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230001

CRA EXPLORATION PTY LIMITED

ROCKY CAPE EL 1/77

PROGRESS REPORT ON THE ALPINE PROSPECT

FOR THE PERIOD 1 FEBRUARY 1984 TO 31 JANUARY 1985

Author: D J Weir

Date: 9 February 1985

Submitted to: T W Dickson

Accepted by:

Copies: CRAE Hobart
CRAE Burnie
CRAE Canberra
Department of Mines, Tasmania

REPORT NO: 13135

CONTENTS

1. SUMMARY

A major aeromagnetic anomaly defined by both the RTZ (1956) and West Coast (1982) surveys was followed up at the Alpine Prospect. The area lies on the southern margin of the Arthur Lineament. A major grid has been established and ground magnetic, 'C' horizon bedrock sampling and Genie EM surveys have been carried out. Two good quality drill targets have been identified and both will be tested in the near future.

2. INTRODUCTION

Detailed exploration of EL 1/77 has continued at a high level to allow a major statutory area reduction to take place at the next Licence renewal, due on 28 March 1985.

During this work a number of major targets have been identified and systematically evaluated. Recent work has focused on the southern extension of the Arthur Lineament and detailed exploration programmes are continuing at the Alpine Prospect and in the area of the Tikkawoppa Plateau.

3. CONCLUSIONS

Two anomalous zones have been identified by detailed surveys at the Alpine Prospect and these are sufficiently encouraging to warrant drill testing.

4. RECOMMENDATIONS

'C' horizon soil geochemistry should be completed over the non basalt covered parts of the grid.

Three anomalies require drill testing:-

Anomaly 1 - A strong conductor on Line 8700E at at 9125N coincident with a magnetic peak on the flank of a larger magnetic feature, together with moderate Cu, Fe, Mn, Co and Ni soil geochemistry

Anomaly 2 - A strong EM conductor coincident with a magnetic high and Cu, Zn, As, Fe soil geochemistry on Line 9100E at 9425N

Anomaly 3 - A strong EM conductor with coincident Cu, Mn, Fe soil geochemistry on Line 8900E/9525N.

Further work at this prospect would be dependent upon drilling results.

5. ALPINE ANOMALY (Plan TASh 2533)

The Alpine aeromagnetic anomaly defined by the West Coast aeromagnetic survey (1982) was designated for follow-up on the basis of its similarity in stratigraphic setting to the Keith River gossans and magnesite deposits at the Lyons River situated at the eastern margin of the Arthur Lineament.

Three mineralisation models can be proposed for this anomaly:-

(a) Stratiform sulphides - either bedded pyrite similar to the Keith River gossans or shale hosted lead and zinc. It should also be noted that the prospect is in a similar stratigraphic setting to the Savage River magnetite deposits.

(b) Skarn type tin and tungsten mineralisation. The proximity of the northern contact of the Heemskirk granite which dips gently to the north could extend as far as the Alpine prospect. Nearby pyrrhotite skarns are known at St Dizier and the CRA tin prospects at Granville East and Gourlays Creek.

(c) Gold Mineralisation - either gold mineralisation associated with stratiform sulphides or alternatively gold associated with iron formations/ massive magnetite lenses. Alluvial gold workings are common in the Corinna district within the Arthur Lineament which would approximate to an on strike position with the Alpine Prospect. No source to the alluvial gold at Corinna has been determined.

A major grid has been established over this complex aero-magnetic anomaly which has been surveyed with compass and clinometer and corrected to HEC survey points along the Heemskirk road.

A programme of mapping, 'C' horizon/bedrock soil sampling, ground magnetics and a Genie EM survey has been implemented. Much of the bedrock geochemistry proved to be ineffective owing to Tertiary alluvial cover and thin basalt cover.

It should be noted that the baseline of the grid extends a further 3.7 Km to the west and reconnaissance grids have been constructed over two smaller aeromagnetic anomalies, but exploration has not yet commenced.

