrated sample.
- Conc - Weight of final concentrate sample (gm).
- Look - Other item of interest recorded in the geological observations column (Y/N).

THIS SHEET MUST BE USED IN CONJUNCTION WITH THE STREAM SEDIMENT SAMPLE FIELD SHEET

MINERAL CODE

Actinolite	ACTN	Cumingtonite ...	CUMN	Ochre	OCHR	Uranophane	URPN*
Adularia	ADUL	Cuprite	CUPR	Oligoclase	OLIG	Urenothorite	URTH*
Agate	AGAT	Diamond	DIAM	Olivine	OLIV	Vanadinite	VAND
Alkali Feldspar ..	ALFL	Digenite	DIGN	Opal	OPAL	Vermiculite	VERM
Albite	ALBT	Diopside	DIOP	Orthoclase	ORCL*	Vesuvianite	VESV
Allanite	ALAM	Dolomite	DOLM	Orthopyroxene ...	ORPX*	Willenite	WILM
Alunite	ALUN	Electrum	ELEC	Pentlandite	PENT	Willyamite	WILY
Ambygonite	AMBL	Emerald	EMER	Perthite	PERT	Witherite	WITM
Amethyst	AMET	Enargite	ENAR	Phlogopite	PHLG	Wolframite	WOLF
Amphibole	AMPH	Enstatite	ENST	Phosphate	PHOS	Wollastonite	WOLS
Andalusite	ANDL	Epidote	EPID	Micro-ilmenite ..	PCIL*	Zeolite	ZEOL
Andesine	ANDE	Evaporites	EVAP	Fitchblende	PITC	Zincite	ZINC
Anhydrite	ANHY	Fayalite	FAYL	Plagioclase	PLAG	Zircon	ZIRC
Ankerite	ANKR	Feldspar	FELD	Platinum	PTMT*		
Anthophyllite ..	ANTH	Ferberite	FERB	Potash Feldspar ..	PTFL*		
Antimonite	ANTM	Ferrodolomite ...	FRDL	Prehnite	PREH		
Antimony Native ..	SBMT*	Fluorite	FLUR	Preussite	PREP		
Apatite	APAT	Frankite	FRAN	Pumpellyite	PUMP		
Aragonite	ARAG	Fuchsite	FUCH	Pyrrargyrite	PYAR		
Argentite	ARGN	Gahnite	GAMN	Pyrite	PYRT		
Arsenic	ASMT*	Galenite	GALN	Pyrochlorite	PYCH*		
Arsenopyrite	ARPY	Garnet	GARN	Pyrofluorite	PYFL		
Asbestos	ASBS	Garnierite	GRNT*	Pyroopphite	PYOP*		
Augite	AUGT	Gibbsite	GIBS	Pyrope	PYAP		
Auriferous	AURF	Glass	GLAS	Pyrophyllite	PYPH*		
Barite	BARB	Glaucophane	GLPH*	Pyroxene	PYRX		
Bastnaesite	BAST	Glaucophane	GLPH*	Pyrrhotite	PYRH		
Bauxite	BAUX	Goethite	GOET	Quartz	QUAR		
Bentonite	BENT	Gold	AUHT*	Rhodochrosite ..	RHCH*		
Beryl	BERY	Graphite	GRAP	Rhodonite	RHOD		
Biotite	BIOT	Grossularite	GRGS	Riebeckite	RIEB		
Bismuth	BISM*	Quano	QUAN	Ruby	RUBY		
Bismuthinite	BISM	Gypsum	GYPG	Rutile	RUTL		
Bitumen	BITH	Halite	HALT	Salts	SALT		
Boracite	BORC	Heazlewoodite ...	HEAZ	Sandstone	SAND		
Borax	BORX	Hedenbergite	HEDN	Sapphire	SAPH		
Boulangerite	BOUL	Menatite	MENT	Scapolite	SCAP		
Bronzite	BRON	Kornblende	KORN	Scheelite	SCHL		
Brucite	BRUC	Hubnerite	HUBN	Sericite	SERC		
Calcite	CALC	Ilmenite	ILMN	Serpentine	SERP		
Carbonate	CARB	Iron Oxides	FEOX*	Siderite	SIDR		
Carnotite	CARN	Jadite	JADT	Silica	SILC		
Cassiterite	CASS	Jarosite	JARS	Silicate	SICT*		
Celestite	CELS	Jasper	JASP	Sillimanite	SILL		
Cerussite	CERS	Kaolin	KAOL	Silver	AGMT		
Chalcedony	CHDW*	Kyanite	KYAN	Sulphate	SLPT*		
Chalcoite	CHCT	Labradorite	LABR	Sulphides	SLPD*		
Chalcopyrite	CHPY	Lepidolite	LEPD	Talc	TALC		
Chamosite	CHAM	Leucite	LEUC	Tantalite	TANT		
Chert	CHER	Leucosene	LECS	Telluride	TELA		
Chlorite	CHLR	Limonite	LIMN	Tennantite	TENT		
Chrome Diopside ..	CHDP	Loellingite	LOEL	Tetrahedrite	TETR		
Chrome Spinel	CHSP	Magnesite	MAGH	Thorite	THOR		
Chromite	CHRM	Magnetite	MGST*	Topaz	TOPZ		
Chrysotile	CHRY	Malachite	MALC	Torbernite	TORB		
Cinnabar	CINN	Manganite	MANG	Tourmaline	TOUR		
Clay	CLAY	Marcasite	MARC	Tranulite	TRAN		
Clinopyroxene ...	CLPX*	Martite	MART	Uraninite	URMT*		
Clinosulphate	CLIS	Melilite	MELT				
Cobaltite	COBL	Mercury	MGHT*				
Collophane	COLP	Mica	NICA				
Columbite	COLM	Microcline	MICR				
Copper	CPMT*	Molybdenite	MOLY				
Cordierite	CODI	Monazite	MONZ				
Corundum	CORN	Montmorillonite ..	MOMT				
Covellite	COVL	Muscovite	MUSC				
Crocidolite	CROC	Nepheline	NEPH				
Cryolite	CRYL	Nephrite	NEPT*				
Cubanite	CUBN						

020

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XY TO STREAM SEDIMENT SAMPLE FIELD SHEET

Sample No - CRAE 6 or 7 digit No.

East - AMG Coord in m.

North - AMG Coord in m.

Zone - AMG Zone.

Sample type - Mesh size.

Gravel, Sand, Silt Clay, Org - as %.

Width - Stream width in m.

Catchment - Contributing catchment area in km².

Flow - Dry (D), Pools (P), Slow (S), Fast (F)

Banks - Alluv (A), Colluv (C), Colluv/Alluv (B)
No defined channel (N)

Channel - Incised deeply (D), weakly (W),
not (N); Braided (B)

Staining - Major Fe (FEH), Minor Fe (FEL)
Major Mn (MNH), Minor Mn (MNL)
Major Carbonate (CBH), Minor Carbonate (CBL)
None (N)

Contamination - None (N), Possible (PO), Probable (PR)
Definite (D), Metal mine in catchment (M)

Site - (2 alternatives) Good (G), Moderate (M),
Poor (P) or Hole in b'rock (HB), B'rock bar
(BB), Boulders (BD), Sed. bar (SB), Veg (V),
Trap undiff (T), Random (R)

Outcrop, Float - Rock type codes.

Major Strat Unit - Symbol on 1:250 000 sheet.

In/Alt - Attached code list (both may be recorded and
refer to outcrop or float. If more detail,
record in Geol. Obs and flag the LOOK column).

Cint - Scintillimeter reading in cps

Look - Other item of interest recorded in Geological
Observation column, Y/N.

Vegetation - Open heath (O), Eucalypt forest (F),
Rain forest (R), Ti Tree (T)
Cultivation (C), Arid grassland (A),
Desert (D).

ROCK TYPE CODE

Sediments - Clastic

Sedimentary	
Rock	SDRC
Conglomerate	CONG
Breccia	BREC
Grit	GRIT
Sandstone -	
Undiff	SSUD
Greywacke	GREY
Arkose	ARKS
Calcarenite	CLAR
Siltstone	SILT
Shale	SHAL
Calcareous	
Shale	CLSH
Black Shale+/	
Carb/Graphite ..	BLSH
Oil Shale	OLSH
Lignite	LIGN
Coal-Black	CLBL
Coal-Brown	CLBR
Mudstone	MUDS
Marl	MARL
Clay	CLAY
Tillite	TILL

Sediments - Chemical

Carbonate -	
Undiff	CRUD
Limestone	LIMS
Dolomite	DOLM
Travertine	TRAV
Argillaceous	
Limestn	ARLM
Chert	CHER
Jasperoid	JASP
Evaporite	EVAP
Phosphate Rock ..	PHRC
Magnesite	MGST
Iron Formation ..	IRFM

Miscellaneous

Silcrete	SLRT
Calcrete	CLRT
Bauxite	BAUX
Ironstone	IRST
Laterite	LATR
Gossan	GOSS
Sulphides	SULP
Quart Vein	QTVW
Greisen	GRES
Fubarite	FUBR

Volcanics

Agglomerate	AGLM
Lapilli Tuff	LPTF
Ash Flow Tuff	AFTF
Ignimbrite	IGNM
Crystal Tuff	CRTF
Vitric Tuff	VTFP
Obsidian	OBSD
Mudflows	MUDF
Tuffaceous	
Sandstone	TFSS
Tuffaceous	
Shale	TFSH
Basic Volc.	
Undiff	BVUD
Basalt	BASL
Basic Lava	BSLV
Basic Pyroclast ..	BSPY
Intermed Volc.	
Undiff	IVUD
Andesite	ANDS
Intermed. Lava ..	INLV
Intermed.	
Pyroclastic ..	INPY
Acid Volc.	
Undiff	AVUD
Rhyolite	RHYL
Rhyodacite	RHDC
Dacite	DACT
Trachyte	TRAC
Acid Lava	ACLV
Acid Pyroclast ..	ACPY

Metamorphics

Metamorphic Rock	
Undiff	HRUD
Breccia	BREC
Mylonite	MLON
Gouge	Goug
Marble	MARB
Calc Silicate ..	CLSL
Skarn	SKAR
Hornfels	HORN
Slate/Phyllite ..	SLAT
Quartzite	QTZT
Meta Sediment -	
Fine	MSFN
Meta Sediment -	
Course	MCCR
Metavolcanic	MTVL
Greenschist	CRSC
Schist Undiff	SCUD
Schist Mafic	SCMP
Schist Leuco	SCLC
Schist Amphibole ..	SCAM
Schist	
Andalusite	SCAN
Schist Biotite ..	SCBT

Schist Chlorite ..	SCCH
Schist Garnet ...	SCGR
Schist Muscovite ..	SCMS
Schist Mica	SCMC
Schist Pelitic ..	BCPL
Schist Psammitic ..	SCPS
Schist Sericite ..	SCSR
Schist Quartz	
Mica	SCOM
Schist	
Staurolite ...	SCST
Schist Talc	SCTL
Amphibolite	AMPH
Gneiss Undiff ...	GNUD
Gneiss Mafic	GNMF
Gneiss Leuco	GNLC
Gneiss Amphibole ..	GNAM
Gneiss Augen	GNAG
Gneiss Biotite ..	GNBT
Gneiss Garnet ...	GNGT
Gneiss Granite ..	GNGR
Gneiss	
Sillimanite ..	GNSL
Gneiss	
Staurolite ...	GNST
Granulite	GNLT
Migmatite	GNIG

Igneous - Intrusives

Greenstone	GNEN
Ultrabasic Intr.	
Undiff	UIUD
Eclogite	ECLG
Peridotite	PERD
Serpentinite	SERP
Anorthosite	ANOR
Gabbro	GABB
Alkali Gabbro ...	ALGB
Norite	NORT
Picrite	PICR
Pyroxenite	PYRX
Dunite	DUNT
Carbonatite	CARB
Kimberlite	KIMB
Coarse Basic	
Intr.	CBIN
Med Basic Intr. ..	MBIN
Fine Basic Intr. ..	FBIN
Lamprophyre	LAMP
Coarse Intermed	
Intr.	CIIN
Med Intermed	
Intr.	MIIN
Fine Intermed	
Intr.	FIIN
Syenite	SYEN
Dolerite	DOLR
Diorite	DIOR
Coarse Acid Intr.	
CAIN	

Medium Acid Intr. MAIN
Fine Acid Intr. .
FAIN
Granite
GRAM
Aplite
APLT
Adamellite
ADAM
Granodiorite
GRDR
Quartz Porphyry ..
QUPR
Quartz Feldspar
Porphyry
QPPR
Granophyre
GRPH
Pegmatite
PEGM
Glass
GLAS

MINERALISATION/ALTERATION CODE

Veins	VEIN
Gossan	GOSN
Boxworks After Sulphides ..	BOXW
Massive Sulphides	MSSL
Dissem. Sulphides	DSSL
Heavy Minerals	HVMN
Cu Staining	CUST
Magnetic Minerals	MGMN
Evaporites	EVAP
Argillisation	
ARGL	
Albitisation	
ALBT	
Calc Silicate	
CLSL	
Carbonatation	
CARB	
Chloritisation	
CHLR	
Dolomitisation	
DOLM	
Ferruginisation	
FERG	
Kaolinisation	
KAOL	
Potassic	
POTS	
Propylitisation	
PROP	
Pyritisation	
PYRT	
Sauritisation	
SAUS	
Sericitisation	
SERC	
Silicification	
SILC	
Talcose	
TALC	
Tourmalinisation	
TOUR	
Zeolitisation	
ZEOL	
Other	
OTHR	

002

KEY TO ROCK SAMPLE FIELD SHEET

- Sample Number** - CRAE 6 or 7 digit No.
- East** - AMG or Local Grid Co-ordinate in m.
- North** - AMG or Local Grid Co-ordinate in m.
- Zone/LG** - AMG Zone or L for Local Grid.
- Sample Type** - DSRG Code.
- From - To** - In a where applicable.
- Width** - Width of sample interval in m.
- Exposure** - Outcrop (O), Float (F), Uncertain (U), Core or Cuttings (C).
- Rock Types** - Rock Type Code.
- Alteration** - Alteration Code.
- Mineralisation**
 - Visible** - None visible (N), Trace (T), Disseminated (D), Abundant (A).
 - Style** - Mineralisation Style Code.
 - Major** - Mineral Code.
 - Min. 1 & 2** - Mineral Code.
 - Gangue** - Mineral Code.
- Age** - Geological Age Code.
- Major Strat. Unit** - Symbol on 1:250 000 sheet
- Grain Size** - Grain Size Code.
- Texture** - Texture Code.
- Colour** -
- Look** - Other item of interest recorded in the Geological observations column (Y/N).

ROCK TYPE CODE

Sediments - Chemical		Volcanics	
Carbonate -	Agglomerate	AGLM	
Undiff	Lapilli Tuff	LPTF	
Limestone	Ash Flow Tuff	AFTF	
Dolomite	Ignimbrite	IGIM	
Travertine	Crystal Tuff	CRTP	
Argillaceous	Vitric Tuff	VITF	
Limesta	Obsidian	OBSD	
Chert	Mudflows	MUDF	
Jasperoid	Tuffaceous		
Evaporite	Sandstone	TFSS	
Phosphate Rock ..	Tuffaceous		
Magnetite	Shale	TFSS	
Iron Formation ..	Basic Volc.		
	Undiff	BVUD	
	Basalt	BASL	
	Basalt Lava	BASL	
	Basic Pyroclast ..	BSFY	
	Basaltic Pyroclast		
	Intermediate Volc.		
	Undiff	IYUD	
	Andesite	ANDS	
	Intermediate Lava ..	INLV	
	Intr.	CBIN	
	Med Basic Intr.	MBIN	
	Fine Basic Intr.	FBIN	
	Lampophyre	LAMP	
	Coarse Intermed		
	Intr.	CIIN	
	Med Intermed		
	Intr.	MIIN	

Miscellaneous

Silcrete	SLAT
Calcrete	CLRT
Bauxite	BAUX
Ironstone	IRST
Laterite	LATR
Gossan	GOSS
Sulphides	SULF
Quartz Vein	QTVN
Green	GRNS
Fuberite	FUBR
Dacite	DACT

Metamorphic Rock	
Undiff	HAUD
Braccia	BREC
Mylonite	MYLN
Gouge	GOUG
Marble	MARB
Calc Silicate	CLSL
Skarn	SKAR
Hornfels	HORN
Slate/Phyllite ..	SLAT
Quartzite	QTIT
Meta Sediment -	
Fine	MFSP
Meta Sediment -	
Course	MCOR
Metavolcanic	MTVL
Greenachist	GRSC
Schist Undiff	SCUD
Schist Mafic	SCMF
Schist Leuco	SCLC
Schist Amphibole ..	SCAM
Schist	
Andalusite	SCAM
Schist Biotite	SCBT
Schist Chlorite	SCCL
Schist Garnet	SCGR
Schist Muscovite ..	SCMS
Schist Mica	SCMC
Schist Pelitic	SCPL
Schist Psammitic ..	SCPS
Schist Sericite	SCSR
Schist Quartz	
Mica	SCOM

MINERALISATION STYLE CODE

Stratabound	SB
Discordant	DC
Veins/Net Vaining ..	VN
Stockwork	SW
Fault/Joints	FL
Shear	SH
Pods	PD
Disseminated	DS
Semi Massive	SM
Massive	MS
Skarn	SK
Pipe	PP
Boxwork (or pass	
assoc. of min)	BW
Placer	PL
Eluvial	EL

igneous - Intrusives

Greenstone	GRGN
Ultrabasic Intr.	
Undiff	UIUD
Eclogite	ECLG
Peridotite	PERD
Serpentinite	SERP
Anorthosite	ANOR
Gabbro	GABR
Alkali Gabbro	ALGB
Norite	NORT
Picrite	PICR
Pyroxenite	PYRX
Dunite	DUNT
Andesine	ANDS
Anhydrite	ANHY
Ankerite	ANKR
Anthophyllite	ANTH
Antimonite	ANTM
Antimony Native	SBNT
Apatite	APAT
Aragonite	ARAG
Asphalite	ASPH
Arsenic	ASMT
Arsenopyrite	ARPY

Asbestos	ASBS
Augite	AUGT
Azurite	AZUR
Berite	BERT
Bastnaesite	BAST
Bauxite	BAUX
Bentonite	BENT
Beryl	BERY
Biotite	BIOT
Bismuth	BISM
Bismuthinite	BISM
Bitumen	BITM
Boracite	BORC
Borax	BORX
Boulangerite	BOUL
Bronzite	BRON
Brucite	BRUC
Calcite	CALC
Carbonate	CARB
Carnotite	CARN
Cassiterite	CASS
Celsite	CELS
Chalcocite	CECH
Chalcocony	CHCN
Chalcocite	CHCT
Chalcopyrite	CHCP
Chamosite	CHAM
Chert	CHER
Chlorite	CHLR
Chromite	CHRM
Chrom Diopside	CHDP
Chrom Spinel	CHSP
Chromite	CHRM
Chrysoile	CHRY
Cinnabar	CINN
Clay	CLAY
Clinopyroxene	CLPX
Clinzoisite	CLIS
Cobaltite	COBL
Colophane	COLP
Columbite	COLM
Copper	CPPT
Corundum	CORU
Covellite	COVL
Crocidolite	CROC
Cryolite	CRYL
Cubanite	CUBN
Cuscutite	CUSC
Cuprite	CUPR
Diamond	DIAM
Digenite	DIGN
Diopside	DIOP
Dolomite	DOLM
Electrum	ELEC
Emerald	EMER
Enargite	ENAR
Enstatite	ENST
Epidote	EPID
Evaporites	EVAP
Fayalite	FAYL
Feldspar	FELD
Ferberite	FEBR
Ferrodoxite	FROD
Fluorite	FLUR
Frankite	FRAN
Fuchsinite	FUCH
Gahnite	GAHN
Galenite	GALN
Garnet	GARN
Garnierite	GRNT
Gibbsite	GIBS
Glass	GLAS
Glaucophane	GLAC
Glaucophane	GLPH
Goethite	GOET
Gold	AUNT
Graphite	GRAP
Grossularite	GRGS
Gypsum	GYPS
Halite	HALT
Hastingsite	HAST
Hedenbergite	HEDN
Hematite	HENT

ALTERATION CODE

Argillization	ARGL
Albitization	ALBT
Calc Silicate	CLSL
Carbonatization	CARB
Chloritization	CHLR
Dolomitization	DOLM
Ferruginization	FERR
Kaolinization	KAOL
Potassic	POTS
Propylitization	PROP
Pyritization	PYRT
Saussurization	SAUS
Sericitization	SERC
Silicification	SILC
Talcos	TALC
Tourmalinization	TOUR
Zeolitization	ZEOL
Other	OTHR

MINERALISATION STYLE CODE

Stratabound	SB
Discordant	DC
Veins/Net Vaining ..	VN
Stockwork	SW
Fault/Joints	FL
Shear	SH
Pods	PD
Disseminated	DS
Semi Massive	SM
Massive	MS
Skarn	SK
Pipe	PP
Boxwork (or pass	
assoc. of min)	BW
Placer	PL
Eluvial	EL

MINERAL CODE

Actinolite	ACTN
Adularia	ADUL
Agate	AGAT
Alkali Feldspar	ALFL
Albite	ALBT
Allanite	ALAN
Alunite	ALUN
Amphibole	AMPH
Amethyst	AMET
Amphibole	AMPH
Andalusite	ANDL
Andesine	ANDS
Anhydrite	ANHY
Ankerite	ANKR
Anthophyllite	ANTH
Antimonite	ANTM
Antimony Native	SBNT
Apatite	APAT
Aragonite	ARAG
Asphalite	ASPH
Arsenic	ASMT
Arsenopyrite	ARPY

