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CRA EXPLORATION PTY LIMITED

RAPID RIVER EL 1/79, NORTH WEST TASMANIA

PROGRESS REPORT ON EXPLORATION
FEBRUARY 1984 - FEBRUARY 1985

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Date: 20 February 1985

Submitted to: T W Dickson

Accepted by:



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REPORT NO: 13136

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1. SUMMARY

Follow-up of a number of geophysical targets has revealed no evidence of mineralisation. The majority of magnetic and INPUT-EM anomalies have been recognised as being caused by Tertiary basalts and Precambrian black shales with no economic potential. Large areas of the EL have been recommended for relinquishment on the basis of this interpretation.

An iron formation in the south of the EL was recognised and sampled but no base or precious metal mineralisation has yet been found. An untested gold anomaly requires further follow-up.

Carbonates in the north of the Licence have been located and will be tested for base metal, gold and magnesite mineralisation. The magnesite potential within the previously recognised "corridor" is still untested because of poor access and lack of outcrop.

2. INTRODUCTION

Rapid River EL 1/79 lies approximately 15 kilometres north of the township of Savage River (Plan TASH 842). The Licence was originally granted to Geopeko with CRAE as a Joint Venture partner. In June 1983 Geopeko withdrew from the Joint Venture and CRAE assumed sole title.

The previously established potential for magnesite occurrences have not received a great deal of field investigation because of access difficulties and lack of outcrop, however the EL is still regarded as prospective for magnesite.

The Licence must be reduced from 365 square kilometres to less than 125 square kilometres in April 1985. A separate report (Clementson, 1985) has been prepared covering this relinquishment requirement.

3. CONCLUSIONS

The majority of aeromagnetic and INPUT-EM anomalies within the EL have proved to be of no economic significance. Large areas of the Licence, whose only potential had been in such anomalies, have been recommended for relinquishment. The remaining portion of the EL covers the central zone of the Arthur Lineament including all known mineralisation and the strike extensions of neighbouring mineralisation.

The iron formation discovered in the south of the EL was shown to have no base or precious metal content, however a nearby gold anomaly requires further follow-up. The stratigraphy of the iron formation occurrence suggests a potential for associated magnesites.

Magnesite may also exist in another part of the Lyons-Arthur River "corridor" in the south of the EL. Exploration of this will require extensive track cutting and trenching or drilling. In the north of the Licence a possible strike extension of the Cann Creek magnesite requires testing by shallow drilling and geophysics.

Carbonate horizons in the Folly Hill area may be a source for the gold worked in this area. Proposed shallow drilling or augering will test this and possible replacement mineralisation associated with an interpreted granitic intrusive. A gold anomaly near the Arthur River has been found and will be followed-up by drainage sampling and shallow drilling or augering.

4. RECOMMENDATIONS

1. Those areas shown in Plan TASH 2496 and detailed separately by Clementson (1985) should be relinquished from EL 1/79.
2. Bedrock sampling (power auger or Jacro drill) should be carried out across possible carbonate zones in the Folly Hill area to test for hard rock gold or metasomatic replacement mineralisation associated with a postulated granitic intrusion.
3. Bedrock sampling should also be carried out over the schists of the Keith Beds as part of the follow-up of the gold anomaly near the Arthur River. Additional stream sediment sampling should precede the shallow drilling.
4. A gravity survey should be conducted across the alluvium covered strike extension of the Arthur River carbonate occurrence. This lies along strike from the Cann Creek magnesite and is therefore prospective for magnesite. In addition, whilst in the area, the auger or Jacro rig should attempt to penetrate the alluvial cover to test for magnesite.
5. The gold anomaly upstream of the iron formation in "Comstaff Creek" should be followed-up by further sediment sampling, rock geochemistry and, if warranted, gridding to allow soil sampling.
6. Exposure will have to be created if the identified target zones within the Lyons-Arthur River "corridor" are to be tested for magnesite. This will entail bulldozing trucks and either shallow drilling or trenching to determine bedrock lithology.

7. The aeromagnetics and regional geology should be examined closely for any indications of extensions onto the EL of the Keith River sulphide horizon. If present this would warrant close examination for base metal and gold mineralisation.

5. GEOLOGY

5.1 Description (Plan TASH 2500)

Because of the limited access, the geology of EL 1/79 is poorly understood. Broadly the area may be divided into three distinct provinces. Most prominent of these is the Arthur Lineament; a belt of middle greenschist facies metamorphics comprising quartz-mica schists, phyllites, some quartzites and, especially in the south, amphibolites and iron formations. The Savage River iron deposits occur within these amphibolites. In the north the rocks of the Lineament are known as the Keith Beds whilst in the south and east of the Lineament, thick sequences of quartz-mica schists and phyllites are referred to as the Whyte Schists. Carbonates occur at a number of localities within the Lineament, principally the Savage River and Arthur River magnesites and carbonates/carbonate schists of Specimen Reef and Golden Ridges, but no large carbonate horizons have been found within EL 1/79.

To the west of the Lineament lie relatively unmetamorphosed siltstones, shales and quartzites of the Precambrian Rocky Cape Group. Within the EL these appear to be equivalents of the Neasey Formation (Longman and Matthews 1961). The contact between these sediments and the Arthur Lineament metamorphics is transitional (Turner 1984).

East of the Arthur Lineament are found rocks of the Precambrian Burnie Formation (which may be correlates of the Oonah Formation). These mudstones and quartz-wackes are believed to be younger than the Rocky Cape Group. The nature of the boundary between the Burnie Formation and the Lineament has not been established.

Permian shales and mudstones occur overlying the Keith Beds in the north of the EL. They are also found in (?) downfaulted blocks at two localities in the south of the Licence.

Tertiary basalts occur over very large areas of the EL. Sub-basaltic Tertiary gravels are also found.

A photo-interpretation and Landsat image study resulted in a lineament map of the EL, however lack of access prevented extensive field checking and no geological interpretation has been attempted (Plan TASH 2502).

5.2 Origin of the Arthur Lineament

The origin of the Arthur Lineament has not been established. Some of the theories proposed include:-

- That it is the result of a northwesterly compression of the Rocky Cape Group against an unyielding older Precambrian basement to the south-east.
- The Lineament represents a basin margin. The older Rocky Cape Group provided detritus which shed into a subsiding basin to the south-east forming the Burnie Formation. The basin margin, being a zone of rapid facies change, downwarping and possibly a locus for basic volcanism. The resulting lithologies and competency contracts along this margin resulted in the higher metamorphic gradient during later deformation.

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- A further possibility, noting the concentration of basic volcanics, now amphibolites, is that the Lineament represented a basic volcanic rise within an otherwise fairly quiet sedimentary basin. During the Penguin Orogeny the basic component proved much more susceptible to metamorphism, producing the amphibolite schist belt, ie, the metamorphic grade is linked to pre-existing lithological differences. Alternatively the basic volcanism was controlled by a major crustal feature which subsequently became the centre of tectonic deformation with maximum metamorphism along its axis.

5.3 Mineralisation

Known mineralisation within the Lineament includes some large mineral deposits; in the south, iron deposits typified by the Savage River deposit; in the north, there is the Keith River sulphide horizon; magnesite at Main Creek, Savage River, Lyons River and Arthur River; vein or reef gold occurrences such as Specimen Reef and Golden Ridges; a number of alluvial gold shows, generally small and often downstream of ironstones and a number of small base metal occurrences such as the Victory copper mine.

The Arthur Lineament is obviously a significant mineralised province with much of its mineralisation being associated with iron formations comprising an ironstone-carbonate-basic volcanic assemblage. The coincidence of gold occurrences, both hard rock and alluvial, close to ironstones has led to ideas that these may be the source of the gold, sampling does not however confirm this. It is worth considering that the iron formation, not just the ironstone, have a genetic association with the gold mineralisation and that possibly the carbonates may have a more significant

role than the ironstones. Bearing this in mind attention should be given to the known carbonates within EL 1/79 as potential gold ores or protones particularly where associated with iron deposits. The gold potential of the Keith River sulphide horizon and nearby magnesite/dolomite which strikes onto the Licence should be fully evaluated.

Coarse gold occurrences are unlikely to have escaped the attention of old prospectors, therefore attention should be concentrated upon the low grade, fine gold potential of all formations associated with the iron formations.

6. COMSTAFF ZINC ANOMALY

A zinc anomaly (230 ppm) located by Comstaff in a creek in the south of the EL was followed up by CRAE and found to be caused by Tertiary basalts. During this work, the other creeks in the catchment, which provide unusually good exposure of the Arthur Lineament metamorphics, were mapped and sampled.

6.1 Geology (Plan TASH 2545)

Permian shales and mudstones with glacial debris occur at the junction of the main creek and the Pipeline Road and persist upstream for some 300 metres. The boundary between the Permian and the Precambrian is not seen but is probably faulted. All the Precambrian metamorphics dip to the east and are also believed to young in that direction. Schistosity is parallel to compositional layering reflecting primary lithology.

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East of the postulated fault, the lowermost exposed Precambrian consists of a suite of amphibolites (both massive and foliated), chloritic quartz-mica schists, phyllites, minor ironstones and carbonate. The overall impression is of a fine-medium grained clastic sedimentary pile with basic volcanics (both lavas and intrusives) and basic volcanoclastics. The ironstones include massive magnetite or magnetite-pyrite, a magnetite-plagioclase hornfels (Appendix 1) and thin beds or lenses of massive pyrite. Carbonate has also been found with the ironstones completing a fairly typical iron-formation assemblage.

The occurrence of contact metamorphic facies, hornfels' and a marble (Appendix 1) within this volcano-sedimentary suite indicates proximity to an intrusive. However, unless the massive amphibolites represent offshoots from a larger concealed basic body, no evidence for the causative intrusive has been observed.

Further east, progressing "up" the Precambrian succession, the volcanic component diminishes leaving an extensive suite of interlayered phyllites and quartz-mica schists. These represent a monotonous pile of shales and siltstones with minor quartzites.

The stratigraphy revealed in these creek sections is grossly similar to that of the Keith Beds about the Lyons and Arthur Rivers magnesite occurrences; this observation is also supported (tenuously) by the fact that the magnesite "corridor" is traversed by these creeks.

6.2 Geophysics

INPUT-EM anomaly 3379/10840 is located close to the junction of the Pipeline Road and the Main Creek. It is regarded as reflecting either the Pipeline, carbonaceous facies in the Permian shales or nearby Tertiary basalt.

An intense "thumb-print" aeromagnetic anomaly located within the central part of the catchment may reflect nearby Tertiary basalt (or a basalt plug) but it appears to have a deeper source. It may indicate a concealed basic igneous body, possibly that which is responsible for marble and hornfels' that lie on the periphery of the anomaly.

6.3 Geochemistry (Plan TASH 2546)

The anomalous zinc values obtained by Comstaff could not be repeated despite locating the original sample sites; zinc adsorbed on clays or in colloids which gain and lose metal with seasonal variations in water chemistry, might explain the discrepancy. However, the catchment of this creek is Tertiary basalt and Permian shales, neither of which are of current exploration interest.

The other creeks were sampled at 200-400 metre intervals. No elevated base metal values were obtained whilst two sites contained anomalous gold. The first (2700 ppt, CN leach; 210 ppb in -80 mesh) is in the zinc anomaly tributary. Sampling upstream of the initial site found only background gold levels. The anomaly is believed to be caused by detrital gold shed out of Tertiary gravels known to occur with the Tertiary basalt pile. Alternatively, the Permian shales may be responsible; exploration elsewhere in Tasmania has shown that gold is sporadically (and uneconomically) associated with similar Permian glacial mudstones.

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The second gold anomaly (3650 ppt, CN leach) is in the south of the catchment within the quartz-mica schists and phyllites. A sample taken 250 metres downstream showed only background values indicating either rapid dispersion/dilution of fine gold, that the anomalous leach sample was incorrectly collected, or that coarse, sporadic, detrital gold was present. Further check and follow-up sampling is required.

Other than high iron values in the various ironstones, no anomalous rock geochemistry was recorded.

7. RAPEND AEROMAGNETIC ANOMALIES
(Plan TASH 1659)

Together with INPUT-EM anomalies 1858/10641, 1703/10680, 2642/10660, 2652/10660 and 2455/10020, the RAPEND NORTH, RAPEND WEST, RAPEND, RAPEND SOUTH and SAVAGE RIVER NORTH magnetic anomalies lie in a cluster in the median part of the Arthur Lineament in an area of prominent linear features.

Field checking and photo-interpretation discounted RAPEND NORTH, SAVAGE RIVER NORTH and INPUT-EM 1858/10641 and 1703/10680 as being anomalies caused by Tertiary basalt. RAPEND EAST may also be a basalt derived anomaly.

Gridding over the RAPEND and RAPEND WEST anomalies facilitated a programme of ground magnetometry and geochemical sampling.

As no access could be economically established to RAPEND SOUTH and the adjacent INPUT-EM anomaly (2642/10660) nor to RAPEND EAST and INPUT-EM 2652/10660, it was necessary to evaluate these by sampling drainages below the anomalies where accessible by helicopter.

7.1 Geology

The RAPEND and RAPEND WEST magnetic anomalies occur within quartz-mica-(chlorite) schists, phyllites and minor quartzites. Observation and petrology (Appendix 1) suggest that these represent a meta-sedimentary suite with little volcanic component. Schistosity and compositional layering, probably reflecting bedding, strikes north-easterly and dips steeply to the south-east.

Whilst RAPEND SOUTH and RAPEND EAST have not been visited, float and outcrop in creeks draining these anomalies suggests that a similar succession of meta-sediments also underlies them.

7.2 Geophysics (Plans TASH 2356-2360)

Profiles of the ground magnetics over RAPEND and RAPEND WEST indicate that the gridding has adequately covered the anomalies. Interpretation indicates that the anomaly is due to shallow sources which would be anticipated to have geochemical signatures if mineralised (Appendix 3).

7.3 Geochemistry (Plan TASH 2476)

Rock, soil and stream sediment samples collected over RAPEND and RAPEND WEST contained no anomalous base or precious metal values (Appendix 2). There is no evidence of mineralisation associated with these anomalies and no further exploration is proposed.

Stream sediment samples from creeks draining the RAPEND SOUTH - INPUT-EM 2642/10660, RAPEND EAST and INPUT-EM 2652/10660 anomalies contained low metal values.

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The high (4250 ppt) Au value for the cyanide leach sample (990462) collected from the creek draining RAPEND SOUTH - INPUT-EM 2642/10660 is a function of the excessively large sample weight and an unsuitable sampling technique. No further work is proposed.

8. INPUT-EM ANOMALIES
2477/10360 AND 2465/10360 (Plan TASH 1653)

Located in the closure zone of a photo-interpreted fold, these anomalies were gridded and soil sampled. Stream sediments were also collected in drainages off the anomalies.

8.1 Geology

Phyllites, schistose black shales, quartz-mica schists and minor, but prominent quartzites occur over the area of the anomalies. More carbonaceous facies of the phyllites/shales are regarded as being the source of the EM anomalies; little economic potential except perhaps Pb-Zn shale hosted mineralisation, is currently attached to these horizons in this environment.

8.2 Geochemistry (Plans TASH 1655-1657, 2480-2481)

The soil and stream sediment sampling revealed no anomalous metal values (Appendix 2) and it is concluded that there is no mineralisation associated with the EM anomalies.

The results of this sampling, together with those from EM anomaly 2966/10440 (which, from photo-interpretation appears to be in the same stratigraphy) are useful in determining a geochemical background for these phyllite/shale bearing successions. Whilst metal levels are

generally low, there appears to be a slightly high, albeit erratic, tungsten signature (up to 130 ppm W in C-horizon soils). Suspicions that this was due to auger contamination were checked and discounted.

With these backgrounds, drainage sampling of other anomalies in the same stratigraphy can be more meaningfully assessed. Using this principal, the drainage sampling of EM anomaly 2880/10440 showed no anomalous geochemical values.

9. INPUT-EM ANOMALY 526/10480
(Plan TASH 1653)

This anomaly lies south of, and within the same stratigraphy as, anomaly 2966/10440. It is interpreted as being caused by similar phyllites/black shales and is not regarded as prospective.

10. INPUT-EM ANOMALIES 2953/10440,
2933/10440, 542/10480, 555/10480 and 2409/10320
(Plan TASH 1653)

Field checking and photo-interpretation show these anomalies as being caused by Tertiary basalts.

11. MT BERTHA INPUT-EM ANOMALIES
(Plan TASH 1643)

This group of INPUT-EM anomalies lie to the west and north of Mt Bertha and are interpreted as reflecting black shale horizons interbedded with the quartz-mica schists and quartzites (? Neasey Formation equivalents) which form the prominent ridges of which Mt Bertha is part.

As access to these anomalies is very restricted, a helicopter supported drainage sampling programme was prepared. Weather conditions severely curtailed two attempts and only a portion of the planned samples could be collected. However, it is regarded that the sampling adequately tested anomalies 3459/10600, 3457/10600, 2213/10561, 3373/10560 and 3369/10560. The sampling located examples of the carbonaceous, and pyritic, black shales believed to cause the EM anomalies, although the bulk of the float and outcrop is quartzites and quartzose schists. None of the rock or stream sediment samples contained any high metal values.

As it is believed that the untested anomalies also reflect the same black shale horizons as those tested and found to be unmineralised, no further work is proposed in this area.

12. SEDGE AEROMAGNETIC ANOMALY
(Plan TASH 1643)

Photo-interpretation and magnetic modelling suggesting that this anomaly was caused by Tertiary basalt was confirmed by field checking.

13. RAPID EAST AEROMAGNETIC AND
INPUT-EM 2966/10440 (Plan TASH 1645)

These anomalies lie adjacent to each other and were therefore regarded as prospective. A small grid was established to permit soil sampling, mapping and ground magnetometry.

13.1 Geology

No cause for the magnetic anomaly was identified. Quartz-chlorite schists of basic volcanic origin and phyllites, regarded as meta-argillites, striking north easterly were found over the area of the anomaly.

Dark grey weathered phyllitic shales and subordinate quartz-mica schists and quartzites were found in the area of the INPUT-EM anomaly. The shales are regarded as the source of the anomaly.

13.2 Geophysics (Plan TASH 1647)

The ground magnetics showed that the anomaly is more confined than suggested by the aeromagnetics, the overall magnetic pattern suggests that a N-S striking shear zone or lithological unit is responsible for the anomaly, and that the depth to the anomaly source is less than about 50 metres.

The phyllitic shales, probably carbonaceous when fresh, adequately account for the INPUT-EM anomaly.

13.3 Geochemistry (Plans TASH 1645-1646)

Power augered C-horizon soil samples were analysed for an extensive suite of metals, the only anomalous value detected was 150 ppm Ao (4350E 5000N) over the magnetic anomaly. The response over the INPUT-EM anomaly was low in all metals determined.

No elevated metals were recorded in any rock or stream sediment samples collected over the grid. In view of the interpreted shallow depth to the magnetic target, and the surface outcrop of the EM anomaly, this lack of geochemical anomalism precludes further investigation.

14. MAGNESITE POTENTIAL

A discrete "corridor" has been identified extending SW from the Lyons-Arthur River magnesite deposits. The corridor has a similar visual and geophysical character to these magnesite occurrences; it strikes through EL 1/79 and is regarded as the best potential area for locating magnesite within the EL.

Two particular areas of the corridor offer the best potential for discovering magnesite. The first is an area with an apparent (photo-interpretation) fold closure and corresponding vegetation anomaly close to the Pipeline Road (Plan TASH 2547). The area is also slightly topographically depressed, this might be indicative of readily weathered carbonate. To date the extremely dense bush in this area has prevented the location of any outcrops or float of any lithology. Attempts to obtain C-horizon soils have been thwarted by thick root bound A-horizon soil development.

The second area is that where "Comstaff Creek" and its tributaries cut the corridor. This the only creek section not filled with Tertiary basalt to cross the corridor. Mapping these creeks (Plan TASH 2545) has not yet revealed any magnesite, though carbonate has been found (Appendix 1); the overall stratigraphy is similar to that interpreted from the Lyons-Arthur River area.

Further evaluation of these two areas will require extensive track cutting and trenching to provide exposure for mapping and interpretation. Alternatively, drilling through the favourable stratigraphy in the Comstaff Creek could be considered.

15. FOLLY HILL - ARTHUR RIVER AREA

(Plan TASH 2520)

The northern part of EL 1/79 is of interest because of:-

- the Folly Hill gold workings
- reports of tin-tungsten mineralisation
- anomalous gold geochemistry unrelated to known gold occurrences
- known and postulated carbonate horizons

Geopeko explored the area for Mittersil-style tungsten mineralisation (Large and Poltock 1981) using stream sediment and rock geochemistry. No mineralisation was found but mapping located siliceous carbonate along strike from the Folly Hill gold workings. These workings are in surficial quartz gravels, assumed to be alluvial Tertiary gravels. The geomorphology of the area does not particularly support this view; it is possible that the gravels represent talus off the adjacent quartzite ridges or surficial silica replacement of carbonate. Old trenching tested the quartzite for hard rock gold and found none. No attention has been given to the carbonate or associated phyllites as sources for the gold. These should be tested.

Longman and Matthews (1961) noted cassiterite-wolframite in granite veins (in the Keith Beds?) south of the Arthur River. These have not yet been relocated but tourmaline bearing quartzites and schists (Appendix 1) have been found in the Neasey Formation near Folly Hill. These occurrences suggest the existence of a granitic intrusive; the possibilities for related carbonate replacement mineralisation should be examined.

Anomalous gold values (300 ppb in -80 mesh, 28.8 ppb by CN leach) in a creek near the eastern boundary of the EL may be derived from recent gravels at the sample site or from the Keith Beds further upstream. Further sediment and hard rock sampling is required.

A carbonate occurrence on the east bank of the Arthur River should strike south west through the EL. No further outcrops have been located. A gravity survey has been proposed to test for this strike extension beneath alluvial cover on the west bank of the river. The horizon is regarded as prospective for magnesite.

16. REFERENCES

- | | | |
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17. LOCATION

Burnie 1:250 000 Sheet SK55-3

18. KEYWORDS

Geophysics - aeromagnetics, ground magnetics, radiometrics, electromagnetics, INPUT
Geology - Arthur Lineament, Whyte Schists, Keith Beds, iron formation, magnesite; Rocky Cape Group, Neasey Formation; Burnie Formation; Oonah Formation; Geochemistry - soil, rock, stream sediment.

19. LIST OF PLANS

<u>Plan No</u>		<u>Scale</u>
✓ TASH 842	Locality Plan Rapid River EL 1/79	1:2 000 000
✓ TASH 2496	Rapid River EL 1/79 Areas to be Relinquished April 1985	1:50 000
✓ TASH 2500	Rapid River EL 1/79 Geological Interpretation	1:50 000
✓ TASH 2502	Rapid River EL 1/79 Photo Lineament Interpretation	1:50 000
✓ TASH 2545	Rapid River EL 1/79 Geology Comstaff Zinc Anomaly Area	1:5 000
✓ TASH 2546	Rapid River EL 1/79 Geochemistry Comstaff Zinc Anomaly Area	1:5 000

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<u>Plan No</u>		<u>Scale</u>
✓ TASH 1659	Rapid River EL 1/79 Rapend Aeromagnetic Anomalies Follow-Up	1:5 000
✓ TASH 2356	Rapid River EL 1/79 Rapend Aeromag. Anomalies Ground Mag Profiles Line 7300mE	1:5 000
✓ TASH 2357	Rapid River EL 1/79 Rapend Aeromag. Anomalies Ground Mag Profiles Line 5200mN	1:5 000
✓ TASH 2358	Rapid River EL 1/79 Rapend Aeromag. Anomalies Ground Mag Profiles Line 5400mN	1:5 000
✓ TASH 2359	Rapid River EL 1/79 Rapend Aeromag. Anomalies Ground Mag Profiles Line 5600mN	1:5 000
✓ TASH 2360	Rapid River EL 1/79 Rapend Aeromag. Anomalies Ground Mag Profiles Line 6000mN	1:5 000
✓ TASH 2476	Rapid River EL 1/79 Rapend Aeromagnetic Anomalies Cu, Pb, Zn, As, Au Geochemistry	1:5 000
✓ TASH 1653	Rapid River EL 1/79 Location Plan, Stream Sediment Sample Sites and Follow-Up Lines, INPUT-EM Anomalies 2450/10300, 2477/10360, 2465/10360	1:25 000
✓ TASH 1655	Rapid River EL 1/79 INPUT-EM Anomaly 2465/10360 Geochemistry and Geology Line 5000N	1:2 500
✓ TASH 1656	Rapid River EL 1/79 INPUT-EM Anomaly 2465/10360 Geochemistry and Geology Lines 4850 and 5150N	1:2 500
✓ TASH 1657	Rapid River EL 1/79 INPUT-EM Anomaly 2477/10360 Geochemistry and Geology Line 5000N	1:2 500

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<u>Plan No</u>		<u>Scale</u>
✓ TASH 2480	Rapid River EL 1/79 INPUT-EM Anomaly 2477/10360 Geochemistry Line 5150N	1:2 500
✓ TASH 2481	Rapid River EL 1/79 INPUT-EM Anomaly 2465/10360 Geochemistry and Geology Line 4850N	1:2 500
✓ TASH 1643	Rapid River EL 1/79 INPUT-EM & Mag Anomaly Location Plan	1:50 000
✓ TASH 1645	Rapid River EL 1/79 Rapid East Aero- magnetic Anomaly, Sample Location and Grid Plan	1:5 000
✓ TASH 1646	Rapid River EL 1/79 Rapid East Aero- magnetic Anomaly, Cu, Pb, Zn, Geochemistry	1:5 000
✓ TASH 1647	Rapid River EL 1/79 Ground Magnetics	1:5 000
✓ TASH 2547	Rapid River EL 1/79 Photo-Interpreted Carbonate Zone	1:25 000
✓ TASH 2520	Rapid River EL 1/79 Geology of the Folly Hill - Arthur River Area	1:10 000

20. LIST OF APPENDICES

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- Appendix 2 Sample Ledgers
- Appendix 3 Rapend Grid Magnetics

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APPENDIX 1

PETROLOGICAL REPORTS

1/025
ZONE 3 - HOLLY HILL AREA
RAPID RIVER EC

224026

Central Mineralogical Services



39 Beulah Road
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Mr. V. Williams
Geologist
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12th June, 1984

REPORT CMS 84/5/33

YOUR REFERENCE:	D.P.O. No. 30382
DATE RECEIVED:	23rd May, 1984
SAMPLE NOS.:	2 Samples
SUBMITTED BY:	V. Williams
WORK REQUESTED:	Petrology

Copy to:
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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.