6. GEOLOGY (Plan TASh 2535)

Road mapping and grid mapping has been completed over the grid. Outcrop on the prospect is very poor and obscured by gravels and basalt cover. Much of the information has been obtained from bedrock soil sampling.

The prospect is situated on the southern margin of the Arthur Lineament which is considered to represent a transgressive mobile belt.

The stratigraphic succession is summarised as follows:-

Recent	Alluvials	(5-10m)	White moderately well sorted white quartz gravels in a sandy matrix often highly compacted and organically stained
Tertiary	Basalt lava	(10-20m)	Flat lying amygdaloidal blue-grey mafic lava. Very vesicular, vesicles usually infilled with zeolites

———————— Unconformity ————————

Metasediments

Late Precambrian-Cambrian
possibly Oonah formation
equivalents

Quartz (mica, chlorite) Schist - light brown to tan quartz rich schist with minor mica and chlorite. It is considered to represent a metamorphosed sequence of dirty sandstones or sandy siltstones. Minor interbedded quartzites. Minor zones of highly chloritic rich rocks which may represent inter-bedded mafic volcanics or mafic intrusives

Mica quartz (chlorite) Schist - dominantly a mica schist with minor quartz and chlorite. Considered to represent unmetamorphosed shales and siltstones and a probable facies change to the quartz (mica) schist

Graphitic Schist Black graphitic mica schist probably originally a black shale

Carbonates-cherts Two types of altered carbonate rocks have been noted on the grid:-

(a) Very fine grained banded highly siliceous rock containing from 10% pyrite to semi massive-massive sulphides, dominantly pyrite with accessory chalcopyrite, magnetite and chalcocite.

(b) Highly deformed quartz rich rock with relict carbonate inclusions. 1-5% pyrite with minor chalcopyrite

Minor silica after carbonate has been noted on Line 9300E.

Sediments

Oonah formation?	Quartzite	Buff fine to medium grained quartzite with trace pyrite and hematite.
	Siltstone-shale	Greenish brown fine grained siltstones possibly slightly chloritic.
Unassigned	Ironstone	A number of ironstones were encountered in Jacro auger drill holes on the main road. It is uncertain whether they represent part of the basalt or represent magnetite/ hematite lenses. They are covered by basalt.

The sequence of rocks observed at this prospect are considered to represent a rapid facies change from (ironstone?) carbonate-black shale environment to a sandy turbiditic sequence from south to north. Limited petrological work is presented in Appendix 1.

The structure of this area is complex with the foliations observed assumed to be parallel to bedding. This would give a generalised ENE strike to the sequence. EM data indicates a number of dip reversals on conductors obtained which might indicate a tight fold structure with an ENE trending axis in the southern portion of the grid.

7. GEOCHEMISTRY

Two phases of 'C' horizon/bedrock geochemistry have been completed over the grid. A Jacro auger rig was used to sample along the main Heemskirk road, whilst a "whacker drill" (a portable percussion drill producing a 20cm x 1cm core from the bottom of the hole) was used to sample the grid lines, dense vegetation preventing access to the Jacro rig. Jacro sampling was the more successful of the two methods; the "whacker drill" being incapable of penetrating gravels and sticky clays associated with the basalt. Soil sampling of the grid is incomplete.

All samples were sent to ALS Laboratories in Brisbane for analysis. Full details of sample ledgers and assay results are presented in Appendix 2. Sample locations are plotted on Plan TASh 2536.

The unreliability of the best available bedrock sampling technique has made interpretation of the geochemical data very difficult. No anomalies were recorded for lead, silver, tin, tungsten or gold.