Asbestos	ASBS
Augite	AUGT
Azurite	AZUR
Berite	BERT
Bastnaesite	BAST
Bauxite	BAUX
Bentonite	BENT
Beryl	BERY
Biotite	BIOT
Bismuth	BISM
Bismuthinite	BISM
Bitumen	BITM
Boracite	BORC
Borax	BORX
Boulangerite	BOUL
Bronzite	BRON
Brucite	BRUC
Calcite	CALC
Carbonate	CARB
Carnotite	CARN
Cassiterite	CASS
Celsite	CELS
Chalcocite	CECH
Chalcocony	CHCN
Chalcocite	CHCT
Chalcopyrite	CHCP
Chamosite	CHAM
Chert	CHER
Chlorite	CHLR
Chromite	CHRM
Chrom Diopside	CHDP
Chrom Spinel	CHSP
Chromite	CHRM
Chrysoile	CHRY
Cinnabar	CINN
Clay	CLAY
Clinopyroxene	CLPX
Clinzoisite	CLIS
Cobaltite	COBL
Colophane	COLP
Columbite	COLM
Copper	CPPT
Corundum	CORU
Covellite	COVL
Crocidolite	CROC
Cryolite	CRYL
Cubanite	CUBN
Cuscutite	CUSC
Cuprite	CUPR
Diamond	DIAM
Digenite	DIGN
Diopside	DIOP
Dolomite	DOLM
Electrum	ELEC
Emerald	EMER
Enargite	ENAR
Enstatite	ENST
Epidote	EPID
Evaporites	EVAP
Fayalite	FAYL
Feldspar	FELD
Ferberite	FEBR
Ferrodoxite	FROD
Fluorite	FLUR
Frankite	FRAN
Fuchsinite	FUCH
Gahnite	GAHN
Galenite	GALN
Garnet	GARN
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Glaucophane	GLPH
Goethite	GOET
Gold	AUNT
Graphite	GRAP
Grossularite	GRGS
Gypsum	GYPS
Halite	HALT
Hastingsite	HAST
Hedenbergite	HEDN
Hematite	HENT

Hornblende	HORN
Muscovite	MUSC
Ilmenite	ILMN
Iron Oxides	FEOX
Jadeite	JADT
Jarosite	JARS
Jasper	JASP
Kaolin	KAOL
Kyanite	KYAN
Labradorite	LABR
Lepidolite	LEPD
Leucite	LEUC
Leucosene	LECS
Limonite	LIMN
Loellingite	LOEL
Magnetite	MAGN
Magnetite	MAGT
Magnetite	MAGT
Malachite	MALC
Manganite	MANG
Marcasite	MARC
Martite	MART
Melilite	MELT
Mercury	MERC
Mica	MICA
Microcline	MICR
Molybdenite	MOLY
Monsite	MONS
Montmorillonite	MONM
Muscovite	MUSC
Nepheline	NEPH
Nephrite	NEPT
Ochre	OCHR
Oligoclase	OLIG
Olivine	OLIV
Opal	OPAL
Orthoclase	ORCL
Orthopyroxene	ORPX
Pantlandite	PANT
Perthite	PERT
Phlogopite	PHLG
Phosphate	PHOS
Picro-ilmenite	PIIC
Picoblenite	PICB
Plagioclase	PLAG
Platinum	PTMT
Potash Feldspar	PTFL
Prehnite	PREH
Preussite	PREU
Pumpellyite	PUMP
Pyrrhotite	PYRH
Pyroxene	PYRX
Pyroxene	PYRX
Pyrope	PYRP
Pyrophyllite	PYPH
Pyroxene	PYRX
Pyrrhotite	PYRH
Quartz	QUAR
Rhodochrosite	RHOC
Rhodonite	RHOD
Riesbeckite	RIES
Ruby	RUBY
Rutile	RUTL
Salts	SALT
Sandine	SAND
Sapphire	SAPH
Scapolite	SCAP
Scheelite	SCHE
Sericite	SERC
Serpentine	SERP
Siderite	SIDR
Silica	SILC
Silicate	SICT
Sillimanite	SILL
Silver	AGNT
Sulphate	SLPT
Sulphide	SLPD
Sulphide	SLPD
Sylvite	SYLV
Talc	TALC
Tantalite	TANT
Tellurite	TELL
Tennantite	TENT
Tetrahedrite	TETR
Thorianite	THOR
Topaz	TOPE
Tourmaline	TOUR
Tourmaline	TOUR
Uraninite	URAN
Uranophane	URUP
Uranothorite	URUT
Vanadinite	VAND
Vermiculite	VERM
Vesuvianite	VESV
Willemitite	WILM
Willemitite	WILY
Witherite	WITH
Wolframite	WOLF
Wollastonite	

LEDGERS

RAPID EAST AEROMAGNETIC ANOMALY

ASMANIA

CRA EXPLORATION PTY. LTD.

S

Sample Number	SOIL DESCRIPTION											BEDROCK					METAL CONTENT ppm / %										Geological Observations
	Co-ordinates AMG / Grid		Depth (m)	Colour	Horizon	% Rock	% Sand	% Silt	% Clay	Organic	Soil Type	Rock Type	Alteration	Vis. Min.	Min. Type	LOOK	Cu	Pb	Zn	Co	Ag	Mn	As	Sn	W	Ba	
	East	North																									
712	4975	5000	0.5	237	5		30	40	30	0	2	9					<2	25	35	10	1	40	<20	5	10	300	Weathered green slate.
713	4950		0.5	233	5		30	40	30	0	2	9					10	25	20	5	1	30	<20	<5	10	280	" " " " talc shale
714	4925		0.9	233	5		30	40	30	0	2	9					10	20	10	10	1	10	<20	<5	10	410	Dr-mid grey talc shale
715	4900		1.0	237	5		30	40	30	0	2	9					50	35	45	15	2	35	<20	<5	<10	360	? greenish ss pyrite
716	4875		0.5	237	5		30	40	30	0	2	9					5	15	40	10	2	35	<20	<5	10	300	Green-grey talc shale
717	4850		0.7	237	5		30	40	30	0	2	9					10	20	40	10	1	35	<20	<5	10	260	"
718	4825		0.7	237	5		30	40	30	0	2	9					<2	15	25	10	1	25	<20	5	<10	420	"
719	4800		0.6	155	5		30	40	30	0	2	9					5	20	10	5	1	10	<20	<5	10	350	Buff-brown "
720	4775		1.2	235	5		30	40	30	0	2	9					<2	20	35	15	1	40	<20	<5	<10	370	ochre shale beneath gravels
721	4750		0.5	133	5		30	40	30	0	2	9					<2	15	20	10	1	40	<20	<5	<10	450	Greenish grey talc shale
722	4725		1.3	153	5		30	40	30	0	2	9					<2	15	10	5	1	10	<20	5	10	240	Pale buff talc shale
723	4700		0.7	333	8		60	30	10	3	2	100					<2	10	5	5	1	20	<20	<5	<10	50	Dr grey humic sand-ex quartzite
724	4625		0.7	333	8		60	30	10	3	2	100					<2	15	15	5	1	15	<20	<5	<10	480	" " " " " "
725	4650		0.8	333	8		60	30	10	3	2	9					5	10	15	5	1	35	<20	<5	<10	760	Dr grey humic sand + chert phyllite
726	4625		0.7	333	5		30	40	30	0	2	9					5	10	10	5	1	15	<20	<5	<10	570	Dr grey shale phyllite
727	4600		1.0	333	5		30	40	30	0	2	9					<2	15	35	10	1	90	20	<5	<10	630	" " " "
728	4575		0.8	333	5		30	40	30	0	2	9					<2	10	10	10	1	50	<20	5	<10	680	" " " "
729	4550		1.4	333	5		30	40	30	0	2	9					45	45	30	15	2	185	<20	<5	<10	620	" " " "
730	4525		0.5	333	5		30	40	30	0	2	9					<2	20	10	10	1	45	<20	<5	<10	460	"
731	4500		0.5	133	7		90	5	5	0	2	100					<2	15	10	5	1	50	<20	<5	30	80	Qz lag gravel.

GEOCHEMICAL SOIL SAMPLING LEDGER

DETECTION LIMIT		2	5	2	5	1	5	20	5	10	10	
ANALYTICAL METHOD		AAS	AAS	AAS	AAS	AAS	AAS	AAS	XRF	XRF	XRF	
element Name: RAPID RIVER EL 1/79	Project:	AMG Zone: 55					Sheet No: 1					
area / Prospect: RAPID EAST	DPO's: 30336						Laboratory: ALS					
map / Photo Ref: LINE 5000N	Sample No's:						Collected By: I.M. Clementson Date Dec 83					

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ASMANIA

CRA EXPLORATION PTY. LTD.

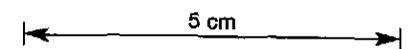
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Sample Number	SOIL DESCRIPTION											BEDROCK				METAL CONTENT ppm / %										Geological Observations	
	Co-ordinates AMG / Grid		Depth (m)	Colour	Horizon	% Rock	% Sand	% Silt	% Clay	Organic	Soil Type	Rock Type	Alteration	Vis. Min.	Min. Type	LOOK	Cu	Pb	Zn	Co	Ag	Mn	As	Sn	W		Ba
	East	North																									
88732	4475	5000	0.9	155	5		50	30	20	0	2	9					<2	20	10	10	1	50	<20	<5	<10	790	Lt br. weath. talcose shale
88733	4450		1.4	162	4		5	10	85	0	2						<2	20	10	10	1	25	<20	<5	<10	260	Lt buff. cream clay
734	4425		1.3	162	4		5	10	85	0	2						10	20	25	10	1	50	<20	<5	<10	640	" " "
735	4400		0.5	133	5		50	30	20	0	2	9					<2	15	15	5	1	60	<20	<5	<10	740	Lt grey shale
736	4375		1.0	162	4		30	30	40	0	2	9					10	20	10	15	1	45	<20	<5	<10	1000	ochre-yellow weath. shale
737	4350		1.0	138	5		30	30	40	0	2	9					25	30	10	15	2	45	180	<5	10	580	Gray/green br. weath. shale
738	4325		1.0	138	5		30	30	40	0	2	9					<2	20	10	10	1	20	<20	<5	<10	150	Lt grey-brown phyllite
739	4300		1.0	133	7		90	5	5	1	5	100					5	10	15	5	1	30	<20	<5	10	160	Qz gravel
740	4150		0.6	137	5		50	30	20	0	2	9					10	15	30	10	1	75	<20	<5	10	260	Talcose shales
741	4175		0.6	137	5		50	30	20	0	2	9					<2	15	10	10	1	45	<20	<5	<10	980	" "
742	4200		1.4	233	4		30	30	40	0	2	9					10	20	5	10	1	35	<20	<5	10	1000	Qz shale in clay matrix
743	4225		1.4	233	4		30	30	40	0	2	9					10	15	10	10	1	15	<20	<5	<10	550	" " "
744	4250		1.4	233	4		30	30	40	0	2	9					<2	10	10	10	1	30	<20	<5	<10	690	" " "
745	4275		1.0	282	4		30	30	40	0	2	9					20	20	15	15	1	25	<20	<5	<10	700	ochre-yellow weath. shales

GEOCHEMICAL SOIL SAMPLING LEDGER		DETECTION LIMIT		2	5	2	5	1	5	20	5	10	10
		ANALYTICAL METHOD		AW									XRF
element Name: RAPID RIVER EL1/79		Project:		AMG Zone: SS				Sheet No.: 2					
-ea / Prospect: RAPID EAST		DPO's: 30336						Laboratory: ALS					
-ap / Photo Ref.: LINE 5000N		Sample No's:						Collected By: Im Clementson Date: DEC 83					

431075 073

SAMPLE NUMBER	SAMPLE LOCATION			SAMPLE DESCRIPTION				ROCK TYPE			MINERALISATION						GEOLOGICAL OBSERVATIONS							
	East	North	Zone/LG	Sample Type	From	To	Width	Exposure	Major	Minor	Alteration	Visible	Style	Major	Minor	Minor		Ground	Age	Mineral	Grain size	Texture	Colour	Look
988647	4265	4800	LG	005				0	SLAT		TALC													Strikes 330°, dip L _h W _{at} ± 85°
988648	-	-	-	-																				Petrological sample.
988661	4400	4800	-	-				0	SLAT															Gneiss/lytle / shale NW Foliation strikes 330° Dip 80° W.
98864	4325	4800	-	-				0	QTZT															Fine grained alt. g ₂ t ₂ Foliated w ₂ 330° m. Dip 80° W.
98865	4300	4800	-	-					QTZT															- but prob close to g ₂ t ₂



PROTECT RAPD RIVER SHEET BURNIE COLLECTED BY IMC DATE 1/84
 TENEMENT EL179 SAMPLE NO.S _____ LOCAL GRID CROSS REF 5000E 5000N = 353256E
 INVESTIGATION RAPD EAST DPO 30338 542435N ; 4300E 5000N = 35656E



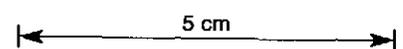
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CRA EXPLORATION PTY LIMITED

SOIL SAMPLE FIELD SHEET.

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SAMPLE NUMBER	LOCATION			SAMPLE DESCRIPTION										BEDROCK					GEOLOGICAL OBSERVATIONS				
	EAST	NORTH	Zone/G	Sample Type	Rock %	Sand %	Silt %	Clay %	Org %	Depth	Colour	Horizon	Soil Type	Exposure Type	Depth to Bedrock	Rock Type	Alteration	Vis. Min		Min. Type 1	Min. Type 2	Look	
988639	4075	4800	LG	01A	30	30	30	0		.2	Ll grey											Qz lag gravel	
640	4100					50	50			.4	GYGN	C	R			SHAL	TAL					Greenish grey clay + weak calcareous	
641	4125					50	50			.6	GYGN	C	R			SHAL	TAL					As above but beneath qz lag.	
642	4150					50	50			.10	GY	C	R			SHAL	TAL					Weak grey shale, slightly ferruginous	
643	4175				5	10	40	40		.7	GYGN	C	R			SHAL	TAL					Weak grey green shale plus some pale cream qzites	
644	4200				10	10	40	40		.6	GYGN	B/C	R			QTZT						Lt cream-greenish-grey weath shale (? volcanic component) - mica some. Some buff-cream qzitic	
645	4225				10	20	40	30		.5	GYGN	C	R			SHAL	TALC					fine grained.	
646	4250					20	30	50		.1	GY	C				SHAL	TALC					Weathered cream-grey shale	
649	4375					20	30	50		.6	GY	C				SHAL	TALC					Lt grey-offwhite clay sh shale	
650	4300					20	30	50		.3	GYGN	C				SHAL	TALC					plus sand ex qzite.	
98851	4600	4800			20	40	21	10		.6	GY											Qz lag gravel	
852	4575									.6	GY												
853	4550					20	40	40		.8	GY	C	R			SLAT	TALC					Lt-midgrey milledobre calcare phyllitic shales	
854	4525					20	40	40		.7	GNRR	C	R			SLAT	TALC					DR grey calcare phyllite/shales	
855	4500					20	40	40		.7	GY	C	R			SLAT	TALC					Midgrey calcare phyllite	
856	4475					10	40	40		.3	GYWAK	C	R			SLAT	TALC					Calcare clay ex phyllite	
857	4450					20	40	40		.6	GYGN	C	R			SLAT	TALC					Phyllite ± ? volcaniclastic?	



PROJECT RAPID RIVER 1:250000 SHEET BURNIE COLLECTED BY IMC DATE 4/84
 TENEMENT EL 1/79 SAMPLE NO.S LOCAL GRID CROSS REF 5000E 5000N Local **CRA**
 INVESTIGATION RAPID EAST DPO'S 30338 357265E 5434250N ANG

451078
076

SAMPLE NUMBER	LOCATION		SAMPLE DESCRIPTION										BEDROCK					GEOLOGICAL OBSERVATIONS					
	EAST	NORTH	Zone/IG	Sample Type	Rock %	Sand %	Silt %	Clay %	Org %	Depth	Colour	Horizon	Soil Type	Exposure	Type	Depth to bedrock	Rock Type		Alteration	Vis. Min	Min. Type 1	Min. Type 2	Look
988858	4425	4800	LG	O11A	30	40	20	10		0.3	GY		T										Clay rich qz lag gravel.
859	4400					50	30	20		0.3	GY		CR										Weath dk grey fine gravel qzite.
862	4375					40	40	20		0.4	GY		CR										Pale grey weath phyllite shales
863	4350	4800				40	40	20		0.7	GYGN		CR										Weath Phyllites
988866	4575	4900			30	40	20	10		0.4	GY		T										Qz lag gravel
867	4550				30	40	30			0.4	GY		T										
868	4525					40	40	20		0.7	GY		CR			SLAT							Dk grey weath phyllites beneath qz lag
869	4500				30	40	30			0.9	GY		T										Qz lag gravel
870	4475				30	40	30			0.6	GY		T										
871	4450				30	40	30			0.4	GY		T										
872	4425					40	40	20		0.8	GY		CR			SLAT							Dk grey phyllite / shales
873	4400					30	50	20		0.3	GY		CR			QTZT							NUM beneath clay r. ch lag.
874	4375					30	30	20		0.4	GYGN		CR			SLAT							Weath silty shales + qzite.
875	4350					30	30	20		0.7	GY					SLAT							Weath shale / phyllite
876	4325					30	40	30		0.5	GY		CR										Mid-dk grey but with sandy element.
988877	4300E	4900N				30	40	30		0.5	GN		CR			SLAT							Pale grey talcose phyllite

451079

5cm

077

PROJECT RAPID RIVER 1:250000 SHEET BURNIE COLLECTED BY JMC DATE 1/84
 TENEMENT EL1/19 SAMPLE NO.S _____ LOCAL GRID CROSS REF 2000E 5000N = 357265E 
 INVESTIGATION RAPID EAST DPO'S 30328 5+34 320N

LEDGERS

COMSTAFF ZINC ANOMALY

TASMANIA

CRA EXPLORATION PTY. LTD.

SS

Sample Number	LOCATION		SAMPLE DESC.				SITE DESCRIPTION							ROCK TYPE			METAL CONTENT ppm / %										Geological Observations				
	AMG Co-ordinates		S. Type	Mesh	% Gravel	% Sand	% Sil	Organic	Width	Flow	Bank	Catchment	Vegetation	Straining	Contam.	Sit. Rating	Outcrop	Maj. Float	Min. Float	LOOK	Cu	Pb	Zn	Co	Ag	Mn		Fe% / Cr.	Ni / Au ppb	Pb / W	Ba / Mo
	East	North																													
88666	352800	5417800	1	4			1	3	4	3	6	3	1/3	1	2		65	100	1	25	30	95	35	1	1000	4.13 / 190	10 / 5	15 / 10	230 / 4	Field Notes to -3mm Float includes basalt	
88671	352910	5417740	1	4			1	3	4	3	6	3	1/3	1	2		105	100	1	10	25	40	25	1	700	2.34 / 105	30 / 5	15 / 10	150 / 4	phyllitic schists, quartz schists & microgneiss.	

GEOCHEMICAL STREAM SEDIMENT SAMPLING LEDGER

DETECTION LIMIT

2 5 2 5 1 5 0.01 / 5 5 / 3 5 / 10 10 / 4

ANALYTICAL METHOD

ANS XRF

Tenement Name: RAPID RIVER EL 1/79

Project: AMG Zone: 55

Sheet No.:

Area / Prospect: COMSTAFF ZINC ANOMALY CR.

DPO's: 30336

Laboratory: ALS

/ Photo Ref

Sample No's

Collected By: mc

Date: 28/11/83

451081 079

ASMANIA

CRA EXPLORATION PTY. LTD.

R

Sample Number	LOCATION							ROCK TYPE MINERALISATION										METAL CONTENT ppm / %										Geological Observations
	Co-ordinates AMG / Grid		Exposure	S. Type	Width (m)	Interval		Major Rock	Minor Rock	Alteration	Visible	Style	Major	Minor	Minor	Gangue	LOOK	Cu	Pb	Zn	Co / Ag	Mn / Fe%	Cr / Ni	Ba / Mo	Sn / W	Pb / Au	Au ppm	
	East	North				From	To																					
98663	352690	5417850	2	3			123		12	39	10	93					35	45	420	85/1	5000/17.8	145/50	110/8	<5/10	ND	<0.1	Limonic vuggy ironstone Host? originally pyritic	
98664	352690	5417850	2	3			123		12	39	10	93					80	45	55	65/2	180/31.4	45/30	230/60	10/10	ND	<0.1	Limonic? quartzite. Probably originally pyritic	
98665	352800	5417800	2	3			100		4	10							20	25	30	35/1	115/7.52	150/30	120/12	<5/10	ND	ND	Foliated, highly pyritic quartzite. Dark-mid grey.	
98668	352900	5417750	2	3			123		4	5	90	30	10				20	20	15	50/1	70/13.4	85/30	80/8	<5/10	<50/10	<0.1	Qz magnetite rock. Abundant magnetite minor pyrite? cpy.	
98670	352910	5417740	2	3			123		4	5	90	30	10				100	55	65	85/4	440/120	30/700	110/36	<5/10	ND	<0.1	" (Has green appearance)	

GEOCHEMICAL ROCK SAMPLING LEDGER		DETECTION LIMIT		2	5	2	5/1	5/0.01	5/5	10/4	5/10	50/10	0.1
		ANALYTICAL METHOD		AAS						XRF		Fire ASSAY	
Tenement Name: RAPID RIVER		Project:				AMG Zone: SS				Sheet No.: 1			
Area / Prospect: Camotup Znamely Creek		DPO's: 30336				Laboratory: ALS				Collected By: IMC			
Map / Photo Ref: 1:4 17 1:1 Cb		Sample No's: 98663-98670				Date: 11/83				✓			

451082 080

TASMANIA

CRA EXPLORATION PTY. LTD.

Sample Number	LOCATION		SAMP DESC.			SITE DESC.					HEAVY MINS.			OUTCROP		METAL CONTENT ppm / %										Geological Observations					
	AMG Co-ordinates		S. Type	Start Wt. (Kg)	End Wt. (Kg)	Width (M)	Flow	Bank	Catchment	Vegetation	Staining	Contam.	Sit. Rating	Visible	Major	Minor	Minor	Outcrop	Float	LOOK	Cu	Pb	Zn	Co / Ag	Cr / Ni		Fe%	Ba / Mo	Sn / W	Au ppm	Weight gms
	East	North																													
98867	352800	5417800	1	10	0.020	3	4	3	6	3	1/3	1	2	4	80	90					35	40	55	95/3	320/800	41.5	110/32	5/10	1.1	16.44	
98868	352910	5417740	1	15	0.030	3	4	3	6	3	1/3	1	2	4	80	90					50	45	45	115/3	115/40	41.8	140/32	25/10	<0.1	4539	Abundant Fe ₂ O ₄ in part. Qz-nug. plant.