026

CENTRAL MINERALOGICAL SERVICES PTY. LTD.

Date 12th June, 1984 224027

SAMPLE REPORT (Mineralogy, Petrology, Ore Microscopy)

Job No. CMS 84/5/33 Date Received: 23.5.1984
Reference D.P.O. No. 30382
Sample No. 1056343, 1056347
Nature of Sample: Hand Specimens

IDENTIFICATION
1056343, 1056347
<u>1056343</u> : Quartz-Tourmaline Vein
<u>1056347</u> : Quartz-Muscovite Schist with Tourmaline

DESCRIPTION SECTION No. 50038, 50039

a. Hand Specimen:

- 1056343: White quartzose rock with sheaves of ?tourmaline needles.
- 1056347: White micaceous schist with small dark needles.

b. Microscopic:

1056343 (T.S. 50038)

This rock consists only of coarse quartz and sporadic crystals and bundles of needles of dark green tourmaline (schorl). The quartz is typical vein material with trains of fine inclusions; it is strongly stressed. The tourmaline too, has been affected by tectonism; the needles are bent and microfractured. The rock is believed to be a stressed vein.

1056347 (T.S. 50039)

This is a banded quartz-muscovite schist with scattered small tourmaline crystals.

The rock consists of laminations of interleaved muscovite flakes, full of minute leucoxene grains, and containing most of the small dark tourmaline needles, alternating with bands of granular quartz with subordinate fine, parallel muscovite flakes, and scattered tourmaline.

The micaceous laminae are unusual in that they are made up of thin (< 0.1 mm) alternating layers of large, thin parallel muscovite flakes and small random flakes; the origin of this structure is not known. The rock is a weakly metamorphosed laminated siltstone and the tourmaline is essentially authigenic.

H.W. Fander, M. Sc.

LOCATION 367000L 346200N FOLLY HILL

027

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

4th February, 1985

REPORT CMS 85/1/19

YOUR REFERENCE:	D.P.O. No. 30345
DATE RECEIVED:	29th January, 1985
SAMPLE NOS.:	3 Samples
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, M. Sc.

028

REPORT CMS 85/1/19

Three rock samples were received for petrographic study; thin-sections were prepared, and a polished section was also prepared of sample 989016. The samples are described below.

989015

(T.S. 52555)

This is an actinolite hornfels, brecciated and veined by a variety of other minerals which are partly metasomatic, showing limited replacement of the host rock.

352830mE

5417710mN

The rock consists very largely of felted masses of fine, fibrous actinolite, spotted with fine cloudy sphene; there are occasional coarser actinolite patches. Poorly defined small aggregates of cloudy ?feldspar are also present throughout.

The rock is cut by epidote veins, quartz-epidote veins and by discontinuous veins of very dark tourmaline which marginally replace adjacent rock. Occasional pyrrhotite grains are scattered through the rock and are generally associated with small quartz patches.

989016

(T.S., P.S. 52556)

This rock can be regarded as a type of hornfels, since it is clearly extensively recrystallized and has random fabric.

352830mE

5417710mN

The main components are very large poikiloblastic crystals of sodic oligoclase, with embedded quartz and small, random, fibrous actinolite crystals; there are patches of eutectoid quartz-plagioclase intergrowths similar to graphic textures, probably a replacement phenomenon. Other minerals include small granular and skeletal sphene aggregates (?after magnetite), swarms of small epidote crystals, and euhedral magnetite. Isolated, partly oxidised pyrite crystals occur, and there are cellular goethite patches after ?chalcopyrite.

The origin of the rock is uncertain, but the present mineral assemblage can be interpreted as having been derived from an intermediate to basic igneous type (perhaps even a granodiorite) by hornblende-hornfels facies contact-metamorphism.

929029

(T.S. 52557) Calcite stain test negative.

This may be classified as a hydromuscovite-dolomite rock or low-grade marble; the micas have a very misleading, dark appearance in hand specimen due to being pigmented with ultrafine carbon.

352980mE

5417730mN

The dominant constituent is dolomite, as small interlocking, elongate grains (single crystals). There are scattered single flakes and larger lensoid aggregates of hydromuscovite with carbon (?graphite) along cleavage-planes; small quartz grains occur throughout the rock, especially in the lenses, and irregular pyrite aggregates occur sparingly and sporadically.

023

224030

Page 2

CMS 85/1/19

The rock shows distinct banding, partly due to coarser and finer mineral bands, partly because of greater amounts of sericite lenses in some bands.

The absence of Ca/Mg silicates indicates a low metamorphic grade.

H.W. Fander, M. Sc.

030

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.

031

224032

CENTRAL MINERALOGICAL SERVICES PTY. LTD.

Date 17th January, 1984

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

IDENTIFICATION
988669
Magnetite-Plagioclase Hornfels

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.

BE-110E CHITABON

(Consult Zone 11...)

032

224033

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.

224034

Date 7th February, 1984

033
CENTRAL MINERALOGICAL SERVICES PTY. LTD.

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.

3525001 543/100N

APPENDIX 2

SAMPLE LEDGERS

035

224036

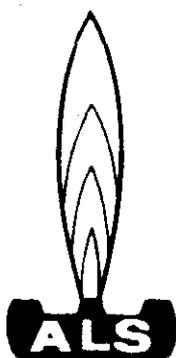
CONSULTING ANALYTICAL CHEMISTS

OFFICE & LABORATORIES
32 SHAND STREET,
STAFFORD, BRISBANE
QUEENSLAND, AUSTRALIA 4053

P.O. BOX 66,
EVERTON PARK, Q. 4053

TELEPHONE: (07) 352 5577
TELEX: ALSEV 42344

Australian Laboratory Services PTY. LTD.



GFK/dh

REF: K113

24th October, 1984.

CRA Exploration Pty. Ltd.,
P.O. Box 138,
ROSNY PARK. TAS. 7018.

Attn: Mr. I. Clementson.

Dear Ian,

We have scanned, by X-ray, the drill pieces and paint samples you submitted. Both surfaces of sample number 931412 were scanned. None of the scans showed any detectable tungsten. The method would detect concentrations of tungsten above 20ppm.

Yours faithfully

G. F. Kilmister,
MANAGER -
Minerals & Industrial Lab.

ORES AND
MINERALS

INDUSTRIAL
PRODUCTS

WATERS AND
POLLUTANTS

036

SAMPLE LEDGERS

COMSTAFF ZINC ANOMALY

031

PROJECT ARTHUR LINEAMENT
 TENEMENT RAPID RIVER EL 1179
 AREA / PROSPECT COMSTAFF CK

GEOCHEMICAL SAMPLING LEDGER

DATES : JANUARY 1985
 LAB. ALS BRISBANE
 PAGE NO. 2

GEOLOGIST MC CLEMENTSON SAMPLE TYPE Rock

SAMPLE NUMBER	GRID REF.	ANALYSES											DPO NUMBER	GEOLOGICAL OBSERVATIONS	CORRESP. -80 MESH STREAM SAMPLE											
		Cu	Pb	Zn	Ag	As	S	Fe %	Cr	Alu ppb																
989016	352830E 5417730N	15	10	10	1	4	190	5.45	50	23												30344	Magnetite rich ? garnet or ? primary igneous rock? Float but close to etc.			
		PETROLOGY: a type of HORNEELS, clearly extremely recrystallized and has random fabric.... may have been derived from an intermediate to basic igneous type by contact metamorphism																								
989017	352840E 5417680N	175	45	80	4	5	730	65.7	45	23														Float: massive magnetite		
989018	352850E 5417650N	105	10	50	2	9	360	5.04	35	5														etc: dark grey calc-silicate (?) or hornfels. To diagenetic		
989019	352855E 5417650N	65	15	45	1	4	480	2.19	70	23														etc: quartz in calc-silicate phyllite with blebs of chloropyrite in the qz		
989020	352860E 5417740N	110	50	105	2	20	175%	24.7	75	5														etc Massive pyrite band Fine gr massive pyrite with grey shale in 20 Band 4m thick (Frank) by ? carbonate new silica		
989021	352860E 5417740N	145	20	95	1	12	3800	7.99	65	5															Silicified shale / phyllite. Extensive qz veins + qz segregations. Blobs of qz + patches of massive pyrite.	
989029	352980E 5417730N	15	45	25	1	4	2950	3.10	15	3															etc of a hard, brittle ? carbonate or a qz- calc rock with late carbonate action. Mottled grey-white. Pore dark grey grains (? barium) in a white qz-carbonate matrix. Tr	
		PETROLOGY: a Hydromuscovite-Dolomite or low-grade MARBLE: dominant constituent is dolomite with scattered flakes and aggregates of hydromuscovite with carbon (? graphite), irregular pyrite aggregates. Absence of Ca/Mg silicates indicates a low metamorphic grade.																								
METHOD	DET.LMT																									

224038

PROJECT ARTHUR LINEAMENT
 TENEMENT RAPID RIVER EL 179
 AREA / PROSPECT COMSTAFF CREEK

GEOCHEMICAL SAMPLING LEDGER

GEOLOGIST I.M. CLEMENTSON SAMPLE TYPE Rock

DATES: JANUARY 1985
 LAB. PLS BRISBANE
 PAGE NO. 1

SAMPLE NUMBER	GRID REF.	ANALYSES										DPO NUMBER	GEOLOGICAL OBSERVATIONS	CORRESP. -80 MESH STREAM SAMPLE
		Cu	Pb	Zn	Ag	As	S	Fe %	Cr	Au ^{ppb}				
989007	552610E 5417740N	30	25	75	1	28	1700	3.60	20	<3		30344	dc below water level in creek bed Weathered grey (mid) massive mudstone. No evidence of any Potation i.e. probably Permian. Form of dc suggests a strike of 170° N.	989008
989010	552100E 5417900N	50	10	150	2	28	370	5.56	65	<3			dc by 10m x 2m: 4m chip sample of grey, suggy, breccia-cong. Heavy Fe oxide staining and veins Probably Permian - ? fault gouge/dug or ?? hydrothermal breccia.	
989011	552100E 5417900N	70	<5	180	2	24	390	9.06	30	<3			dc as above 4m chip sample S of 989010. This zone is ferruginous bed. Matrix is grey clay/shale.	
989012	552100E 5417900N	10	<5	25	<1	5	90	1.18	380	<3			dc S of 989011 but continuous with it. A brown conglomerate with qz, qz:ls and ls clasts. Very clay-rich ? Tertiary or hydrothermal. As above but should be more large pebbles.	
989013	552100E 5417900N	15	<5	50	1	2	150	1.92	1800	<3			Cr content suggests Tertiary gravel.	
989014	552830E 5417740N	25	<5	10	<1	7	120	1.94	115	<3			Flint: siliceous in local lithology ? silica after carbonate. Traces Fe staining.	
989015	552830E 5417740N	50	10	35	1	8	920	4.57	55	<3			Dark grey, siliceous rock with 2-3% diagen. Fe-stained hornblende or a calc-silicite.	
		Petrologist: This is an Actinolite Hornfels, brecciated and veined by a variety of minerals which are partly metamorphic.												
METHOD	DET. LINT													

041
SS

TASMANIA

CRA EXPLORATION PTY. LTD.

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.	Silt Rating	Outcrop	Maj. Float	Min. Float	LODR	Cu	Pb	Zn	Co / Ag	Mn / Fe	Cr / Ni	Ba / Mo	Sn / W	Au / Pb					
	East	North																																
988679	6300	5710	1	4	70	20	10	1	1	3	3	3	3	1	2	104	100	120		<2	15	20	5/1	35/0.77	200/30	87/24	29/10	ND						
988682	6300	5326	1	4	70	20	10	1	0.5	3	3	3	3	1	3	104	100	120		<2	15	15	10/1	35/1.15	200/65	70/16	29/40	ND						
988684	6300	5075	1	4	70	20	10	1	2.0	4	1	3	3	1	2	104	100	120		<2	10	5	5/1	35/0.91	200/55	49/16	29/30	ND						
988632	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	29/10	5	Clearing Rapend.					

GEOCHEMICAL STREAM SEDIMENT SAMPLING LEDGER

DETECTION LIMIT
ANALYTICAL METHOD

2 5 2 5/1 5/0.01 5/5 10/4 5/10 3
AAS --- --- --- > XRF --- > MS

Tenement Name: RAPID RIVER EL 1/79

Project:

AMG Zone: SS

Sheet No.:

Area / Prospect: RAPEND

DPO's: 30336

Laboratory: ALS

Map / Photo Ref.: LINE 6300E

Sample No's:

Collected By: I.M.E

Date: 11/83 ✓

224042

042

TASMANIA

CRA EXPLORATION PTY. LTD.

NO

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		Sm / W
	East	North			From	To																			
988651	7300E	5000N	1	3	-1	-1	105	-1	-1	-1	-1	-1	-1	-1	-1	70	45	25	15/1	100/3.52	25/100	160/24	25/10	Phyllitic qz schist	
988652	7300E	5000N	1	3	-1	-1	105	-1	-1	-1	-1	-1	-1	-1	-1	20	20	35	15/1	110/3.00	20/25	160/24	25/10		
988654	7610	5000N	1	2	-1	-1	100	104	-1	-1	-1	-1	-1	-1	-1	20	20	35	10/1	100/1.75	25/25	170/24	25/10	Qz. ls in qz-schist	
988655	7610	5000	1	2	10	-1	100	104	-1	-1	-1	-1	-1	-1	-1	10	25	70	15/1	135/2.34	25/30	160/24	25/10		
988659	7185	5000	2	2	-1	-1	105	104	-1	-1	-1	-1	-1	-1	-1	10	15	35	15/1	140/2.10	25/20	160/24	25/10	Qz schist	
988660	6960	5000	1	3	-1	-1	105	104	-1	-1	-1	-1	-1	-1	-1	10	20	25	15/1	160/2.28	15/25	160/24	25/10	-polym. ? V. ls fragment	

GEOCHEMICAL ROCK SAMPLING LEDGER		DETECTION LIMIT		2	S	2	5/1	5/10	5/5	10/4	5/10
		ANALYTICAL METHOD		AAS						XRF	
Tenement Name: RAPID RIVER		Project:			AMG Zone: 35			Sheet No: 1			
Area / Prospect: RAPEND		DPO's: 30336			Laboratory: ALS						
Map / Photo Ref: LINE 5000N		Sample No's: 988651 - 988660			Collected By: IMC			Date: 11/83			

224013

043

ND

TASMANIA

CRA EXPLORATION PTY. LTD.

F

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																														
988680	6300	5710	1	2	0			104	120	9	2	1	120					10	15	35	15/1	100/20	30/25	210/4	25/10	Dark gray, very lustrous, talcose and graphitic phyllite + qz veins. Foliaion strikes 010°M Vertical											
988681	6300	5550	1	2	4			104	120	9	2	1	120					15	25	50	30/1	340/2.7	20/20	240/4	25/10	Grey phyllite and qz-schists + qz veins. High contorted. Strike ± 360°M.											
988683	6300	5300	2	3				104										10	10	40	15/1	130/2.36	40/25	240/4	25/10	? Slightly graphitic talcose phyllite.											
988685	6300	5075	1	2	2			104	105		2	1	120					20	10	35	15/1	25/2.2	35/25	240/4	25/10	Grey phyllite and schists											
GEOCHEMICAL ROCK SAMPLING LEDGER							DETECTION LIMIT										2	5	2	5/1	5/0.01	5	15	10/4	5/10												
							ANALYTICAL METHOD																														
Tenement Name: RAPID RIVER EL1179							Project:							AMG Zone: 55							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 ✓																

224014

C.R.A. EXPLORATION GEOCHEMICAL SAMPLE JGER

Tenement name RAPID RIVER EL179 No. 988468-988473 Sample numbers 988468-988473 Collected by J.M. Clementson Sheet no. 1
 Area / Prospect RAPID WEST ACCESS Date
 Map / Photo reference Sample stations on metres upstream on a cascade Analysed by A. Malness DPO no. 3032 S
 A 02143

044

Sample No.	Type	ss channel **						Carbon	Metal content ppm or %										Grid ref	Geological Observations
		fl	wi	al	co	ca	pH		Cu	Pb	Zn	Ag	Mo	Mn	Au	Fe %	Co / Au	Sn / Au		
		o/c sample type ***							s sample type ****											
988468	SS	gs	✓					-80"	15	x	50	x	x	175		1.75/30	35/x	x/179	1620m S	Very small creek draining approx locality of Rapid North. Boat float
								+80"	5	x	25	x	x	125		1.25/30	20/x	x/93		
988469	SS	gs	✓					-80"	x	x	15	x	x	55		0.77/15	10/x	x/78	1700m S	Prominent creek draining from east into main creek. Abundant qz, sericite schist phyllite float plus some basalt
								+80"	x	x	5	x	x	30		0.45/15	5/x	3/59		
988470	o/c	gs							15	10	145	x		785		5.60/30	50/100	x/176	1720m S	Slightly foliated phyllite/schist Grey ferruginous 0.0-0.1 g qz x 10 ⁻³
988471	SS	gs	✓					-80"	x	x	5	x	x	20		0.33/5	10/x	x/58	1900m S	Main creek. Abundant qz of grey schists and phyllites. Well foliated. Strike N-S.
								+80"	x	x	x	x	x	20		0.24/5	5/x	x/52		
988472	SS	gs						-80"	5	x	10	x	x	65	/	0.77/15	15/x	x/70	2200m S	Main creek. As above.
								+80"	x	x	5	x	x	25		0.33/x	10/x	x/52		
988473	qc	gs							5	10	50	x		115		1.60/15	15/x	x/243	2200m S	Foliated schist or phyllite.

224045

* Sample type ss = stream sediment oc = outcrop f = float s = soil
 ** Stream sed. sample description fl = flow m3/sec wi = width m al = alluvial co = colluvial ca = catchment km2
 *** Outcrop sample type gs = grab sample rc = rock chip (state interval & length) cs = channel sample (state length)
 **** Soil sample type super hole or pit depth m A, B or C horizon

C.R.A. (PLORATION . GEOCHEMICAL SAMPLE . DGER

Tenement name RAPID R. EL 1179 No. Sample numbers 988433-988440 Collected by J.M. Clementson Sheet no.
 Area / Prospect RAPID NORTH AEROMAG. ANOMALY. Date 14-4-83
 Map / Photo reference Creek L. frame, line 5000N and 5425E. NO Analysed by Analyse DPO no. 30327
 A 02143

045

Sample No.	Type	ss channel **						Carbon	Metal content ppm or %										Grid ref	Geological Observations			
		fl	wi	al	co	ca	pH		Cu	Pb	Zn	Ag	Mo	Mn	As	Co	Ni	Cd					
		o/c sample type ***							s sample type ****														
988433	f	g/s							70	x	80	x			1400			115	15	120		Creek	approx 100m SE of pipeline. Limeritic material, prob highly weathered basalt.
988436	SS	o	1.5	70%	30%	All basalt		25	S	165	x			420			2.5	0.15			5000N 5118E	Dry creek, all basalt float.	
988437	S	A	1.2	B				90	S	140	x			310			2.30	1.00			5000N 5250E	Ochre, silty clay. Ex basalt	
988438	SS	o	1.5	70%	30%		+80"	40	x	110	x			440			55	1.15	10	110			
							-80"	45	S	145	x			520			55	1.25	15	95		5000N 5275E	Dry creek, 100% basalt float. Draining to north.
988439	S	A	1.0	B				90	S	120	x			1250			2.30	1.25			5000N 5250E	Ochre clay, ex basalt.	
988440	S	A	0.9	B				105	x	205	x			490			2.90	1.5	100		5425E 4650N	Ochre clay, ex basalt.	

224045

* Sample type es = stream sediment oc = outcrop f = float s = soil
 ** Stream sed. sample description fl = flow m3/sec wi = width m al = alluvial co = colluvial ca = catchment km2
 *** Outcrop sample type gs = grab sample rc = rock chip (state interval & length) cs = channel sample (state length)
 **** Soil sample type auger hole or pit depth m A, B or C horizon

047

224048

SAMPLE LEDGERS

INPUT-EM ANOMALIES 2477/10360 AND 2465/10360

PROJECT ARTHUR LINEAMENT
 TENEMENT RAPID RIVER ELI/79
 AREA / PROSPECT INPUT 2465/10360

GEOCHEMICAL SAMPLING LEDGER

GEOLOGIST I M CLEMENTSON SAMPLE TYPE SOIL

DATES: 1 / 84
 LAB. PLS
 PAGE NO. 1

SAMPLE NUMBER	GRID REF.	ANALYSES														DPO NUMBER	GEOLOGICAL OBSERVATIONS	CORRESP. -80 MESH STREAM SAMPLE					
		Cu	Pb	Zn	Co	Mn	Fe	As	Ba	Sr	W												
988746	4850N 5000E	<2	5	<2	<5	<5	350	1	250	<5	10										30341	C-HORIZON SOILS	
747	4850N 4875E	60	10	100	60	140	3967	<1	220	<5	<10												
748	4850N 4900E	105	15	125	30	20	3600	1	70	<5	<10												
749	4850N 4925E	5	15	10	10	20	2650	<1	<10	<5	<10												
750	4850N 4950E	<2	5	5	<5	5	640	1	<10	<5	40												
751	4850N 4975E	5	<5	<2	<5	5	500	1	930	<5	10												
752	4850N 5025E	<2	<5	<2	<5	5	830	1	80	<5	30												
753	4850N 5050E	<2	<5	<2	<5	5	340	1	290	<5	<10												
754	4850N 5075E	<2	<5	10	<5	5	400	1	360	<5	10												
755	4850N 5100E	2	<5	2	<5	<5	550	2	250	<5	<10												
756	4850N 5125E	<2	5	2	<5	5	1000	1	180	<5	20												
757	5150N 4850E	<2	<5	2	<5	10	1200	1	30	<5	20												
758	5150N 4875E	<2	<5	2	<5	10	1200	<1	30	<5	20												
759	5150N 4900E	<2	<5	5	<5	5	2000	1	270	<5	10												
760	5150N 4925E	<2	<5	2	<5	5	1000	1	210	<5	20												
761	5150N 4950E	<2	<5	2	<5	5	970	<1	230	<5	<10												
762	5150N 4975E	<2	<5	2	<5	5	630	1	250	<5	10												
763	5150N 5000E	<2	5	5	<5	5	550	1	330	<5	<10												
764	5100N 5000E	<2	10	5	<5	5	1200	1	190	<5	20												
765	5050N 5000E	<2	<5	5	<5	5	930	10	320	<5	<10												
766	4950N 5000E	<2	<5	2	<5	15	2250	1	80	<5	40												
767	4900N 5000E	<2	<5	<2	<5	5	860	7	450	<5	10												

METHOD
 DET.LIMIT

048

224049

TASMANIA

CRA EXPLORATION PTY. LTD.