7.1 Copper (Plan TASh 2537)

Three copper anomalies are of note:-

- Maximum 280 ppm obtained in graphitic schists in roadside samples adjacent to outcropping massive pyrite in chert

- Maximum 570 ppm extending from line 8900E/9450N to 9100E/9425N

- Maximum 710 ppm extending from line 8900E/9750N to 9100E/9750N

7.2 Zinc (Plan TASh 2538)

Three zinc anomalies are evident:-

- Maximum 680 ppm on the road adjacent to the sulphide outcrop
- Maximum 940 ppm on line 9100E/9450N
- Maximum 1700 ppm on line 8700E/9850N

7.3 Nickel (Plan TASh 2539)

Two nickel anomalies are evident:-

- Maximum 820 ppm on line 8700E/9975N
- Maximum 860 ppm on line 8700E/9350N

7.4 Cobalt (Plan TASh 2540)

One single cobalt anomaly, max 220 ppm, is located at line 8700E/9950N.

7.5 Iron (Plan TASh 2541)

Four iron anomalies were outlined:-

- Maximum 22.7% Fe on line 8900E/9550N
- Maximum 16.8% Fe on line 9100E/9400N
- Maximum 16.5% Fe on line 8700E/9150N
- 0-850N (Heemskirk road) maximum 20.2% Fe

The high iron content of many of the samples cannot solely be contributed to the basalts. Some form of iron formation must be a reality.

7.6 Arsenic (Plan TASh 2542)

Only one arsenic anomaly was obtained on the grid, 450 ppm on line 9100E/9450N. All arsenic values greater than 10 ppm were reassayed for gold though no anomalies were reported.

7.7 Manganese (Plan TASh 2543)

Seven manganese anomalies are evident from the +500 ppm contour:-

- Maximum 700 ppm at line 8300E/10075N
- Maximum 990 ppm at line 8700E/10450N
- Maximum 940 ppm at line 8700E/9300N
- Maximum 2450 ppm at line 8700E/9175N
- Maximum 1600 ppm at line 8700E/9000N
- Maximum 930 ppm at line 8900E/9550N
- Maximum 1550 ppm at line 9300E/10475N

8. GEOPHYSICS

Full details of the geophysics completed at this prospect are located in Appendix 3.

8.1 Ground Magnetics (Plan TASh 2365)

Ground magnetic readings were taken at 12.5m intervals over the whole grid and at 5m intervals over the most intense magnetic peaks.

Inspection of the contour data shows three zones of high magnetic intensity:-

1. 1200m x 150m paralleling the baseline at approximately 10050N. The source is interpreted as being lithological

2. An approximately plan oval anomaly 800nT above background with a peak of 4000nT at 8700E/9050N. The anomaly has dimensions of 600m x 400m and appears to be faultbound to east and west. The intensity of the anomaly signifies a magnetite source

3. A narrow (100m) northeasterly trending high extending from 9100E/9425N to 9300E/9650N and is open to the east. It may represent an on strike continuation of anomaly 2.

Ground magnetic profiles are plotted on Plans TASh 2398 and 2403.

8.2 Genie EM Survey (Plans TASh 2304-2311)

A number of conductors were outlined by the EM survey which for the most part are peripheral to the major ground magnetic anomaly on line 8700E. A number of dip reversals were noted from interpretation of the data which might indicate a tight fold structure.

The conductors were rated as follows:-

1. 8700E/9125N
2. 9100E/9425N
3. 8500E/8980N
4. 8900E/9525N

9. DISCUSSIONS

The Alpine anomaly represents one of the more exciting prospects in the Rocky Cape Licence area.

Compilation of available geochemical and geophysical data indicates an overall lack of coincidence of the anomalies obtained. (Plan TASh 2544)

Three major targets are immediately apparent which warrant drill testing:-

- Line 8700E/9125N — Strong EM conductor situated on the flank of a major ground magnetic anomaly with moderate Cu, Fe, Mn, Co and Ni soil geochemistry
- Line 9100E/9425N — Strong EM conductor coincident with a magnetic high and Cu, Zn, As and Fe soil geochemistry
- Line 8900E/9525N — Strong EM conductor with coincident Cu, Mn, Fe soil geochemistry

The 4000nT magnetic peak on line 8700E/9950N is almost certainly caused by massive magnetite but requires testing with soil geochemistry. A number of other geophysical targets are apparent but require soil geochemistry to upgrade them.