GEOCHEMICAL PANNED CONCENTRATE SAMPLING LEDGER

DETECTION LIMIT

ANALYTICAL METHOD

2	5	2	5/1	5/5	0.01	10/4	5/10	0.1
AAS					XRF		FAIR ASSEM	

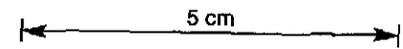
Tenement Name: <u>RAPID RIVER EL 179</u>	Project: <u>AMG Zone: SS</u>	Sheet No.:
Area / Prospect: <u>COMSTAFF Zn Anomaly</u>	DPD's: <u>30336</u>	Laboratory: <u>ALS</u>
Map / Photo Ref:	Sample No's:	Collected By: <u>IMC</u> Date: <u>28/11/83</u> ✓

451083001

LEDGERS

INPUT-EM ANOMALY 2450/10360

SAMPLE NUMBER	LOCATION			SAMPLE DESCRIPTION										BEDROCK					GEOLOGICAL OBSERVATIONS			
	EAST	NORTH	Zone/GS	Sample Type	Rock %	Sand %	Silt %	Clay %	Org %	Depth	Colour	Horizon	Soil Type	Exposure Type	Depth to Bedrock	Rock Type	Alteration	Vis. Min		Min. Type 1	Min. Type 2	Look
488787	5000	5000	L	011A						.8	L. BRN	C R	S			MSFN	TALC					L. buff brown weathered phyllitic sh.
788	5025	"	L	"						.7	GRY	C R	S			MSFN	TALC					Dk grey weathered phyllitic shale.
789	5050	"	"	"						.7	OCM	C R	S			MSFN	TALC					Ochre ferruginous phyllitic shales
790	5075	"	"	"						1.0	GRY	C R	S			MSFN						Grey weathered phyllitic shales
793	5200	"	"	"						.8	R BRN	B R	S			BASL						Typical basal soil
794	5175	"	"	"						1.0	GRY BRN	R										? alluvial or residual. Sloppy grey brown mud with phyllite frags in ? alluvial flat.
795	5150	"	"	"						.8	GRY BRN	R										"
796	5125	"	"	"						.5	"	R										"
797	4950	"	"	"						1.0	GRY	C R	S			MSFN						Lt grey weathered phyllite
798	4925	"	"	"						1.0	GRY	C R	S			MSFN						" " " "
799	4900	"	"	"						1.0	GRY	C R	S			MSFN						" " " "
800	4875	"	"	"						1.0	GRY	C R	S			MSFN						" " " "
887	4850	"	"	"						1.0	GRY	C R	S			MSFN						" " " "
988888	4825	"	"	"						1.0	GRY	C R	S			MSFN						" " " "



PROJECT RARD RIVER 1:250000 SHEET Burnie COLLECTED BY JMC DATE 1/84
 TENEMENT EL 1/79 SAMPLE NO. S LOCAL GRID CROSS REF 5000E 5000N
 INVESTIGATION INPUT 2450/10360 DPD'S 30341 360850E 5437200N

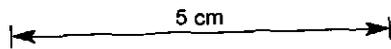


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CRA EXPLORATION PTY. LIMITED

STREAM SEDIMENT SAMPLE FIELD SHEET

SAMPLE NUMBER	LOCATION			SAMPLE DESCRIPTION						SITE DESCRIPTION							GEOLOGY				GEOLOGICAL OBSERVATIONS					
	East	North	Zone	Sample Type	Gravel %	Sand %	Silt %	Clay %	Org %	Width	Gibberment	Flow	Bank	Channel	Staining	Contam.	Site	Outcrop	Float		Min/Ait	Sint	Look	Veget.		
																			Major	Minor						
988791	300650	5437200	SS	002	30	30	30	20		0	2	0	B	W	FEH	H	M	SLAT	SLQM	BASL	PL				R	Float : semi-tic qz. ka qz. ka v. qz basalt gray phyllite.



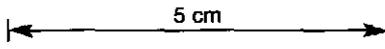
PROJECT: RAPID RIVER 1:250 000 SHEET: BURNIE COLLECTED BY: IMC
 TENEMENT: EL/79 SAMPLE NO'S: 988791 DATE: 1/84
 INVESTIGATION: INPUT 2450/10360 DPO: 30341



LEDGER

INPUT -EM ANOMALY 2477/10360

SAMPLE NUMBER	LOCATION		SAMPLE DESCRIPTION										BEDROCK					GEOLOGICAL OBSERVATIONS				
	EAST	NORTH	Zone/IS	Sample Type	Rock %	Sand %	Silt %	Clay %	Org %	Depth	Colour	Horizon	Soil Type	Exposure Type	Soil to Rock	Rock Type	Alteration		Vis. Min	Min. Type 1	Min. Type 2	Look
988768	5000E	5000N	L	O11A						.9	BRN	BK	R			SLAT	TALC					Brown weathered phyllite/shale.
769	4975E		L	O11A						1.0	BRN	I										Clay rich qz lag ?? weath qzite
770	4950		L	O11A						1.1	BRN	C	R			SLAT	TALC					Brown-grey weathered phyllite/shale
771	4925		L	O11A						.7	BRN	I										Clay rich qz lag
772	4900		L	O11A						.9	GRY	C	R			SLAT						Grey weathered phyllite/shale
773	4875		L	O11A						.9	GRY	C	R			SLAT						Dark grey weathered phyllite
774	4850		L	O11A						.9	BRN	C	R			SLAT						Brown weathered phyllite
775	4825		L	O11A						.9	BRN	C	R			SLAT						" "
776	4800		L	O11A						1.3	BRN	C	R			SLAT						" "
777	4775		L	O11A						.7	BRN GRY	C	R			SLAT	TALC					Greenish grey talcose phyllites
778	4750		L	O11A						.6	BRN	C	R			SLAT	TALC					Brown-buff weathered phyllite
779	5200		L	O11A						.7	BLK	I										Humic qz lag
780	5175		L	O11A						1.5	OL GRY	B	R									Mid blue grey soft clay
781	5150		L	O11A						1.5	BRN	B	R									Mid brown clay
782	5125		L	O11A						1.5	BRN	B	R									" "
783	5100		L	O11A						1.5	BLK	HK	R									Humic black sand
784	5050		L	O11A						1.3	BLK	AK	R									" " " ? qz lag
785	5075		L	O11A						1.0	BLK	AK	R									" " " " "
988786	5025		L	O11A						.8	BLK	AK	R									" " " " "



PROJECT RAPID RIVER 1:250000 SHEET BURNIE COLLECTED BY IMC DATE 1/84
 TENEMENT FL1179 SAMPLE NO.S 988768 - 988786 LOCAL GRID CROSS REF 5000E 5000N
 INVESTIGATION 8477/10360 INPUT DPO's 3034J 3580E 5437150N



451089 087

LEDGERS

INPUT-EM ANOMALY 2465/10360

CRA EXPLORATION PTY LIMITED

SOIL SAMPLE FIELD SHEET.

SL

SAMPLE NUMBER	LOCATION			SAMPLE DESCRIPTION										BEDROCK					GEOLOGICAL OBSERVATIONS			
	EAST	NORTH	Zone/IG	Sample Type	Rock %	Sand %	Silt %	Clay %	Org %	Depth	Colour	Horizon	Soil Type	Exposure Type	Soil to bedrock	Rock Type	Alteration	Vis. Min		Min. Type 1	Min. Type 2	Look
988746	5000	4850	L	R						8	GRY	C	R									Lt grey silty weathered quartz
747	4875	4850	L	O11A						15	GRN	B	R									Dk green (vivid) clay - some mica marginal tabular grains.
748	4900	4850	L	O11A						15	BRN	B	R									Mid brown clay
749	4925	4850	L	O11A						15	GRN	B	R									" " "
750	4950	4850	L	O11A						23	GRY		T									Qz lag gravel
751	4975	4850	L	O11A						13	GRY	C	R			SLAT	TALC					Weathered mid grey shale/phyllite
752	5025	4850	L	O11A						10	GRY		T									Qz lag gravel
753	5050	4850	L	O11A						10	GRY	C	R			SLAT	TALC					Mid grey weathered talcose phyllite
754	5075	4850	L	O11A						9	GRY	C	R			SLAT	TALC					" " " "
755	5100	4850	L	O11A						10	GRY	C	R			SLAT	TALC					" " " "
756	5125	4850	L	O11A						7	GRY	C	R			SLAT	TALC					" " " "
757	4850	5150	L	O11A						9	GRY		T									Qz lag clay rich
758	4875	5150	L	O11A						7	GRY		T									" " " "
759	4900	5150	L	O11A						4	GRY	C	R			SLAT	TALC					Weathered grey-brown phyllite/shale
760	4925	5150	L	O11A						4	GRY	C	R			SLAT	TALC					" grey " "
761	4950	5150	L	O11A						6	BRN	C	R			SLAT	TALC					" brown " "
762	4975	5150	L	O11A						7	GRY	C	R			SLAT	TALC					Lt grey weathered phyllite
763	5050	5150	L	O11A						10	GRY	C	R			SLAT	TALC					" " " "
764	5000	5100	L	O11A						0.7	GRY	C	R			SLAT	TALC					Greenish grey chloritic / talcose phyllite
765	5000	5050	L	O11A						9	GRY	C	R			SLAT	TALC					" " " "
766	5000	4950	L	O11A						9	GRY		T									Monic qz lag.
988767	5000	4900	L	O11A						9	GRY	C	R			SLAT	TALC					Lt grey phyllite

451091

5 cm

089

PROJECT RAPID RIVER 1:250000 SHEET Burnie COLLECTED BY IMC DATE 1/84
 TENEMENT EL 179 SAMPLE NO.S 988746-988767 LOCAL GRID CROSS REF 5000E 5000N
 INVESTIGATION 12/84 2465/10310 DPD's 30341 358950E 5437850N



CRA EXPLORATION PTY. LTD.

ASMANIA

Sample Number	SOIL DESCRIPTION											BEDROCK				LOOK	METAL CONTENT ppm / %										Geological Observations
	Co-ordinates AMG / Grid		Depth (m)	Colour	Horizon	% Rock	% Sand	% Silt	% Clay	Organic	Soil Type	Rock Type	Alteration	Vis. Min.	Min. Type		Cu	Pb	Zn	Co	Ag	Mn	As	Sn	W	Ba	
	East	North																									
88687	5000E	5000N	0.60	153	4	-	80	20	0	2	9					5	20	10	5	<1	25	<20	<5	20	380	Fine silty clay, light buff. Feels talcose. Surface.	
88688	4975E	5000N	0.85	153	4		80	20	0	2	9					<2	25	5	5	<1	20	<20	<5	10	510	Mostly qz.	
88689	4950E	5000N	1.1	153	4		80	20	0	2	9					<2	15	5	5	<1	20	<20	<5	10	440		
693	4925E	5000N	0.6	13	5		80	20	-	0	2	100				5	10	5	5	<1	45	<20	<5	50	40	with grey qz. ta	
694	4900E	"	0.6	13	5		80	10	10	0	2	100				10	10	15	5	1	65	<20	<5	90	30	" " "	
695	4875E	"	0.6	135	5		80	10	10	0	2	100				<2	15	10	5	<1	65	<20	<5	80	20	" " "	
696	4850E	"	0.6	153	5		80	10	10	0	2	100				<2	15	10	<5	1	50	<20	<5	60	40	" " "	
697	4825E	"	0.9	133	7		90	10		3	4	100				10	15	10	5	1	100	<20	<5	130	30	Prob. aluv. gravels.	
698	4800E	"	0.6	133	7		90	10		3	4	100				<2	10	15	<5	1	45	<20	<5	60	60	" " "	
699	4775	"	1.3	133	4		30	30	40	2	2					5	15	10	5	1	30	<20	<5	10	180	Gley type horizon.	

GEOCHEMICAL SOIL SAMPLING LEDGER		DETECTION LIMIT										2	5	2	5	1	5	20	5	10	10
		ANALYTICAL METHOD										AAS								XRF	
Location Name: RAPID RIVER EL 1179		Project:					AMG Zone: 55					Sheet No: 1									
Area / Prospect: INPUT ANOMALY # 2463/10360		DPO's: 30336					Laboratory: ALS					Collected By: I M Clementson Date DEC 83 ✓									
/ Photo Ref		Sample No's 988687 988689																			

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090

CRA EXPLORATION PTY. LTD.

S

ASMANIA

Sample Number	SOIL DESCRIPTION											BEDROCK				LOOK	METAL CONTENT ppm / %										Geological Observations
	Co-ordinates AMG / Grid		Depth (m)	Colour	Horizon	% Rock	% Sand	% Silt	% Clay	Organic	Soil Type	Rock Type	Alteration	Vis. Min.	Min. Type		Cu	Pb	Zn	Co	Ag	Mn	As	S _n	W	Ba	
	East	North																									
8700	4750	5000	1.4	353	4		30	30	40	2	2					60	25	15	10	2	30	20	<5	20	140	Clay type soil.	
701	4725		0.8	334	2						3	2				10	10	20	5	1	35	<20	<5	50	170	Clay rich peaty soil.	
702	4700		0.5	133	7		80	10	10	1	5					5	5	10	5	1	70	<20	<5	80	40	Prob. alluvial gravels.	
703	4675		0.5	133	5		60	20	20	0	2	100				5	5	5	5	<1	50	<20	<5	60	30	Weather. grey quartz.	
704	4650		0.8	153	5		50	30	20	0	2	100				<2	10	5	5	<1	30	<20	<5	30	260	Weather br. shales and grey quartz.	
705	4625		0.9	134	7		80	10	10	3	3	100				10	10	25	10	<1	80	<20	<5	100	100	Humic gravels.	
706	5025E	5000N	0.5	153	5		30	40	30	0	2	9				<2	20	5	10	<1	30	<20	<5	40	260	Weather. grey shales/shale	
707	5050E		0.5	153	5		30	40	30	0	2	9				<2	20	5	<5	<1	25	<20	<5	30	260	" , talcose	
708	5075E		0.4	153	5		30	40	30	0	2	9				<2	20	10	5	1	30	<20	<5	30	190	" "	
709	5100E		0.4	153	5		30	40	30	0	2	9				<2	20	15	5	1	15	<20	<5	10	330	" "	

GEOCHEMICAL SOIL SAMPLING LEDGER		DETECTION LIMIT										2	5	2	5	1	5	20	5	10	10
		ANALYTICAL METHOD										ARS									XRF
Element Name: RAPID RIVER EL1/79		Project: AMG Zone: 55										Sheet No.: 2									
Area / Prospect: INPUT ANOMALY #2465/10360		DPO's: 30336										Laboratory: ALS									
Map / Photo Ref:		Sample No's:										Collected By: I M. Clementson Date: Dec 83 ✓									

451093 091

LEDGERS

RAPEND AEROMAGNETIC ANOMALIES

CRA EXPLORATION PTY. LTD.

SS

ASMANIA

Sample Number	LOCATION		SAMPLE DESC.					SITE DESCRIPTION							ROCK TYPE						METAL CONTENT ppm / %							Geological Observations	
	AMG Co-ordinates		S. Type	Mesh	% Gravel	% Sand	% Silt	Organic	Width	Flow	Bank	Catchment	Vegetation	Staining	Contam.	Sit. Rating	Outcrop	Maj. Float	Min. Float	LOOK	Cu	Pb	Zn	Co	Mn	Cr	Cd		Sr
	East	North																						Ag	Fe	Ni	Mo		W
88653	7310E	5000N	1	4	50	40	10	1	0.5	1	3	7	3		1	3	105	105	104		10	20	45	10/41	85/1.70	580/25	90/44	45/90	
88656	7590E	5000N	1	4	30	30	40	1	0.8	3	3	7	3		1	3	100	100	100		10	20	15	15/1	160/2.42	190/45	160/8	45/10	
88657	7570	5000N	1	4	30	30	40	1	3	4	3	5	3		1	3		105	104		5	25	35	20/1	620/3.42	180/40	150/44	45/10	
88658	7185	5000N	1	4	30	30	40	1	0.5	3	3	7	3		1	3		105	104		5	55	75	10/1	65/1.97	200/40	120/4	45/10	
88661	8760	5000N	1	4	40	30	30	1	2	4	3	7	3		1	2		100	105 104		5	20	40	10/41	20/1.17	230/35	120/4	45/10	
88678	8025E	5000N	1	4	60	25	15	1	2	4	3	7	3		1	8		100	104		<2	15	10	5/41	80/6.65	500/40	50/8	45/20	

GEOCHEMICAL STREAM SEDIMENT SAMPLING LEDGER

DETECTION LIMIT

ANALYTICAL METHOD

2 5 2 5/1 5/0.0 5/5 10/4 5/10
 AAS > XRF

Stream Name: RAPID RIVER 1/79

Project: AMG Zone: 555

Sheet No.: 1

20 / Prospect: RAPEND

DPO's: 30336

Laboratory: ALS

/ Photo Ref: 115 5000N

Sample No's

Collected By: [unclear] Date: 23 11 83

451096 094

ASMANIA

CRA EXPLORATION PTY. LTD.

SS

Sample Number	LOCATION		SAMPLE DESC.					SITE DESCRIPTION							ROCK TYPE			METAL CONTENT ppm / %							Geological Observations					
	AMG Co-ordinates		S. Type	Mesh	% Gravel	% Sand	% Silt	Organic	Width	Flow	Bank	Catchment	Vegetation	Staining	Contam.	Silt Rating	Outcrop	Maj. Float	Min. Float	LOOK	Cu	Pb	Zn	Co / Ag		Mn / Fe	Cr / Ni	Ba / Mo	Sn / W	Au / Pb
	East	North																												
8679	6300	8710	1	4	70	20	10	1	1	3	3	8	3	1	2	104	100	120		<2	15	20	5/1	35/0.77	220/30	87/24	25/10	ND		
8682	6300	8326	1	4	70	20	10	1	0.5	3	3	8	3	1	3	104	100	120		<2	15	15	10/1	35/1.15	220/65	70/16	25/40	ND		
8684	6300	8075	1	4	70	20	10	1	2.0	4	1	8	3	1	2	104	100	120		<2	10	5	5/1	39/0.91	120/55	49/16	25/30	ND		
8632	6300	6290	1	4	70	20	10	1	3.0	4	2	5	3	1	2	104	104	120		<2	20	30	10/1	110/1.55	150/40	110/24	25/10	5	Cl draining Rapid.	

GEOCHEMICAL STREAM SEDIMENT SAMPLING LEDGER

DETECTION LIMIT

2 5 2 5/1 5/0.01 5/3 10/4 5/10 3

ANALYTICAL METHOD

AAS --- ---> XRF ---> AAS

Stream Name: RAPID RIVER EL1/79

Project: AMG Zone: SS

Sheet No.:

Area / Prospect: RAPEND

DPO's: 30336

Laboratory: ALS

/ Photo Ref LINE 6300E

Sample No's

Collected By I.M.C

Date 11/83 ✓

451097 095

ASMANIA

CRA EXPLORATION PTY. LTD.

R

Sample Number	LOCATION						ROCK TYPE		MINERALISATION							METAL CONTENT ppm / %						Geological Observations				
	Co-ordinates AMG / Grid		Exposure	S. Type	Width (m)	Interval		Major Rock	Minor Rock	Alteration	Visible	Style	Major	Minor	Minor	Gangue	LOOK	Cu	Pb	Zn	Co / Ag		Mn / Fe %	Cr / Ni	Ba / Mo	Sn / W
	East	North				From	To																			
88680	6300	5710	1	2	5			104	120	9	2	1	120								15/1	100/2.20	30/25	210/24	25/10	Dark grey, very lustrous, talcose and graphitic phyllite + quartz veins. Foliation strikes 010°M Vertical
88681	6300	5550	1	2	4			104	120	9	2	1	120								20/1	340/2.77	20/20	240/24	25/10	Grey phyllites and quartz veins schists + quartz veins. Highly contorted. Strike ± 360°M.
88683	6300	5300	2	3				104													15/1	130/2.36	40/25	240/24	25/10	? Slightly graphitic talcose phyllite.
88685	6300	5075	1	2	2			104	105		2	1	120								15/1	25/2.90	35/25	240/24	25/10	Grey phyllite and schists

GEOCHEMICAL ROCK SAMPLING LEDGER

DETECTION LIMIT
ANALYTICAL METHOD

2 5 2 5/1 5/0.01 5/5 10/4 5/10

Tenement Name: RAPID RIVER EL1/79

Project: AMG Zone: SS

Sheet No.:

Area / Prospect: RAPEND

DPO's: 30336

Laboratory: ALS

Map / Photo Ref: LINE 6300 E

Sample No's

Collected By: IMC

Date: 11-83 ✓

451099 097

TASMANIA

CRA EXPLORATION PTY. LTD.

P

Sample Number	LOCATION		SAMP DESC.		SITE DESC.								HEAVY MINS.		OUTCROP		METAL CONTENT ppm / %										Geological Observations				
	AMG Co-ordinates		S. Type	Start Wt. (Kg)	End Wt. (Kg)	Width (M)	Flow	Bank	Catchment	Vegetation	Staining	Contam.	Sil. Rating	Visible	Major	Minor	Minor	Outcrop	Float	LOOK	Cu	Pb	Zn	Cr / Ni	Co / Fe %	Mn / Ag		Ba / Mo	Sn / W	Au ppm	WEIGHT gms
	East	North																													
188633	6300E	6290N	1	18	0.020	3	4	2	5	3	1	92	92	95							5	20	30	100 / 40	15 / 309	- / 1	10 / 12	5 / 40	<0.1	15.08	? Tr Au

GEOCHEMICAL PANNED CONCENTRATE SAMPLING LEDGER

DETECTION LIMIT	2	5	2	5/5	5/0.01	/1	10/4	5/10	0.1
ANALYTICAL METHOD	AAS					-> XRF			FIRE ASSAY

Tenement Name: RAPID RIVER EL 179
 Area / Prospect: RAPID GRID
 Map / Photo Ref: L111 6300E

Project: AMG Zone: 55
 DPO's: 30836
 Sample No's:

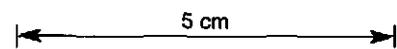
Sheet No.: 1
 Laboratory: ALS
 Collected By: IMClementon Date: Dec 83

451100 098

LEDGERS

REGIONAL SAMPLING

SAMPLE NUMBER	LOCATION			SAMPLE DESCRIPTION							SILT DESCRIPTION										GEOLOGY					GEOLOGICAL OBSERVATIONS
	East	North	Zone	Sample Type	Gravel %	Sand %	Silt %	Clay %	Org %	Width	Gravel	Flow	Banks	Channel	Staining	Content	Site	Outcrop	Flint		Min/Alt	Sinks	Look	Notes		
																			Major	Minor						
988635	5439850	5439850	002	20	20	10			2	1	F	B	N	N	PR	M		SHAL	SHAL	BASL	PC				R	Dk grey-black originally pyritic shales etc.
988637	5437350	5437350	002	40	30	20	10		1	L	P	A	N	N	PR	R		QTM	PTZ	PC				I	Ck draining north from S.R.M. Radio Labs.	