NOT Located

Sample Number	SOIL DESCRIPTION											BEDROCK				METAL CONTENT ppm / %											Geological Observation
	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	Sr	W	Ba	
	East	North																									
988687	5000E	5000N	0.60	153	4	-	80	20	0	2	9					5	20	10	5	<1	25	<20	<5	20	380	Fine silty clay, slight Fe-b. calc. Surfo	
988688	4975E	5000N	0.85	153	4		80	20	0	2	9					<2	25	5	5	<1	80	<20	<5	10	510	Mon. all qz.	
988689	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	Worth Hgrey qz: b	
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. alluv. gneiss.	
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												
Tenement Name: RAPID RIVER EL 1/79											Project: AMG Zone: 55				Sheet No: 1												
Area / Prospect: Indur Anomaly #2465/10360											DPO's: 30336				Laboratory: ALS												
Map / Photo Ref:											Sample No's: 988687 : 988689				Collected By: I.M. Clementson Date: DEC 83 ✓												

21051

N3

CRA EXPLORATION PTY. LTD.

TASMANIA

Sample Number	SOIL DESCRIPTION											BEDROCK					METAL CONTENT ppm / %										Geological Observation
	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	Kl	Ba	
	East	North																									
988710	5125E	5000N	0.6	135	4		30	40	30	0.2	9					<2	20	10	10	1	15	20	<5	10	340	Weakly oxidized/shales	
988711	5150E	5000N	0.6	135	4		30	40	30	0.2	9					<2	15	10	10	1	20	<20	<5	20	240	"	

GEOCHEMICAL SOIL SAMPLING LEDGER	DETECTION LIMIT		2	5	2	5	1	5	20	5	10	10
	ANALYTICAL METHOD		AOE							XRF		
Tenement Name: RAPID RIVER EL1/79	Project:	AMG Zone: SS		Sheet No: 3								
Area / Prospect: INPUT ANOMALY #2465/10360	DDO's: 20336	Laboratory: ALS										
Map / Photo Ref	Sample Nos	Collected By: IMC		Date: Dec 83								

224052

no.

TASMANIA

CRA EXPLORATION PTY. LTD.

Sample Number	SOIL DESCRIPTION											BEDROCK					METAL CONTENT ppm / %										Geological Observation
	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	Se	W	Ba	
	East	North																									
988700	4750	5000	1.4	353	4		30	30	40	2	2						60	25	15	10	2	30	20	<5	20	140	Gley 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 gravel
703	4675		0.5	133	5		60	20	20	0	2	100					5	5	5	5	<1	50	<20	<5	60	30	Went. gray qz. tes.
704	4650		0.8	153	5		50	30	20	0	2	100					<2	10	5	5	<1	30	<20	<5	30	260	Went. br. sh. sand gray qz. tes.
705	4625		0.9	134	7		80	10	10	3	3	100					10	10	25	10	<1	80	<20	<5	100	100	Homic gravels.
706	5025E	5000N	0.5	153	5		30	40	30	0	2	9					<2	20	5	10	<1	30	<20	<5	40	260	Went. gray chert / shal
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										6	5	2	5	1	5	20	5	10	10
		ANALYTICAL METHOD										AMS									
Tenement 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									

2240533

PROJECT ARTHUR LINEAMENT
 TENEMENT RAPID RIVER ELI/79
 AREA / PROSPECT INPUT ANOMALY 2477/10360

GEOCHEMICAL SAMPLING LEDGER

GEOLOGIST IMC SAMPLE TYPE SOILS

DATES : 1/84
 LAB. A.L.S.
 PAGE NO. 1

SAMPLE NUMBER	GRID REF.	ANALYSES												DPO NUMBER	GEOLOGICAL OBSERVATIONS	CORRESP. -80 MESH STREAM SAMPLE			
		Cu	Pb	Zn	Co	Mn	Fe	As	Ba	Sr	W								
768	5000E	<2	<5	2	<5	5	1100	5	570	<5	10						30341	Soils - C-Horizon.	
769	4975E	<2	<5	<2	<5	5	940	3	50	<5	10								
770	4950	<2	<5	<2	<5	<5	510	3	190	<5	10								
771	4925	<2	<5	<2	<5	<5	500	2	90	<5	10								
772	4900	<2	5	2	<5	5	910	5	180	<5	20								
773	4875	<2	5	5	5	10	750	3	290	<5	<10								
774	4850	<2	5	5	5	5	1250	4	360	<5	10								
775	4825	2	5	20	5	25	5000	3	300	<5	<5								
776	4800	2	10	15	10	20	120%	2	310	<5	10								
777	4775	<2	5	10	10	20	6150	3	330	<5	10								
778	4750	<2	10	10	5	10	5250	3	660	<5	10								
779	5200	75	5	5	5	10	1500	4	30	<5	30								
780	5175	35	20	65	30	45	5250	<1	60	<5	<10								
781	5150	2	20	15	20	45	600	<1	-	-	-								
782	5125	15	5	2	5	5	720	1	90	<5	10								
783	5100	<2	15	5	120	10	981%	170	80	<5	20								
784	5075	<2	5	5	<5	10	1500	2	<10	<5	20								
785	5050	<2	5	5	<5	10	1400	2	<10	<5	30								
786	5025	2	5	5	10	5	660	2	<10	<5	20								

224054

METHOD
 DET. UNIT

055

PROJECT ARTHUR LINEAMENT
 TENEMENT RAPID RIVER EL 1/79
 AREA / PROSPECT RADIO TOWER AREA

GEOCHEMICAL SAMPLING LEDGER
 GEOLOGIST V WILLIAMS SAMPLE TYPE ROCK CHIPS

DATES : MAY 1984
 LAB. _____
 PAGE NO. _____

SAMPLE NUMBER	GRID REF.	ANALYSES														Au ppm	DPO NUMBER	GEOLOGICAL OBSERVATIONS	CORRESP. -80 MESH STREAM SAMPLE		
		Cu	Pb	Zn	Ag																
1198407	359300mE 5436300mN	10	35	2	< 1												< 0.01	30380	Black-dark brown Fe-Mn rich friable beds within Precambrian black shales.		
1198408	359300mE 5436300mN	10	40	5	1												0.06	30380			
1198409	359300mE 5436300mN	10	15	2	1												< 0.01	30380			
1198410	359300mE 5436300mN	10	15	< 2	1												0.02	30380			
1198411	359300mE 5436300mN	5	15	< 2	< 1												0.02	30380			
1198412	359300mE 5436300mN	30	35	< 2	1												0.03	30380			
1198413	359300mE 5436300mN	80	10	10	< 1												0.01	30380			
1198414	359300mE 5436300mN	170	30	10	1												0.10	30380			
1198415	358500mE	30	10	< 2	< 1												< 0.01	30380	Float. Quartzite with Black Streaks	1198102	
METHOD	DET LIMIT																				

224056

SAMPLE LEDGERS

MT BERTHA INPUT ANOMALIES

PROJECT ARTHUR LINEAMENT
 TENEMENT RAPID RIVER ELI/79
 AREA / PROSPECT COMSTAFF CREEK

GEOCHEMICAL SAMPLING LEDGER

GEOLOGIST MClementson SAMPLE TYPE STREAM SEDIMENTS

DATES: Nov 1984
 LAB. ALS BRISBANE
 PAGE NO. 1

SAMPLE NUMBER	GRID REF.	ANALYSES																	DPO NUMBER	GEOLOGICAL OBSERVATIONS	CORRESP. -80 MESH STREAM SAMPLE			
		Cu	Pb	Zn	As	Ag	Fe %	Mn	Co	Ni	Mo	Ba	Sn	W	Au ppb									
988835	35260E 5417820N	15	15	65	3	<1	3.47	460	25	50	10	130	<5	10	210	✓						31959	Very small tributary of "Comstaff Creek" - pure 200m upstream from Pipeline Road. -40" field stream. 1m wide Low flow. Moderate bank of silt + all. Mod-heavy Mn staining. Flout 70% Tert. bank 20% v. qz; 10% Qz-muc. - schist.	
988836	35260E 5417820N														2700 ppb	Sample weight - 5.12 kg	✓						-4" bulk (5kg) CN leach.	988835

METHOD DET LIMIT ICP ? 5 ? 1 1 0.01 5 5 5 5 10 5 10 3

060

NOT Located

TASMANIA

CRA EXPLORATION PTY. LTD.

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	K ₂ O / Mo		Sn / W	P ₂ O ₅ / Pb	Au ppm
	East	North				From	To																					
988663	352690	5417850	2	3			123		12	39	10	93					35	45	40	80/1	100/1	10/50	140/8	15/10	ND	ND	20.1	Limonite veeging in situ Matrix? possibly pyrite
988664	352690	5417850	2	3			123		12	39	10	93					80	45	35	15/1	100/1	10/50	140/60	15/10	ND	ND	20.1	Limonite? pyrite Probably originally pyrite
988665	352800	5417800	2	3			102		4	10							20	25	30	35/1	100/1	10/50	140/16	15/10	ND	ND		Talated highly pyritic pyrite. Dark - microp.
988668	352400	5417750	2	3			123		4	90	30	10					20	20	15	50/1	10/134	80/50	80/8	15/10	150/10	20.1	Py magnetite rock Abundant magnetite minor pyrite? sp.	
988670	352410	5417740	2	3			123		4	90	30	10					100	55	65	80/1	100/1	10/50	140/36	15/10	ND	20.1	(New gneiss appearance)	

GEOCHEMICAL ROCK SAMPLING LEDGER

DETECTION LIMIT	2	5	10	50	100	1000	10000
ANALYTICAL METHOD	ICP	---	---	---	---	XRF	Fire Assay

Tenement Name: RAPID RIVER Project: AMG Zone 55 Sheet No: 1

Area / Prospect: Central / Zennedy Creek DPO's: 30330 Laboratory: AL'S

Map / Photo Ref: North of P. ... Sample No's: 988663-988670 Collected By: IMC Date: 11/83

1007702

062

NOT LOCATED

TASMANIA

CRA EXPLORATION PTY. LTD.

Sample Number	LOCATION		SAMP DESC.			SITE DESC.					HEAVY MINS.			OUTCROP		LOOK	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	Cu	Pb	Zn	Co / Ag	Cr / Ni	Fe %		Ba / Mn	Pb / Sn	Au ppm	Warrant gms
	East	North																													
988667	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	110/30	5/10	1.1	16.44		
988686	352910	5417740	1	15	0.050	3	4	3	6	3	1/3	1	2	4	80	90				50	45	45	115/3	145/40	41.8	140/30	25/10	<0.1	45.37	Abundant Fe ₂ O ₄ in per. Q ₂ -mag. Rock.	

GEOCHEMICAL PANNED CONCENTRATE SAMPLING LEDGER			DETECTION LIMIT			2	5	2	5/1	5/5	0.01	10/4	5/10	0.1	
			ANALYTICAL METHOD			AAS						XRF		Fe & As	
Tenement Name: RAPID RIVER CL 1/79			Project:			AMG Zone: 55			Sheet No.:						
Area / Prospect: COMSTAFF Zn Anomaly			DPO's: 30336			Laboratory: PLS									
Map / Photo Ref.:			Sample No's:			Collected By: MC			Date: 23/11/83 ✓						

221063

SAMPLE LEDGERS

FOLLY HILL - ARTHUR RIVER AREA

PROJECT ARTHUR LINEAMENT
 TENEMENT RAPID RIVER EL 1/79
 AREA / PROSPECT FOLLY HILL

GEOCHEMICAL SAMPLING LEDGER

GEOLOGIST I M Clementson SAMPLE TYPE Rocks

DATES: Nov 1984
 LAB. ALS BRISBANE
 PAGE NO. 1

SAMPLE NUMBER	GRID REF.	ANALYSES																DPO NUMBER	GEOLOGICAL OBSERVATIONS	CORRESP. -80 MESH STREAM SAMPLE							
		Cu	Pb	Zn	As	Ag	Fe %	Mn	Co	Ni	Mo	Ba	Sr	W	Au ppb												
988810	363540E 544390N	S	<S	S	28	<1	0.32	25							<10	<S	10	10					31959	Floot: quartzite light buff grey finegrained. Extensive quartz veining			
988811	363530E 544390N	S	10	35	<1	1	2.50	85							210	<S	<10	<3							Oc: pale buff-ochreous schist. Weathered. Slightly more ferruginous than normal.		
988812	363300E 544380N	S	<S	10	<1	<1	0.74	50							<10	<S	<10	<3							Floot: pale greenish quartzose schist, dominantly finegrained quartzite with green (chloritic or kaolinitic) interlaminae.		
988813	363220E 5444250N	10	<S	10	<1	1	2.79	10							<10	<S	<10	<3							Oc: channel sample over 6m of weathered silty schistose sediments. Ochreous		
988814	363050E 5444500N	S	10	35	9	<1	2.12	320							150	<S	<10	<3								Oc: dark grey to black schist with minor quartz veining with ferruginous selvage	
METHOD	ICP														2KF												
DETECT	2	5	2	1	1	0.01	5								10	5	10	3									

PROJECT ARTHUR LINEAMENT
 TENEMENT RAPID RIVER EL 1179
 AREA / PROSPECT FOLLY HILL

GEOCHEMICAL SAMPLING LEDGER

GEOLOGIST I.M. Clementson SAMPLE TYPE Stream Sediments

DATES: Nov 1984
 LAB. ALS BRISBANE
 PAGE NO. 1

SAMPLE NUMBER	GRID REF.	ANALYSES															DPO NUMBER	GEOLOGICAL OBSERVATIONS	CORRE -80 M STREA SAMPL
		CU	Pb	Zn	As	Ag	Fe %	Mn	Ca	Ni	Mo	Ba	Sn	W	Au ppb				
988815	362950E 5444550N	5	10	20	<1	<1	1.22	60	<5	10	10	140	<5	10	<3	31959	Chuckling Creek. -40# (Field sieved) stream sediment sample. Point bar top site. Low flow. Coll and c/s in bank, very deep. Minor Fe stain. Flout 80% dark and buff shales/salts, 20% quartzite.		
988816	362950E 5444550N															50 ppt Sample weight: 5.47 kg	✓ -4# Bulk (5kg) sample for Au by CN leaching.	9888	
988817	363925E 5442750N	5	10	20	<1	<1	1.13	75	5	15	10	30	<5	20	230	✓	Eaton's Creek. -40# (Field sieved) 10m wide. Mod stream flow. c/s (phyllite and mica bearing). Flout: qz; qz:ls; shales and amphibolites. No stain, basins Fe stain.		
988818	363925E 5442750N															50 ppt Sample weight: 5.07 kg	✓ -4# Bulk (5kg) for CN Leach	98881	
988819	367300E 5442100N	10	10	25	<1	<1	1.54	140	5	15	10	50	80	10	300	✓	-40# (Field sieved) stream and 2m wide. Mod flow. 50:50 coll and alluvial banks. Flout 40% qz; 20% qz:ls; 20% phyllite 20% Permian sh. Heavy Fe stain. Logging in area.		
988820	367300E 5442100N															28.8 ppt Sample weight: 5.5 kg	-4# bulk (5kg) for CN Leach	98819	
METHOD DET LIMIT	ICP	2	5	2	1	1	0.01	5	5	5	5	10	5	10	3	XRF	FAIMS		

224066

PROJECT ARTHUR LINEAMENT

TENEMENT RAPID RIVER EL V79

AREA / PROSPECT FOLLY HILL AREA

GEOCHEMICAL SAMPLING LEDGER

DATES : APRIL '84

066

GEOLOGIST VAW

SAMPLE TYPE ROCK CHIPS (NOT COLLECTED U/ STREAM SEDS) PAGE NO. _____

SAMPLE NUMBER	GRID REF. (ANG)	ANALYSES																DPO NUMBER	GEOLOGICAL OBSERVATIONS	CORRESP. -80 MESH STREAM SAMPLE
		Cu	Pb	Zn	Ag	Ni	Co	Fe	Mn	As	Ba	Sn	W							
1056342	364200mE	2	<5	10	1													<0.1ppm	30377	Composite samples from saddle between Folly Hill and Frog Hill. Quartzites with black stringers. - chlorite or tourmaline?
	5443700mN										75	<10							30383	
1056343	344200mE	2	<5	5	<1													<0.1ppm	30377	North along strike from Folly Hill same rocks as above.
	5443700mN										15	<10							30383	
1056345	367000mE	5	<5	5	<1													<0.1ppm	30377	North along strike from Folly Hill same rocks as above.
	5446200mN										70	<10							30383	
1056348	367000mE																			
	5446200mN	<2	<5	2	<1													<0.1	30377	
											10	<10							30383	

224062

067

SAMPLE LEDGERS

RAPEND ANOMALIES

PROJECT ARTHUR LINEAMENT
 TENEMENT RAPID RIVER EL 1/79
 AREA / PROSPECT RAPID AERODROME FOLLOW-UP

GEOCHEMICAL SAMPLING LEDGER

DATES : 27 Nov 1984
 LAB. ALS BRISBANE
 PAGE NO. 1 / 2

GEOLOGIST I M CLEMENTSON SAMPLE TYPE SOILS (HAND AUGER)

SAMPLE NUMBER	GRID REF. ALL 5200N	ANALYSES											DPO NUMBER	GEOLOGICAL OBSERVATIONS	CORRESP. -80 MESH STREAM SAMPLE	
		Cu	Pb	Zn	As	Pb	Fe %	Mn	Ba	Sn	W					
988925	7500E	25	25	20	<1	1	1.83	45	190	5	10			31959	0.8m, B. Yell-grey sandy clay	
926	7475E	10	15	20	<1	<1	1.11	85	70	<5	40				0.7m, B. Grey sandy clay	
927	7450E	130	105	20	5	1	1.24	50	250	5	30				0.7m, B. Dk grey sandy clay plus weath. qz-mica schists	
928	7425E	10	25	20	<1	1	1.23	50	150	<5	20				0.9m, B. Grey brown clay plus mica schist	
929	7400E	30	25	40	<1	1	1.74	105	120	<5	50				0.9, B. Green clay. Fine qz.	
930	7375E	35	25	100	<1	2	10.4	710	<10	<5	<10				0.7, B. Brown clay. Fine v. qz	
931	7350E	20	20	50	<1	1	4.71	180	50	<5	20				0.5, B. " " " "	
932	7325E	15	20	55	<1	1	2.80	55	330	<5	10				1.0m, B. Yellow-brown sandy clay + weathered mica schist.	
933	7300E	10	30	60	<1	1	4.09	380	130	<5	10				1.1m, B. Grey sandy clay + weath biotite schist.	
934	7275E	10	30	45	<1	1	2.80	240	270	<5	10				0.5m, B. Yell-grey clay "	
935	6900E	10	15	40	<1	<1	1.75	160	140	<5	10				0.5m, B. Grey-green clay plus phyllite fragments	
936	6925E	5	10	25	<1	<1	1.20	85	210	<5	10				0.5m, B. "	
937	6950E	10	15	30	<1	1	2.33	105	300	<5	10				0.7m, B. Grey-brown sandy clay plus phyllite + mica schist	
938	6975E	5	10	45	<1	1	2.49	150	290	<5	10				0.6, C. Weath mica schist	
939	7000E	15	130	55	<1	1	4.18	185	260	<5	10				0.9, B. Or-brown clay	
940	7025E	15	40	75	<1	2	4.58	145	410	<5	<10				0.7, B. " " "	
941	7050E	5	10	25	<1	<1	1.45	135	170	<5	10				1.0, C. L. grey weath q-mica schists.	
942	7075E	15	20	45	<1	1	3.57	155	150	<5	30				1.2, B. Brown sandy clay	
943	7100E	15	25	55	<1	2	3.71	65	340	<5	<10				0.9, B. Light brown clay plus q-mica schist + qz frags	
944	7125E	5	30	15	<1	<1	0.91	90	150	<5	30				0.7, B. "	
945	7150E	5	5	15	<1	<1	1.08	90	130	<5	60				0.9m, B. "	
988946	7175E	2	10	30	<1	<1	1.46	110	160	<5	10				0.7m, C. Light grey weath qz-mica schist	
METHOD		ICP							XRF							
DET.LIMIT		2	5	2	1	1	200	5	10	5	10					

070

PROJECT ARTHUR LINEAMENT
 TENEMENT RAPID RIVER FL 1179
 AREA / PROSPECT RAPEND AEROMAG ANOMALIES

GEOCHEMICAL SAMPLING LEDGER

DATES : 27 Nov 1984
 LAB. ALS BRISBANE
 PAGE NO. 1

GEOLOGIST I. M. CLEMENTSON SAMPLE TYPE ROCKS

SAMPLE NUMBER	GRID REF.	ANALYSES																DPO NUMBER	GEOLOGICAL OBSERVATIONS	CORRESP. -80 MESH STREAM SAMPLE	
		Cu	Pb	Zn	As	Ag	Fe %	Mn				Ba	Sn	W	Au ppb						
988822	7325E 6000N	20	15	15	3	<1	2.12	60				290	<5	<10	<3				31959	Float. Coarse, segregated quartz-biotite schist. Non magnetic.	988821
988823	7325E 6000N	20	110	90	65	1	10.6	7.83%				120	<5	<10	<3					Extremely well developed Fe and Mn oxide crust developed on "licked" alluvial in creek bank. Probably very humic rich.	988821
988825	7150E 6000N	5	10	25	1	<1	1.93	1550				150	<5	<10	<3					Dark grey phyllite. Well chloritised. Float.	
988826	7150E 5600N	10	20	25	<1	<1	1.87	130				100	<5	<10	<3					Quartz-musc-biotite schist (with volcaniclastic like appearance?) Float.	
988828	7310E 5600N	5	15	55	<1	<1	2.80	240				120	<5	<10	<3					cf finely banded qz-chlorite-biotite schist with mafic (Zn) interlaminae	
988828	7310E 5600N	PETROLOGY :- Qz-chlorite-muscovite schist, metamorphic grade - granulite facies. Probable origin: laminated siltstone.																31760			
988831	7600E 5600N	5	10	30	<1	<1	2.61	195				240	<5	<10	<3					cf qz-chl-mica schist + interbedded phyllites	
988833	6825E 5400N	20	15	25	3	<1	1.88	170				160	<5	40	<3					cf qz-musc schist + interbedded phyllites.	
METHOD DET LIMIT	ICP	2	5	2	1	1	0.01	5				XRF	10	5	10	FA/ARS	3				

224071

071

PROJECT ARTHUR LINEAMENT

GEOCHEMICAL SAMPLING LEDGER

DATES: Nov 27 1984

TENEMENT RAPID RIVER FL 139

LAB. ALS BRISBANE

AREA / PROSPECT RAPID RIVER PROSPECT

GEOLOGIST J. F. CLEMENTS

SAMPLE TYPE STREAM SEDIMENTS (-40th FINE SIEVE)

PAGE NO. 1

SAMPLE NUMBER	GRID REF.	ANALYSES															DPO NUMBER	GEOLOGICAL OBSERVATIONS	CORRESP. -80 MESH STREAM SAMPLE
		Cu	Pb	Zn	As	Hg	Fe %	Mn	Co	Ni	Mb	Ba	Sn	W	Pb ppb				
98821	7325E 6600N	10	15	30	8	<1	2.14	160	10	15	10	40	<5	10	<3	✓	3.959	-40 th F. sil. sand. Phyl. sand and Mn sil. sil. Heavy Mn and Fe sil. sand Flint qz, qz-misc sil. qz-b ch. sil. qz-b low Mn sil. sil. banks 2m wide	98821
98824	7175E 6600N	5	10	15	3	<1	1.17	70	<5	10	10	20	<5	10	<3	✓	"	-40 th F. sil. sand. Lign. sil. Mat Fe and Mn sil. sil. of qz- bank sil. sil. Flint qz-b sil. and qz-misc sil. sil. qz- bank sil. sil. Lign. sil. Mat	98824
98827	7165E 5600N	5	10	15	<1	<1	0.82	50	<5	10	10	30	<5	10	<3	✓	"	-40 th F. sil. sand. Mat R. sil. sil. Lign. sil. Mat valley. Sil. qz-misc sil. Flint 30% sil. qz 20% qz-misc sil.	98827
98829	7435E 5600N	5	10	10	<1	<1	0.54	35	<5	5	10	20	<5	20	<3	✓	"	-40 th F. sil. sand. Lign. sil. Mat and (Lign. sil. Mat) sil. sil. sil. sil. sil. Flint 90% qz 10% phyl. sil. qz-misc sil. Phyl. sand (Lign. sil. Mat)	98829
98832	7185E 5600N	5	5	10	<1	<1	0.33	20	<5	<5	10	<10	<5	30	<3	✓	"	-40 th F. sil. sand. Lign. sil. Mat bank Flint 1/3 qz, 1/3 qz-misc sil. 1/3 qz-b ch. sil. Dry.	98832
98834	6345E 5400N	5	15	15	<1	<1	0.54	35	<5	10	10	<10	<5	20	<3	✓	"	-40 th F. sil. sand. Lign. sil. Mat sil. banks Flint 70% qz 35% phyl. sil. qz-misc sil.	98834
98950	7175E 5400N	5	10	15	1	<1	0.59	40	<5	10	10	<10	<5	20	<3	✓	"	-40 th F. sil. sand. Lign. sil. Mat Lign. sil. Mat 65% qz 40% qz-misc sil. and traces phyl. sil.	98950
METHOD DETLMT	ICP	2	5	2	1	1	0.01	5	5	5	5	XRF 10	5	10	3				

224072

072

Not Located.