10. LOCATION

Queenstown SK55-5 1:250 000 Sheet

11. KEYWORDS

Precambrian siltstone; quartzite, dolomite, black shale, siltstones, carbonates-cherts; Geophysics - ground magnetics, GENIE-EM; Assays - surface.

12. LIST OF PLANS

Plan TASh No		Scale
2533	Rocky Cape EL 1/77 Alpine Anomaly Aeromagnetics and Grid Location Plan	1:100 000
2536	Rocky Cape EL 1/77 Alpine Anomaly Sample Locations	1:5 000
2537	Rocky Cape EL 1/77 Alpine Anomaly Copper Geochemistry	1:5 000
2538	Rocky Cape EL 1/77 Alpine Anomaly Zinc Geochemistry	1:5 000
2535	Rocky Cape EL 1/77 Alpine Anomaly Geology	1:5 000

Plan TASh No		Scale
2539	Rocky Cape EL 1/77 Alpine Anomaly Nickel Geochemistry	1:5 000
2540	Rocky Cape EL 1/77 Alpine Anomaly Cobalt Geochemistry	1:5 000
2541	Rocky Cape EL 1/77 Alpine Anomaly Iron Geochemistry	1:5 000
2542	Rocky Cape EL 1/77 Alpine Anomaly Arsenic Geochemistry	1:5 000
2543	Rocky Cape EL 1/77 Alpine Anomaly Manganese Geochemistry	1:5 000
2365	Rocky Cape EL 1/77 Alpine Anomaly Ground Magnetics Contour Plan	1:5 000
2396	Rocky Cape EL 1/77 Alpine Anomaly Ground Magnetic Profiles Line 8100E	1:5 000
2397	Rocky Cape EL 1/77 Alpine Anomaly Ground Magnetic Profiles Line 8300E	1:5 000
2398	Rocky Cape EL 1/77 Alpine Anomaly Ground Magnetic Profiles Line 8500E	1:5 000
2399	Rocky Cape EL 1/77 Alpine Anomaly Ground Magnetic Profiles Line 8700E	1:5 000
2400	Rocky Cape EL 1/77 Alpine Anomaly Ground Magnetic Profiles Line 8900E	1:5 000
2401	Rocky Cape EL 1/77 Alpine Anomaly Ground Magnetic Profiles Line 9100E	1:5 000

Plan TASh No			Scale
2402	Rocky Cape EL 1/77 Alpine Anomaly Magnetic Profiles Line 9300E	Ground	1:5 000
2403	Rocky Cape EL 1/77 Alpine Anomaly Magnetic Profiles Line 9500E	Ground	1:5 000
2304	Rocky Cape EL 1/77 Alpine Anomaly Profiles Line 8100E	Genie EM	1:5 000
2305	Rocky Cape EL 1/77 Alpine Anomaly Profiles Line 8300E	Genie EM	1:5 000
2306	Rocky Cape EL 1/77 Alpine Anomaly Profiles Line 8500E	Genie EM	1:5 000
2307	Rocky Cape EL 1/77 Alpine Anomaly Profiles Line 8700E	Genie EM	1:5 000
2308	Rocky Cape EL 1/77 Alpine Anomaly Profiles Line 8900E	Genie EM	1:5 000
2309	Rocky Cape EL 1/77 Alpine Anomaly Profiles Line 9100E	Genie EM	1:5 000
2310	Rocky Cape EL 1/77 Alpine Anomaly Profiles Line 9300E	Genie EM	1:5 000
2311	Rocky Cape EL 1/77 Alpine Anomaly Profiles Line 9500E	Genie EM	1:5 000
2544	Rocky Cape EL 1/77 Alpine Anomaly of Geophysical and Geochemical Data	Compilation	1:5 000