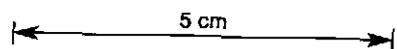


PROJECT RAPID RIVER 1:250 000 SHEET BURNIE COLLECTED BY IMC
 TENEMENT ELIHY SAMPLE NOS 988635 / 988637 DATE 1/84
 INVESTIGATION Regional DPO: 30338



451103 101

SAMPLE NUMBER	SAMPLE LOCATION			SAMPLE DESCRIPTION				ROCK TYPE			MINERALISATION						GEOLOGICAL OBSERVATIONS							
	East	North	Zone/LG	Sample Type	From	To	Width	Exposure	Major	Minor	Alteration	Visible	Stylite	Major	Minor	Minor	Gangue	Age	Mineral	Grain Size	Texture	Colour	Looks	
988634	359300	5442150	SS	005				0	SMAL		OTHR	D	OS	PRT										weathered py. bc (ss) shale brown matrix pyritic? black - like green shales on road between mile 28 on H. Down Bridge.
988636	357250	5439850	SS	006				0	SMAL			D	OS	LIMN										Black shales. Foliated 010°. Bedding strikes at 025°M, dip 80° to E. Limonite pseudomorphs after pyrite euhedra Quartzite bedding



PROJECT _____ 1:250000 SHEET BURNIE COLLECTED BY JMC DATE 1/84
 TENEMENT LL1179 SAMPLE NO.S 988634 LOCAL GRID CROSS REF _____



451104 102

TASMANIA

CRA EXPLORATION PTY. LTD.

P

Sample Number	LOCATION		SAMP DESC.			SITE DESC.							HEAVY MINS.			OUTCROP			METAL CONTENT ppm / %										Geological Observations		
	AMG Co-ordinates		S. Type	Start Wt. (Kg)	End Wt. (Kg)	Width (M)	Flow	Bank	Catchment	Vegetation	Staining	Contam.	Sif. Rating	Visible	Major	Minor	Minor	Outcrop	Float	LOOK	Cu	Pb	Zn	Co / Ag	Ni / Cr	Fe%	Ba / Mo	Sn / W		Au ppm	Weight gms
	East	North																													
188675	353000	5418700	1	6	0.020	3	5	1	4	3 1/2	1	1	3	90				93			15	25	45	25 / 1	35 / 600	6.05	80 / 8	15 / 10	<0.1	33.10	
188677	353050	5418650	1	6	0.020	3	5	1	4	3 1/2	1	1	3	90				93			30	40	100	60 / 2	75 / 1450	14.7	40 / 20	25 / 20	0.1	11.72	
188631	360400	5429975	1	12	0.010	6	5	2	4	3 1/2	1	1	2	90				93	93		15	30	85	35 / 1	120 / 1300	5.93	210 / 6	15 / 50	<0.1	5.86	

GEOCHEMICAL PANNED CONCENTRATE SAMPLING LEDGER	DETECTION LIMIT	2	5	2	5 / 1	5 / 5	0.01	10 / 4	5 / 10	0.1
	ANALYTICAL METHOD	ARS					→	YKF	→	MAS
Tenement Name: RAPID RIVER EL1/79	Project: REGIONAL SAMPLING	AMG Zone: 55	Sheet No.:							
Area / Prospect:	DPO's: 30336	Laboratory: ALS ✓								
Map / Photo Ref.:	Sample No's:	Collected By: IMC					Date: 28.11.83			

451105 103

SS

CRA EXPLORATION PTY. LTD.

ASMANIA

Sample Number	LOCATION		SAMPLE DESC.					SITE DESCRIPTION								ROCK TYPE								METAL CONTENT ppm / %								Geological Observations
	AMG Co-ordinates		S. Type	Mesh	% Gravel	% Sand	% Silt	Organic	Width	Flow	Bank	Catchment	Vegetation	Straining	Contam.	Sit. Rating	Outcrop	Maj. Float	Min. Float	LOOK	Cu	Pb	Zn	Co / Ag	Mn / Fe %	Cr / Ni	Ba / Mo	Sn / W	Au ppb			
	East	North																														
38674	318700	5418700	1	4				1	3	5	1	4	3	1/3	1	1	93	105			20	30	120	85/2	180/6.59	80/75	330/4	5/110	3			
38676	353050	5418650	1	4				1	3	5	1	4	3	1/3	1	1	93	105			40	30	35	20/1	185/6.20	165/12.5	280/4	25/110	3			
38630	360400	5429975	1	4	50	30	20	1	6	5	2	4	3	1/2	1	1	93	93	105		10	20	30	10/1	240/3.24	160/55	100/4	25/110	5	Traces of phyllite flint amongst bank.		
38662	360000	5432100	1	4	50	30	20	1	5	5	2	6	3	1/3	1	1					20	35	185	85/2	180/2.53	240/185	260/4	25/110				

GEOCHEMICAL STREAM SEDIMENT SAMPLING LEDGER

DETECTION LIMIT	2	5	2	5/1	10/0.01	5/5	10/4	5/10	3
ANALYTICAL METHOD	AAS					XRF		AAS	

Element Name: RAPID RIVER EL1/79 Project: REGIONAL SAMPLING AMG Zone: ES3 Sheet No.: _____
 Area / Prospect: Regional sampling DPO's: 30336 Laboratory: ALS
 Map / Photo Ref.: _____ Sample No.: _____ Collected By: IMC Date: 28.11.83

451106 104

APPENDIX II

PETROLOGICAL REPORTS

Central Mineralogical Services



39 Beulah Road
Norwood, S.A. 5067
Telephone 42 5659

Mr. I.M. Clementson
Geologist
C.R.A. Exploration Pty. Ltd.
P.O. Box 138
ROSNY PARK / TAS. 7018

7th February, 1984

REPORT CMS 84/1/24

YOUR REFERENCE:	D.P.O. No. 30339
DATE RECEIVED:	20th January, 1984
SAMPLE NOS.:	988648
SUBMITTED BY:	I.M. Clementson
WORK REQUESTED:	Petrology

Copy to:
The Chief Geologist
C.R.A. Exploration Pty. Ltd.
P.O. Box 656
FYSHWICK / A.C.T. 2609

Copy & Invoice to:
Administration Officer
C.R.A. Exploration Pty. Ltd.
P.O. Box 138
ROSNY PARK / TAS. 7018

H.W. Fander
H.W. Fander, M. Sc.

CENTRAL MINERALOGICAL SERVICES PTY. LTD.

Date 7th February, 1984

SAMPLE REPORT (Mineralogy, Petrology, Ore Microscopy)

Job No. CMS 84/1/24 Date Received: 20.1.1984
 Reference D.P.O. No. 30339
 Sample No. 988648
 Nature of Sample: Hand Specimen

IDENTIFICATION
988648
Quartz-Chlorite Schist (Meta-igneous)

DESCRIPTION SECTION No. 48773

a. Hand Specimen:

Green, fine-grained schist with boxworks and stringers of small cavities.

b. Microscopic:

In simple terms, this is a quartz-chlorite schist; however, its origin is more complex and it is believed to be meta-igneous, though more likely to have been a lava or a minor intrusive than a pyroclastic rock.

The rock consists of irregular small lenses, streaks and grains of quartz and quartz mosaics, randomly distributed through a matrix of matted-parallel flakes of chlorite (penninite) with minor interleaved sericite. Leucoxene is unusually abundant, as small knots and streaks of semi-opaque white fibrous crystals (?rutile), and is believed to represent leucoxenised primary opaques. Thus, the present mineral assemblage is all secondary or metamorphic, and relict textures are absent.

The abundance of leucoxene is characteristic of rocks derived from basic igneous types, and is difficult to explain in a sedimentary context. Thus, the rock is interpreted as having been a dolerite/basalt, thoroughly altered to quartz, chlorite and leucoxene, and then metamorphosed.

A few crystals of oxidised or leached pyrite are scattered through the rock and are post-metamorphic.

H.W. Fander, M. Sc.

Central Mineralogical Services



39 Beulah Road
Norwood, S.A. 5067
Telephone 42 5659

Mr. I.M. Clementson
Geologist
C.R.A. Exploration Pty. Ltd.
P.O. Box 138
ROSNY PARK / TAS. 7018

17th January, 1984

REPORT CMS 83/12/31

YOUR REFERENCE:	D.P.O. No. 30337
DATE RECEIVED:	22nd December, 1983
SAMPLE NOS.:	988669
SUBMITTED BY:	I.M. Clementson
WORK REQUESTED:	Petrology

Copy to:
The Chief Geologist
C.R.A. Exploration Pty. Ltd.
P.O. Box 656
FYSHWICK / A.C.T. 2609

Copy & Invoice to:
Administration Officer
C.R.A. Exploration Pty. Ltd.
P.O. Box 138
ROSNY PARK / TAS. 7018

H. W. Fander

H.W. Fander, M. Sc.

SAMPLE REPORT (Mineralogy, Petrology, Ore Microscopy)

Job No. CMS 83/12/31 Date Received: 22.12.1983

Reference D.P.O. No. 30337

Sample No. 988669

Nature of Sample: Hand Specimen

DESCRIPTION SECTION No. 48551

a. Hand Specimen:

Speckled crystalline rock, quite strongly magnetic.

K-stain test negative.

b. Microscopic:

This is a magnetite-plagioclase rock and can probably be regarded as a type of hornfels, though the interpretation is partly dependent on the geological circumstances; it could equally well be a segregation or a xenolith in an igneous rock, and is believed to be of igneous rather than sedimentary origin.

The rock consists mainly of large, randomly orientated plates of complexly twinned oligoclase, with scattered magnetite crystals which are intergrown with cloudy leucoxenic sphene, and small fibrous hornblende and epidote crystals. The distinctive magnetite-leucoxene intergrowths probably resulted from preferential conversion of ilmenite exsolution lamellae to sphene, presumably a metamorphic effect; it is inferred that the original magnetite crystals were formed at high temperatures, possibly suggesting a basic igneous derivation.

A few patches of goethite occur; some have sulphide boxworks, others contain relict pyrite or chalcopyrite. Chlorite veinlets cut the rock.

H.W. Fander, M. Sc.

IDENTIFICATION
988669
Magnetite-Plagioclase Hornfels

APPENDIX III

STREAM SEDIMENT SAMPLE LOCATIONS AND RESULTS

(PRE 1982)

KEY TO VARIABLE USED IN STREAM SEDIMENT SAMPLE LEDGER

STRNORD (STREAM ORDER)

STREAM ORDER WILL GIVE AN INDICATION OF CATCHMENT SIZE.

STREAM ORDERS HAVE BEEN CALCULATED ON THE BASIS OF:

STREAM SOURCES ARE ASSIGNED 1ST. ORDER WHEN TWO 1ST. ORDER
STREAMS JOIN TOGETHER, THE STREAM BECOMES 2ND. ORDER ETC. ETC.

GEOLOGY

THREE GEOLOGICAL VARIABLES HAVE BEEN ASSIGNED AS FOLLOWS:

1. SITEGEO (SITE GEOLOGY)
2. FORMGEO (FORMATIONAL GEOLOGY)
3. PROFCAR (PROF. CAREY GEOLOGY)

SITEGEO

THIS VARIABLE REPRESENTS THE GEOLOGY OBSERVED AT EACH SAMPLE SITE AND
IS A COMBINATION OF OUTCROP AND FLOAT GEOLOGY.

20 ROCK TYPES HAVE BEEN USED AS FOLLOWS:

1 SAND DUNES	15 CHERT
2 GRAVELS	16 SLATES
3 BASALT	17 CARBONACEOUS SLATES
4 GREYWACKE	18 CONGLOMERATE
5 DOLOMITE	19 GRANITE
6 QUARTZITE	20 VOLCANICS
7 GREYWACKE	21 SCHISTS
8 BLACK SILTSTONE	22 TALLITE
9 SILTSTONE	23 Limestone
10 SHALE	24 AMPHIBOLITE
11 MICACEOUS QUARTZITE	25 DOLERITE
12 MUDSTONE	26 BLACK SLATES
13 SANDSTONE	27 SERPENTINITE
14 BLACK SHALE	28 HORNFELS

VALUES OF -1 REPRESENT EITHER NO OUTCROP OR THIS INFORMATION WAS NOT
INCLUDED IN THE ORIGINAL REPORT.

FORMGEO

THIS CONSISTS OF BROAD FORMATIONAL DIVISIONS AS RECOGNISED BY THE
TASMANIAN DEPT. OF MINES AND PUBLISHED ON THE 1:250 000 GEOLOGICAL
ATLAS SHEETS ENTITLED BURNIE AND QUEENSTOWN.

20 FORMATIONS HAVE BEEN USED.

SEDIMENTARY ROCKS

1 UNCONSOLIDATED SEDIMENTS	RECENT AND TERTIARY
2 GLACIO-MARINE SEQUENCES	CARBONIFEROUS/PERMIAN
3 SILTSTONE-SHALE SEQUENCES	DEVONIAN
4 QUARTZ SANDSTONE SEQUENCES	.
5 Limestone SEQUENCES	ORDOVICIAN
6 CONGLOMERATES, SANDSTONES, SILTSTONES	.

7	GREYWACKE-TURBIDITE SEQUENCES	CAMBRIAN
8	DOMINANTLY VOLCANIC SEQUENCES	"
9	UNDIFFERENTIATED UNMETAMORPHOSED SEQUENCES	PRECAMBRIAN
10	DOMINANTLY MUDSTONES AND TURBIDITES	"
11	DOMINANTLY ORTHOQUARTZITE AND CONGLOMERATES	"
12	DOMINANTLY SOLOMITE	"
13	UNDIFFERENTIATED METAMORPHIC SEQUENCES	"
14	META-PELITIC SEQUENCES	"
15	META-QUARTZITE SEQUENCES	"

IGNEOUS ROCKS

16	BASALT	TERTIARY
17	DOLERITE	JURASSIC
18	GRANITE	CARB.-DEVONIAN
19	SERPENTINITES+PERIDOTITES	CAMBRIAN
20	DOLERITE	PRECAMBRIAN

PROFCAR

THIS VARIABLE RESULTS FROM A PHOTO-INTERPRETATIONAL STUDY OF PART OF N.W. TASMANIA CONDUCTED BY PROF. CAREY OF TAS. UNIV. FOR FURTHER INFORMATION SEE UNPUBLISHED REPORT: 'NOTES TO ACCOMPANY THE PHOTO-INTERPRETATION OF THE COUNTRY BETWEEN THE ARTHUR AND PIEMAN RIVER TASMANIA' BY S. WARREN CAREY.

15 ROCK GROUPINGS HAVE BEEN UTILISED

SEDIMENTS

1	QUATERNARY DUNES	7	PRECAMBRIAN SIGMA GROUP
2	TERTIARY GRAVELS	8	" PHI GROUP
3	PERMIAN TILLITE	9	" EPSILON GROUP
4	ORD.-EIL. JUNEE GROUP	10	" ALPHA GROUP
5	CAMBRIAN MU GROUP	11	" RHO GROUP
6	" UPSILON GROUP		

IGNEOUS

12	TERTIARY BASALT	14	DEVONIAN GRANITE
13	JURASSIC DOLERITE	15	EDCAMBRIAN KAPPA GROUP

VALUES OF -1 REPRESENT SAMPLES OUTSIDE OF THE AREA OF PHOTO-INTERPRETATION

TOPO

A TOPOGRAPHICAL INDEX HAS BEEN ESTIMATED FROM OBSERVATIONS OF CONTOURS ON THE 1:100,000 TOPOGRAPHICAL SHEETS AS FOLLOWS:

- 1 SWAMPY, MARSHY AREAS
- 2 LOW LYING
- 3 MODERATE TOPOGRAPHY
- 4 STEEP TOPOGRAPHY
- 5 VERY STEEP TOPOGRAPHY

SNPTYP

DISTINGUISHES BETWEEN TYPES OF SAMPLE

- 1 -80% STREAM SEDIMENTS
- 2 PANNED CONCENTRATE

EAST NORTH

COORDINATES FOR ALL SAMPLES WERE DIGITISED USING A CALCOMP TABLE BY
TECHNICAL COMPUTER SYSTEMS IN ADELAIDE. ALL COORDINATES ARE IN A.M.G.
METRIC UNITS.

ANALYTICAL VARIABLES

ALL VALUES THAT ARE BELOW DETECTION LIMITS HAVE BEEN ENTERED AS
HALF OF DETECTION LIMIT

VALUES OF -1 INDICATE THAT A SAMPLE WAS NOT ANALYSED FOR A PARTICULAR
ELEMENT

	SAMPLE NO.	EAST	NORTH	STRMORB	TOPO	SMPTYP	SITFGEOI.	FORMGEOI.	PROFCAR	PR	ZN	CU
25276	188892	360567	5447135	4	4	1	9	9	*	8	15	5
25277	188893	366109	5446938	2	5	1	2	9	*	5	28	8
278	188894	364511	5443949	5	5	1	12	13	*	10	32	10
279	188895	362906	5442286	3	4	1	21	9	*	2.5	15	2
25280	188896	364853	5445629	3	4	1	8	9	*	8	18	5
81	188897	364928	5441858	4	5	1	21	13	*	10	30	12
82	188935	349393	5442820	4	3	1	17	9	*	5	5	1
83	188936	348445	5442174	3	3	1	6	9	*	10	2	2
84	188937	351402	5418621	3	4	1	3	13	*	5	35	15
85	188938	351610	5422391	4	3	1	6	13	*	5	5	2
86	188940	361348	5422960	4	4	1	21	9	*	5	2	1
87	210294	368864	5440434	5	3	1	21	2	*	12	35	7
88	211554	368796	5437320	1	4	1	21	13	*	10	82	5
89	211555	368638	5437790	1	4	1	21	13	*	16	72	14
25290	211556	367662	5441906	2	3	1	*	13	*	330	460	210
91	211557	367025	5444014	2	3	1	9	13	*	130	1000	72
92	211558	367424	5444302	3	2	1	21	13	*	220	4400	180
93	211559	366767	5444985	2	3	1	21	9	*	310	4400	190
94	211570	368347	5441230	2	5	1	21	2	*	100	982	88
95	211571	368217	5442145	3	3	1	21	13	*	3	27	6
96	211587	366764	5445745	2	3	1	10	9	*	9	18	6
97	211588	367439	5441971	2	3	1	10	13	*	7	20	5
98	211589	366917	5442371	1	3	1	*	13	*	6	10	1
99	211590	366765	5442742	1	3	1	13	13	*	6	20	5
25300	211591	366640	5443863	2	3	1	16	13	*	7	20	4
01	211593	368419	5438845	1	4	1	3	2	*	7	39	10
02	212392	366560	5445457	6	4	1	3	9	*	150	970	100
03	212395	368994	5440800	5	3	1	*	2	*	190	1740	140
04	212398	367200	5442750	6	3	1	6	13	*	140	1450	98
05	212651	366177	5435839	1	3	1	21	13	*	6	30	8
25306	212652	366311	5435543	2	4	1	7	13	*	14	33	7

451116 114

25307	570089	367881	5447169		4	1	*		*	10	60	10
08	570091	367889	5447329	1	4	1	*		*	10	40	15
09	570093	367158	5446577	*	3	1	*	9	*	2.5	15	10
53310	660044	363001	5445589	1	3	1	*	9	*	15	65	125
11	660045	363531	5445571	1	4	1	*	9	*	10	25	5
12	660046	363752	5445664	1	5	1	*	9	*	2.5	15	3
13	660047	363216	5444775	2	3	1	*	9	*	5	50	5
14	660048	363229	5444332	1	3	1	*	9	*	10	20	3
15	660049	363432	5443677	1	4	1	*	9	*	5	2	3
16	665020	355700	5435343	1	3	1	*	9	*	2.5	15	10
17	665021	355597	5435565	1	3	1	*	9	*	2.5	10	7
18	665022	355344	5435609	2	3	1	*	9	*	5	10	5
19	665023	355273	5435488	3	3	1	*	9	*	2.5	15	7
25320	665024	354979	5434274	1	4	1	*	9	*	250	10	50
21	665025	355058	5434135	5	4	1	*	9	*	65	40	55
22	665026	355185	5434207	1	4	1	*	9	*	25	25	85
23	665027	355573	5434169	2	4	1	*	9	*	15	25	30
24	665028	355710	5434013	1	4	1	*	9	*	25	3	7
25	665029	355746	5433744	1	4	1	*	9	*	5	3	7
26	665030	356042	5433453	5	4	1	*	9	*	2.5	10	7
27	665031	356435	5433385	1	4	1	*	9	*	10	5	5
28	665032	356505	5432793	2	4	1	*	13	*	2.5	15	5
29	665033	356667	5432855	1	4	1	*	13	*	5	10	2
25330	665035	357923	5432019	3	3	1	*	13	*	10	20	5
31	665036	359173	5430990	1	3	1	*	13	*	5	10	5
32	665037	358635	5431028	4	3	1	*	13	*	25	190	30
33	665040	360401	5430350	1	3	1	*	13	*	25	200	40
34	665041	360866	5429044	2	3	1	*	13	*	10	60	30
25335	665042	361117	5429154	2	3	1	*	13	*	10	30	10

45117 115

	SAMPLE NO.	EAST	NORTH	STRMSB	TOPO	SMPTYP	SITERCOL	FORMSFOI	PROFCAR	FB	ZN	CU	
253	36	665043	361104	5429534	2	3	1	*	13	*	3	50	45
	37	665044	360633	5430001	1	3	1	*	13	*	60	70	80
	38	665045	360299	5429944	3	3	1	*	13	*	5	50	15
	39	665046	360027	5430283	4	3	1	*	13	*	5	50	15
253	40	665047	359032	5431108	1	3	1	*	13	*	2.5	45	35
	41	665050	358257	5430906	4	4	1	*	13	*	5	60	50
	42	665071	355115	5435774	1	3	1	*	9	*	2.5	15	10
	43	665072	354703	5436138	1	3	1	*	9	*	5	40	20
	44	665073	354777	5436179	2	3	1	*	9	*	10	40	10
	45	665074	354092	5435803	1	3	1	*	9	*	2.5	25	10
	46	665075	354059	5435993	3	3	1	*	9	*	2.5	20	7
	47	665076	353747	5435756	1	4	1	*	9	*	2.5	25	5
	48	665077	353383	5436062	3	3	1	*	9	*	2.5	20	7
	49	665078	352952	5435549	4	4	1	*	9	*	10	15	5
253	50	665079	352805	5434934	3	4	1	*	9	*	5	35	10
	51	665080	352956	5434694	4	4	1	*	9	*	5	15	7
	52	665081	353090	5434730	5	4	1	*	9	*	5	30	7
	53	665082	353222	5434789	2	4	1	*	9	*	2.5	10	3
	54	665083	353225	5434364	1	4	1	*	9	*	5	35	10
	55	665084	353521	5434663	1	4	1	*	9	*	5	10	7
	56	665085	353600	5434592	1	4	1	*	9	*	2.5	10	7
	57	665086	353609	5434044	1	4	1	*	9	*	5	20	5
	58	665087	353932	5434208	1	4	1	*	9	*	5	9	10
	59	665088	353935	5433946	2	4	1	*	9	*	2.5	10	3
253	60	665089	354106	5433863	3	4	1	*	9	*	5	6	3
	61	665090	354263	5433915	5	4	1	*	9	*	2.5	15	3
	62	665091	354844	5433447	2	3	1	*	9	*	2.5	10	10
	63	665092	355078	5433733	1	3	1	*	9	*	5	35	3
	64	665093	354779	5434469	1	4	1	*	9	*	10	10	5
	65	665094	354810	5431480	1	3	1	*	9	*	10	9	5
253	66	665095	354957	5434627	1	3	1	*	9	*	15	6	5