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.	Silt 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																																												
988633	6300E	6290N	1	18	0.020	3	4	2	U	U	1	2	2	PS								5	20	30	300 / 40	15 / 30%	- / 1	10 / 12	5 / 40	<0.1	13.08	? Tr Au.														
1198021	361155	5426570																				5	<5	10	20	5 / 1.1	15 / 1	30 /	5 / 10	<0.1	64.5	DPO 30316 MARCH 84														
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 HL 479															Project:					AMG Zone: SS					Sheet No: 1																					
Area / Prospect: RAPID GRD															DPO's: 30336					Laboratory: ALS																										
Map / Photo Ref: Line 6200E															Sample No's:					Collected By: IMC/Montoon					Date: Dec 83																					

224073

073
SS

TASMANIA

CRA EXPLORATION PTY. LTD.

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. Flak	Min. Flak	LOOK	Cu	Pb	Zn	Co / Ag	Mn / Fe ₂ O ₃	Cr / Ni	Ba / Mo	Sn / W	As	Au								
	East	North																																				
988653	7310E	5000N	1	4	50	40	10	1	0.5	1	3	7	3		1	3	105	105	104		10	20	45	10 / <1	85 / 1.70	580 / 25	90 / <4	25 / 80										
988656	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 / 2.48	190 / 45	160 / 8	25 / 10										
988657	7570	5000N	1	4	30	30	40	1	3	4	3	5	3		1	3		105	104		5	25	35	20 / 1	600 / 3.42	180 / 40	150 / 4	25 / 10										
988658	7185	5000N	1	4	30	30	40	1	0.5	3	3	7	3		1	3		105	104		5	55	75	10 / 1	165 / 1.97	200 / 40	120 / 4	25 / 10										
988661	6760	5000N	1	4	40	30	30	1	2	4	3	7	3		1	2		100	105 / 104		5	20	40	10 / <1	80 / 1.17	230 / 35	120 / 4	25 / 10										
988678	6025E	5000N	1	4	60	25	15	1	2	4	3	7	3		1	2		100	104		<2	15	10	5 / <1	35 / 0.65	380 / 40	50 / 8	25 / 20										
1198001	361155	5426570																			10	<5	30	10 / <1	140 / 2.7		130 /	25 / <10	16	✓	DPO 30376 MARCH 84							
1198002	361270	5426310																			2	<5	5	5 / <1	25 / 0.5		50 /	25 / <10	2	✓	"							

GEOCHEMICAL STREAM SEDIMENT SAMPLING LEDGER		DETECTION LIMIT		2	5	2	5 / 1	5 / 0.2	5 / 5	10 / 4	5 / 10		
		ANALYTICAL METHOD		AAS						> XRF			
Tenement Name: RAPID RIVER 1/79		Project: AMG Zone: 55				Sheet No.: 1							
Area / Prospect: RAPEND		DPO's: 30336 / 30376				Laboratory: ALS							
Map / Photo Ref.: LINE 5000N		Sample No's:				Collected By: IM Clementson		Date: 28 11 83					

271074

PROJECT ARTHUR LINEAMENT
 TENEMENT RAPID RIVER EL 1179
 AREA / PROSPECT INPUT ANOMALY SEGS. (S.E. SECTION)

GEOCHEMICAL SAMPLING LEDGER

NOT LOCATED

DATES: MAY 1983
 LAB. ANGLARS/ALS
 PAGE NO. 1

GEOLOGIST IMC / VAW SAMPLE TYPE STREAM SEDIMENT / PAN CONS.

SAMPLE NUMBER	GRID REF.	ANALYSES														DPO NUMBER	GEOLOGICAL OBSERVATIONS	CORRESP. -80 MESH STREAM SAMPLE			
		Cu	Pb	Zn	Mn	Fe%	Ni	Co	Ag	As	Ba	W	Sr	Au							
988549	357600E 5435450N	14	4	22	105	0.73	15	7					3						30333	DRAINS INPUT 2880/10400	✓
1198006	351370E 5435400N	5	<5	2	15	0.41	5	5	<1	4	<10	<10	<5						30376	DRAINS INPUT 2880/10400	✓
1198026	351370E 5435400N	5	20	2	75	1.15	<5	<5	<1	3	<10	10	<5	100	ppm			30376	(Panned Concentrate)	1198006	
990453	351900E 5428900N	5	15	15		0.12			<1	14								30346	ML Bertha area	✓	
990463	351400E 5426600N	10	15	5		0.06												30346	DRAINS 3459/10600 + 3457/10600	✓	
1198003	353000E 5429100N	5	<5	20	30	1.04	20	<5	<1	5	100	<10	<5					30376	DRAINS 2213/10561	✓	
1198023	353000E 5429100N	10	<5	5	20	0.6	10	<5	<1	<1	30	<10	<5					30376	" " " (Pan Con)	1198003	
1198004	352800E 5429200N	10	<5	35	40	1.11	20	<5	<1	4	80	<10	<5					30376	3373/10560	✓	
1198024	352800E 5429200N	10	<5	10	15	0.44	10	<5	<1	<1	10	<10	<5					30376	" " " (Pan Con)	1198004	
1198005	352200E 5429200N	5	<5	20	20	0.54	10	<5	<1	4	90	<10	<5					30376	" " 3369/10560		
1198025	352200E 5429200N	5	<5	2	15	0.37	5	<5	<1	5	40	<10	<5					30376	" " " (Pan Con)	1198005	

METHOD
 DET. L.P. 7

07A

224075

PROJECT ARTHUR LINEAMENT
 TENEMENT RAPID RIVER EL 1/79
 AREA / PROSPECT MT BERTHA

GEOCHEMICAL SAMPLING LEDGER

DATES : APRIL 1984

GEOLOGIST V WILLIAMS

SAMPLE TYPE ROCK CHIP TAKEN WITH -80# STREAM SEDIMENTS

PAGE NO.

075

SAMPLE NUMBER	GRID REF.	ANALYSES														Au ppm	DPO NUMBER	GEOLOGICAL OBSERVATIONS	CORRESP. -80 MESH STREAM SAMPLE
		Cu	Pb	Zn	Ag	As													
1198401	352800mE	5	< 5	5	1	2										<0.1	30377	Float in creek draining INPUT	1198004
	5429200mN																	ANOM 3373/10560 Quartzite	
1198402	325800mE	2	5	10	2	6										<0.1	30377	Float in creek draining INPUT	1198004
	5429200mN																	ANOM 3373/10560 Black Slate	
1198403	325800mE	< 2	< 5	35	2	2										<0.1	30377	Float in creek draining INPUT	1198004
	5429200mN																	ANOM 3373/10560 Laminated Black Slate with Minor Black Veins	
1198404	352200mE	5	< 5	20	1	4										<0.1	30377	Float in creek draining INPUT EM	1198005
	5429200mN																	ANOM 3369/10560 Black Slate	
1198405	352200mE	2	< 5	45	1	1										<0.1	30377	Float in creek draining INPUT EM	1198005
	5429200mN																	ANOM 3369/10560 Laminated Black Shale	
1198406	352200mE	< 2	5	10	1	3										<0.1	30377	Float in creek draining INPUT EM	1198005
	5429200mN																	ANOM 3369/10560 Black Slate with quartz veins	

224076

076

224077

SAMPLE LEDGERS

RAPID EAST MAGNETIC ANOMALY

PROJECT ARTHUR LINEAMENT
 TENEMENT RAPID RIVER EL 179
 AREA / PROSPECT RAPID EAST

GEOCHEMICAL SAMPLING LEDGER

GEOLOGIST I. M. CLEMENSON SAMPLE TYPE SOILS (HAND AUGER)

073
 DATES: Nov 1984
 LAB. ALS BRISBANE
 PAGE NO. 1

SAMPLE NUMBER	GRID REF.	ANALYSES											DPO NUMBER	GEOLOGICAL OBSERVATIONS	CORRESP. -80 MESH STREAM SAMPLE		
		Cu	Pb	Zn	As	Pb	Fe %	Mn	Ba	Sn	W						
<u>4800N</u>																	
489401	4675E	5	20	65	<1	<1	0.80	40	350	<5	20			3195A	1.1m B. M. grey clay + blue silt.		
402	4650E	5	<5	10	<1	<1	0.38	15	530	<5	<10				1.1m B. Yellow-buff clay		
403	4625E	2	<5	10	<1	<1	0.25	15	570	<5	<10				1.1m B. Light grey-buff clay + qz frags		
<u>4900N</u>																	
404	4800E	5	10	40	<1	<1	2.14	45	250	<5	10				0.7m B. Lt brown clay. Qz frags.		
405	4775E	2	10	10	<1	<1	0.57	15	300	<5	<10				0.9 B. Cream brown clay + qz frags		
406	4750E	5	10	15	<1	<1	0.28	15	150	<5	10				0.8 B. Brown sandy clay		
407	4725E	5	<5	10	3	<1	0.38	5	170	<5	<10				0.9 B. Yellow-brown sandy clay.		
408	4700E	5	10	10	<1	<1	0.57	30	260	<5	30				1.0m B. Grey sandy clay + qz		
409	4675E	2	5	20	<1	<1	0.85	105	360	<5	40				0.8m C. Wash grey silt/clay		
410	4650E	2	<5	10	<1	<1	0.50	35	180	<5	30				0.8m B. Lt br. clay + qz frags.		
411	4625E	115	20	10	<1	<1	0.55	15	420	<5	<10				0.7m C. Wash black shale.		
412	4600E	5	10	10	<1	<1	0.53	35	220	<5	20				0.6m B. Grey sandy clay.		
<u>5100N</u>																	
413	4200E	5	15	45	<1	1	2.37	210	250	<5	10				0.8m B. Lt br. clay + qz gravel		
414	4225E	10	20	25	1	1	1.35	80	260	<5	40				0.4m AB. Humic brown clay		
415	4250E	5	<5	15	<1	<1	0.33	20	400	<5	<10				0.6m B. Lt brown clay + v. qz		
416	4275E	15	<5	15	<1	<1	0.29	15	330	<5	10				1.0m B. M. brown clay + v. qz		
417	4300E	5	<5	10	<1	<1	0.42	20	490	<5	<10				1.0m B. Sandy brown clay + v. qz		
418	4325E	10	10	15	<1	<1	0.96	60	<10	<5	60				0.5m B. Sandy grey clay		
419	4350E	5	5	15	<1	<1	0.79	40	290	<5	20				0.6m Log gravel + brown clay		
420	4375E	5	<5	10	<1	<1	0.25	10	<10	<5	10				0.7m B. Brown clay sandy		
421	4400E	10	30	10	18	<1	2.30	10	290	<5	10				0.8m B. Yellow brown clay		
422	4425E	2	10	20	<1	1	1.93	105	240	<5	<10				0.9m B. Light brown clay		
423	4450E	5	5	40	<1	<1	1.01	65	40	<5	30				0.6 B. Dark brown, slightly humic		
424	4475E	5	5	20	<1	<1	1.13	80	90	<5	50				0.7 B. Dark brown-grey clay		
METHOD		ICP							XRF								
DETAILS		2	5	2	1	1	0.01	5	10	5	10						

224080

081

PROJECT ARTHUR - INEAMENT

GEOCHEMICAL SAMPLING LEDGER

DATES : Nov 1984

TENEMENT RAPID RIVER EL 1/79

LAB. ALS BRISBANE

AREA / PROSPECT RAPID EAST MAG / INPUT 2966/10440

GEOLOGIST I.M. CLEMENTSON

SAMPLE TYPE SOILS (HAND ASSES)

PAGE NO. 1

SAMPLE NUMBER	GRID REF.	ANALYSES											DPO NUMBER	GEOLOGICAL OBSERVATIONS	CORRESP. -80 MESH STREAM SAMPLE		
		Cu	Pb	Zn	As	Pb	Fe %	Mn	Ba	Sn	W						
	<u>522SE</u>																
989444	4900N	5	5	15	<1	<1	1.15	90	20	<5	110			31959	0.5m B. Dk brown-grey sandy clay		
445	4925N	5	5	10	<1	<1	0.63	45	<10	<5	40				0.7m B. Lk grey clay + g. clay		
446	4950N	2	<5	10	<1	<1	0.35	20	310	<5	20				0.8m B/C Lk grey clay + weath shale		
447	4975N	5	<5	10	<1	<1	0.50	30	260	<5	20				0.8m B. Dk brown sandy clay		
448	5025N	2	10	15	<1	<1	0.46	20	300	5	20				0.7m C. Weath lkg grey shale/arkist		
449	5050N	2	5	10	<1	<1	0.42	15	270	<5	10				0.8m C. "		
450	5075N	10	5	15	<1	<1	0.53	20	240	<5	20				1.1m B. Brown-grey clay + shale frag		
451	5100N	5	10	20	<1	<1	0.98	65	40	<5	60				0.6m B/C Sand grey clay + shale frag		
452	5125N	2	10	35	<1	<1	0.47	20	300	<5	20				0.5m B. Dk grey sandy clay		
453	5150N	2	10	15	<1	<1	0.45	15	250	<5	20				0.6m A/B Humid clay plus shale frag		
454	5175N	2	5	15	<1	<1	0.44	20	250	<5	10				0.9m C. Weath grey to off shales		
455	5200N	5	5	15	<1	<1	0.38	20	260	<5	20				0.8m C. "		
	<u>5125E</u>																
456	4900N	2	10	10	<1	<1	0.51	25	140	<5	30				0.7m B. Sand clay + frag weath shale		
457	4925N	2	25	25	<1	<1	0.65	20	220	<5	10				1.2m C. Weath mica shales/arkist		
458	4950N	2	5	15	<1	<1	0.36	10	190	<5	<10				0.9m C. "		
459	4975N	10	5	15	<1	1	0.49	20	170	<5	10				0.8m B/C "		
460	5025N	5	5	20	<1	<1	0.74	20	130	<5	10				0.8m B. Brown clay + g. z		
461	5050N	2	5	15	<1	<1	0.47	25	180	<5	30				1.0m B/C Weath shales + grey clay		
462	5075N	5	<5	10	4	<1	0.61	40	<10	<5	40				1.0m B. Grey sandy clay		
463	5100N	15	10	20	<1	1	0.79	20	180	<5	10				1.0m B. Light grey weath shale		
464	5125N	90	20	30	32	1	7.52	15	160	<5	10				1.2m B. Yellow sandy clay		
465	5150N	5	5	15	<1	<1	0.46	15	160	<5	20				0.7m B. Grey clay + shale/arkist		
466	5175N	5	5	15	<1	<1	0.39	15	110	<5	<10				0.8m B/C Weath grey shales/shales		
467	5200N	5	5	15	<1	<1	0.55	30	160	<5	20				0.9m C. Weath lkg grey arkist/sh		

224082

METHOD
DET. 1987

082

C.R.A. EXPLORATION GEOCHEMICAL SAMPLE JGER

Tenement name: RAPID RIVER EL 1179 No. 988489 - 988496 Sample numbers: 988489 - 988496 Collected by: I.M. Clementson Sheet no. 1
 Area / Prospect: RAPID EAST AEROMAG ANOMALY Date: 20-4-83
 Map / Photo reference: RECT LINE (Mag. E-W) Analysed by: Analabo DPO no. 30330
 A 02143

Sample No.	Type	ss channel **						Carbon	Metal content ppm or %											Grid ref	Geological Observations									
		ss [*]	oc	f	s	fl	wi		al	co	ca	pH	Cu	Pb	Zn	Ag	Mo	Mn	Au			Fe ²⁺ / Ni	Pb/ Co	Sn/ Ca						
																									o/c sample type ***					
																									s sample type ****					
988489	S	A	0.9	C							15	X	15	X		15		0.14% /5	X/10	X/410	S100E	DK grey/black clay, or shale or mudstone								
490	S	Replicate							15	S	10	X		10				0.13% /5	X/5	X/382	"	"								
988491	S	A	0.7	C							25	15	30	X		20		0.4% /10	X/10	X/777	S125E	M: grey weathered shale / mudstone.								
492	S	Replicate							S	10	30	X		30				0.6% /10	X/10	X/778	"	"								
988493	S	A	0.7	C							10	S	10	X		40		0.85% /5	X/15	X/328	S150E	Mottled grey-green-ochre weathered shale								
494	S	Replicate							20	X	20	X		60				0.4% /10	X/10	X/340	"	"								
988495	S	A	1.0	C							X	X	10	X		50		0.6% /10	X/10	X/106	4975E	LL ochre-brown weathered shale / mudstone								
496	S	Replicate							X	X	10	X		55				0.5% /5	X/5	X/136	"	"								

* Sample type ss = stream sediment oc = outcrop f = float s = soil
 ** Stream sed. sample description fl = flow m3/sec wi = width m al = alluvial co = colluvial ca = catchment km2
 *** Outcrop sample type gs = grab sample rc = rock chip (state interval & length) cs = channel sample (state length)
 **** Soil sample type auger hole or pit depth m A, B or C horizon

224083

083

C.R.A. (PLORATION . GEOCHEMICAL SAMPLE . DGER

Tenement name: RAPID RIVER EL 1/79 No. Sample numbers: 988549-550/580-581 Collected by: J.N. Clementson Sheet no. 1
 Area / Prospect: Date: 19. May. 83
 Map / Photo reference: B. of ... to "Rapid Foot" Done before. Analysed by: DPO no. 30393
 A 02143

Sample No.	Type	ss channel **						Carbon	Metal content ppm or %										Grid ref	Geological Observations
		fl	wi	al	co	ca	pH		Cu	Pb	Zn	Fe%	Mn	Ni	Co	Au / Ag	Ca	U / Th		
		o/c sample type ***																		
		s sample type ****																		
988549	s/s gs							14	4	22	0.72	105	15	-	1/2	1	1/3	357600E 543600N	Clk 6m wide along flow float all gz / qzite. Traces of ... s-s-s	
988550	f gs							40	x	5	1.5	165	545	10	1/2	1	1/2	357600E 543600N	White fine-med grained slightly schistose PE qzite 0.0-0.1x10 ⁻³ g	
988580	o/c gs							5	x	70	2.55	65	40	80	x/1	503	1/2	357600E 543700N	Vertical, N-S striking qzite schist	
988581	o/c gs							10	x	40	0.81	45	70	10	x/1	160	1/2	357850E 5436450N	"	

* Sample type ss = stream sediment oc = outcrop f = float s = soil
 ** Stream sed. sample description fl = flow m3/sec wi = width m al = alluvial co = colluvial ca = catchment km2
 *** Outcrop sample type gs = grab sample rc = rock chip (state interval & length) cs = channel sample (state length)
 **** Soil sample type auger hole or pit depth m A, B or C horizon

224084

TASMANIA

CRA EXPLORATION PTY. LTD.

Not Located

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	Straining	Conflam	Sit. Rating	Visible	Major	Minor	Minor	Outcrop	Float	LOOK	Cu	Pb	Zn	Co / Ag	Ni / Cr	Fe	Ba / Mn	Sn / W		Pb ppm	Wt. %
	East	North																													
988691	356250	5434400	1	6	0.020	4	4	2	6	4	2	1	2	3	90	93		103	100		S	15	25	20/1	25/1000	2.30	60/15	1/100	20.1	24.26	V. qz rich.

GEOCHEMICAL PANNED CONCENTRATE SAMPLING LEDGER			DETECTION LIMIT			2	0	0	0.1	5/0	0.01	1/10	10	0.1
			ANALYTICAL METHOD			4K50								
Tenement Name RAPID RIVER EL1/79			Project: AMG Zone SS			Sheet No.								
Area / Prospect RAPID EAST			DPO's 30330			Laboratory ALS								
Map / Photo Ref			Sample No's			Collected By I.M. Clementson Date DEC 83								

224085

087

CRA EXPLORATION PTY. LTD.

TASMANIA

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	Sr	W	Er	
	East	North																									
988712	4975	5000	0.5	237	S		30	40	30	0	2	9				<2	25	35	10	1	40	<20	<5	<10	300	200	Wash. grey green slate.
713	4950		0.5	233	S		30	40	30	0	2	9				10	35	20	5	1	30	<20	<5	<10	300	200	" " " " calcareous
714	4925		0.9	233	S		30	40	30	0	2	9				10	20	10	10	1	10	<20	<5	<10	300	200	Dr. mid grey calcareous shale
715	4900		1.0	237	S		30	40	30	0	2	9				50	35	45	15	2	35	<20	<5	<10	350	250	greenish ex pyrite
716	4875		0.5	237	S		30	40	30	0	2	9				5	15	40	10	2	35	<20	<5	<10	300	260	green grey calcareous shale
717	4850		0.7	237	S		30	40	30	0	2	9				10	20	40	10	1	35	<20	<5	<10	260		"
718	4825		0.7	237	S		30	40	30	0	2	9				<2	15	25	10	1	25	<20	<5	<10	460		"
719	4800		0.6	155	S		30	40	30	0	2	9				5	20	10	5	1	10	<20	<5	<10	350		Buff-brown
720	4775		1.2	285	S		30	40	30	0	2	9				<2	20	35	15	1	40	<20	<5	<10	370		ochre shale beneath grey silt
721	4750		0.5	133	S		30	40	30	0	2	9				<2	15	20	10	1	40	<20	<5	<10	450		Greeny grey calc shale.
722	4725		1.3	153	S		30	40	30	0	2	9				<2	15	10	5	1	10	<20	<5	<10	240		Pale buff calcareous shale
723	4700		0.7	333	8		60	30	10	3	2	100				<2	10	5	5	1	20	<20	<5	<10	50		Dark grey humic sand-ex gr. silt
724	4625		0.7	333	8		60	30	10	3	2	100				<2	15	15	5	1	15	<20	<5	<10	400		" " " "
725	4650		0.8	333	8		60	30	10	3	2	9				5	10	15	5	1	35	<20	<5	<10	700		Dark grey humic sand shale phyllite
726	4625		0.7	333	S		20	40	30	0	2	9				5	10	10	5	1	15	<20	<5	<10	500		Dark grey shale phyllite
727	4600		1.0	333	S		30	40	30	0	2	9				<2	15	35	10	1	40	<20	<5	<10	300		" " " "
728	4575		0.8	333	S		30	40	30	0	2	9				<2	10	10	10	1	20	<20	<5	<10	300		" " " "
729	4550		1.4	333	S		30	40	30	0	2	9				45	45	30	15	2	135	<20	<5	<10	300		" " " "
730	4525		0.5	333	S		30	40	30	0	2	9				<2	20	10	10	1	40	<20	<5	<10	300		" " " "
731	4500		0.5	133	7		90	5	5	0	2	100				<2	15	10	5	1	50	<20	<5	<10	300		Dr. grey sand.

GEOCHEMICAL SOIL SAMPLING LEDGER

Tenement Name RAPID RIVER EL 1179	Project AMG Zone 55	Sheet No 1
Area / Prospect RAPID EAST	NPI's 30336	Laboratory ALS
Map / Photo Ref LINE 5000N	Sample No's	Collected By I.M. Clementson Date Dec 83

24088

089

224090

APPENDIX 3

RAPEND GRID MAGNETICS

090



CRA EXPLORATION PTY. LIMITED

(INC. IN N.S.W.)

2ND FLOOR, BELLERIVE QUAY,
31 CAMBRIDGE ROAD, BELLERIVE, 7018, TASMANIA, AUSTRALIA

224091

P.O. BOX 138
ROSNY PARK 7018
TELEGRAMS: CRAEX
TELEX: AAS7144
TELEPHONE: 44 3533
AREA CODE: (002)

IN REPLY PLEASE QUOTE

MEMO TO: I. M. CLEMENTSON
COPY TO: T. W. DICKSON

MEMO FROM: T. VON STROKIRCH

SUBJECT: RAPEND GRID MAGNETICS EL 1/79

A four line grid across the Rapend air magnetic anomalies has been traversed with ground magnetics with readings taken at 12.5 metre spacings using a proton precession magnetometer. Anomalies were located on all lines.

Line 5200N has 40 gamma anomalies centred on 7050E and 7400E. Both appear to be due to shallow lithological sources of approximately 100 metres width.