14. LIST OF APPENDICES

Appendix 1	Alpine Anomaly - Petrological Reports
Appendix 2	Alpine Anomaly - Sample Ledgers and Assay Data
Appendix 3	Alpine Anomaly - Memorandum from T Strokirch re Geophysical Investigations

APPENDIX 1

ALPINE ANOMALY

PETROLOGICAL REPORTS

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230019

Central Mineralogical Services

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

Mr. J. Weir
Geologist
C.R.A. Exploration Pty. Ltd.
P.O. Box 138
ROSNY PARK / TAS. 7018

4th February, 1985

REPORT CMS 85/1/20

YOUR REFERENCE:	D.P.O. No. 31967
DATE RECEIVED:	30th January, 1985
SAMPLE NOS.:	4 Samples
SUBMITTED BY:	J. Weir
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.

REPORT CMS 85/1/20

1154369 (T.S. 52558)
This is an indurated, hematitic, feldspathic sandstone, verging on an orthoquartzite; some weathering and leaching has occurred.

The framework consists of small (fine sand-size) quartz grains, subrounded to rounded, and with moderate sphericity, each with a thin rim of ultrafine hematite. However, the amount of hematite is variable in different portions of the rock. Former feldspar grains are represented by voids or ferruginous clay aggregates. Occasional detrital tourmaline is seen.

The cement is quartz, in optical continuity with the framework grains. The rock is bedded, due to the orientation of the long axes of the grains. There is no sign of metamorphism.

1154370 (T.S. 52559)
This is a stressed and perhaps incipiently metamorphosed, weakly micaceous and argillaceous sandstone, and may have contained minor siderite.

The framework consists of small, closely-packed stressed quartz grains whose clastic shapes are still clearly recognisable, with interstitial wisps of sericite (representing recrystallized clays), and fairly regularly distributed small aggregates of earthy goethite thought to be oxidised siderite. Detrital heavy mineral grains include rutile, zircon, leucoxene and tourmaline (green and yellow varieties). Some feldspar may have been present, but is now leached.

An incipient, impersistent schistosity has developed sporadically through the formation of sericite streaks.

1154371 (T.S. 52560)
This is a stressed ?feldspathic sandstone with many voids, and with white quartz veins which predate the dynamic, metamorphic phase of deformation.

Despite the deformation, the clastic nature of the framework grains is clearly recognisable; the framework is composed of small, closely-packed, stressed quartz grains, cemented by quartz, with sporadic small sericite flakes and with many voids representing a leached detrital mineral, thought to have been feldspar. Detrital heavy minerals comprise black oxide opaques and green tourmaline.

The rock is traversed by veins of milky quartz which is also markedly stressed.

1154375 (T.S. 52561)
This is a muscovite-metaquartzite which has been subjected to later deformation, with the development of folding and thin fracture zones. With an increase in mica, the rock would be classified as a quartz-muscovite schist.

The rock consists dominantly of streaky, parallel, elongate quartz grains and mosaics, and thin partings or laminae of muscovite flakes with minor associated phlogopite. Very small cloudy rutile needles are embedded in the micas. There are tourmaline crystals consisting of rounded (detrital) cores and euhedral, authigenic overgrowths, and rounded zircon grains.

Later dynamic metamorphism has caused folding, minor disruption and brecciation.

This rock differs from the others in its definite, pronounced degree of metamorphism, and different lithology. All the rocks in this group differ substantially from 1142567, as there is no evidence of a former carbonate lithology.

H.W. Fander, M. Sc.