451118 116

25427	670389	349986	5442291	1	2	1	*	9	*	2.5	4	1
28	670390	346878	5442907	2	3	1	*	9	*	2.5	10	2
29	670391	346775	5442781	4	3	1	*	9	*	2.5	20	7
25430*	670392	346105	5442597	1	3	1	*	9	*	2.5	10	5
31	670403	348264	5442850	2	3	1	*	9	*	2.5	3	5
32	670404	348788	5442561	4	3	1	*	9	*	2.5	2.5	3
33	670405	348673	5442385	3	3	1	*	9	*	2.5	2.5	3
34	670406	348433	5441939	1	2	1	*	9	*	2.5	45	35
35	670407	349248	5441344	3	2	1	*	9	*	2.5	2.5	7
36	670408	348107	5442853	1	3	1	*	9	*	2.5	2.5	2
37	670409	347737	5442605	4	3	1	*	9	*	2.5	2	5
38	670410	347160	5442598	1	3	1	*	20	*	2.5	2.5	2
39	670411	347150	5442425	1	3	1	*	9	*	2.5	2.5	2
25440	670412	346745	5442615	4	3	1	*	9	*	5	1	10
41	670424	351921	5447429	1	3	1	*	9	*	2.5	2.5	7
42	670425	352079	5447456	2	3	1	*	9	*	445	1	2
43	680099	368718	5437584	1	4	1	*	13	*	10	120	25
44	680101	368883	5437549	5	4	1	*	13	*	2.5	60	10
45	680107	368690	5440166	1	3	1	*	2	*	2.5	10	5
46	680109	368869	5440221	5	3	1	*	2	*	25	45	15
46	680111	368228	5441093	2	4	1	*	13	*	5	170	25
48	680113	368596	5441663	1	3	1	*	2	*	2.5	180	45
49	680121	368083	5442106	3	3	1	*	13	*	2.5	35	10
25450	680123	367430	5442285	2	3	1	*	13	*	2.5	320	3
51	680125	367513	5442877	2	3	1	*	13	*	2.5	260	10
52	680127	366622	5442738	1	3	1	*	13	*	30	330	3
53	680129	367543	5444280	2	3	1	*	13	*	2.5	10	3
54	680131	367493	5444429	2	3	1	*	13	*	2.5	20	3
55	680133	367002	5444733	2	3	1	*	13	*	2.5	140	10

451121 119

	SAMPLE NO.	EAST	NORTH	STRORD	TOPO	SMPTYP	SITEGEO	FORMGEO	PROFCAR	PB	ZN	CU
25456	680135	366584	5444972	2	4	1	*	9	*	2.5	35	5
57	680137	365992	5446650	1	4	1	*	9	*	2.5	35	5
58	680139	366461	5446981	3	4	1	*	9	*	2.5	25	5
59	680141	366416	5447168	2	4	1	*	9	*	2.5	25	5
25460	680143	366097	5447084	1	4	1	*	9	*	2.5	35	5
61	680167	362150	5417944	2	4	1	*	9	*	2.5	10	3
62	680169	364361	5442847	1	4	1	*	13	*	2.5	20	3
63	680170	363825	5442667	2	4	1	*	9	*	2.5	15	5
64	680171	363420	5442847	3	4	1	*	9	*	10	60	15
65	680172	363489	5442605	4	4	1	*	9	*	2.5	15	3
66	680173	362895	5441905	4	5	1	*	9	*	2.5	15	3
67	680174	362684	5442138	3	4	1	*	9	*	2.5	15	3
68	680175	364685	5443448	4	4	1	*	9	*	2.5	30	3
69	680176	364854	5443590	4	4	1	*	13	*	2.5	20	3
25470	680177	365131	5445609	3	4	1	*	9	*	2.5	10	3
71	680178	365258	5445398	3	4	1	*	9	*	2.5	20	3
72	680241	366439	5447136	1	3	1	*	2	*	10	210	30

451122 120°

SAMPLE NO.	NI	CO	MO	AS	SN	CXCU
188892	*	*	*	*	*	*
188893	*	*	*	*	*	*
188894	*	*	*	*	*	*
188895	2.5	*	*	*	*	*
188896	8	*	*	*	*	*
188897	20	*	*	*	*	*
188935	*	*	*	*	*	*
188936	*	*	*	*	*	*
188937	*	*	*	*	*	*
188938	*	*	*	*	*	*
188940	*	*	*	*	*	*
210294	19	13	*	*	*	*
211554	10	6	1	2.5	*	*
211555	21	17	1	2.5	*	*
211556	21	13	1	700	*	*
211557	22	12	1	50	*	*
211558	20	10	1	50	*	*
211559	17	6	1	320	*	*
211570	21	12	1	170	*	*
211571	9	3	1	2.5	*	*
211587	12	6	1	2.5	*	*
211588	8	5	1	2.5	*	*
211589	8	1	1	2.5	*	*
211590	18	8	1	2.5	*	*
211591	11	5	1	2.5	*	*
211593	15	10	1	2.5	*	*
212392	19	10	1	262	*	*
212395	16	8	1	264	*	*
212398	18	8	1	216	*	*
212651	7	5	1	2.5	*	*
212652	22	17	2	2.5	*	*

451123 121

570089	20	*	1.5	2.5	*	1
570091	30	*		2.5	*	1
570093	3	*	1.5	2.5	*	1
660044	3	*	1.5	2.5	*	5
660045	5	*	1.5	2.5	*	1
660046	2.5	*	1.5	2.5	*	1
660047	3	*	1.5	2.5	*	1
660048	3	*	1.5	2.5	*	1
660049	2.5	*	1.5	2.5	*	1
665020	2.5	2.5	1.5	2.5	0.5	1
665021	2.5	2.5	1.5	2.5	0.5	1
665022	2.5	2.5	1.5	2.5	0.5	1
665023	2.5	2.5	1.5	2.5	0.5	1
665024	2.5	2.5	1.5	2.5	*	4
665025	45	2.5	10	2.5	*	4
665026	3	2.5	7	2.5	*	3
665027	3	2.5	25	2.5	*	3
665028	3	2.5	5	2.5	*	1
665029	2.5	2.5	5	2.5	*	1
665030	15	2.5	10	2.5	*	1
665031	2.5	2.5	5	2.5	*	1
665032	6	2.5	15	2.5	*	1
665033	3	2.5	1.5	2.5	*	1
665035	20	10	1.5	2.5	0.5	1
665036	15	7	1.5	2.5	5	1
665037	150	55	1.5	2.5	20	1
665046	225	95	1.5	2.5	0.5	2
665041	65	35	1.5	2.5	0.5	1
665042	45	15	1.5	2.5	0.5	1

451124 122

SAMPLE NO.	NI	CO	MO	AS	SN	CXCU
665043	80	55	1.5	2.5	0.5	2
665044	100	30	1.5	2.5	0.5	4
665045	45	15	1.5	2.5	0.5	1
665046	60	35	1.5	2.5	0.5	1
665047	45	25	1.5	2.5	0.5	1
665050	50	40	1.5	2.5	0.5	2
665071	2.5	7	1.5	2.5	0.5	1
665072	10	7	1.5	2.5	0.5	1
665073	7	3	1.5	2.5	0.5	1
665074	5	2.5	1.5	2.5	0.5	1
665075	5	15	1.5	2.5	0.5	1
665076	5	2.5	1.5	2.5	0.5	1
665077	5	2.5	1.5	2.5	75	1
665078	7	7	1.5	2.5	0.5	1
665079	10	3	1.5	2.5	0.5	1
665080	5	7	1.5	2.5	0.5	1
665081	15	3	1.5	2.5	0.5	1
665082	15	10	1.5	2.5	0.5	1
665083	15	3	1.5	2.5	0.5	1
665084	5	7	1.5	2.5	0.5	1
665085	7	7	1.5	2.5	0.5	1
665086	10	3	1.5	2.5	0.5	1
665087	8	3	1.5	2.5	0.5	1
665088	5	3	1.5	2.5	1	1
665089	5	3	1.5	2.5	0.5	1
665090	10	3	1.5	2.5	0.5	1
665091	5	3	1.5	2.5	25	1
665092	10	3	1.5	2.5	0.5	1
665093	5	3	1.5	2.5	0.5	1
665094	5	2.5	1.5	2.5	*	1
665095	5	3	1.5	2.5	*	1

451125 123

SAMPLE NO.	NI	CO	MO	AS	SN	CXCU
665136	2.5	3	1.5	2.5	0.5	1
665137	5	3	1.5	2.5	0.5	1
670107	3	*	1.5	2.5	*	1
670109	3	*	1.5	2.5	*	1
670111	2.5	*	1.5	2.5	0.5	1
670113	2.5	*	1.5	2.5	0.5	1
670115	2.5	*	1.5	2.5	*	1
670117	2.5	*	1.5	2.5	*	1
670139	2.5	*	1.5	2.5	*	1
670245	3	*	1.5	2.5	*	1
670368	2.5	3	1.5	2.5	2.5	1
670369	7	3	1.5	2.5	2.5	1
670370	7	2.5	1.5	2.5	0.5	1
670371	5	2.5	1.5	2.5	1	1
670372	15	2.5	1.5	2.5	0.5	1
670373	7	2.5	1.5	2.5	1	1
670374	5	2.5	1.5	2.5	0.5	1
670375	5	3	1.5	2.5	1	1
670376	7	2.5	1.5	2.5	0.5	1
670377	10	2.5	1.5	2.5	0.5	1
670378	5	3	1.5	2.5	0.5	1
670379	7	2.5	1.5	5	0.5	1
670380	7	2.5	1.5	2.5	1	1
670381	5	3	1.5	2.5	0.5	1
670382	7	2.5	1.5	2.5	0.5	1
670383	15	7	1.5	2.5	0.5	1
670384	7	2.5	1.5	2.5	0.5	1
670385	7	2.5	1.5	2.5	0.5	1
670386	7	3	1.5	2.5	5	1
670387	10	2.5	1.5	2.5	0.5	1
670388	10	2.5	1.5	2.5	0.5	1

451126124

665096	5	2.5	1.5	2.5	*	1
665097	2.5	3		2.5	*	1
665098	2.5	3	1.5	2.5	*	1
665099	5	7	1.5	2.5	0.5	1
665108	25	10	1.5	5	0.5	2
665109	15	3	1.5	5	0.5	1
665110	7	3	1.5	2.5	0.5	1
665111	10	3	1.5	2.5	0.5	1
665112	25	7	1.5	2.5	0.5	1
665113	15	3	1.5	5	0.5	1
665114	25	10	1.5	5	0.5	1
665115	20	7	1.5	5	0.5	1
665116	15	7	1.5	2.5	*	1
665117	20	10	1.5	10	0.5	1
665118	20	10	1.5	2.5	0.5	1
665119	15	7	1.5	5	*	1
665123	15	10	1.5	5	0.5	1
665124	15	7	1.5	2.5	0.5	1
665125	15	3	1.5	2.5	0.5	1
665126	10	7	1.5	2.5	0.5	1
665127	7	7	1.5	5	0.5	1
665128	15	7	1.5	5	0.5	2
665129	10	7	1.5	5	0.5	3
665130	15	10	1.5	2.5	0.5	3
665131	5	2.5	1.5	2.5	0.5	2
665132	2.5	3	1.5	5	0.5	1
665133	15	30	1.5	2.5	0.5	2
665134	2.5	2.5	1.5	5	0.5	1
665135	5	3	1.5	5	0.5	2

451127

670389	7	2.5	1.5	2.5	0.5	1
670390	10	2.5	2.0	2.5	0.5	1
670391	7	2.5	1.5	2.5	0.5	1
670392	7	2.5	1.5	5	0.5	1
670403	45	3	1.5	2.5	*	*
670404	10	2.5	1.5	2.5	*	*
670405	10	3	1.5	2.5	-5	*
670406	85	60	1.5	2.5	*	*
670407	15	20	1.5	2.5	*	*
670408	10	15	1.5	2.5	*	*
670409	6	7	1.5	2.5	*	*
670410	5	10	1.5	2.5	*	*
670411	7	10	1.5	2.5	*	*
670412	5	2.5	1.5	2.5	*	*
670424	15	10	1.5	2.5	*	*
670425	10	7	1.5	2.5	*	*
680099	65	*	1.5	2.5	*	1
680101	15	*	1.5	2.5	*	1
680107	20	*	1.5	2.5	*	1
680109	30	*	1.5	2.5	*	1
680111	30	*	1.5	2.5	*	3
680113	25	*	1.5	2.5	*	4
680121	15	*	1.5	2.5	*	1
680123	5	*	1.5	2.5	*	1
680125	15	*	1.5	2.5	*	2
680127	50	*	1.5	2.5	*	1
680129	15	*	1.5	2.5	*	1
680131	15	*	1.5	2.5	*	1
680133	10	*	1.5	2.5	*	2

SAMPLE NO.	NI	CO	MO	AS	SN	EXCU
680135	5	*	1.5	2.5	*	2
680137	10	*	1.5	2.5	*	1
680139	10	*	1.5	2.5	*	1
680141	15	*	1.5	2.5	*	1
680143	15	*	1.5	2.5	*	1
680167	5	*	1.5	2.5	*	1
680169	5	*	1.5	2.5	*	1
680170	5	*	1.5	2.5	*	1
680171	15	*	1.5	2.5	*	1
680172	5	*	1.5	2.5	*	1
680173	5	*	1.5	2.5	*	1
680174	5	*	1.5	2.5	*	1
680175	15	*	1.5	2.5	*	1
680176	15	*	1.5	2.5	*	1
680177	10	*	1.5	2.5	*	1
680178	5	*	1.5	2.5	*	1
680241	50	*	1.5	2.5	*	1

NUMBERS THAT ARE CODED * REPRESENT "SPECIAL VALUES".
 THESE VALUES WILL BE EXCLUDED FROM ALL CALCUALTIIONS IN THE
 GASP SYSTEM.

451129 127

SAMPLE NO.	EASTING	NORTHING	BE	BT	CO	MG	CU	MW	MO	NI
C1196	352188	5418951	0.001	-1	-1	35	30	-1	0.001	20
C1197	353792	5417149	0.001	-1	-1	30	30	-1	0.001	18
C1198	353752	5418144	0.001	-1	-1	50	30	-1	0.001	8
C1199	353622	5415931	0.001	-1	-1	10	30	-1	0.001	8
C1200	351899	5413850	0.001	-1	-1	35	30	-1	0.001	30
C1201	351824	5416134	0.001	-1	-1	25	30	-1	0.001	15
C1202	351965	5416114	0.001	-1	-1	35	14	-1	0.001	40
C1203	352106	5416111	0.001	-1	-1	35	18	-1	0.001	20
C1204	352255	5416152	0.001	-1	-1	35	35	-1	0.001	45
C1205	352384	5416168	0.001	-1	-1	40	30	-1	0.001	14
C1206	352593	5415880	0.001	-1	-1	30	30	-1	0.001	40
C1207	352714	5415946	0.001	-1	-1	50	18	-1	0.001	10
C1208	352855	5415986	0.001	-1	-1	30	16	-1	0.001	30
C1209	352921	5416094	0.001	-1	-1	25	10	-1	0.001	150
C1210	352983	5416223	0.001	-1	-1	35	22	-1	0.001	10
C1211	353116	5416206	0.001	-1	-1	65	18	-1	0.001	8
C1212	353101	5416246	0.001	-1	-1	40	30	-1	0.001	12
C1213	353305	5416171	0.001	-1	-1	45	30	-1	0.001	10
C1214	353426	5416247	0.001	-1	-1	30	28	-1	0.001	12
C1215	353564	5416331	0.001	-1	-1	60	14	-1	0.001	5
C1216	353692	5416361	0.001	-1	-1	30	3	-1	0.001	4
C1217	353796	5416251	0.001	-1	-1	10	4	-1	0.001	2
C1218	352585	5418128	-1	-1	-1	-1	-1	-1	-1	-1
C1219	352663	5417999	0.001	-1	-1	45	18	-1	0.001	36
C1220	352787	5417891	0.001	-1	-1	20	10	-1	0.001	20
C1221	352908	5417804	0.001	-1	-1	45	14	-1	0.001	24
C1222	352962	5417697	0.001	-1	-1	25	12	-1	0.001	8
C1223	353262	5417604	0.001	-1	-1	75	22	-1	0.001	28
C1224	353285	5417831	0.001	-1	-1	40	10	-1	0.001	8
C1225	353368	5417808	0.001	-1	-1	45	16	-1	0.001	14
C1226	353490	5417813	0.001	-1	-1	45	28	-1	0.001	18
C1227	352672	5417967	0.001	-1	-1	45	18	-1	0.001	44
C1228	352408	5417840	0.001	-1	-1	35	40	-1	0.001	310
C1229	352539	5417687	0.001	-1	-1	20	46	-1	0.001	310
C1230	352474	5417553	0.001	-1	-1	60	48	-1	0.001	360
C1231	352423	5417414	0.001	-1	-1	13	44	-1	0.001	310
C1232	352490	5418229	-1	-1	-1	-1	-1	-1	-1	-1
C1233	352332	5418204	-1	-1	-1	-1	-1	-1	-1	-1
C1234	352756	5418395	-1	-1	10	-1	-1	-1	0.001	-1
C1235	352805	5418517	-1	-1	10	-1	-1	-1	0.001	-1
C1236	352905	5418617	-1	-1	5	-1	-1	-1	0.001	-1
C1237	352942	5418760	-1	-1	5	-1	-1	-1	0.001	-1
C1238	352972	5418904	-1	-1	5	-1	-1	-1	0.001	-1
C1239	352975	5419144	-1	-1	5	-1	-1	-1	0.001	-1
C1240	352941	5419169	-1	-1	5	-1	-1	-1	0.001	-1
C1241	353167	5419249	-1	-1	5	-1	-1	-1	0.001	-1
C1242	353220	5419279	-1	-1	5	-1	-1	-1	0.001	-1
C1243	353204	5419407	-1	-1	5	-1	-1	-1	0.001	-1
C1244	353291	5419524	-1	-1	5	-1	-1	-1	0.001	-1
C1245	353343	5419647	-1	-1	5	-1	-1	-1	0.001	-1
C1246	353412	5419760	-1	-1	5	-1	-1	-1	0.001	-1
C1247	353434	5419911	-1	-1	5	-1	-1	-1	0.001	-1
C1248	353365	5419410	0.001	-1	-1	45	12	-1	0.001	24
C1249	353428	5419291	0.001	-1	-1	55	18	-1	0.001	38
C1250	353554	5419215	0.001	-1	-1	75	20	-1	0.001	52
C1251	353638	5419146	0.001	-1	-1	30	16	-1	0.001	36
C1252	353766	5419160	0.001	-1	-1	30	14	-1	0.001	46
C1253	353906	5419155	0.001	-1	-1	20	14	-1	0.001	20
C1254	354727	5419190	0.001	-1	-1	30	16	-1	0.001	24
C1255	354150	5418971	0.001	-1	-1	20	12	-1	0.001	8

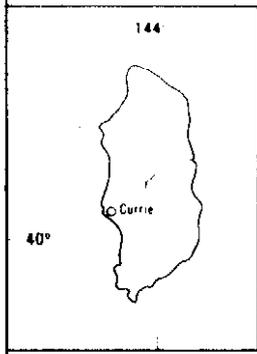
451130 128

SAMPLE NO.	FE	SN	U	ZN
C1195	-1	-1	-1	50
C1197	-1	20	-1	30
C1198	-1	10	-1	14
C1199	-1	16	-1	20
C1200	-1	13	-1	38
C1201	-1	18	-1	50
C1202	-1	18	-1	46
C1203	-1	20	-1	50
C1204	-1	13	-1	40
C1205	-1	12	-1	48
C1206	-1	13	-1	42
C1207	-1	10	-1	44
C1208	-1	12	-1	34
C1209	-1	12	-1	64
C1210	-1	14	-1	34
C1211	-1	12	-1	18
C1212	-1	14	-1	34
C1213	-1	12	-1	30
C1214	-1	10	-1	46
C1215	-1	10	-1	18
C1216	-1	12	-1	14
C1217	-1	8	-1	4
C1218	-1	-1	-1	-1
C1219	-1	13	-1	60
C1220	-1	14	-1	38
C1221	-1	18	-1	32
C1222	-1	6	-1	34
C1223	-1	16	-1	54
C1224	-1	10	-1	52
C1225	-1	8	-1	42
C1226	-1	8	-1	62
C1227	-1	18	-1	32
C1228	-1	13	-1	230
C1229	-1	14	-1	200
C1230	-1	16	-1	220
C1231	-1	14	-1	150
C1232	-1	-1	-1	-1
C1233	-1	-1	-1	-1
C1234	12	-1	-1	56
C1235	10	-1	-1	54
C1236	14	-1	-1	92
C1237	14	-1	-1	94
C1238	12	-1	-1	74
C1239	12	-1	-1	56
C1240	14	-1	-1	62
C1241	14	-1	-1	64
C1242	4	-1	-1	16
C1243	4	-1	-1	24
C1244	10	-1	-1	44
C1245	10	-1	-1	50
C1246	12	-1	-1	64
C1247	8	-1	-1	56
C1248	-1	10	-1	42
C1249	-1	8	-1	60
C1250	-1	12	-1	74
C1251	-1	10	-1	54
C1252	-1	14	-1	52
C1253	-1	-1	-1	52
C1254	-1	-1	-1	52
C1255	-1	-1	-1	52