Line 5400N has a 50 gamma anomaly on the flank of a broad slightly anomalous zone between 6850E and 7200E. The peak is possibly due to pyrite or maybe very disseminated magnetite at the surface.

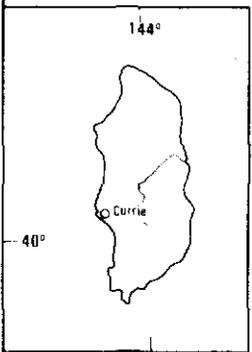
Line 5600N has a broad zone between 7200E and 7650E which has a small positive magnetic contrast. It appears to be a surface response.

Line 6000N has a sharp 40 gamma magnetic peak at 7350E located on a broader magnetic high. It is shallow and appears to dip steeply to the east but with only 2 points accurate dip determination is impossible.

Line 7300E has a 20 gamma magnetic response over what appears to be a faulted contact at 5150N. The depth to source is not greater than 15 metres.

To sum up; while there are a number of magnetic anomalies in the area they are all due to shallow sources and they would thus be expected to respond to geochemical techniques if they were due to bodies of interest. Considering the small nature of the air-borne anomalies it would appear that they would correlate with the broader magnetic zones.

T. von Strokirch

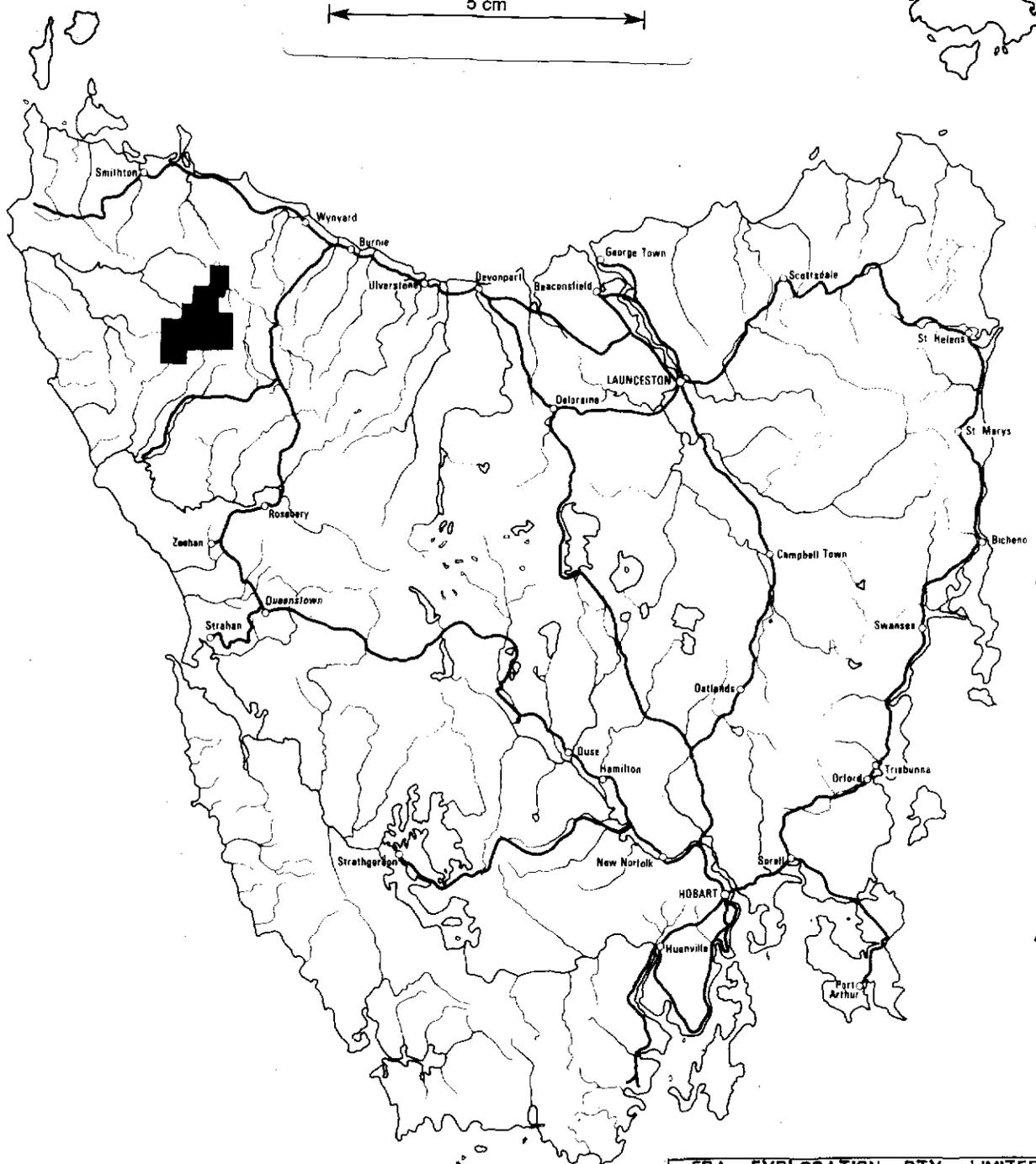


TASMANIA

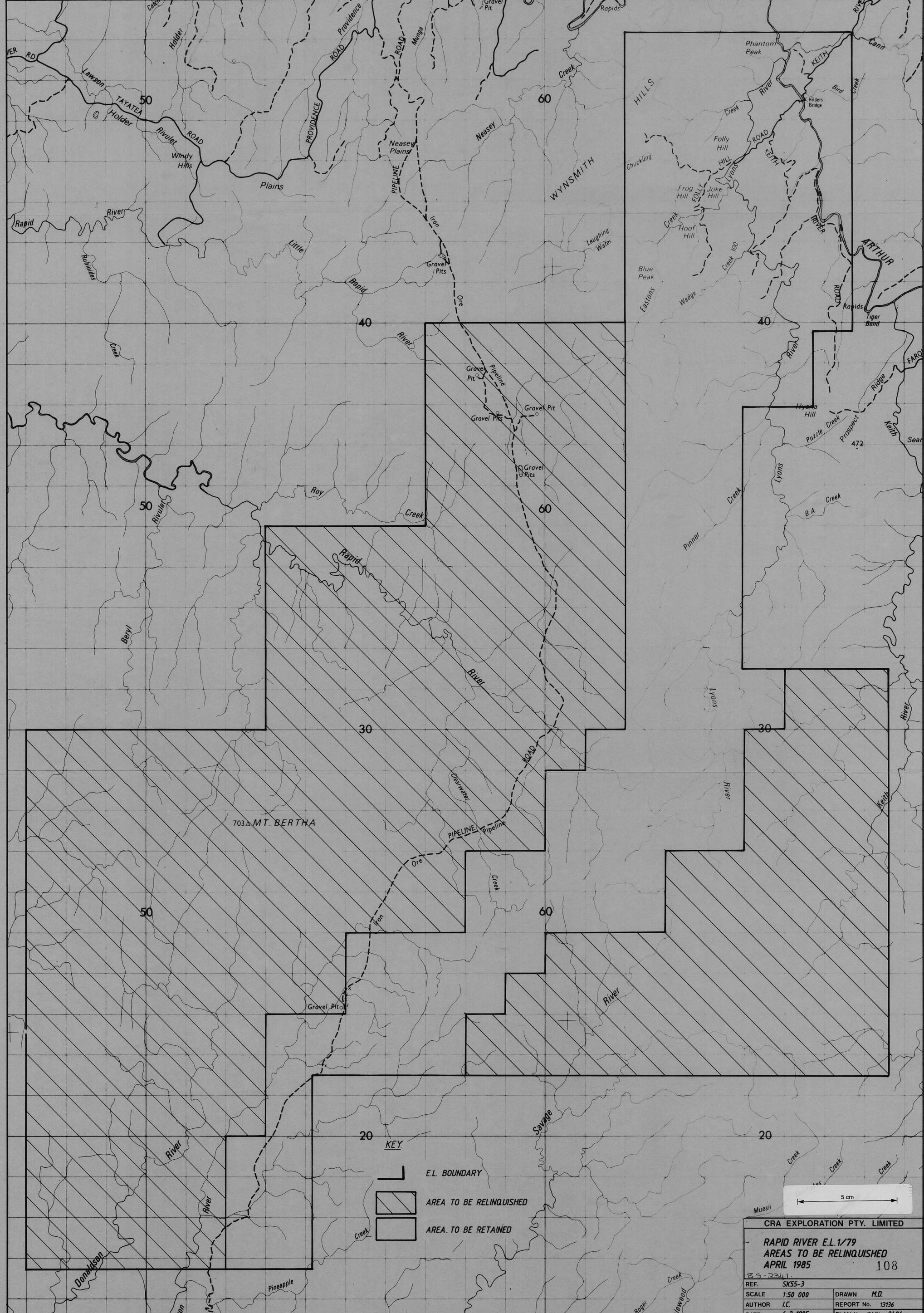
Scale 1:2 000 000

0 50 100 Kilometres

5 cm

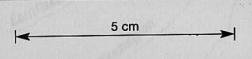


CRA EXPLORATION PTY. LIMITED	
LOCALITY PLAN 091	
RAPID RIVER E.L. 1/79	
85-2311	
REF. SK55 - 3	
SCALE: 1 : 2 000000	DRAWN: R. T.
AUTHOR: M. F.	REPORT N° 13136
Date: 30 - 8 - 1982	Plan NO. TASH 842



KEY

-  E.L. BOUNDARY
-  AREA TO BE RELINQUISHED
-  AREA TO BE RETAINED

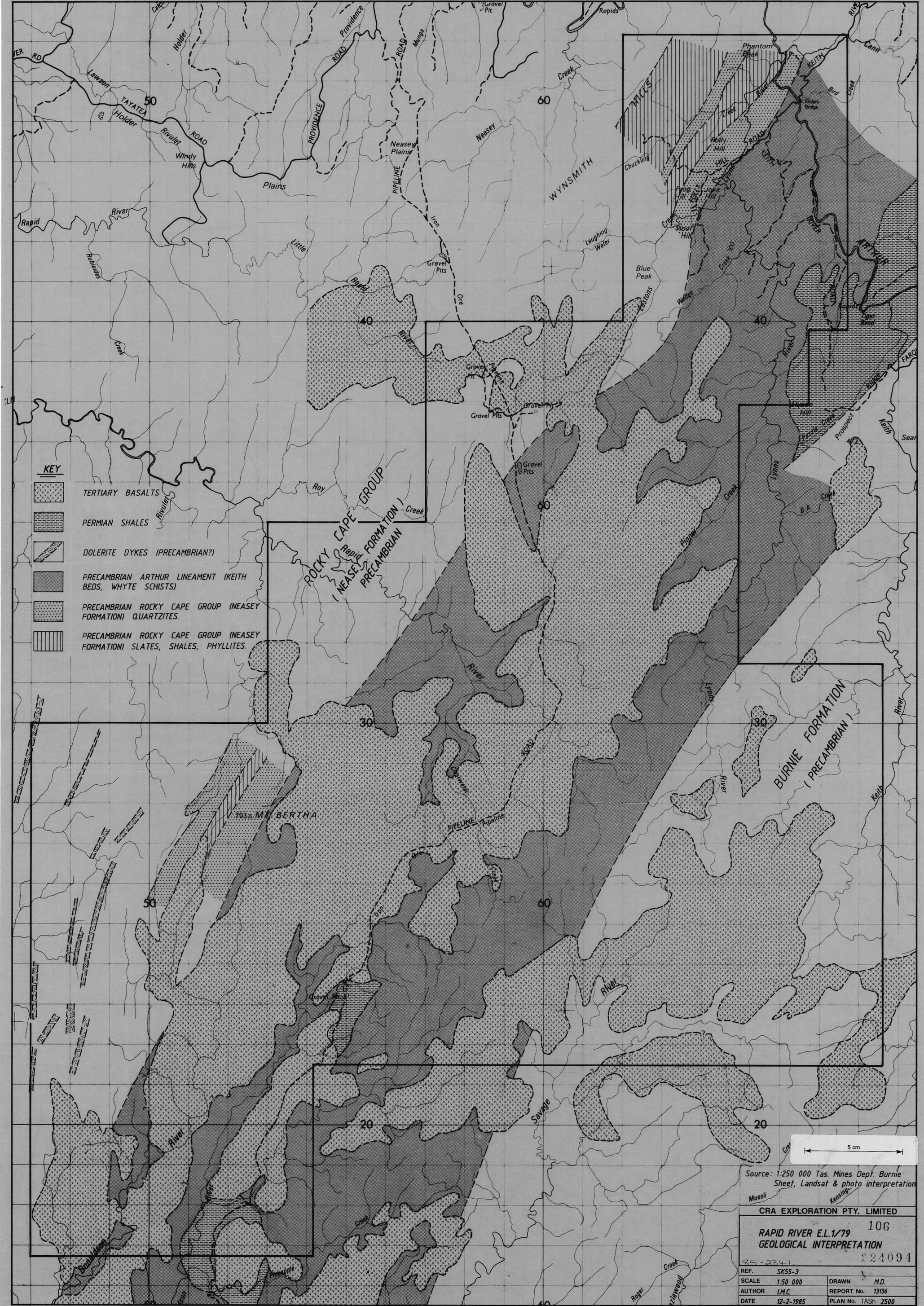


CRA EXPLORATION PTY. LIMITED

RAPID RIVER E.L. 1/79
AREAS TO BE RELINQUISHED
APRIL 1985 108

85-2341

REF. SK55-3	DRAWN M.D.
SCALE 1:50 000	REPORT No. 13136
AUTHOR I.C.	PLAN No. TASH 2496
DATE 6-2-1985	

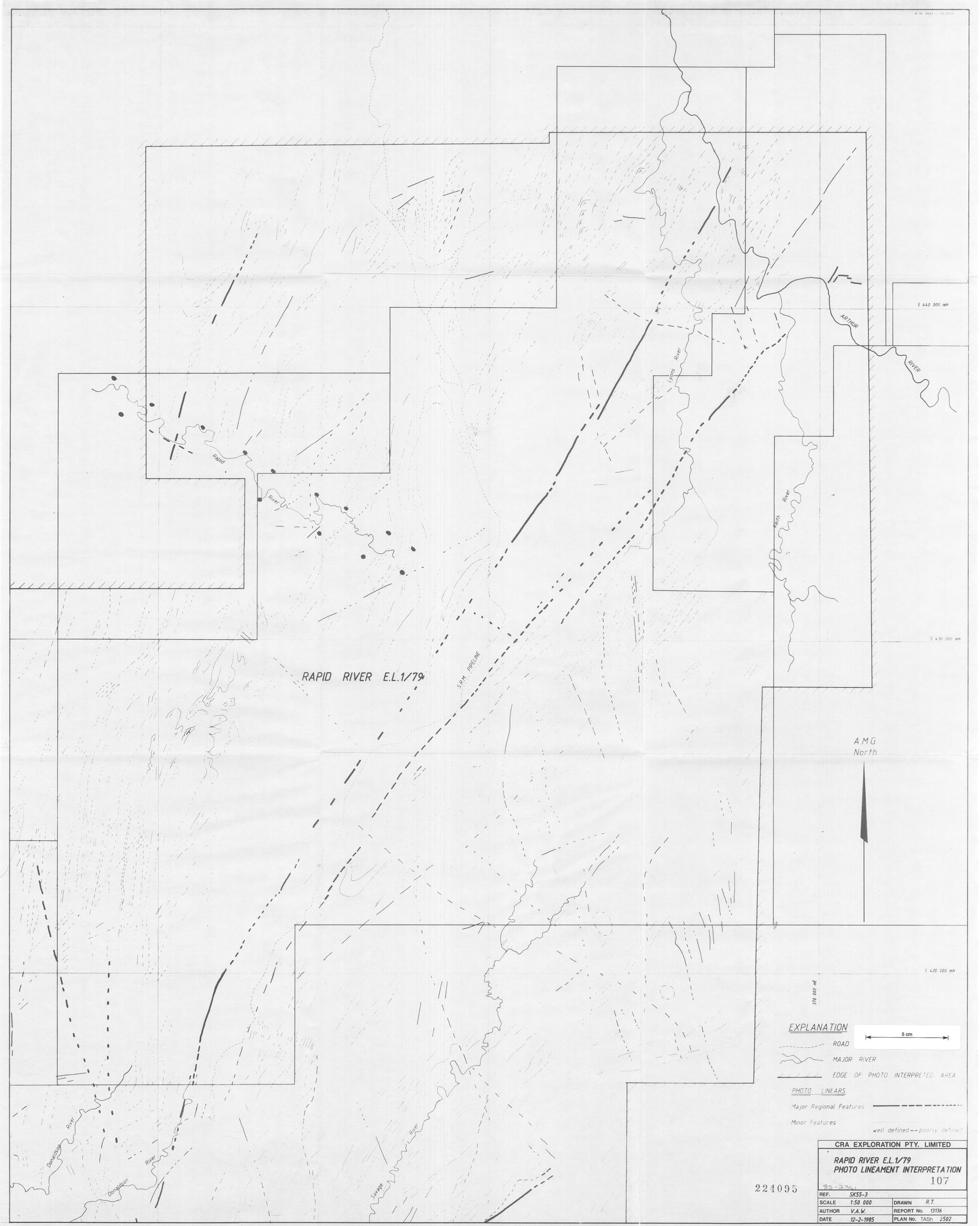


- KEY**
- TERTIARY BASALTS
 - PERMIAN SHALES
 - DOLERITE DYKES (PRECAMBRIAN?)
 - PRECAMBRIAN ARTHUR LINEAMENT (KEITH BEDS, WHYTE SCHISTS)
 - PRECAMBRIAN ROCKY CAPE GROUP (NEASEY FORMATION) QUARTZITES.
 - PRECAMBRIAN ROCKY CAPE GROUP (NEASEY FORMATION) SLATES, SHALES, PHYLLITES.

5 cm

Source: 1:250 000 Tas. Mines Dept. Burnie Sheet, Landsat & photo interpretation

CRA EXPLORATION PTY. LIMITED	
106	
RAPID RIVER E.L.1/79	
GEOLOGICAL INTERPRETATION	
85-2341	224094
REF. SK55-3	
SCALE 1:50 000	DRAWN M.D.
AUTHOR I.M.C.	REPORT No. 13136
DATE 12-2-1985	PLAN No. TASH 2500



5 440 000 MN

5 430 000 MN

5 420 000 MN

RAPID RIVER E.L.1/79

SRM PIPELINE

AMG
North



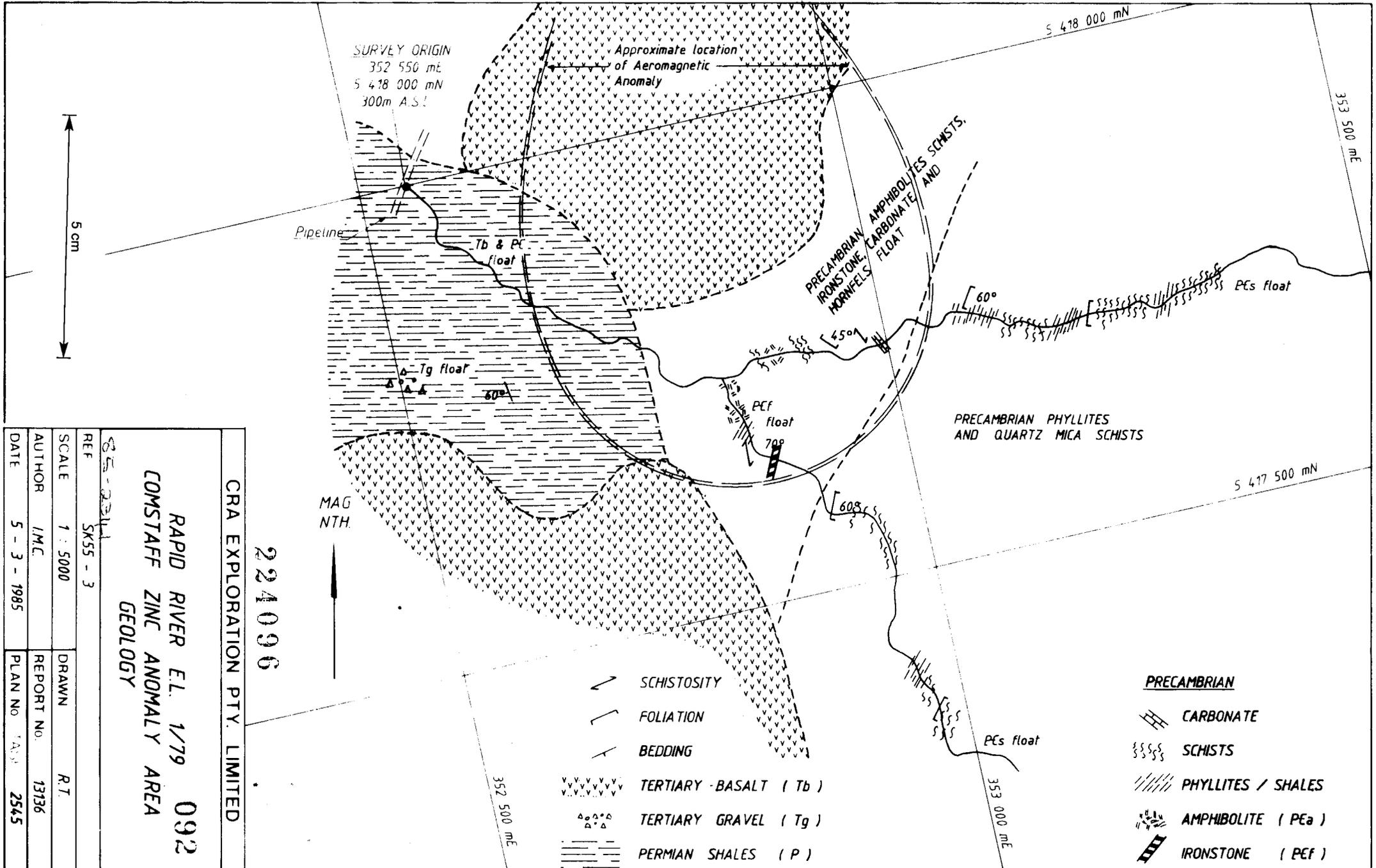
EXPLANATION

- ROAD
- MAJOR RIVER
- EDGE OF PHOTO INTERPRETED AREA
- PHOTO LINEARS**
- Major Regional Features
- Minor Features well defined poorly defined



224095

CRA EXPLORATION PTY. LIMITED	
RAPID RIVER E.L.1/79	
PHOTO LINEAMENT INTERPRETATION	
107	
REF. SK55-3	DRAWN R.T.
SCALE 1:50 000	REPORT No. 13136
AUTHOR V.A.W.	PLAN No. TASH 2502
DATE 12-2-1985	



CRA EXPLORATION PTY. LIMITED	
224096	
RAPID RIVER EL. 1/79 092	
COMSTAFF ZINC ANOMALY AREA	
GEOLOGY	
REF	SK55 - 3
SCALE	1 : 5000
AUTHOR	I/M.C.
DATE	5 - 3 - 1985
DRAWN	R.T.
REPORT NO.	13136
PLAN NO.	2545

- SCHISTOSITY
- FOLIATION
- BEDDING
- TERTIARY -BASALT (Tb)
- TERTIARY GRAVEL (Tg)
- PERMIAN SHALES (P)
- PRECAMBRIAN**
- CARBONATE
- SCHISTS
- PHYLITES / SHALES
- AMPHIBOLITE (PEa)
- IRONSTONE (PEf)

SURVEY ORIGIN
 352 550 E
 5 478 000 N
 300 A S L

5 m

Pip 1

8 35 (2 pp 1
 36 (2700ppt)

989032 (3ppb)
 033 (250ppt)

02 (3ppb 3 /)

98 30 (6 0ppt)
 03 (3ppb)

98 008 (3ppb)
 0 (350ppt)

989015 (<3ppb 4.57 /)
 016 (3ppb 5.45%)

989014 (3ppb 17 /)
 989025 (450ppt)

98 07 (<3ppb 65.7 /)
 989018 (5ppb 5.04 /)

989007
 (<3ppb 3 %)

989020 (5ppb 24.7 /)
 21 (5ppb 7.89%)

5 477 500 N

98 024 (250ppt)

9 90 6
 (800ppt) *

989023 (5ppb)

SS Sampl (A)

● R ck Fl t S mpl (A F)

★ Ro k O/C S mpl (A F)

989022 (3 50ppt)