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230022

Central Mineralogical Services

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

Dr.R.R. Large
Supervising Geologist
Geopeko
P.O. Box 598
DEVONPORT / TAS. 7310

3rd November, 1983

REPORT CMS 83/10/22

YOUR REFERENCE:	D.P.O. No. 31869
DATE RECEIVED:	11th October, 1983
SAMPLE NOS.:	1140105 — Alpine grid
SUBMITTED BY:	C. Kendall
WORK REQUESTED:	Mineralogy

H.W. Fander, M. Sc.

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

230023

CENTRAL MINERALOGICAL SERVICES PTY. LTD.

Date 3rd November, 1983

SAMPLE REPORT (Mineralogy, Petrology, Ore Microscopy)

IDENTIFICATION
1140105

Job No. CMS 83/10/22 Date Received: 11.10.1983

Reference D.P.O. No. 31869

Sample No. 1140105

Nature of Sample: Soil Sample

DESCRIPTION SECTION No. 47791

a. Hand Specimen:

b. Microscopic:

The sample was wet-screened through a 72 mesh B.S.S. screen (212 μ, the nearest screen we have to 80 mesh); the +72 mesh fraction, representing 83 % of the total deslimed sample, was examined under a stereobinocular microscope, and nine rock fragments were selected for thin-section preparation. The -72 mesh fraction (17 %) was deslimed to remove clays and humus prior to heavy-liquid separation in TBE (S.G. = 2.95), as these hinder the process. Due to sample limitations (only 7.6 g of -72 mesh material was available), the resultant heavy fraction was very small.

+72 Fraction. This consists dominantly of quartz and quartzite, from pebble to sand size; the quartz includes smoky and milky varieties. Most of the sectioned fragments, of the darker rocks, are banded tourmaline-metaquartzites grading into banded tourmaline rocks; feldspathic sandstones and cherts are also present.

-72 Fraction - Heavy Fraction (13 % of sample)

A scan was made using short-wave UV, but no scheelite was detected. The heavy minerals are tourmaline, minor decomposed sulphides (pyrite, ?arsenopyrite), traces of zircon, tc z, ilmenite and leucoxene. No tungsten minerals were detected; it is suspected that the tungsten may be associated either with clays or humus, though it would occur as a secondary minerals such as anthoinite (known from Tara), a clay-like, ultrafine white hydrous Al-tungstate which is difficult to detect and would require fairly lengthy mineralogical procedures.

H.W. Fander, M. Sc.

1023

230024

Central Mineralogical Services

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

Mr. R. Perring
Geologist
Geopeko
P.O. Box 598
DEVONPORT / TAS. 7310

15th August, 1983

REPORT CMS 83/7/18

YOUR REFERENCE:	D.P.O. No. 31856
DATE RECEIVED:	22nd July, 1983
SAMPLE NOS.:	KR 12781, KR 12782
SUBMITTED BY:	R. Perring
WORK REQUESTED:	Mineralogy

for H.W. Fander, M. Sc.

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

REPORT CMS 83/7/18

Two samples of pyritic rock, labelled KR 12781 and KR 12782, were received for mineralogical examination, with particular emphasis on possible tin mineralisation. Representative polished sections were prepared, and a thin-section was also prepared from KR 12781.

Both rocks can be classified broadly as pyritic cherts and consist essentially of fine- to medium-grained, disseminated to semi-massive pyrite with a semi-banded distribution in a fine-grained to microcrystalline quartz matrix. There is some evidence of quartz pseudomorphing fine-grained carbonate, although the bulk of the cherty quartz appears primary.

Accessory phases include thinly disseminated to locally conspicuous magnetite and traces of chalcopyrite, virtually entirely replaced by secondary chalcocite. Where present, magnetite exhibits a distinctly banded distribution, as does in banded zones the altered chalcopyrite.

Traces of carbonaceous matter are present in KR 12781. Both rocks include a little degraded (pyritised) pyrrhotite in addition to pyrite.