451131 129

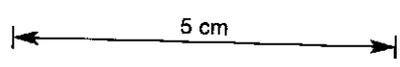
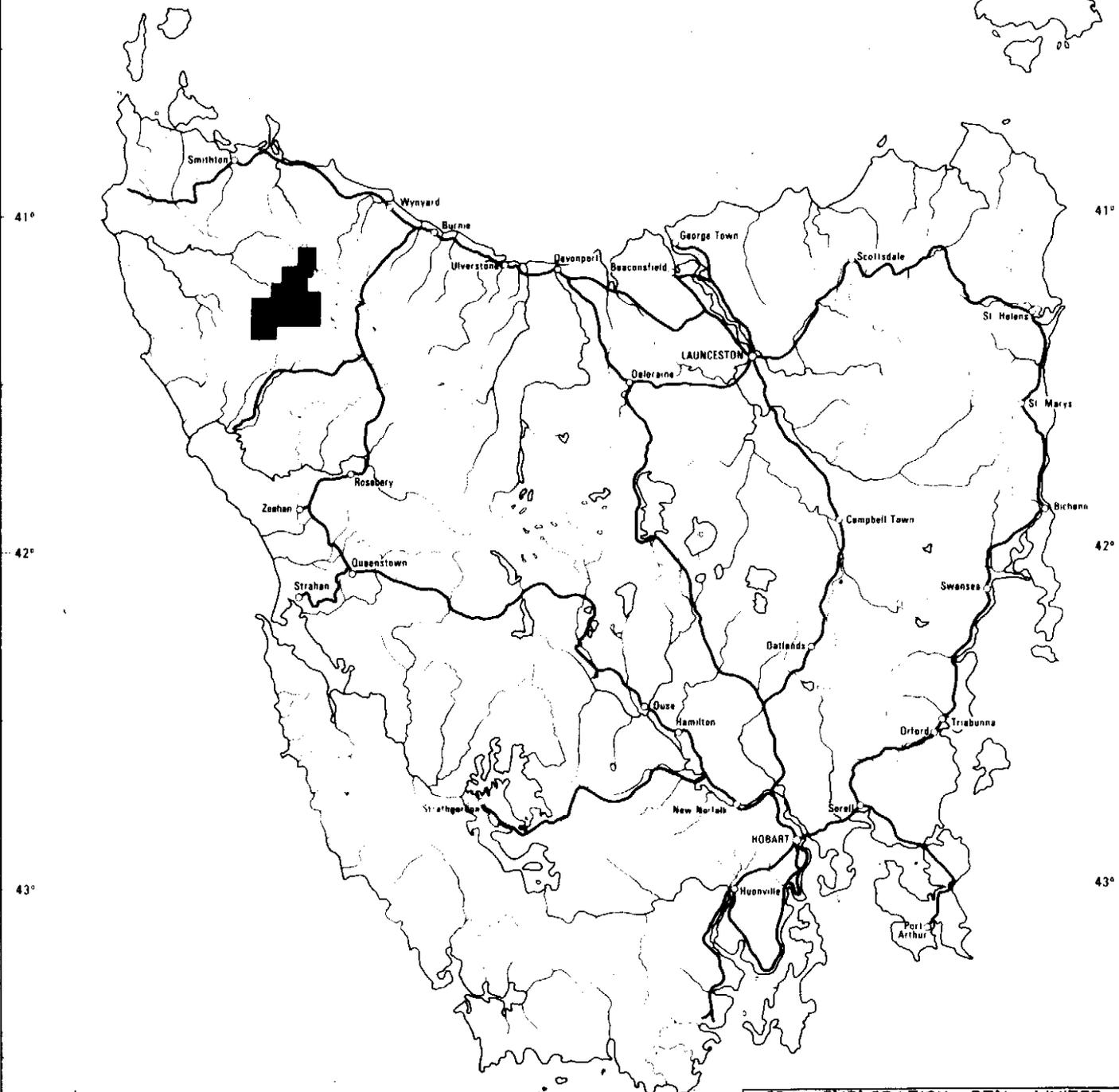
SAMPLE NO.	EASTANG	NORTHANG	BE	BI	CO	CS	NW	MD	NI		
C1256	354290	5418979	0.001	-1	-1	-1	35	16	-1	0.001	12
C1257	354321	5418973	0.001	-1	-1	-1	15	3	-1	0.001	8
C1258	354370	5418997	0.001	-1	-1	-1	20	12	-1	0.001	12
C1259	354676	5418961	0.001	-1	-1	-1	25	10	-1	0.001	6
C1260	354410	5419036	0.001	-1	-1	-1	60	30	-1	0.001	12
C1261	354384	5418867	0.001	-1	-1	-1	45	24	-1	0.001	12
C1262	353464	5420052	-1	-1	U	-1	-1	10	-1	0.001	-1
C1263	353794	5420113	-1	-1	S	-1	-1	10	-1	0.001	-1
C1264	353726	5420143	-1	-1	U	-1	-1	4	-1	0.001	-1
C1265	353809	5420145	-1	-1	S	-1	-1	8	-1	0.001	-1
C1266	353899	5420203	-1	-1	U	-1	-1	10	-1	0.001	-1
C1267	353988	5420171	-1	-1	0.001	-1	-1	12	-1	0.001	-1
C1268	354288	5420102	-1	-1	0.001	-1	-1	10	-1	0.001	-1
C1269	354137	5420243	-1	-1	0.001	-1	-1	8	-1	0.001	-1
C1270	354210	5420280	-1	-1	0.001	-1	-1	8	-1	0.001	-1
C1271	354342	5421701	0.001	-1	-1	-1	310	16	-1	0.001	98
C1272	354330	5421840	0.001	-1	-1	-1	140	14	-1	0.001	70
C1273	354488	5421879	0.001	-1	-1	-1	50	10	-1	0.001	94
C1274	354636	5421944	0.001	-1	-1	-1	75	14	-1	0.001	94
C1275	354694	5422125	0.001	-1	-1	-1	200	4	-1	0.001	4
C1276	354591	5422174	0.001	-1	-1	-1	40	23	-1	0.001	110
C1277	354686	5422098	0.001	-1	-1	-1	110	6	-1	0.001	8
C1278	354812	5422181	0.001	-1	-1	-1	50	4	-1	0.001	6
C1279	354912	5422108	0.001	-1	-1	-1	45	4	-1	0.001	2
C1790	355199	5422215	0.001	-1	-1	-1	20	6	-1	0.001	2
C1791	355301	5422264	0.001	-1	-1	-1	25	2	-1	0.001	0.001
C1792	355261	5422311	0.001	-1	-1	-1	40	2	-1	0.001	0.001

SAMPLE NO.	FB	SN	V	W	ZN
C1258	-1	16	1	1	28
C1257	-1	13	1	1	28
C1256	-1	18	1	1	41
C1259	-1	16	1	1	33
C1250	-1	12	1	1	33
C1254	-1	12	1	1	33
C1264	8	-1	1	1	40
C1263	8	-1	1	1	44
C1264	8	-1	1	1	33
C1265	8	-1	1	1	33
C1266	13	-1	1	1	47
C1267	10	-1	1	1	48
C1268	8	-1	1	1	33
C1269	16	-1	1	1	34
C1270	8	-1	1	1	33
C1271	-1	12	1	1	33
C1272	-1	18	1	1	33
C1273	-1	18	1	1	33
C1274	-1	18	1	1	22
C1275	-1	20	1	1	8
C1276	-1	20	1	1	33
C1277	-1	18	1	1	16
C1278	-1	20	1	1	10
C1279	-1	20	1	1	33
C1790	-1	12	1	1	8
C1791	-1	14	1	1	8
C1792	-1	16	1	1	8

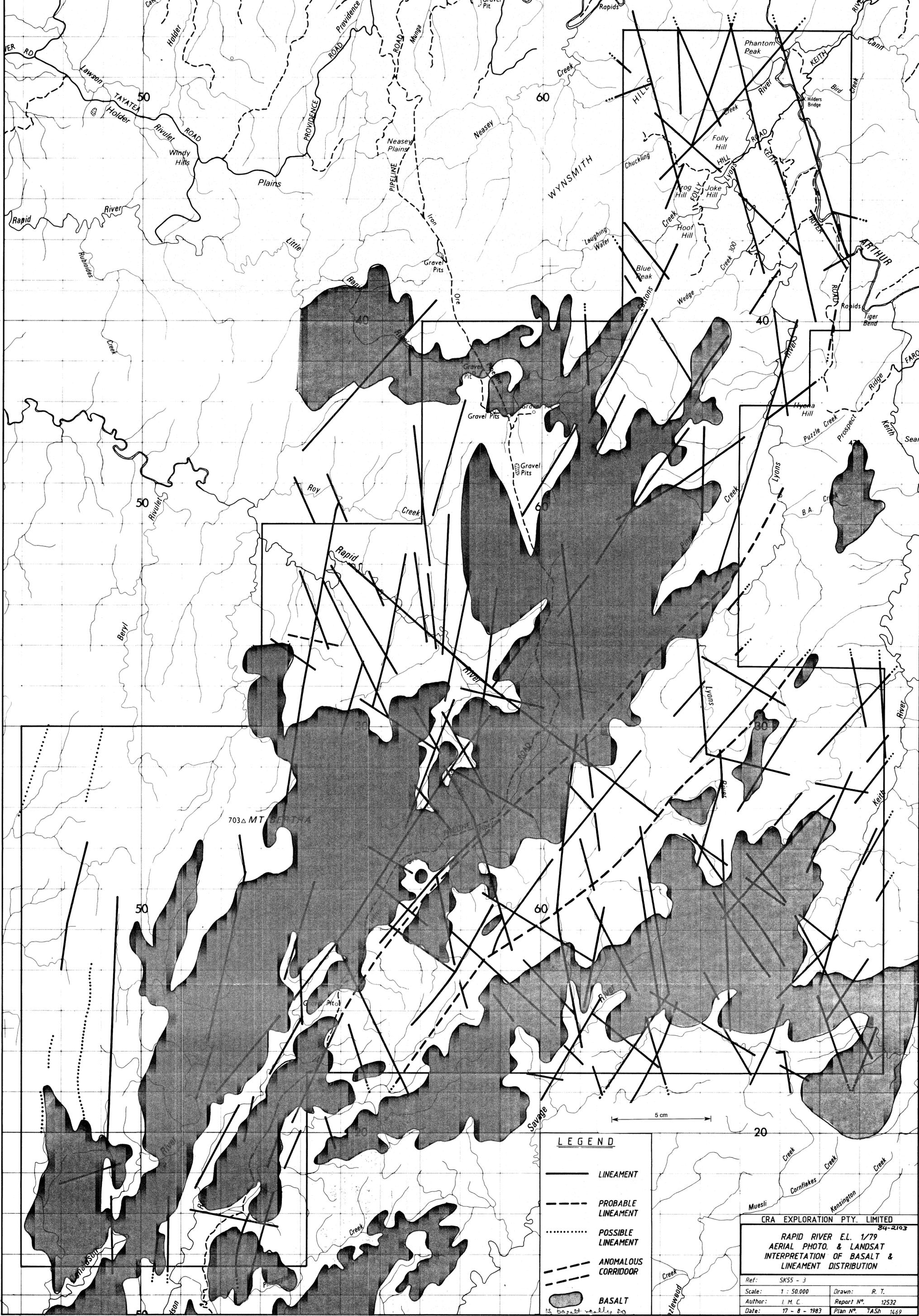


TASMANIA

Scale 1:2 000 000



CRA EXPLORATION PTY. LIMITED	
LOCALITY PLAN	
RAPID RIVER E.L. 1/79	
REF. SK55 - 3	
SCALE: 1 : 2 000000	DRAWN: R. T.
AUTHOR: M. F.	REPORT N ^o . 12532
Date: 30 - 8 - 1982	Plan NO. TASH 842



LEGEND

- LINEAMENT
- - - PROBABLE LINEAMENT
- POSSIBLE LINEAMENT
- - - ANOMALOUS CORRIDOR
- BASALT

5 cm

CRA EXPLORATION PTY. LIMITED
84-2103

RAPID RIVER E.L. 1/79
AERIAL PHOTO. & LANDSAT
INTERPRETATION OF BASALT &
LINEAMENT DISTRIBUTION

Ref: SK55 - 3	Drawn: R. T.
Scale: 1 : 50,000	Report No. 12532
Author: I. M. C.	Plan No. TASH 1469
Date: 17 - 8 - 1983	

RAPID RIVER AIRBORNE GEOPHYSICS

MAGNETICS

ARTIFICIALLY ILLUMINATED FROM WEST

3780000 E

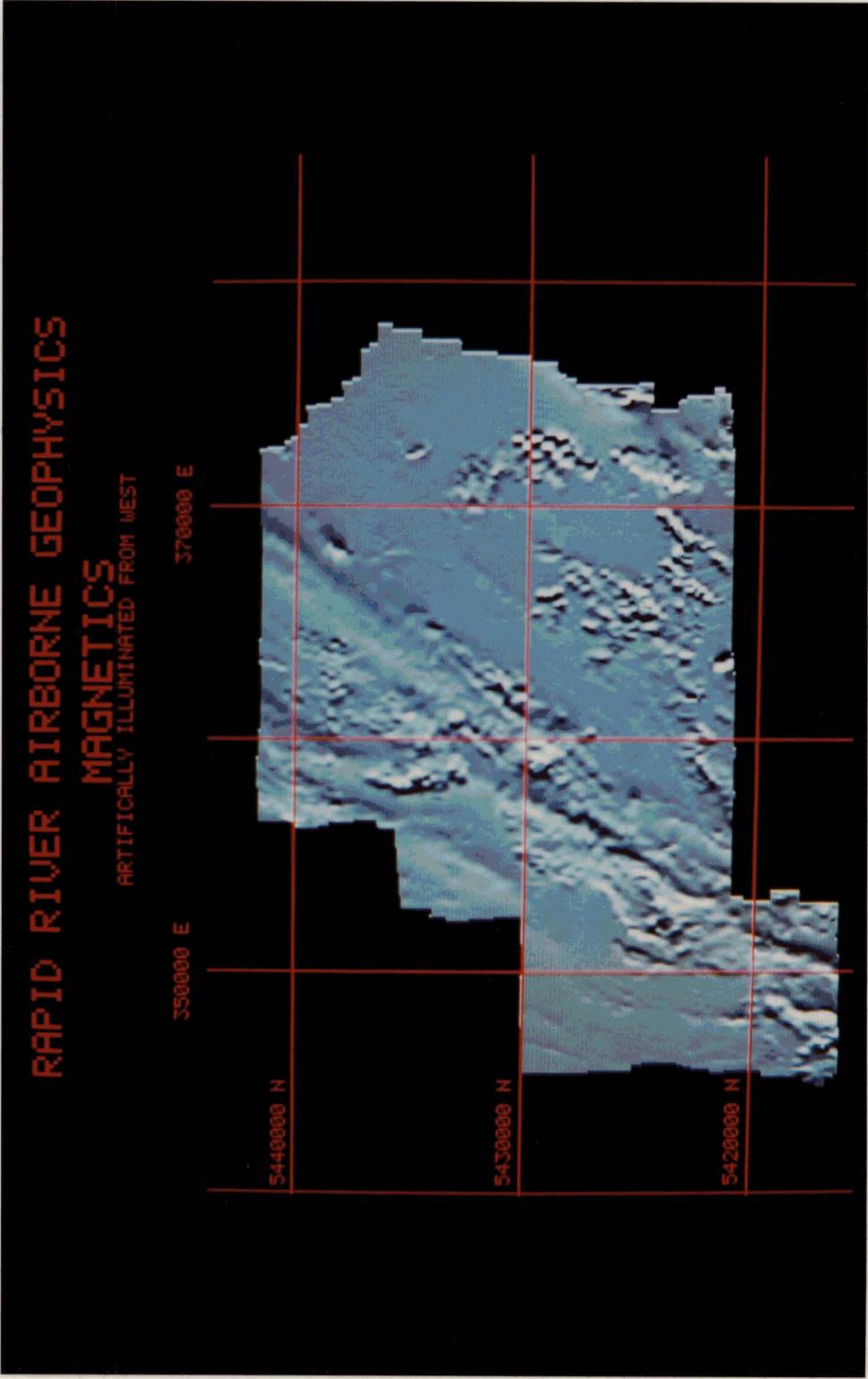
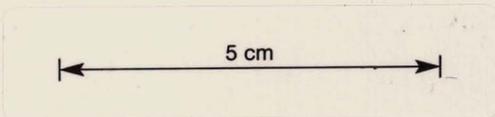
3580000 E

5440000 N

5430000 N

5420000 N

451136



CRA EXPLORATION PTY. LIMITED

**RAPID RIVER E.L. 1/79
1st. E-W- DERIVATIVE OF
AEROMAGNETIC DATA ARTIFICIALLY
ILLUMINATED FROM WEST**

REF.	Sk55-3		
SCALE	AS SHOWN	DRAWN	R. T.
AUTHOR	I. M. C.	REPORT No.	12532
DATE	2 - 3 - 1984	PLAN No.	TASH 1651

5440000

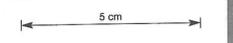
5430000

5420000

350000 E

360000 E

370000 E



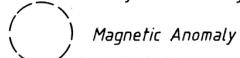
CRA EXPLORATION PTY. LIMITED
 451137 84-2103
 RAPID RIVER E.L. 1/79
 TOTAL COUNT RADIOMETRICS
 (Dark shades = low counts per sec.)

REF.	SK55- 3	DRAWN	COMTAL
SCALE	1 : 50000 (approx)	REPORT No.	12532
AUTHOR	COMTAL	PLAN No.	TASH 1644
DATE	27-2-1984		

LEGEND

- ★ 6 Channel Anomaly with very slow decay
- ★ 5 " " " " " "
- ★ 4 " " " " " "
- 6 Channel Anomaly with slow decay
- 5 " " " " " "
- 4 " " " " " "
- 6 Channel Anomaly with fast decay
- 5 " " " " " "
- 4 " " " " " "
- ✕ 6 Channel Anomaly with very fast decay
- ✕ 5 " " " " " "
- ✕ 4 " " " " " "
- ✕ 3 Channel Anomaly
- ✕ 2 " " " " " "

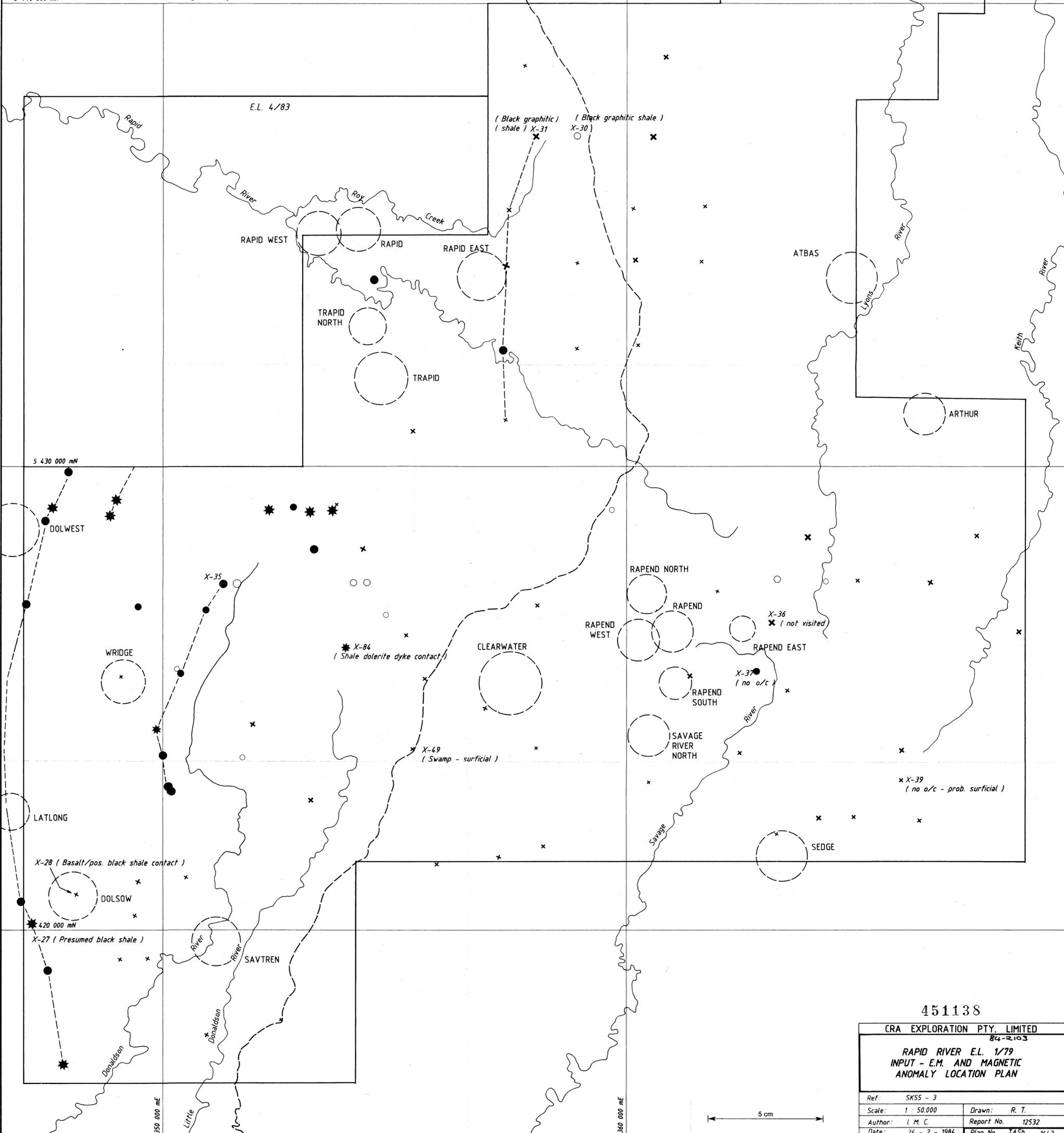
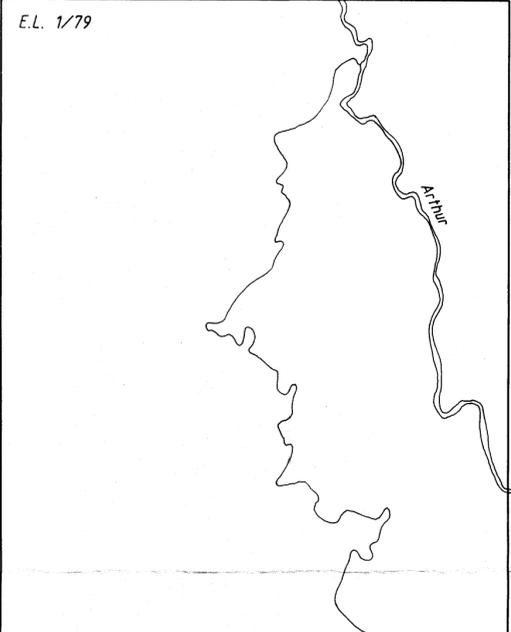
Decay rates are defined by the channel 1 to channel 4 ratio:
 very slow decay - ratio is less than 4
 slow decay - ratio is between 4 and 8
 fast decay - ratio is between 8 and 12
 very fast decay - ratio is greater than 12