**** NOTE ****
 A l in ppt determin d by
 b lk y nide l ch t chniqu
 Val in ppb determin d by AAS

CRA EXPLORATION PTY LIMITED		22409	
RAPID RIVER EL 1/79 093			
COMSTAFF ZINC ANOMALY AREA			
GEOCHEMISTRY			
REF	SK55 3	DRAWN	RT
SCALE	1 5000	REPORT N	71736
AUTHOR	IMC	PLAN N	TASH 2546
DATE	5 3 1985		

MAG
 NTH

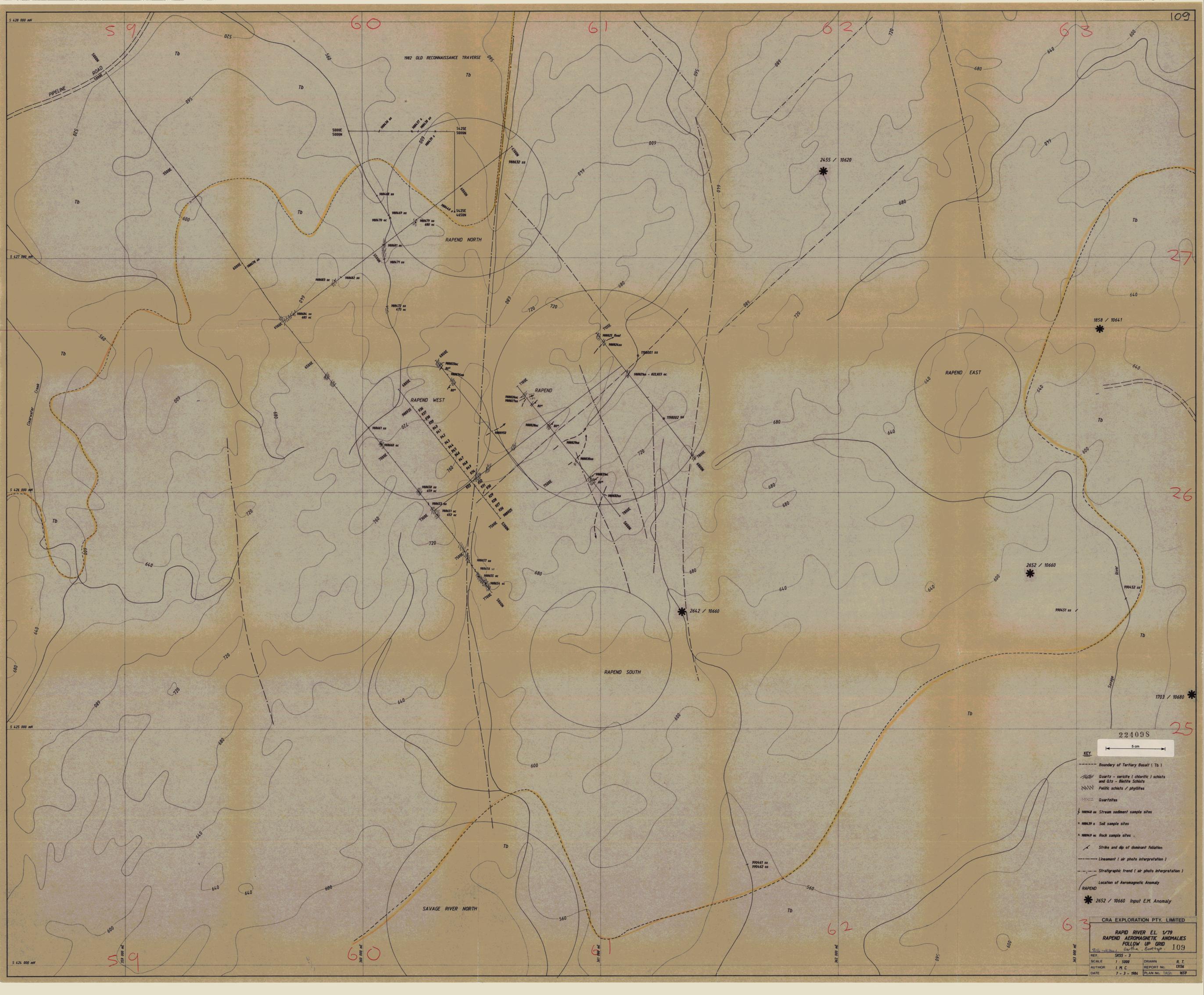


353 500 E

5 478 000 N

352 500 E

353 000 E



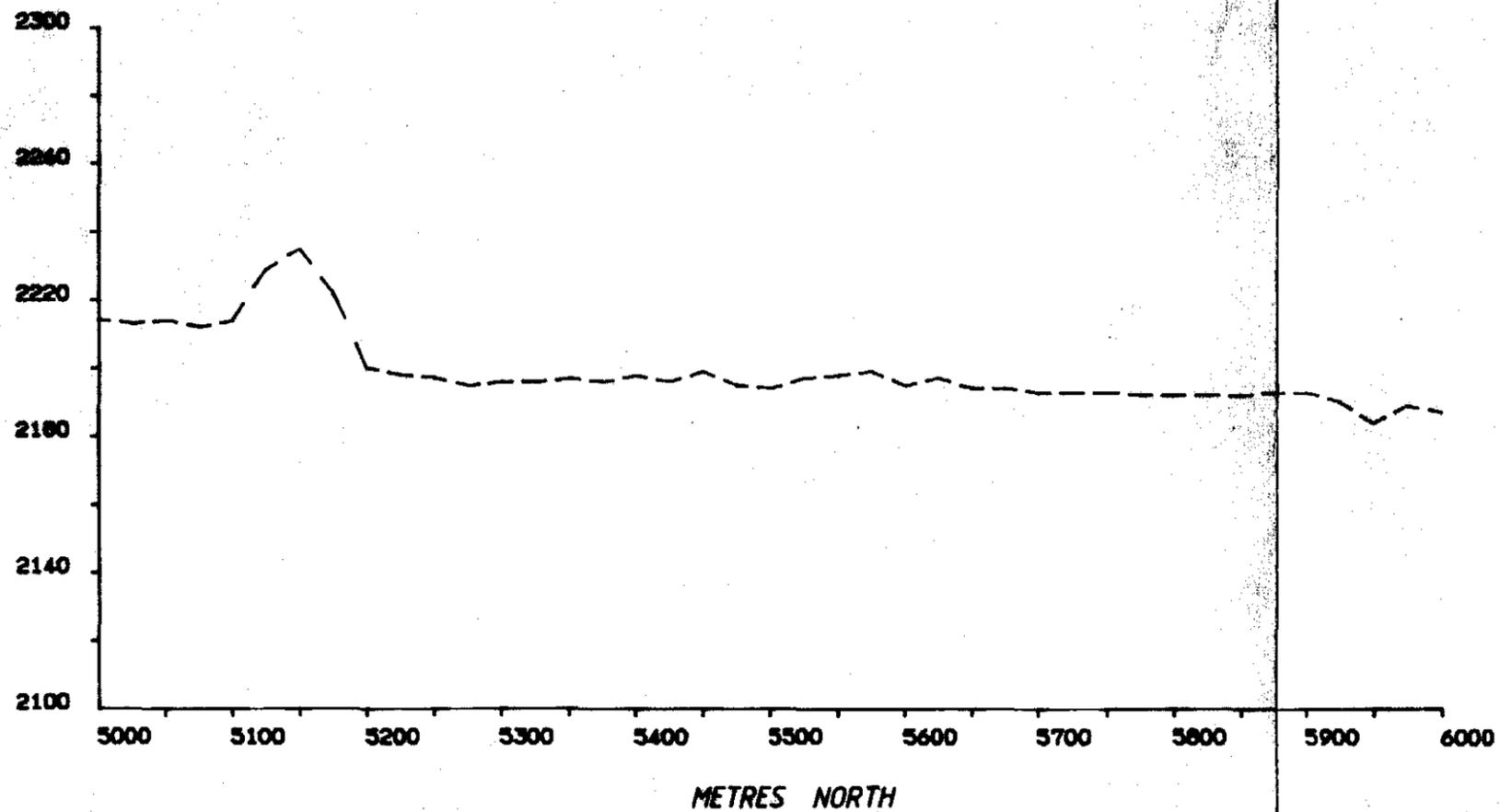
224098
5 cm

- KEY**
- Boundary of Tertiary Basalt (Tb)
 - Quartz - sericite (chloritic) schists and Qtz - biotite schists
 - Pelitic schists / phyllites
 - Quartzites
 - Stream sediment sample sites
 - Soil sample sites
 - Rock sample sites
 - Strike and dip of dominant foliation
 - Lineament (air photo interpretation)
 - Stratigraphic trend (air photo interpretation)
 - Location of Aeromagnetic Anomaly
 - 2652 / 10660 Input E.M. Anomaly

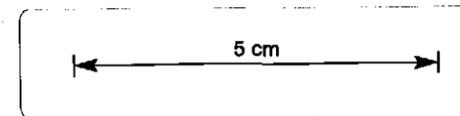
CRA EXPLORATION PTY. LIMITED
 RAPID RIVER E.L. 1/79
 RAPID AEROMAGNETIC ANOMALIES
 FOLLOW UP GRID
 SK55 - 3
 SCALE 1 : 5000
 AUTHOR I. M. C.
 DATE 7 - 3 - 1984
 DRAWN R. T.
 REPORT NO. 0726
 PLAN NO. 1859

nano Teslas

RAPEND GRID BASELINE 7300E

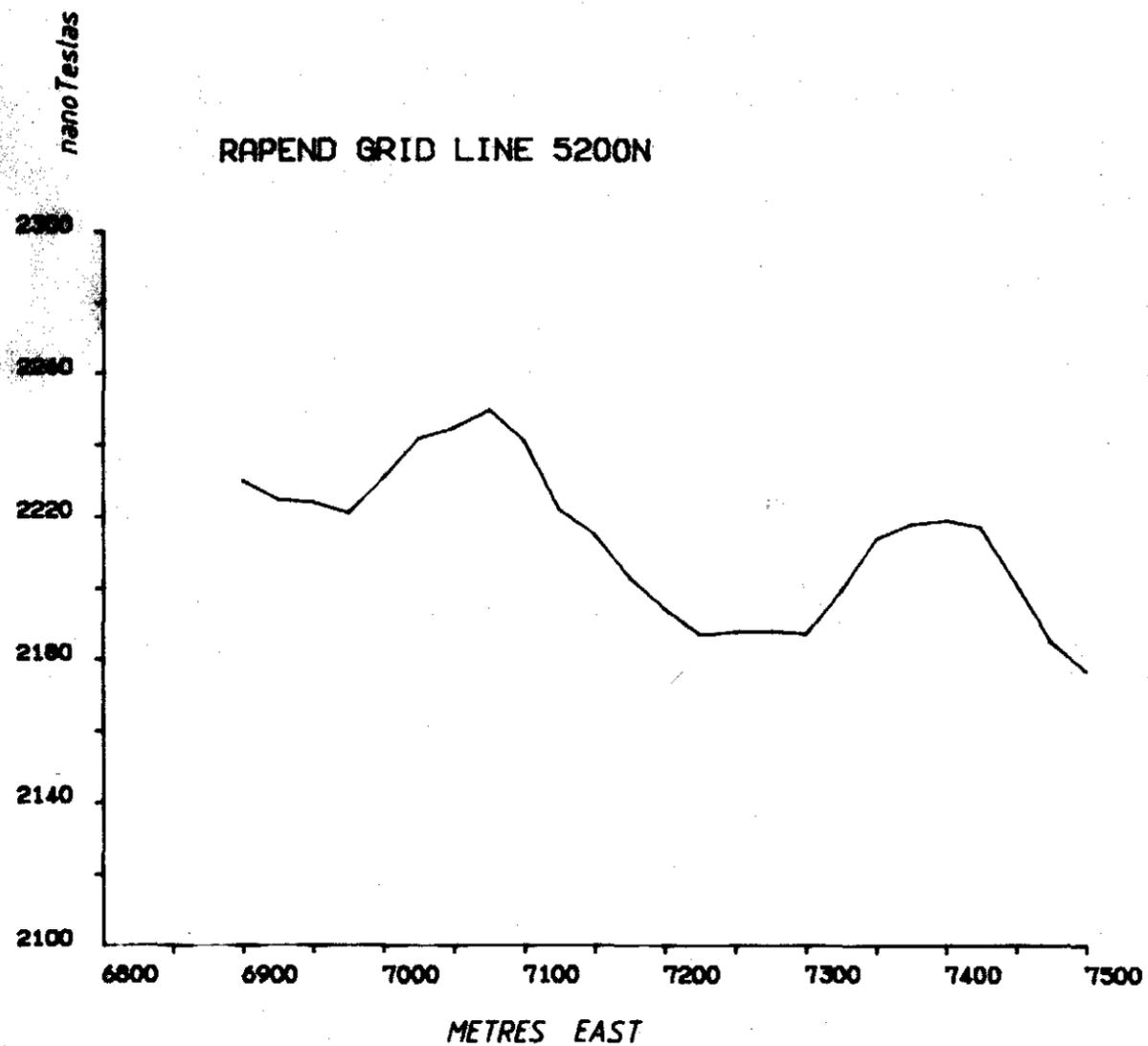


224099



CRA EXPLORATION PTY. LIMITED	
RAPID RIVER E.L. 1/79	
RAPEND AEROMAGNETIC ANOMALIES	
GROUND MAGNETIC PROFILES	
LINE 7300 mE 094	
REF. SKSS - 5	
SCALE 1 : 5000	DRAWN LMC
AUTHOR LMC	REPORT No. 13136
DATE 29 - 11 - 1984	PLAN No. TASH 2306

* No Drift Correction *



224100

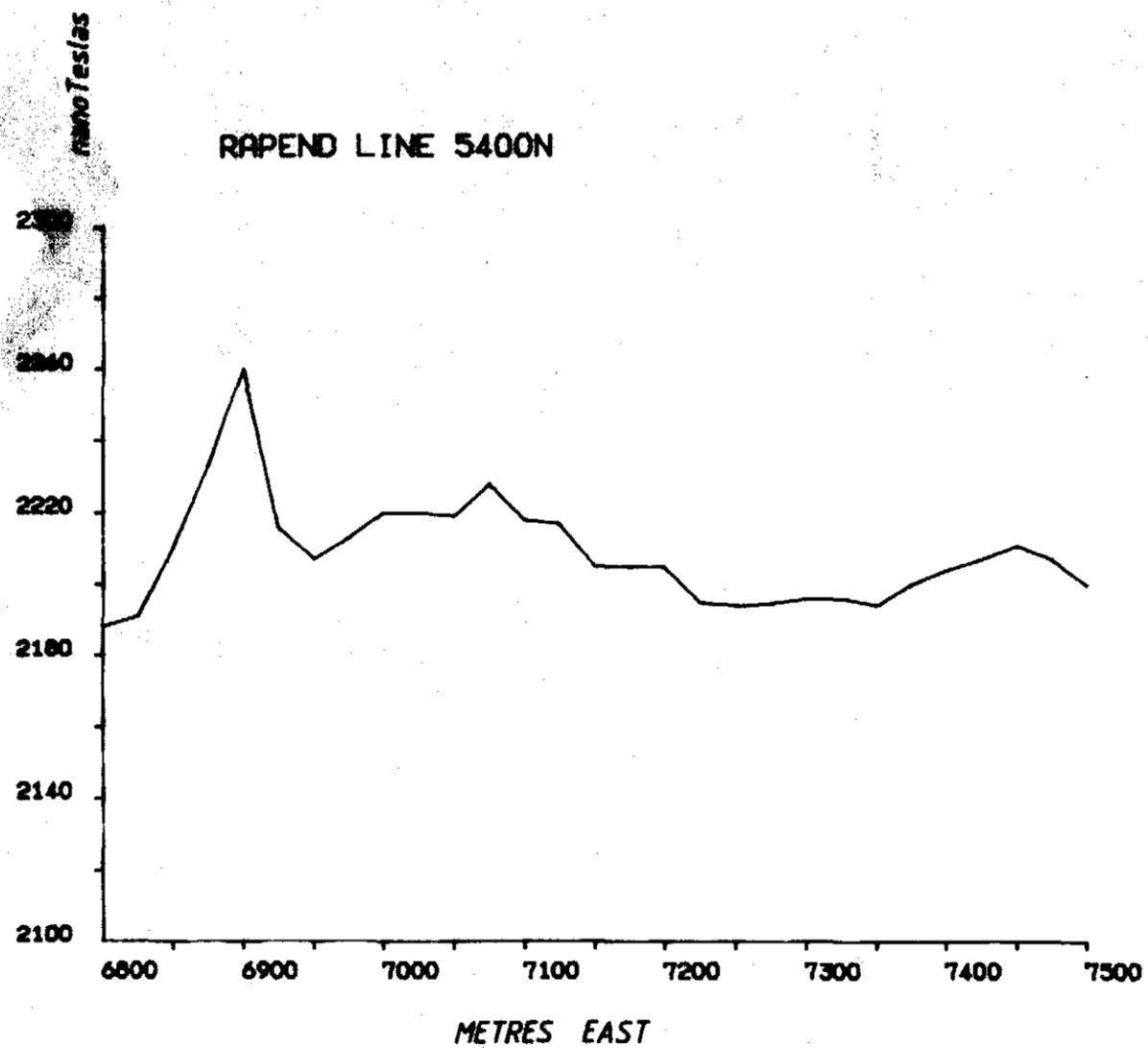
5 cm

CRA EXPLORATION PTY. LIMITED

RAPID RIVER E.L. 1/79
 RAPEND AEROMAGNETIC ANOMALIES
 GROUND MAGNETIC PROFILES
 LINE 5200 mN 095

REF.	SK55 - 5	DRAWN	LMC
SCALE	1 : 5000	REPORT No.	13136
AUTHOR	LMC	PLAN No.	TASH 2357
DATE	29 - 11 - 1984		

* No Drift Correction *



224101

5 cm

CRA EXPLORATION PTY. LIMITED

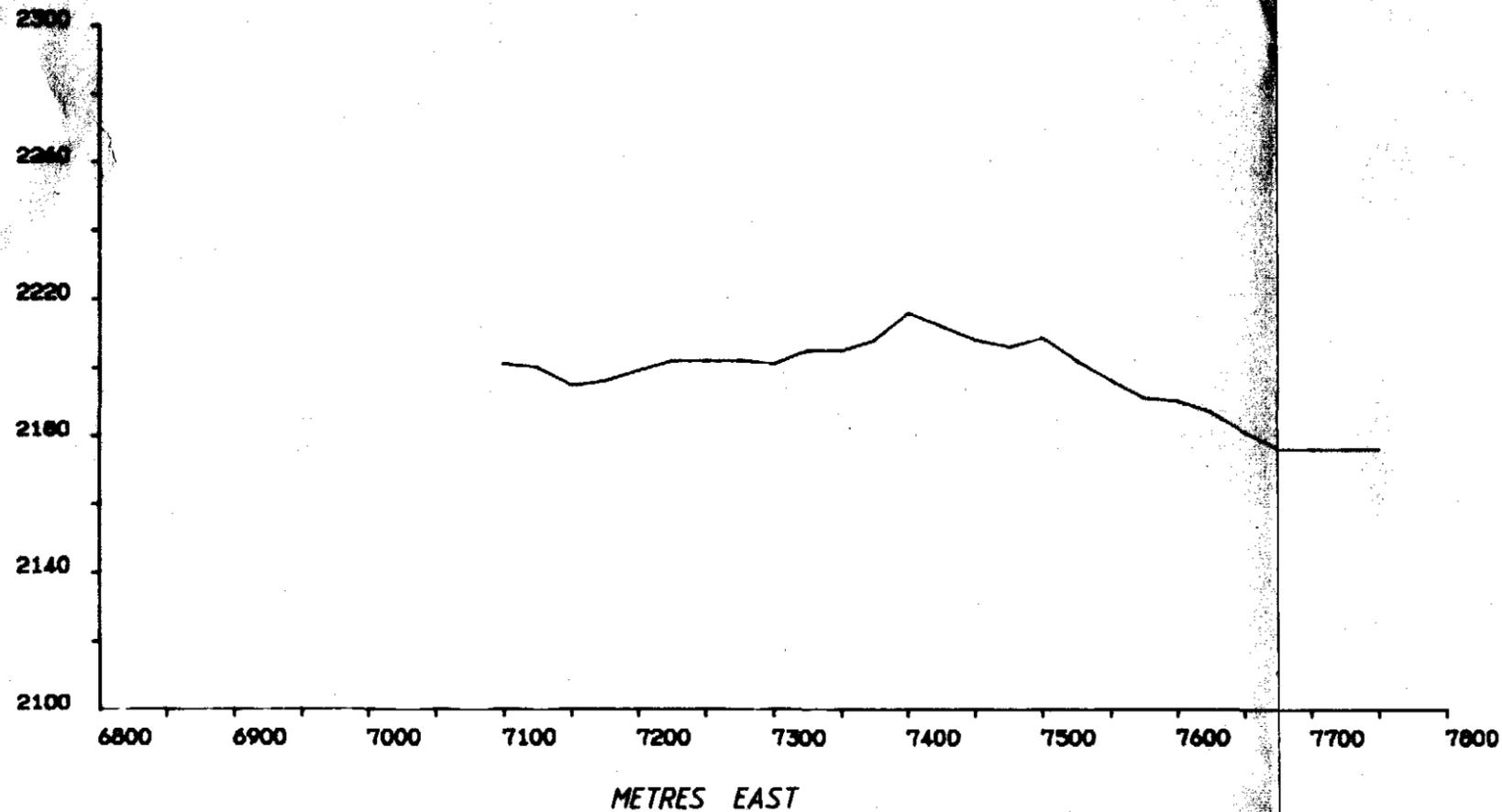
RAPID RIVER E.L. 1/79
 RAPEND AEROMAGNETIC ANOMALIES
 GROUND MAGNETIC PROFILES
 LINE 5400 mN 096

REF.	SK55 - 5
SCALE	1 : 5000
AUTHOR	LML
DATE	29 - 11 - 1984
DRAWN	LML
REPORT No.	13136
PLAN No.	TASH 2350

* No Drift Correction *

nano Teslas

RAPEND GRID 5600 N



224102

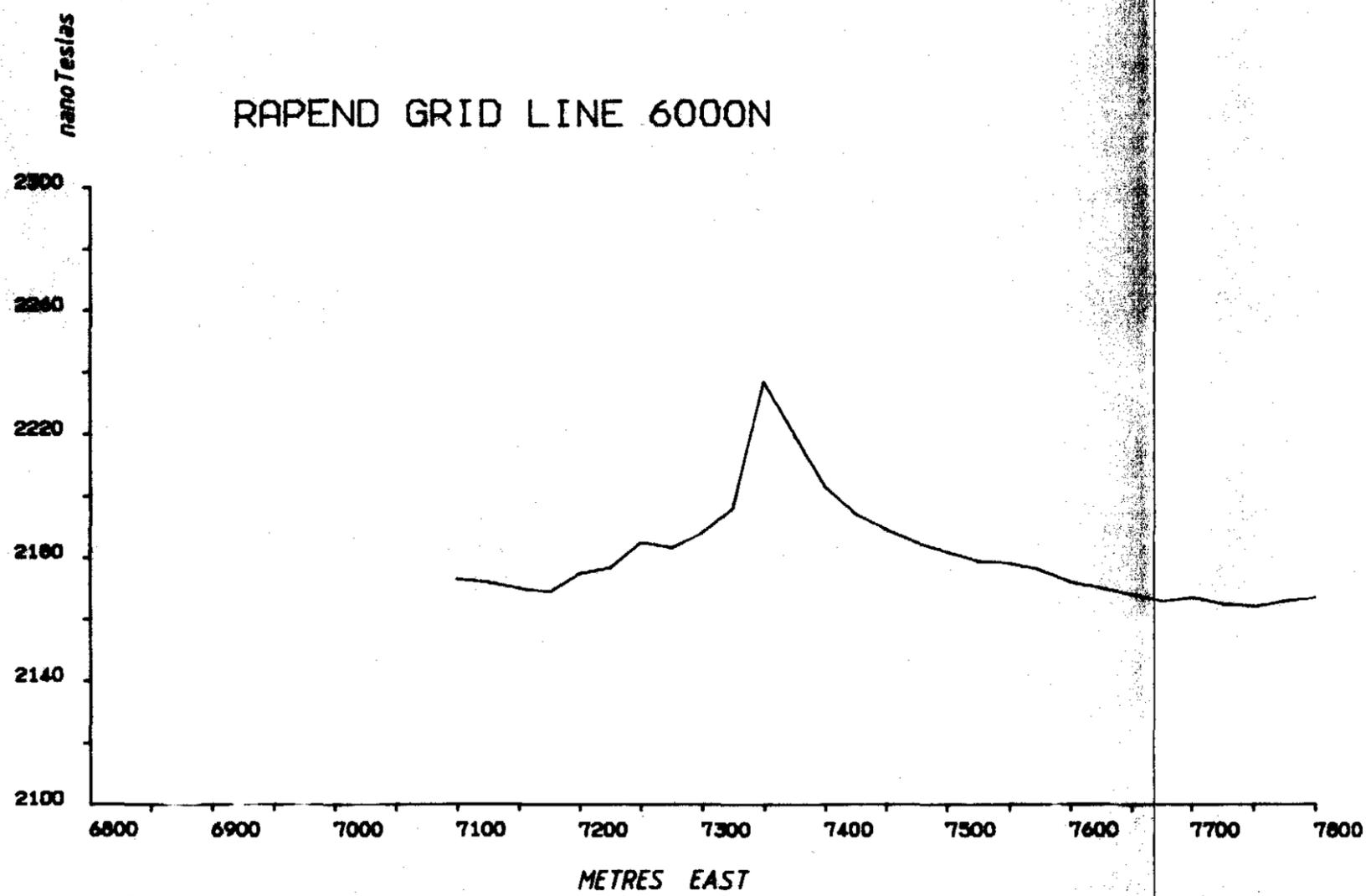
5 cm

CRA EXPLORATION PTY. LIMITED

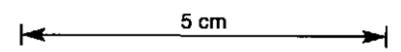
RAPID RIVER E.L. 1/79
 RAPEND AEROMAGNETIC ANOMALIES
 GROUND MAGNETIC PROFILES
 25-2341. LINE 5600 mN 097