There is no detectable cassiterite (or stannite) in the areas sectioned. These rocks lack metasomatic features apart from the above-noted silicification of accessory carbonate and appear to represent a primary, rather than metasomatic, pyritic chert association.

Finer details are partly obscured by fracturing, partial remobilisation of pyrite into discordant films and weathering effects, particularly secondary Fe-staining.

D. Cowan, B. Sc.

82-

230026

Central Mineralogical Services

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

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

11th January, 1985

REPORT CMS 85/1/3

YOUR REFERENCE:	D.P.O. No. 31966
DATE RECEIVED:	7th 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.
G.P.O. Box 384D
MELBOURNE / VIC. 3001

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

The Administration Officer
C.R.A. Exploration Pty. Ltd.
P.O. Box 138
ROSNY PARK / TAS. 7018

H.W. Fander, M. Sc.

026

230027

REPORT CMS 85/1/3

Three rock samples were received for petrographic study; thin-sections were prepared and examined, and are described below.

989305 (T.S. 52424)
This is a carbonaceous phyllite, i.e. an incipiently metamorphosed black shale.

The rock consists of subparallel streaks of fine sericite-chlorite dispersed through a semi-opaque ultrafine matrix of carbon (perhaps subgraphite) and recrystallized clays, with occasional coarser quartz grains or patches; silt-sized quartz grains are evenly scattered through the rock.

There are conformable zones of bleached rock, in which carbonaceous material has been removed; within these zones are fragments of boudinaged quartz-sulphide veins, arranged "en echelon". The sulphides are porous and compact pyrite - the porous pyrite is suspected to be altered pyrrhotite.

989314 (T.S. 52425)
This is a severely altered igneous rock, and present mineral assemblages and relict textures suggest a basic type, probably a dolerite.

Although most of the rock now consists of secondary minerals, laths of andesine have survived in places, though penetrated by, and riddled with, chlorite. Elsewhere, the plagioclase is represented by quartz-sericite-chlorite pseudomorphs. Chlorite is very abundant, as pseudomorphs after ferromagnesian minerals and filling interstices. Conspicuous leucoxene pseudomorphs after primary magnetite are distributed through the rock; no unaltered magnetite was detected.

1142567 (T.S. 52426)
Alpine Anomaly.
The present rock is essentially a quartz-pyrite assemblage, but is represents a silicified carbonate rock, with a relatively complex history.

10000N/8335E
The rock is dominantly composed of small interlocking polygonal quartz grains, all containing numerous minute carbonate inclusions representing unreplaced relict grains, except in a few lensoid patches where the quartz is quite clear and is probably recrystallized nodular chert (present in the original carbonate rock). Small euhedral pyrite crystals are common throughout and contain occasional small carbonate inclusions; the textural relationships between the pyrite and the quartz indicate that they formed contemporaneously, postdating the carbonate.

Very occasional quartz-lined cavities occur, and these contain massive, coarse chalcopyrite (and oxidised chalcopyrite in places); they are evidently of younger formation than the pyrite.

Throughout the rock there are minute grains (mostly < 10 μ) of an unidentified mineral which may be one of the Pb phosphate compounds; they are too small for definite identification by optical methods alone, but assays could be helpful.

H.W. Fander, M. Sc.

APPENDIX 2

ALPINE ANOMALY

SAMPLE LEDGERS AND ASSAY DATA

029

230030

Australian Laboratory Services PTY. LTD.