Magnetic Anomaly

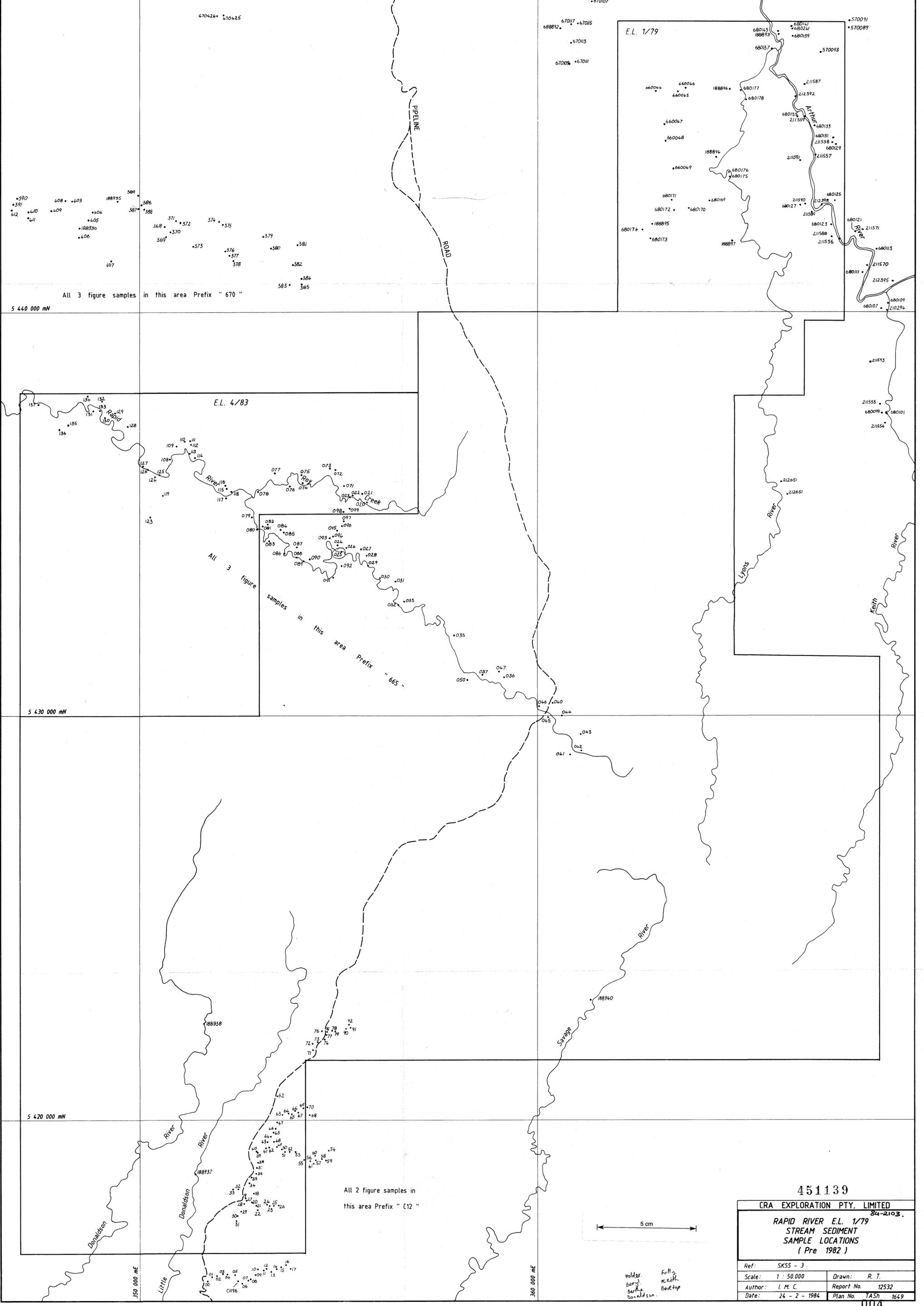
Italicised annotation represents Esso anomaly identification and notes, dashed lines represent interpreted black (graphitic) shale units recognised by Esso.

5 440 000 MN



451138

CRA EXPLORATION PTY. LIMITED	
84-2103	
RAPID RIVER E.L. 1/79	
INPUT - E.M. AND MAGNETIC ANOMALY LOCATION PLAN	
Ref: SK55 - 3	Drawn: R. T.
Scale: 1 : 50,000	Report No. 12532
Author: I. M. C.	Plan No. TASH 1643
Date: 24 - 2 - 1984	



All 3 figure samples in this area Prefix " 670 "

5 440 000 mN

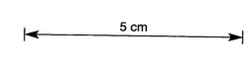
E.L. 4/83

All 3 figure samples in this area Prefix " 665 "

5 430 000 mN

All 2 figure samples in this area Prefix " C12 "

5 420 000 mN



451139

CRA EXPLORATION PTY. LIMITED	
84-2103	
RAPID RIVER E.L. 1/79	
STREAM SEDIMENT	
SAMPLE LOCATIONS	
(Pre 1982)	
Ref: SK55 - 3	Drawn: R. T.
Scale: 1 : 50,000	Report No. 12532
Author: I. M. C.	Plan No. TASH 1649
Date: 24 - 2 - 1984	

Holder: Barry Donaldson
 Filler: Keith Bortop

E.L. 1/79

5 440 000 mN

E.L. 4/83

5 430 000 mN

5 420 000 mN

350 000 mE

360 000 mE

-  Pb > 17.8 ppm
-  Zn > 125.9 ppm
-  Co > 39.8 ppm
-  Cu > 39.8 ppm
-  Mo > 7.1 ppm
-  W > 15 ppm

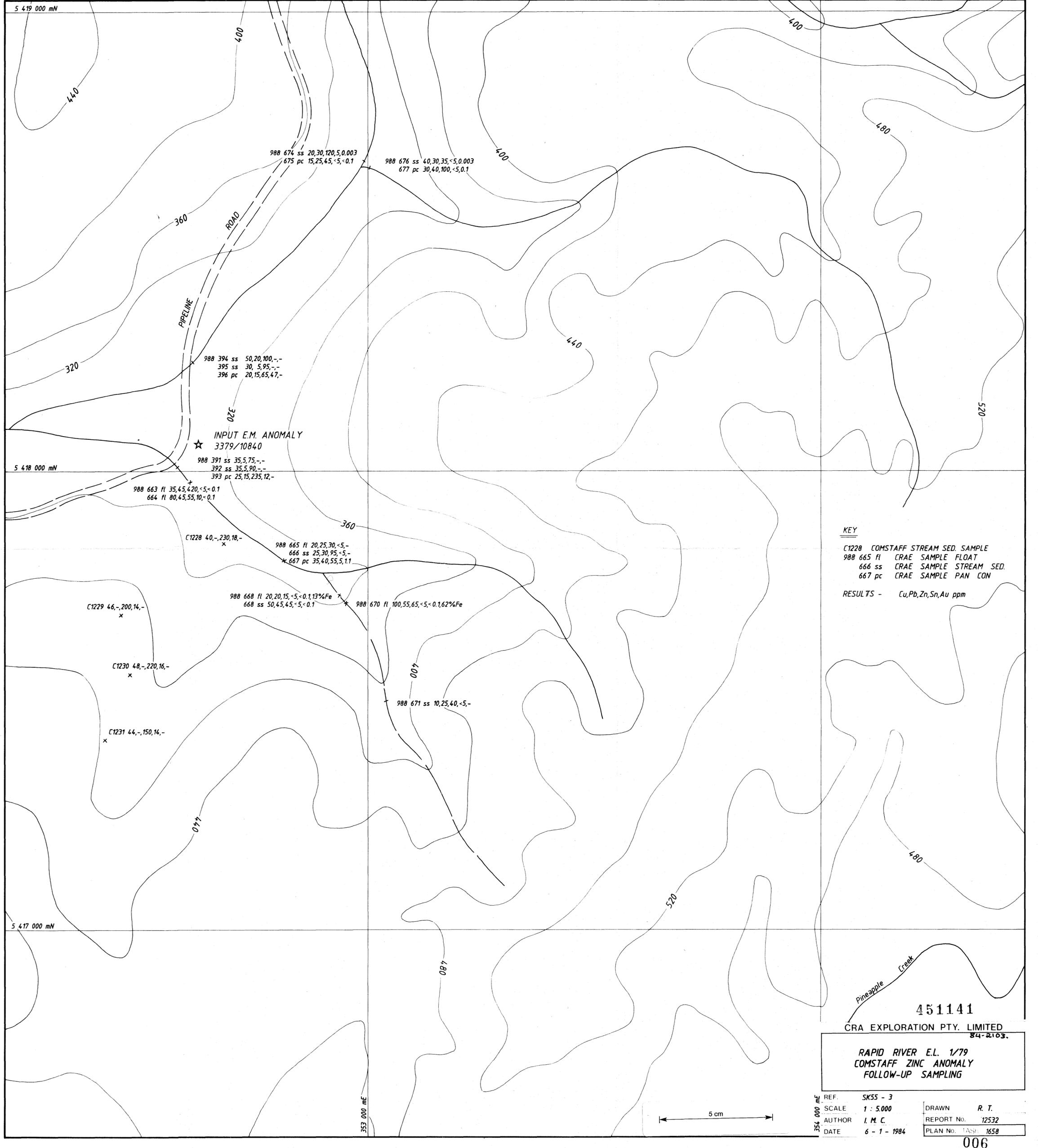
5 cm

451140

CRA EXPLORATION PTY. LIMITED

RAPID RIVER E.L. 1/79
ANOMALOUS STREAM SEDIMENT
GEOCHEMISTRY

Ref:	SK55 - 3	Drawn:	R. T.
Scale:	1 : 50,000	Report No.	12532
Author:	I. M. C.	Plan No.	TASH 1650
Date:	2 - 3 - 1984		



5 419 000 mN

5 418 000 mN

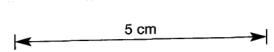
5 417 000 mN

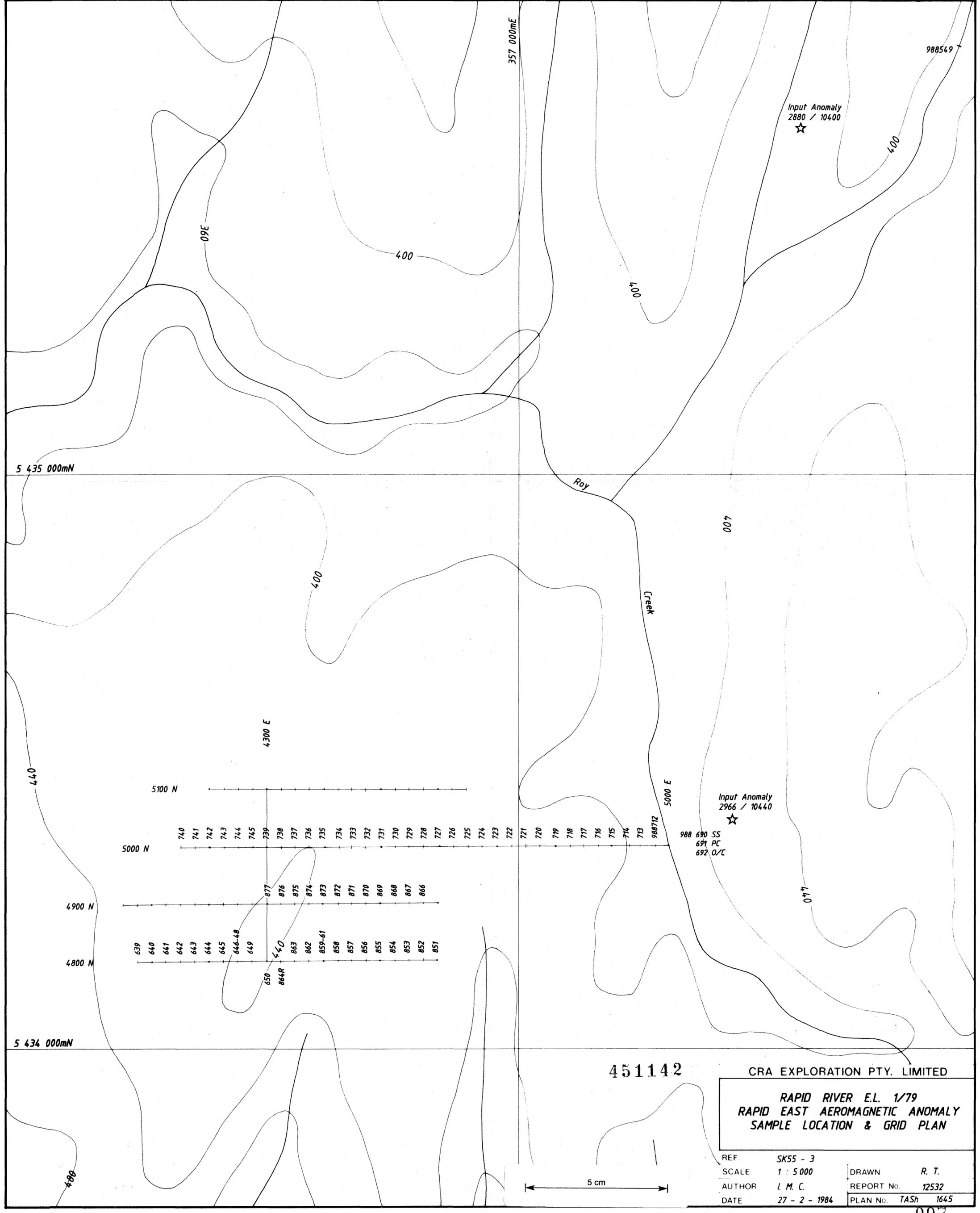
353 000 mE

KEY
 C1228 COMSTAFF STREAM SED. SAMPLE
 988 665 fl CRAE SAMPLE FLOAT
 666 ss CRAE SAMPLE STREAM SED.
 667 pc CRAE SAMPLE PAN CON
 RESULTS - Cu,Pb,Zn,Sn,Au ppm

451141
 CRA EXPLORATION PTY. LIMITED
 84-2103.
RAPID RIVER E.L. 1/79
COMSTAFF ZINC ANOMALY
FOLLOW-UP SAMPLING

REF.	SK55 - 3	DRAWN	R. T.
SCALE	1 : 5,000	REPORT No.	12532
AUTHOR	I. M. C.	PLAN No.	1458 1658
DATE	6 - 1 - 1984		

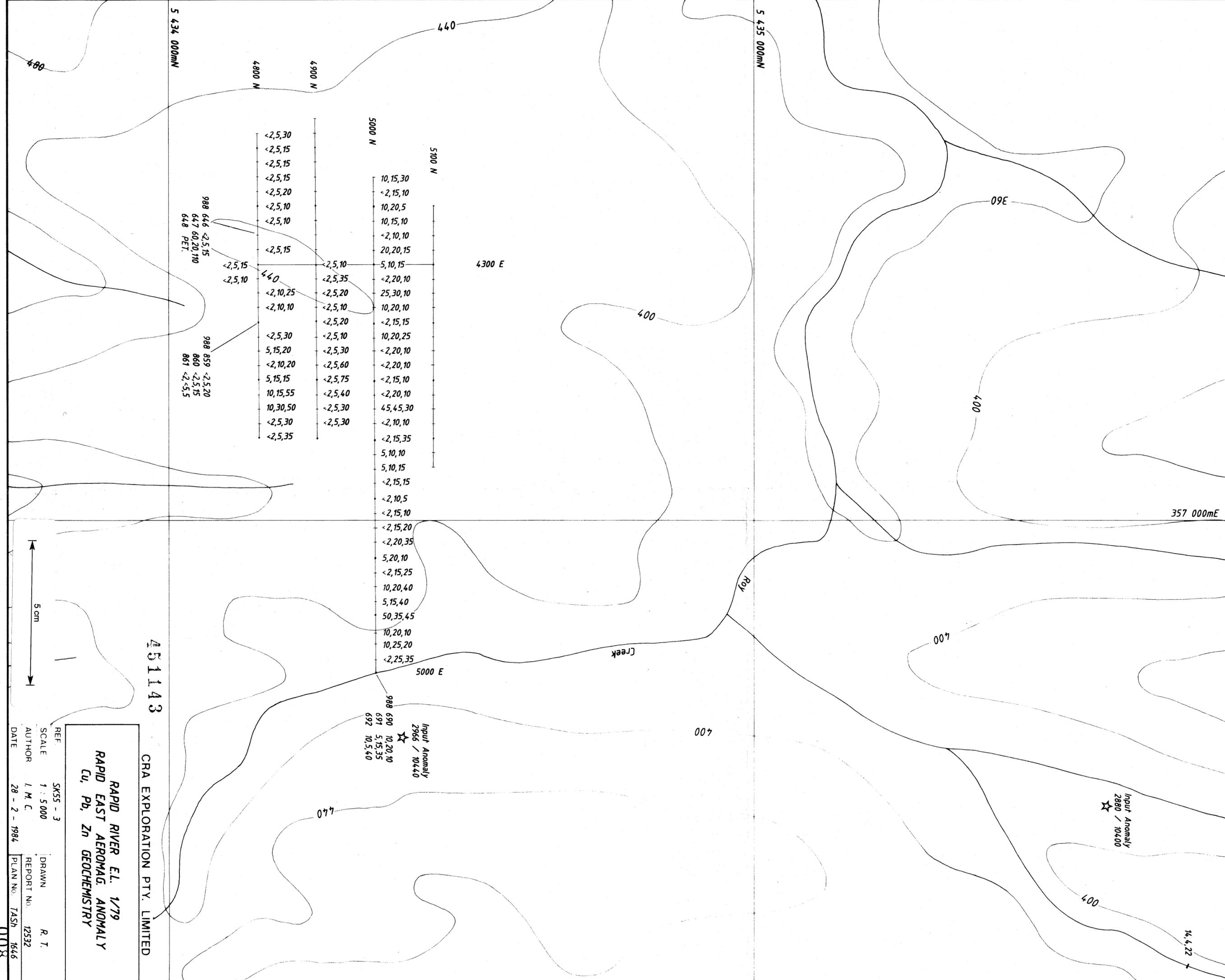




CRA EXPLORATION PTY. LIMITED

RAPID RIVER E.L. 1/79
RAPID EAST AEROMAGNETIC ANOMALY
SAMPLE LOCATION & GRID PLAN

REF.	SK55 - 3	DRAWN	R. T.
SCALE	1 : 5 000	REPORT No.	12532
AUTHOR	I. M. C.	PLAN No.	TASH 1645
DATE	27 - 2 - 1984		



988 646 <2,5,15	<2,5,30	10,15,30
647 60,20,110	<2,5,15	<2,15,10
648 PET.	<2,5,15	10,20,5
	<2,5,15	10,15,10
	<2,5,20	<2,10,10
	<2,5,10	20,20,15
	<2,5,10	5,10,15
	<2,5,15	<2,20,10
	<2,5,10	25,30,10
	<2,5,10	10,20,10
	<2,5,10	<2,15,15
	<2,5,10	10,20,25
	<2,5,10	<2,20,10
	<2,5,10	<2,20,10
	<2,5,10	<2,15,10
	<2,5,10	<2,20,10
	<2,5,10	45,45,30
	<2,5,10	<2,10,10
	<2,5,10	<2,15,35
	<2,5,10	5,10,10
	<2,5,10	5,10,15
	<2,5,10	<2,15,15
	<2,5,10	<2,10,5
	<2,5,10	<2,15,10
	<2,5,10	<2,15,20
	<2,5,10	<2,20,35
	<2,5,10	5,20,10
	<2,5,10	<2,15,25
	<2,5,10	10,20,40
	<2,5,10	5,15,40
	<2,5,10	50,35,45
	<2,5,10	10,20,10
	<2,5,10	10,25,20
	<2,5,10	<2,25,35