REF.	SK55 - 5	
SCALE	1 : 5000	DRAWN I.M.C.
AUTHOR	I.M.C.	REPORT No. 13736
DATE	29 - 11 - 1984	PLAN No. TASH 2359

* No Drift Correction *

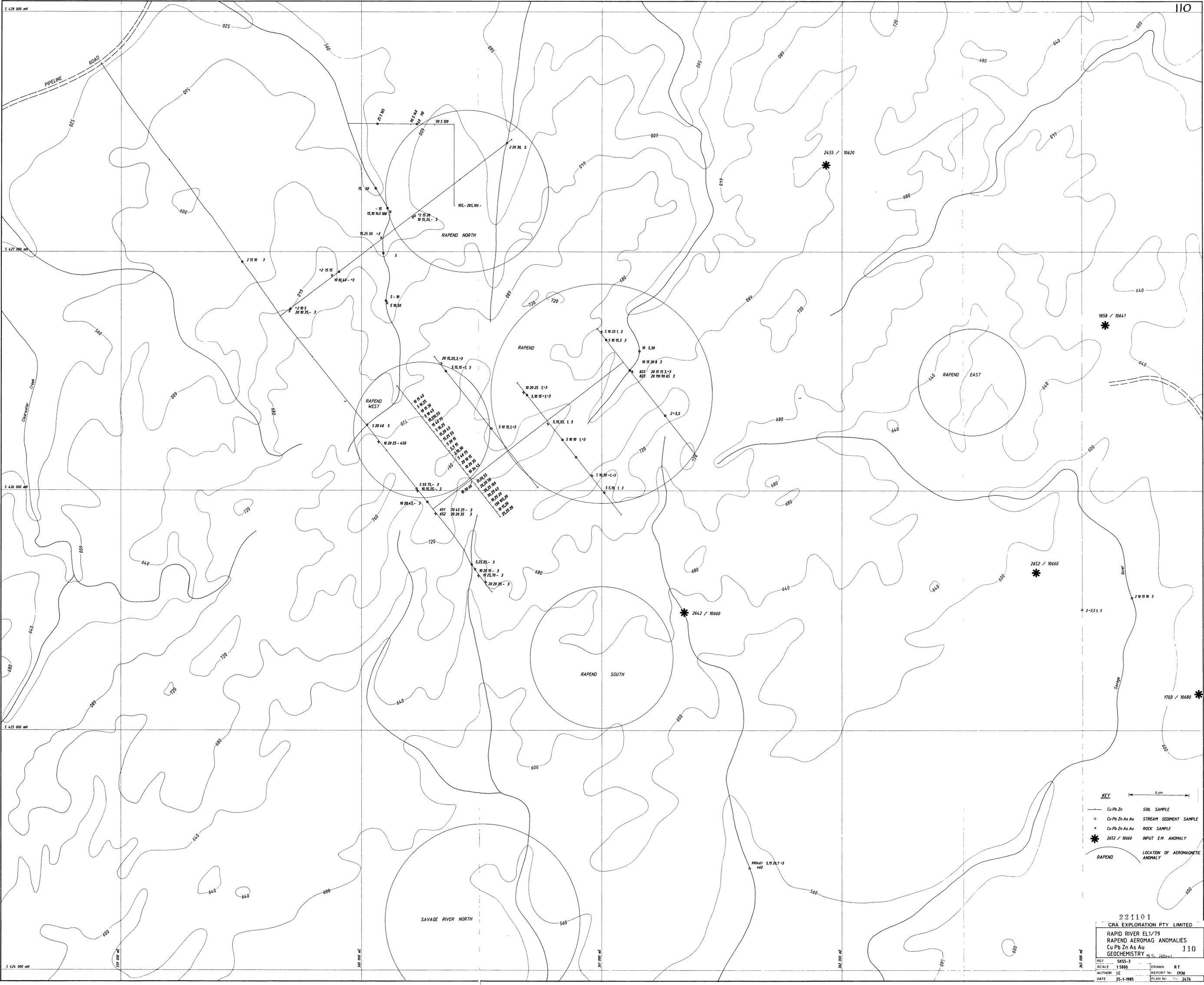


224103



CRA EXPLORATION PTY. LIMITED			
RAPID RIVER E.L. 1/79			
RAPEND AEROMAGNETIC ANOMALIES			
GROUND MAGNETIC PROFILES			
LINE 6000 mN 098			
REF.	SK35 - 5		
SCALE	1 : 5000	DRAWN	L.M.C.
AUTHOR	L.M.C.	REPORT No.	13136
DATE	29 - 11 - 1984	PLAN No.	TASh 2360

* No Drift Correction *



KEY

- Cu Pb Zn SOIL SAMPLE
- Cu Pb Zn As Au STREAM SEDIMENT SAMPLE
- × Cu Pb Zn As Au ROCK SAMPLE
- ★ 2652 / 10660 INPUT EM ANOMALY
- RAPEND LOCATION OF AEROMAGNETIC ANOMALY

5 cm

221101
 CRA EXPLORATION PTY LIMITED
 RAPID RIVER EL1/79
 RAPID AEROMAG ANOMALIES
 Cu Pb Zn As Au GEOCHEMISTRY 110

REF	SK55-3	DRAWN	RT
SCALE	1:5000	REPORT NO.	1936
AUTHOR	IC	DATE	25-1-1985
PLAN NO.	2476		

5 440 000 mN

E.L. 1/79

AMG
NTH.

5 cm

KEY

901122

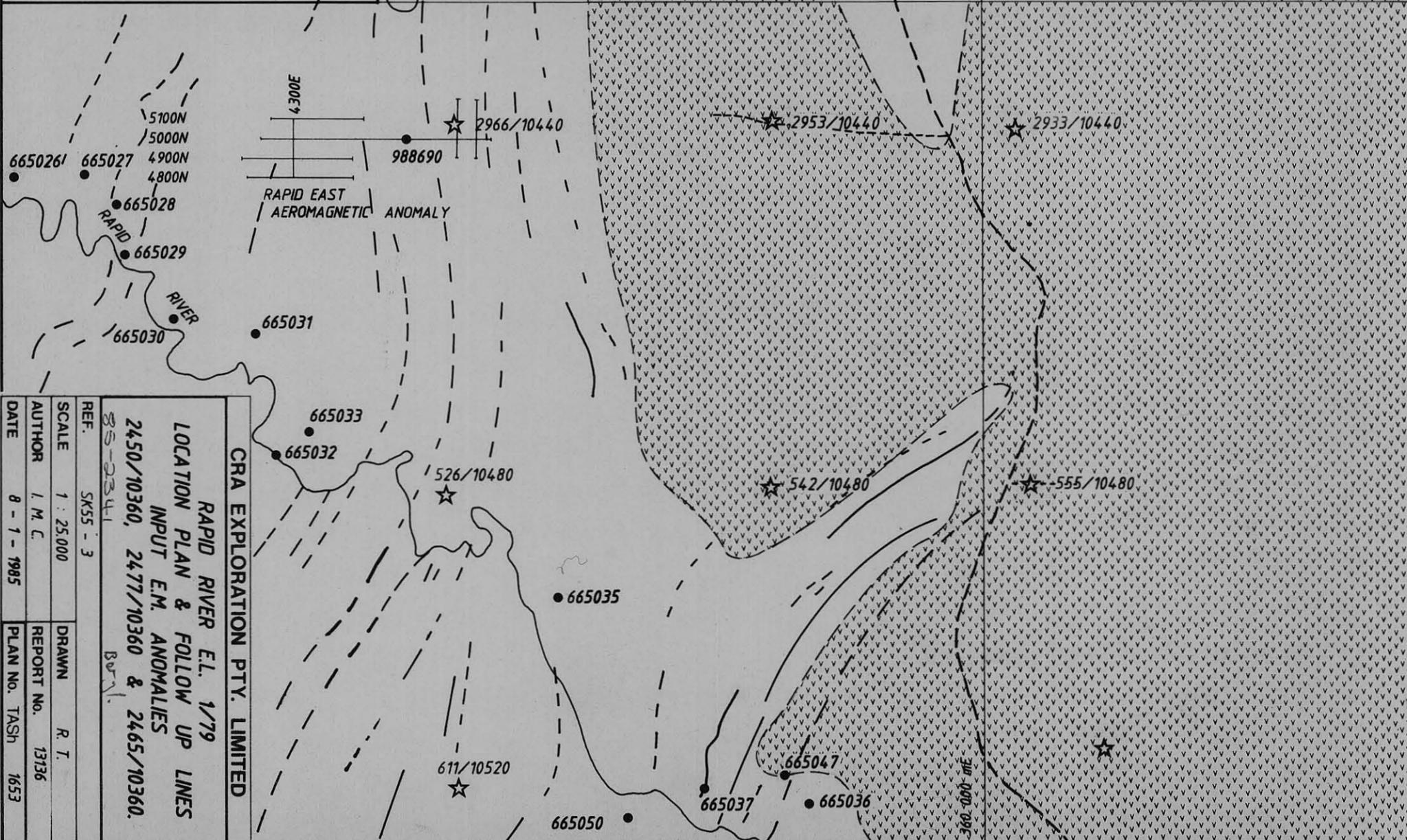
-  Tertiary Basalt
-  Photo Lineament
-  Cut Lines
-  Flagged Traverses

★ Input E.M. Anomaly With Fiducial & Line No.

● Stream Sediment Sample Site & No. (Prefix 665 = Comstaff Samples)

ROY CREEK

5 435 000 mN



REF.	SK55 - 3	85-2341
SCALE	1 : 25,000	
AUTHOR	I. M. C.	
DATE	8 - 1 - 1985	
DRAWN	R. T.	
REPORT No.	13136	
PLAN No.	TASH 1653	

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.

ppm METAL
125
100
75
50
25
0
270°M

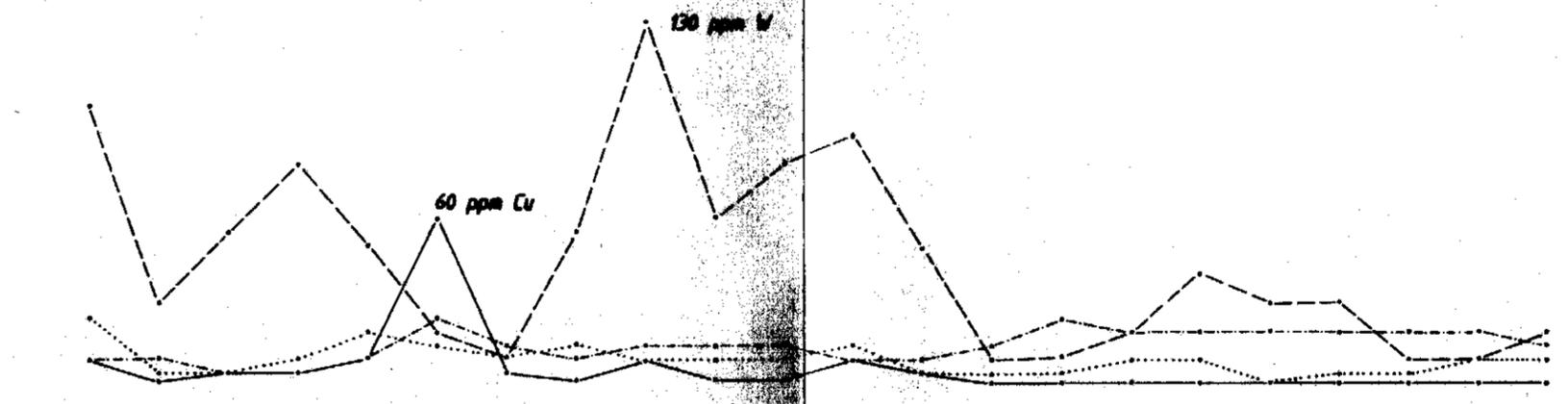
KEY TO GEOCHEMISTRY

- COPPER
- - - - LEAD
- ZINC
- · - · TUNGSTEN

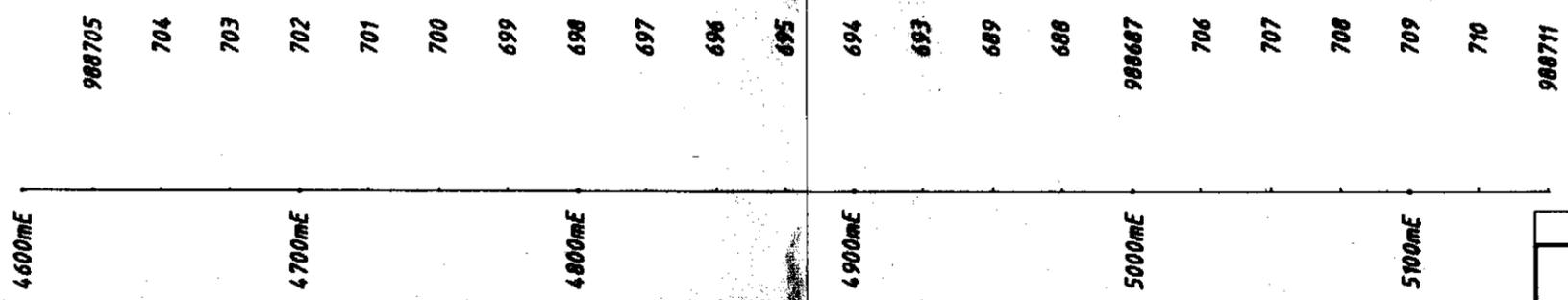
All Sn < 5 ppm
Co < 10 ppm
Ag < 2 ppm
As < 20 ppm
Ba < 300 ppm

KEY TO GEOLOGY

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

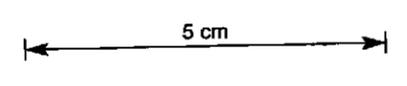


Sample No's



090°M

224106



CRA EXPLORATION PTY. LIMITED			
RAPID RIVER E.L. 1/79			
INPUT E.M. ANOMALY 2465/10360			
GEOCHEMISTRY & GEOLOGY			
LINE 5000 N 101			
85-2341			
REF.	SK55 - 3		
SCALE	1 : 2500	DRAWN	R. T.
AUTHOR	I. M. C.	REPORT No.	13136
DATE	6 - 3 - 1984	PLAN No.	TASh 1655

KEY TO GEOLOGY

Talcose grey brown shales slates.

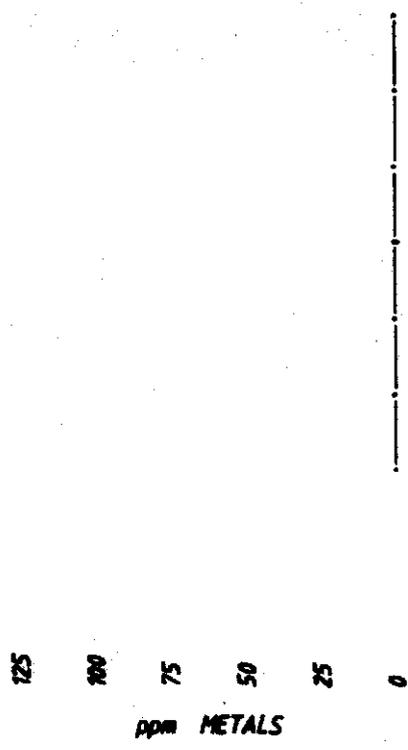
Quartzites, pale, fine-med grained.

Scree, alluvium, colluvium (quartzose)

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

5 cm

125 ppm Zn
 105 ppm Cu

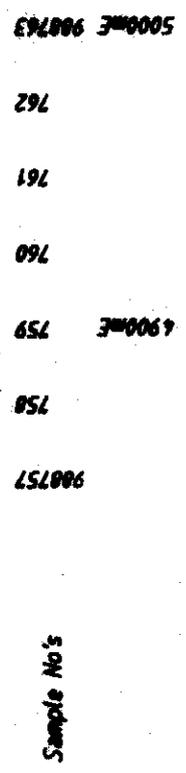
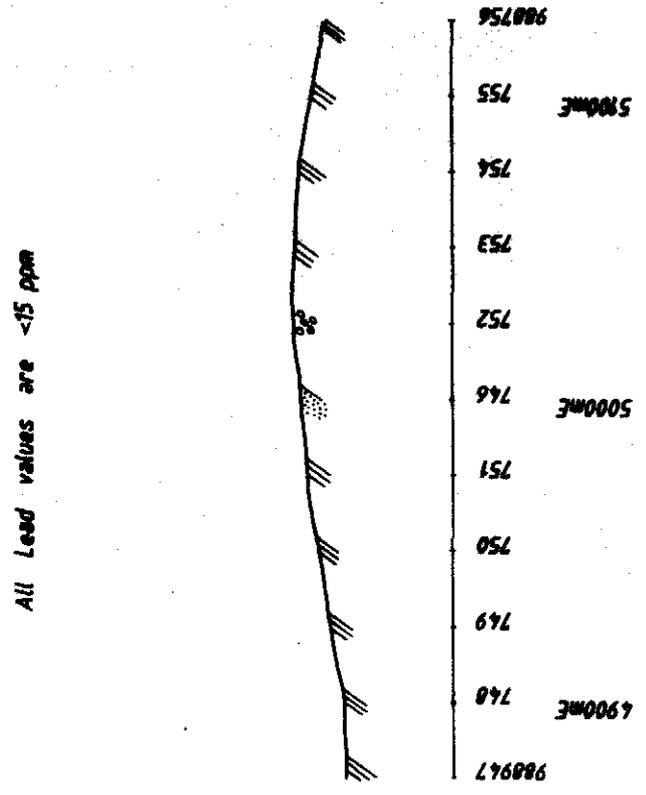


All Lead values are < 15 ppm

All Lead values are < 10 ppm
 All Zinc values are < 10 ppm

224107

CRA EXPLORATION PTY. LIMITED	
RAPID RIVER E.L. 1/79 INPUT E.M. ANOMALY 2465/10360 GEOCHEMISTRY & GEOLOGY LINES 4850 N & 5150 N 099	
REF.	SX35 - 3
SCALE	1 : 2500
AUTHOR	I. M. C.
DATE	7 - 3 - 1984
DRAWN	R. T.
REPORT No.	13136
PLAN No.	TASH 1656



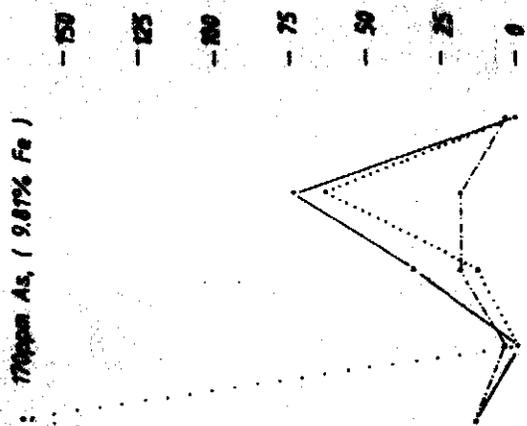
KEY TO GEOCHEMISTRY

- COPPER
- - - LEAD
- ZINC

KEY TO GEOLOGY

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

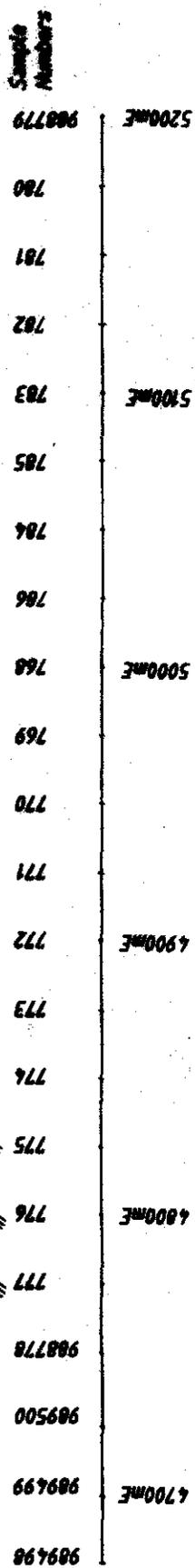
5 cm



ppm METALS

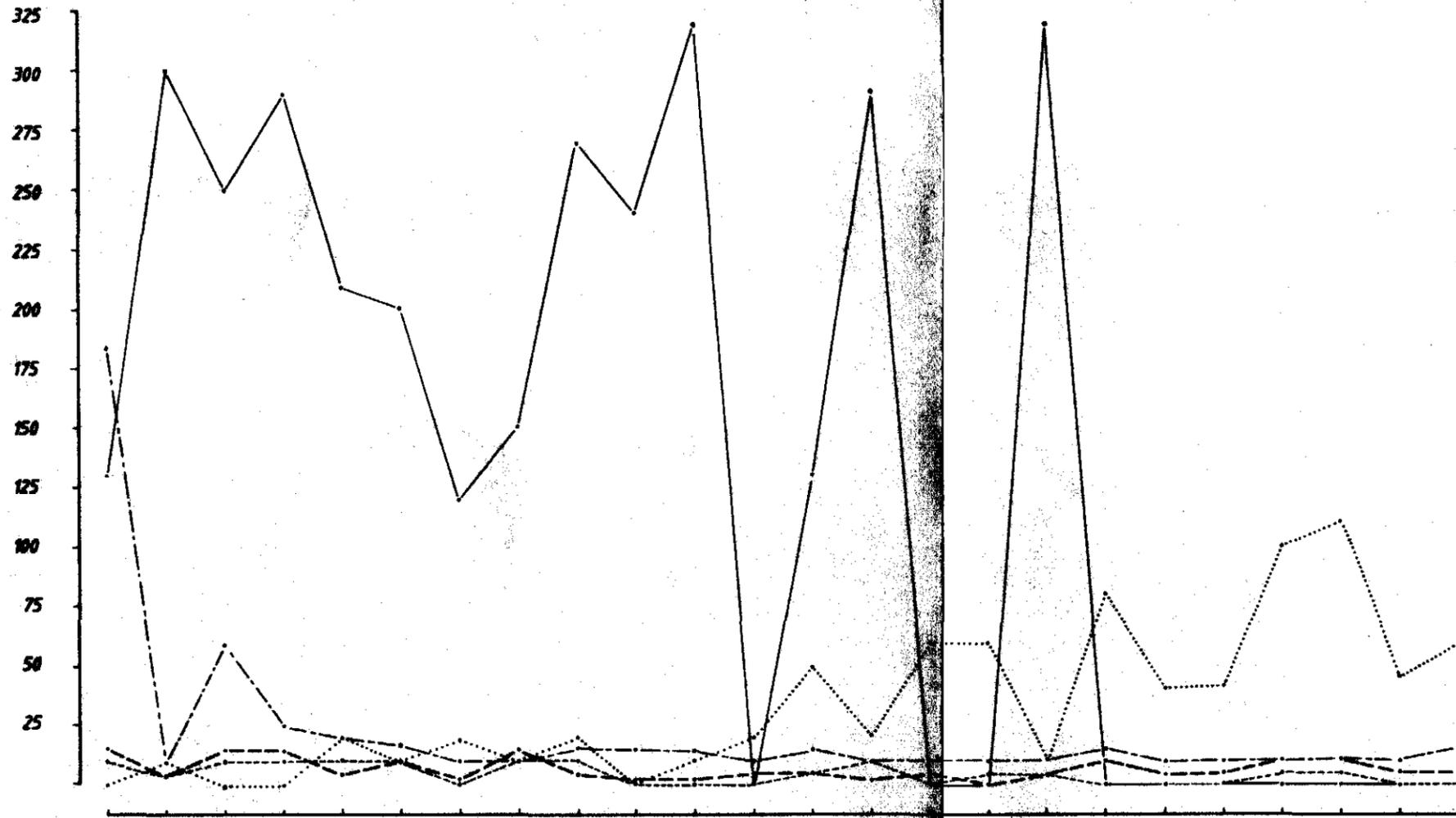
270°M

224108



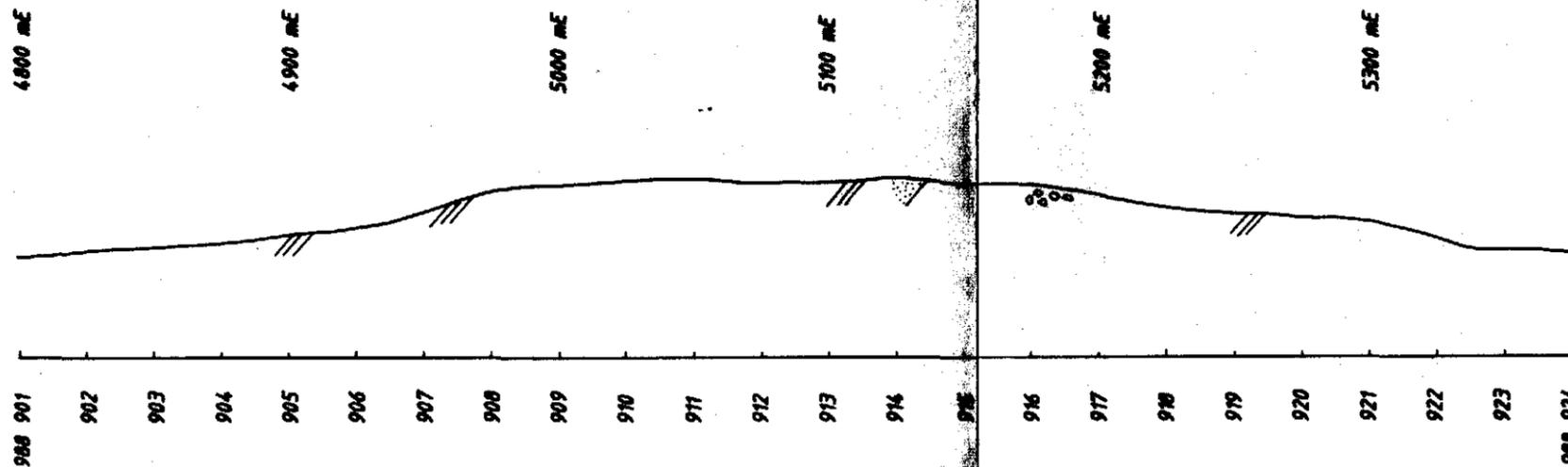
CRA EXPLORATION PTY. LIMITED	
RAPID RIVER EL. 1/79 INPUT E.M. ANOMALY 2477/10360 GEOCHEMISTRY & GEOLOGY LINE 5000 N 102	
REF. SK55 - 3	
SCALE 1 : 2500	DRAWN R. T.
AUTHOR I. M. C.	REPORT No. 13136
DATE 8 - 1 - 1985	PLAN No. TASH 1657

p.p.m.



--- Cu
 - - - Pb
 - - - Zn
 ——— Ba
 W

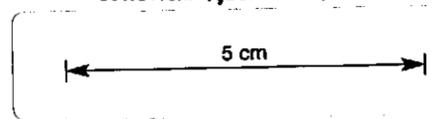
All Sn < 5 ppm
 As < 1 ppm
 Ag < 1 ppm



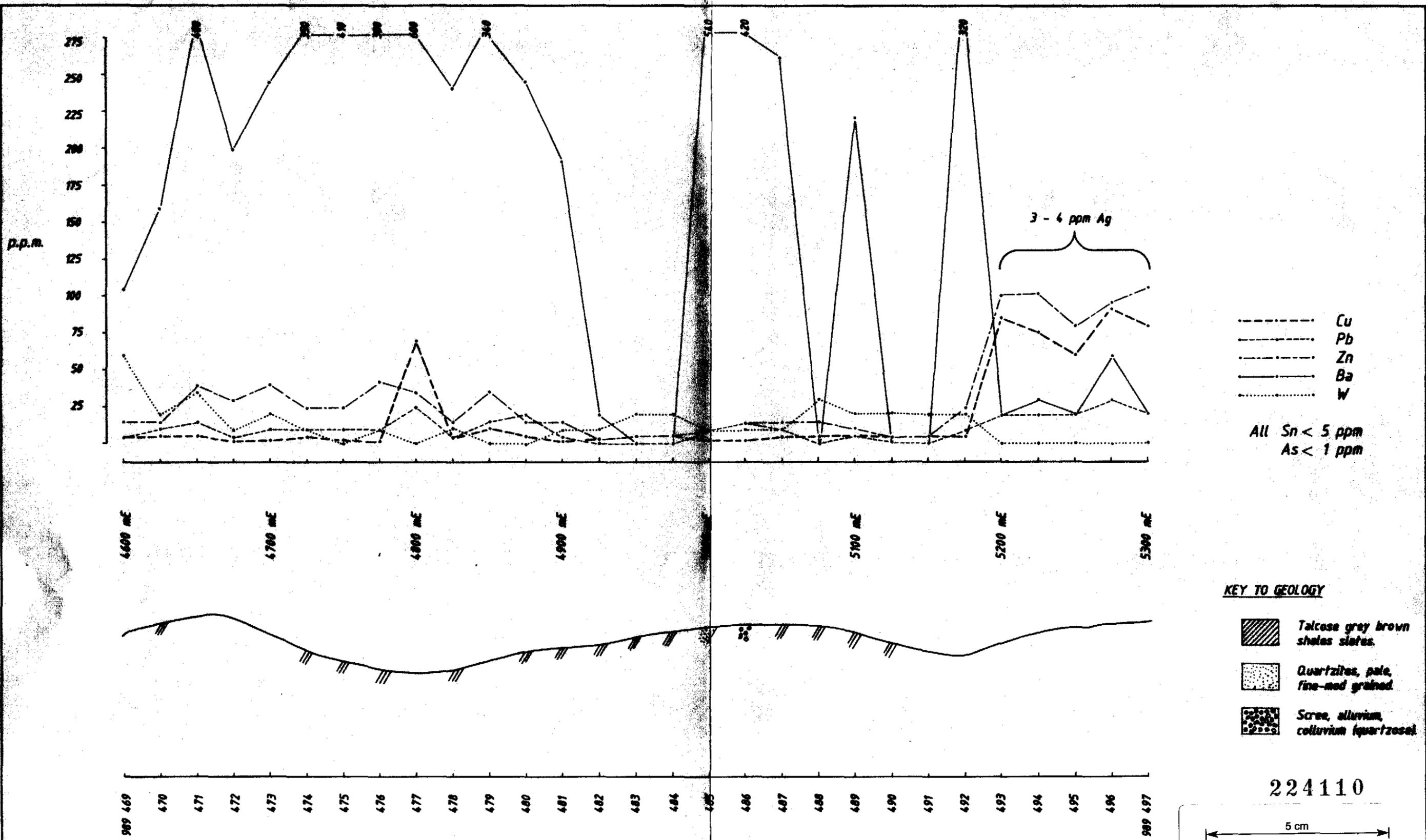
KEY TO GEOLOGY

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

224109



CRA EXPLORATION PTY. LIMITED	
RAPID RIVER E.L. 1/79 INPUT EM ANOMALY 2477/10360 GEOCHEMISTRY LINE 5150 N	
REF. SK55 - 3	103
SCALE 1 : 2500	DRAWN R.T.
AUTHOR I.M.C.	REPORT No. B36
DATE 25 - 1 - 1985	PLAN No. TASH 2/77



CRA EXPLORATION PTY. LIMITED			
RAPID RIVER E.L. 1/79			
INPUT EM ANOMALY 2485 / 10360			
GEOCHEMISTRY & GEOLOGY			
LINE 4850 N			104
REF.	SK33 - 3		
SCALE	1 : 2500	DRAWN	R.T.
AUTHOR	I.M.C.	REPORT No.	8736
DATE	25 - 1 - 1985	PLAN No.	TASH 2487

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

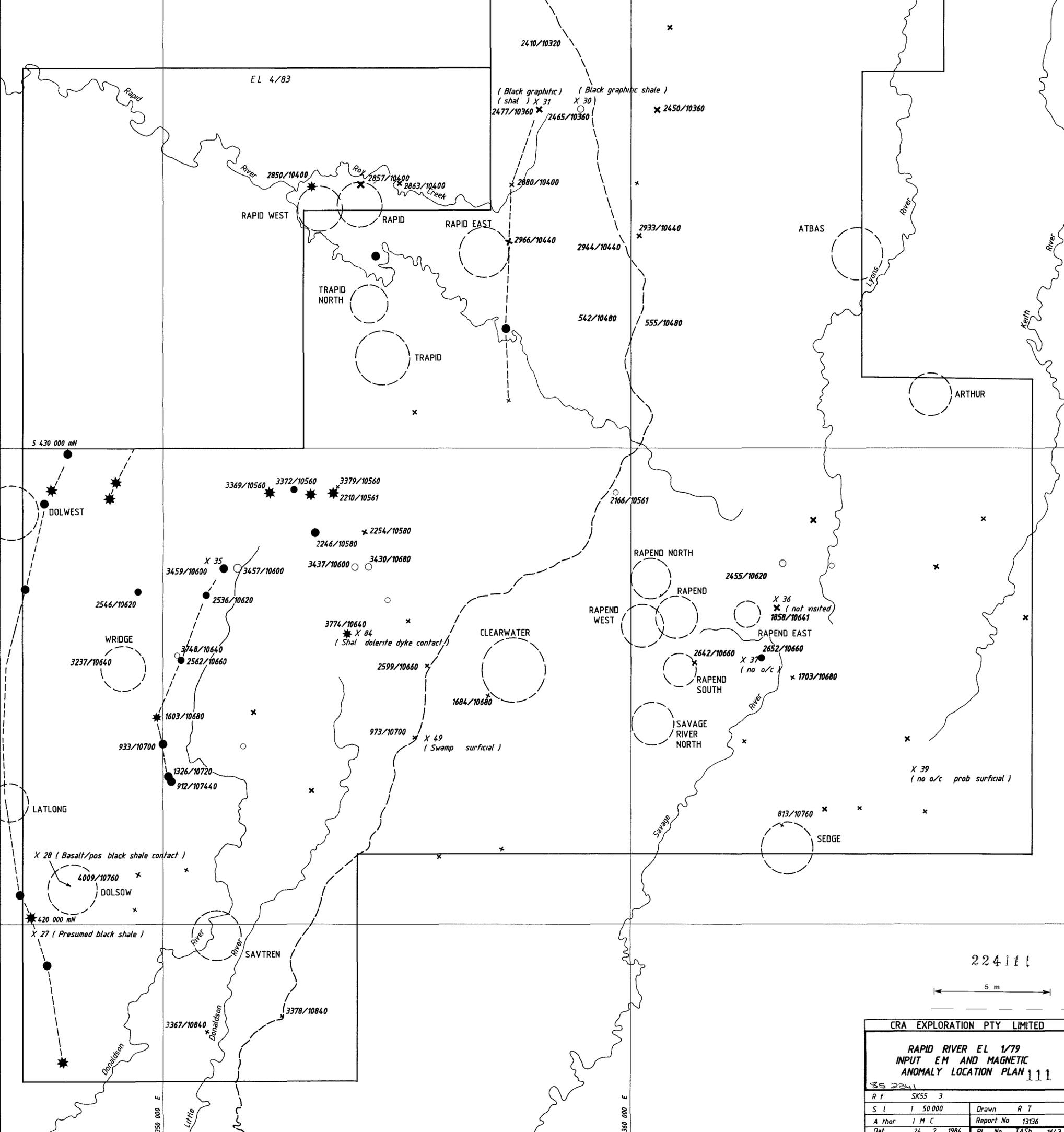
Decay rates are defined by the channel 1 to channel 4 ratio
 very slow decay ratio is less than 4
 slow decay ratio is between 4 and 8
 fast decay ratio is between 8 and 12
 very fast decay ratio is greater than 12

○ Magnetic Anomaly

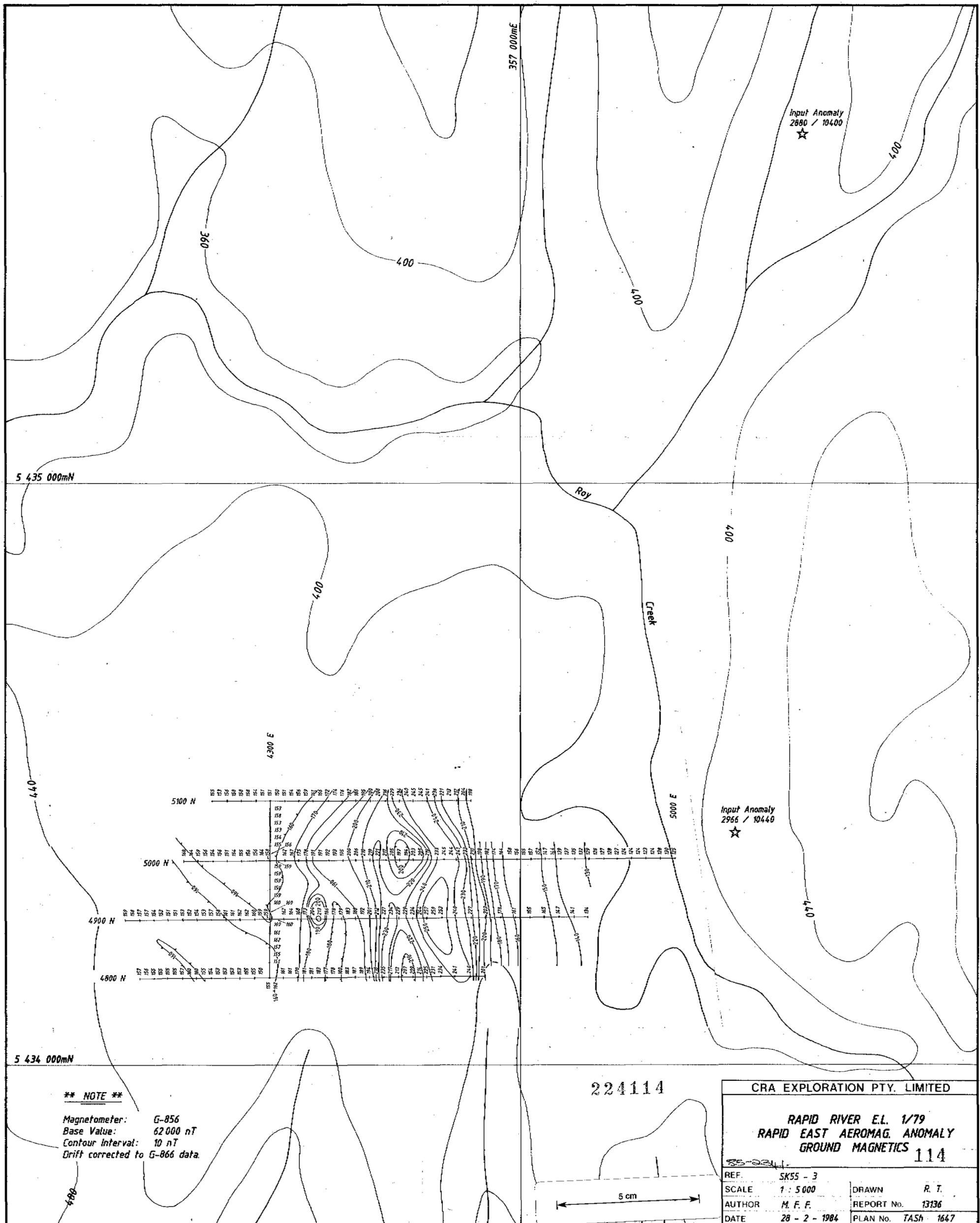
Italicised annotation represents Esso anomaly identification and notes dashed lines represent interpreted black (graphitic) shale units recognised by Esso

5 440 000 mN

813/10760 Input Anomalies (Fiducial/Line No)



CRA EXPLORATION PTY LIMITED			
RAPID RIVER EL 1/79 INPUT EM AND MAGNETIC ANOMALY LOCATION PLAN 111			
35 2211			
R f	SK55 3	Drawn	R T
S l	1 50 000	Report No	13136
A thar	I M C	PI No	TASH 1643
Det	24 2 1984		

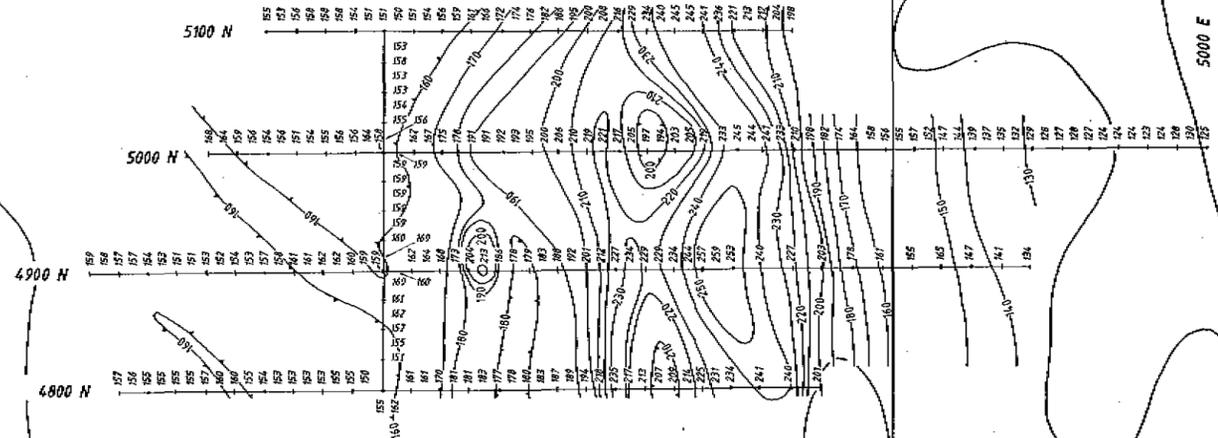


5 435 000mN

357 000mE

Input Anomaly
2880 / 10400
★

077



Input Anomaly
2966 / 10440
★

5 434 000mN

**** NOTE ****

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

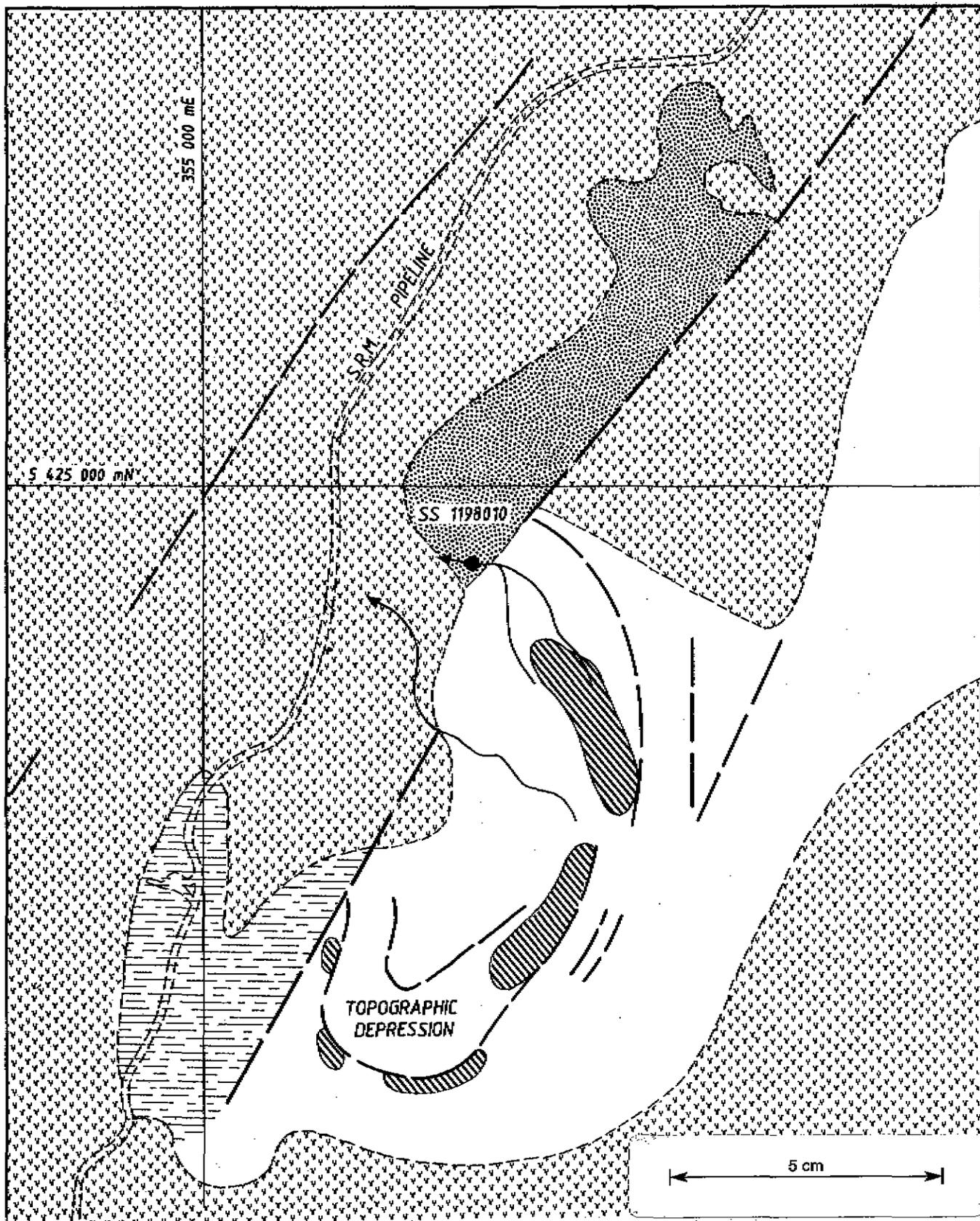
224114

CRA EXPLORATION PTY. LIMITED

RAPID RIVER E.L. 1/79
RAPID EAST AEROMAG. ANOMALY
GROUND MAGNETICS 114

REF.	SK55 - 3	DRAWN	R. T.
SCALE	1 : 5 000	REPORT No.	13136
AUTHOR	M. F. F.	PLAN No.	TASH 1647
DATE	28 - 2 - 1984		

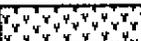
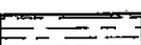
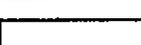
5 cm



224115

5 cm

0 1 2Km

-  VEGETATION ANOMALY
-  TERTIARY BASALT
-  SUB BASALTIC GRAVEL
-  PERMIAN
-  PRECAMBRIAN
-  PHOTO LINEARS
-  SS 1198010 SS SAMPLE SITE & NUMBER

CRA EXPLORATION PTY. LIMITED			
RAPID RIVER E.L. 1/79			
PHOTO - INTERPRETED			
CARBONATE ZONE 105			
85-234			
REF.	SK55 - 3		
SCALE	1: 25000	DRAWN	R.T.
AUTHOR	V.A.W.	REPORT No.	13136
DATE	5 - 3 - 1985	PLAN No.	TASH 2547



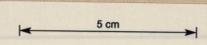
KEY

- DIP BEDDING
- SCHISTOSITY
- FOLIATION
- GOLD WORKINGS
- TRACK
- PHOTO LINEAMENTS

- RECENT GRAVELS
- TERTIARY GRAVELS
- TERTIARY BASALT
- BASIC IGNEOUS ROCKS
- PRECAMBRIAN PHYLITE/SHALE
- PRECAMBRIAN QUARTZITE & QUARTZWACKE

- PRECAMBRIAN CONGLOMERATE
- PRECAMBRIAN FINE GRAINED SCHISTS
- PRECAMBRIAN CARBONATE
- GEOPEKO SAMPLE LOCATION
- C.R.A.E. SAMPLE LOCATION

SOURCES: Photo Interpretation
Geopeko Mapping
CRAE Mapping



224116

CRA EXPLORATION PTY. LIMITED

RAPID RIVER E.L. 1/9
GEOLOGY AND GOLD GEOCHEMISTRY
OF THE FOLLY HILL
ARTHUR RIVER AREA 115

REF. SK55-3	Kept.
SCALE 1:10 000	DRAWN M.D.
AUTHOR I.M.C.	REPORT No. 13136
DATE 18-2-1985	PLAN No. TASH 2520