Input Anomaly
2966 / 10440
988 690 10,20,10
691 5,15,35
692 10,5,40

Input Anomaly
2880 / 10400

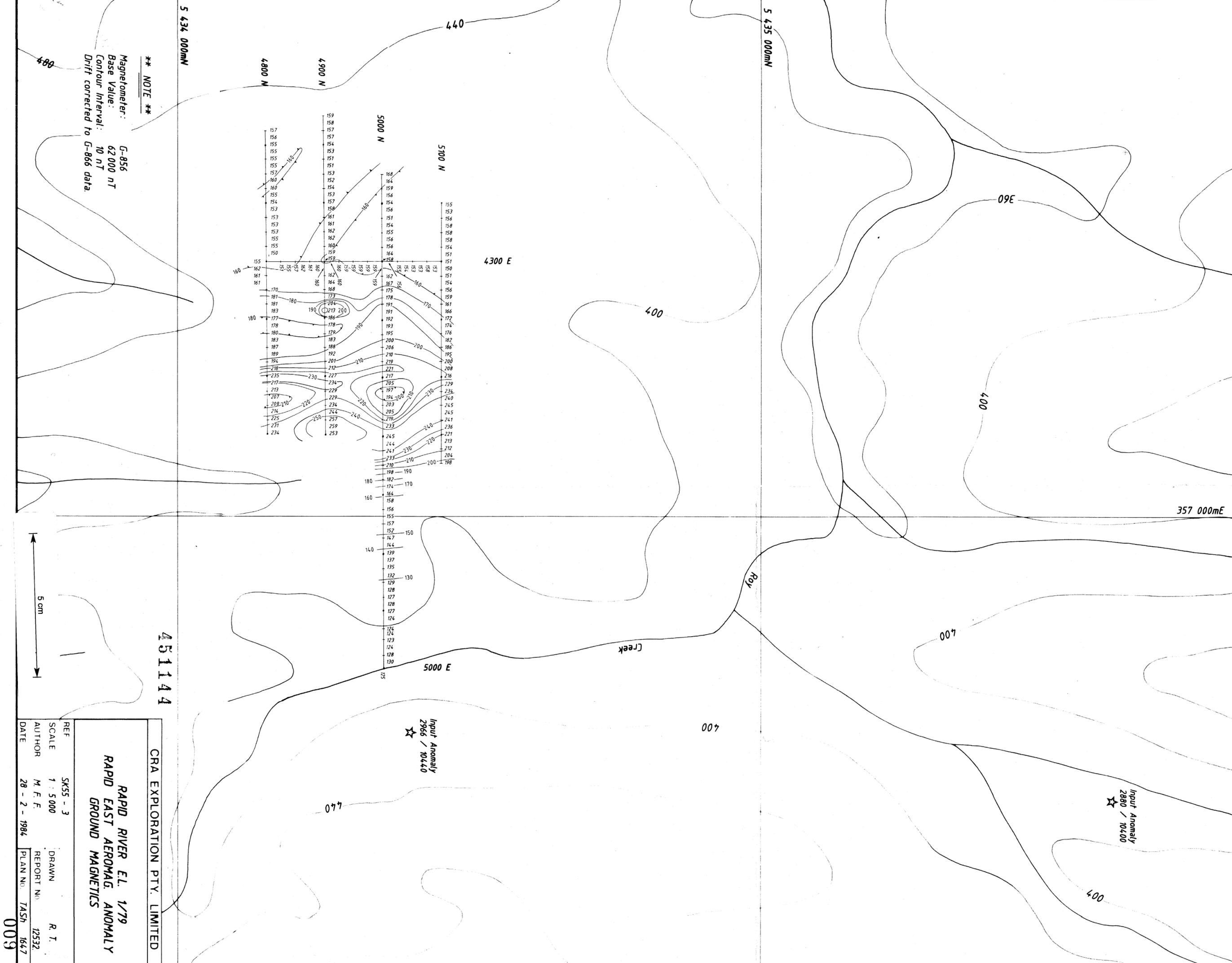
REF SK55 - 3
SCALE 1 : 5000
AUTHOR I. M. C.
DATE 28 - 2 - 1984

DRAWN R. T.
REPORT NO. 12532
PLAN NO. TASH 1646

451143

CRA EXPLORATION PTY. LIMITED

RAPID RIVER E.L. 1/79
RAPID EAST AEROMAG. ANOMALY
Cu, Pb, Zn GEOCHEMISTRY



**** NOTE ****

Magnetometer: G-856
 Base Value: 62 000 nT
 Contour Interval: 10 nT
 Drift corrected to G-866 data

5 434 000mN

5 435 000mN

451144

357 000mE

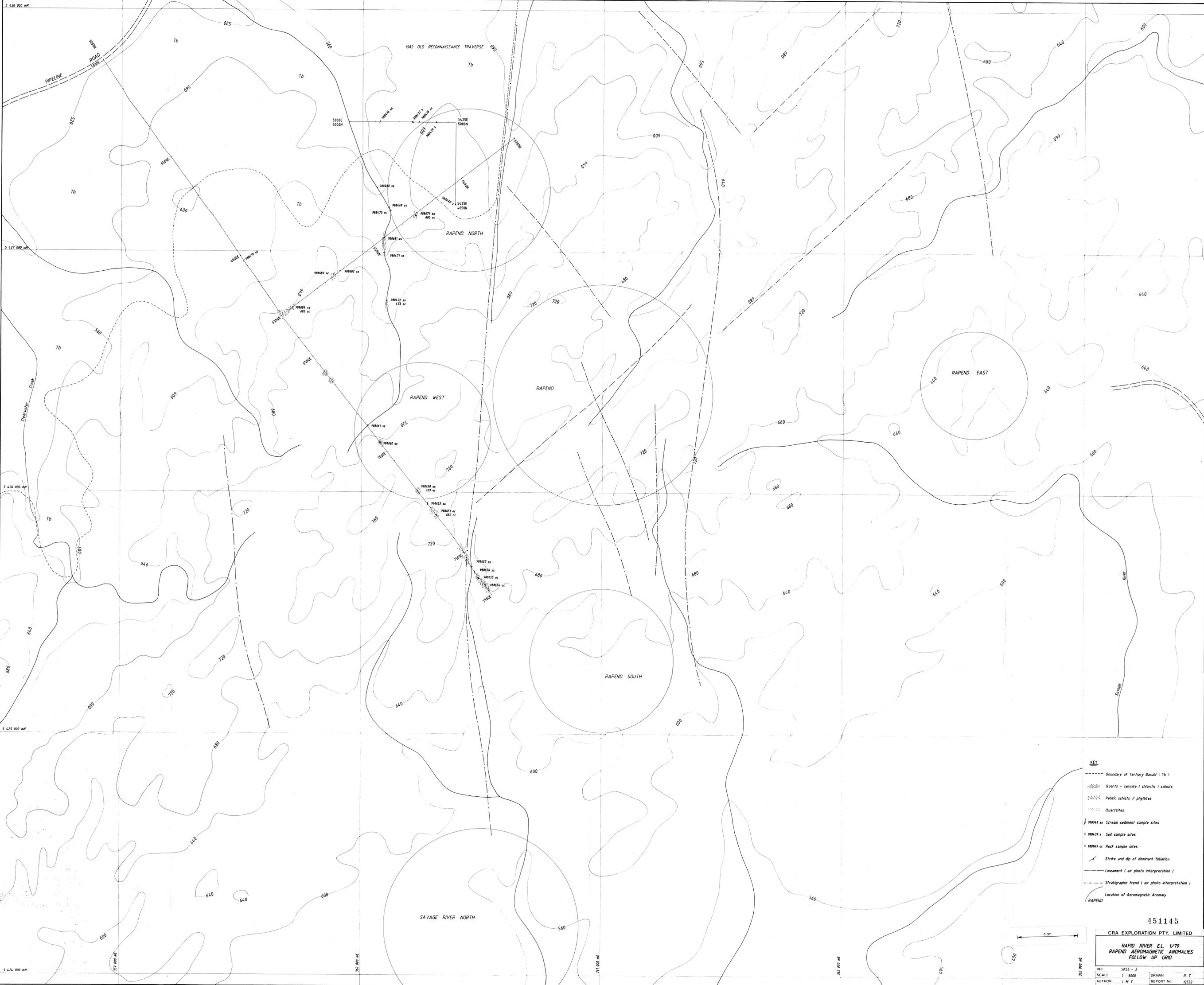
5 cm

CRA EXPLORATION PTY. LIMITED

RAPID RIVER EL. 1/79
 RAPID EAST AEROMAG. ANOMALY
 GROUND MAGNETICS

REF	SK55 - 3	DRAWN	R. T.
SCALE	1 : 5 000	REPORT NO.	12532
AUTHOR	M. F. E.	PLAN NO.	TASH 1647
DATE	28 - 2 - 1984		

009



- KEY**
- Boundary of Tertiary Basalt (Tb)
 - ▨ Quartz - sericite (chloritic) schists
 - ▧ Pelitic schists / phyllites
 - ▤ Quartzites
 - ▥ Stream sediment sample sites
 - ✕ 98639 s Soil sample sites
 - ✕ 98640 w Rock sample sites
 - ↗ Strike and dip of dominant foliation
 - Lineament (air photo interpretation)
 - Stratigraphic trend (air photo interpretation)
 - Location of Aeromagnetic Anomaly



451145

CRA EXPLORATION PTY. LIMITED

RAPID RIVER E.L. 1/79
RAPEND AEROMAGNETIC ANOMALIES
FOLLOW UP GRID

REF.	SK55 - 3	DRAWN	R. T.
SCALE	1 : 5000	REPORT NO.	2552
AUTHOR	I. P. C.	PLAN NO.	1255
DATE	7 - 3 - 1984		

nanoTESLAS

63000
62900
62800
62700
62600
62500
62400
62300
62200
62100
62000

5300
5600
5900
6200
6500
6800
7100
7400
7700
8000

METRES EAST

**** NOTE ****
Magnetometer: G-856
Base Value: 62,000nT
Drift corrected to G-866 data.

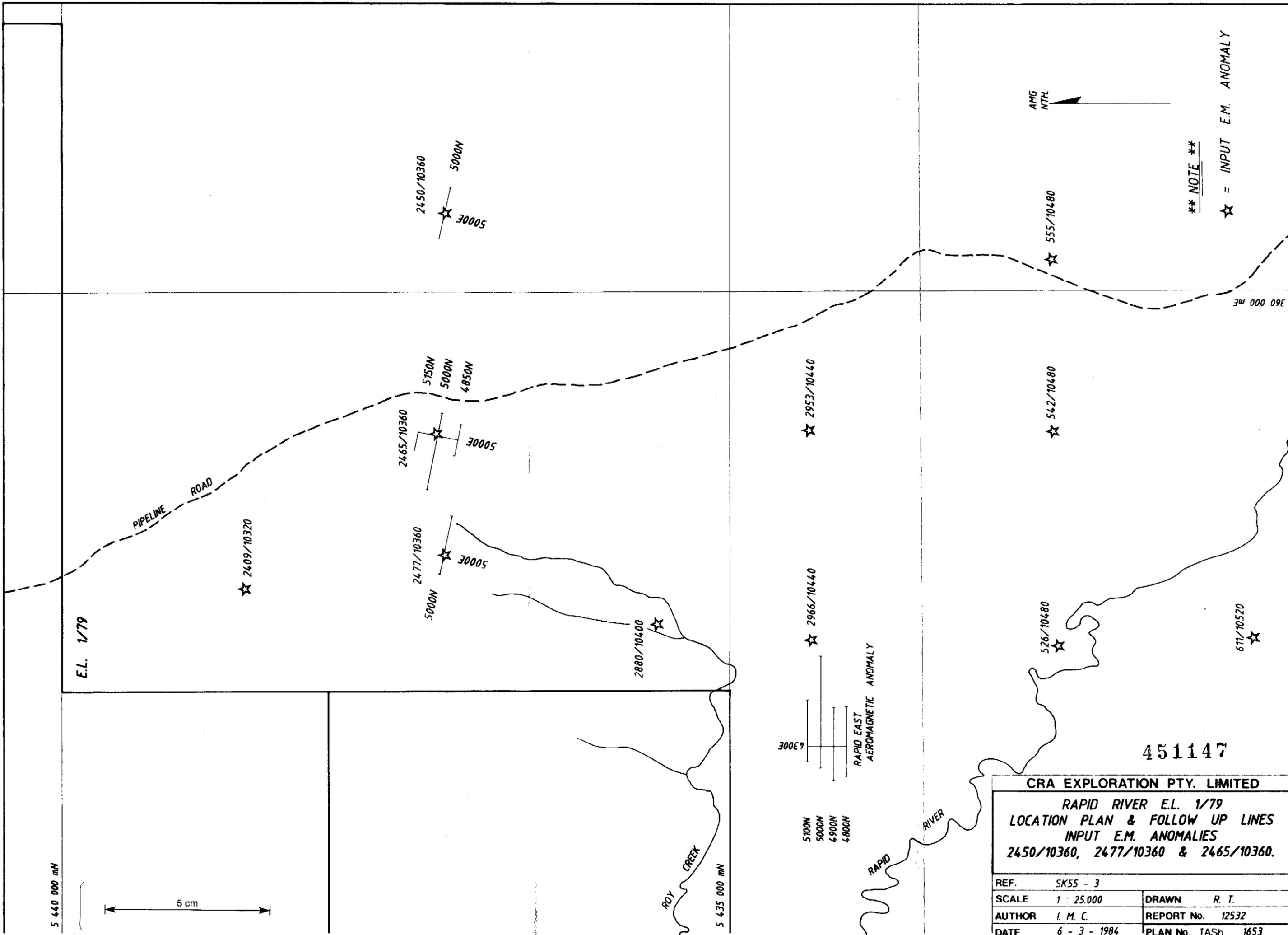
451146

CRA EXPLORATION PTY. LIMITED

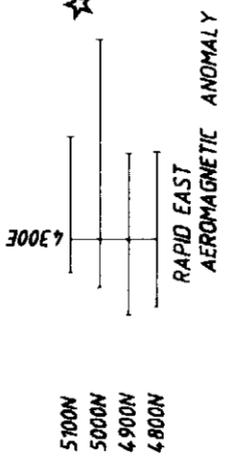
RAPID RIVER E.L. 1/79
RAPEND AEROMAGNETIC ANOMALIES
GROUND MAGNETICS
LINE 5000N

REF.	SK55 -3	
SCALE	AS SHOWN	DRAWN R. T.
AUTHOR	M.F.F.	REPORT No. 12532
DATE	6 - 3 - 1984	PLAN No TASH 1652

5 cm



**** NOTE ****
 ☆ = INPUT E.M. ANOMALY



451147

CRA EXPLORATION PTY. LIMITED			
RAPID RIVER E.L. 1/79			
LOCATION PLAN & FOLLOW UP LINES			
INPUT E.M. ANOMALIES			
2450/10360, 2477/10360 & 2465/10360.			
REF.	SK55 - 3		
SCALE	1 : 25,000	DRAWN	R. T.
AUTHOR	I. M. C.	REPORT No.	12532
DATE	6 - 3 - 1984	PLAN No.	TASH 1653

KEY TO GEOCHEMISTRY

COPPER
LEAD
ZINC

?

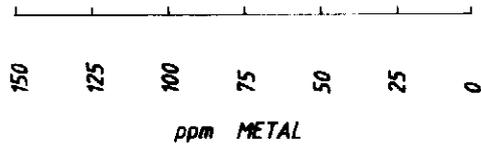
KEY TO GEOLOGY

 Talcose grey brown shales, slates.

 Quartzites, pale fin-mod grained.

 Scree, alluvium, colluvium (quartzose)

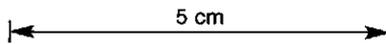
Tb Tertiary Basalt



Stream sediment 20 ppm W
Pan Concentrate 40 ppm W

090°M

270°M

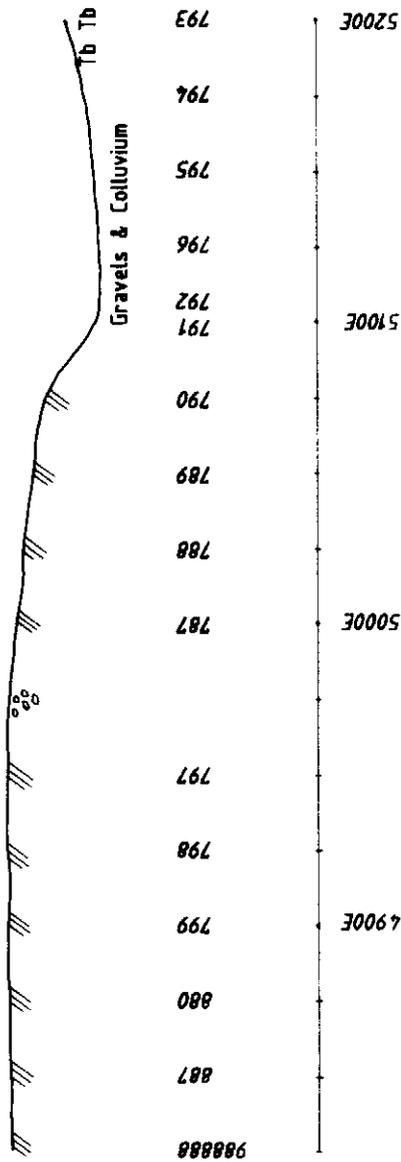


451148

CRA EXPLORATION PTY. LIMITED

RAPID RIVER E.L. 1/79
INPUT E.M. ANOMALY 2450/10360
GEOCHEMISTRY & GEOLOGY
LINE 5000 N

REF.	SK55 - 3	
SCALE	1 : 2500	DRAWN R. T.
AUTHOR	I. M. C.	REPORT No. 12532
DATE	6 - 3 - 1984	PLAN No TASH 1654



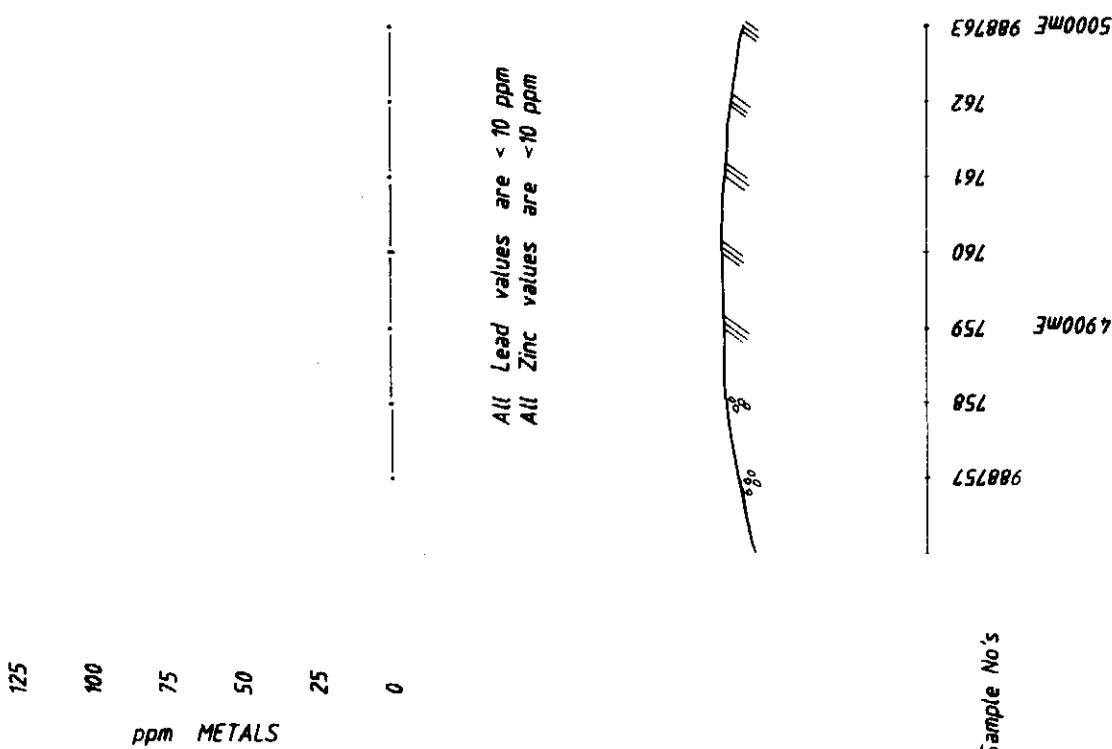
KEY TO GEOLOGY

 Talcose grey brown shales states.

 Quartzites, pale, fine-mod grained.

 Scree, alluvium, colluvium (quartzose)

All As <10 ppm
 All Sn results pending
 All Co <60 ppm
 All W results pending



451150

CRA EXPLORATION PTY. LIMITED

**RAPID RIVER E.L. 1/79
 INPUT E.M. ANOMALY 2465/10360
 GEOCHEMISTRY & GEOLOGY
 LINES 4850 N & 5150 N**

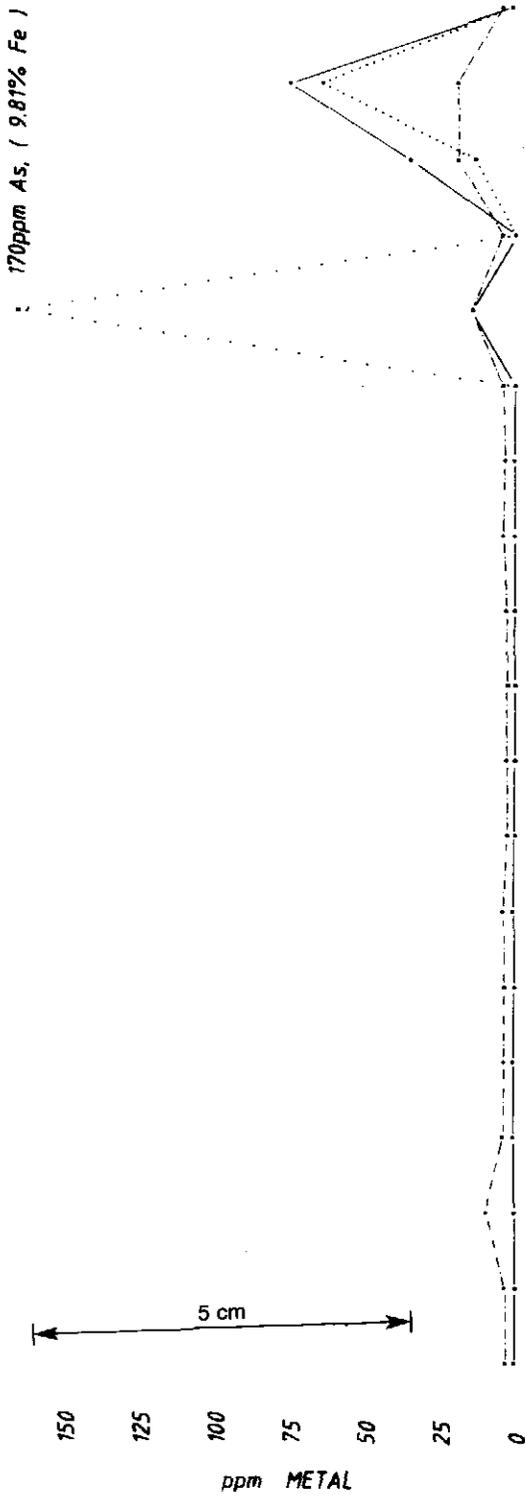
REF.	SK55 - 3		
SCALE	1 : 2500	DRAWN	R. T.
AUTHOR	I. M. C.	REPORT No.	12532
DATE	7 - 3 - 1984	PLAN No	TASH 1656

KEY TO GEOCHEMISTRY

- COPPER
- - - LEAD
- · · · · ZINC

KEY TO GEOLOGY

-  Talcose grey brown shales, slates.
-  Quartzites, pale fine-mod. grained.
-  Scree, alluvium, colluvium (quartzose)



090°M

270°M

451151

CRA EXPLORATION PTY. LIMITED

RAPID RIVER E.L. 1/79
 INPUT E.M. ANOMALY 2477/10360
 GEOCHEMISTRY & GEOLOGY
 LINE 5000 N

REF.	SK55 - 3	
SCALE	1 : 2500	DRAWN R. T.
AUTHOR	I. M. C.	REPORT No. 12532
DATE	6 - 3 - 1984	PLAN No TASH 1657

Sample No's