CONSULTING ANALYTICAL CHEMISTS

LABORATORY REPORT

Office & Laboratory
32 Shand Street
Stafford, Q 4053
PO Box 66,
Everton Park, Q 4053
Phone: (07) 352 5577
Telex: AI SEV 42344

Client: CRA EXPLORATION PTY. LIMITED
Address: LEVEL 4, BELLERIVE QUAY
CAMBRIDGE ROAD
BELLERIVE TAS. 7018

Batch Number: A169

Contact: MR. J. WEIR

No. of Samples: 10
Date Received: 31/01/85
Date Completed: 25/02/85

Order No: D.P.O. 31968 Sample Type: ROCK CHIP

SAMPLE NUMBER	Element Unit Method	Cu ppm IC580	Pb ppm IC580	Zn ppm IC580	Ni ppm IC580	Co ppm IC580
1154375		10	15	25	5	<5
1154378		10	40	50	15	5
1154385		115	70	130	115	50
1154386		85	75	95	50	40
1154388		25	20	45	10	10
1154393		15	25	45	25	15
1154394		5	10	10	<5	<5
1154395		10	<5	5	10	<5
1154397		30	20	10	10	20
1154399		10	15	20	10	<5
Detection Limit		2	5	2	5	5

Comments:

Signatory: G J Kilmister

030

230031

Australian Laboratory Services PTY. LTD.

Incorporated in Queensland

CONSULTING ANALYTICAL CHEMISTS

LABORATORY REPORT

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

Client: CRA EXPLORATION PTY. LIMITED
Address: LEVEL 4, BELLERIVE QUAY
CAMBRIDGE ROAD
BELLERIVE TAS. 7018

Batch Number: A169

Contact: MR. J. WEIR

No. of Samples: 10
Date Received: 31/01/85
Date Completed: 25/02/85

Order No: D.P.O. 31968 Sample Type: ROCK CHIP

SAMPLE NUMBER	Element Unit Method	As ppm IC580	Ag ppm IC580	Fe % IC580	Mn ppm IC580	Au ppb PM204
1154375		4	1	0.49	35	3
1154378		14	<1	2.01	80	<3
1154385		16	4	28.1	250	<3
1154386		20	3	35.2	250	<3
1154388		42	<1	3.45	85	<3
1154393		20	<1	2.58	350	<3
1154394		3	<1	0.20	20	<3
1154395		<1	<1	0.48	30	<3
1154397		12	<1	0.92	390	<3
1154399		12	<1	1.10	45	<3
Detection Limit		1	1	0.01	5	3

Comments:

Registered Laboratory

Signatory: G J Kilmister

031

230032

Australian Laboratory Services PTY. LTD.

CONSULTING ANALYTICAL CHEMISTS

LABORATORY REPORT

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

Client: CRA EXPLORATION PTY. LIMITED
Address: LEVEL 4, BELLERIVE QUAY
CAMBRIDGE ROAD
BELLERIVE TAS. 7018

Batch Number: A169-1

Contact: MR. J. WEIR

Order No.: D.P.O. 31968 Sample Type: ROCK CHIPS

No. of Samples: 10
Date Received: 31/01/85
Date Completed: 25/02/85

SAMPLE NUMBER	Element Unit Method	Sn ppm XRF 1A	W ppm XRF 1A	Ba ppm XRF 1A		
1154375		<5	<10	50		
1154378		<5	<10	160		
1154385		<5	<10	20		
1154386		<5	<10	30		
1154388		<5	<10	<10		
1154393		5	<10	320		
1154394		<5	<10	140		
1154395		<5	<10	<10		
1154397		<5	<10	270		
1154399		<5	<10	130		
Detection Limit		5	10	10		

Comments:

Signatory: G J Kilmister

032

230033

Australian Laboratory Services PTY. LTD.

CONSULTING ANALYTICAL CHEMISTS

LABORATORY REPORT

Office & Laboratory
32 Shand Street
Stafford, Q 4053
PO Box 66
Everton Park, Q 4053
Phone (07) 352 5577
Telex ALSLV 42344

Client: CRA EXPLORATION PTY. LIMITED
Address: LEVEL 4, BELLERIVE QUAY
CAMBRIDGE ROAD
BELLERIVE TAS. 7018

Batch Number: A169-2

Contact: MR. J. WEIR

No. of Samples: 16
Date Received: 31/01/85
Date Completed: 25/02/85

Order No: D.P.O. 31968 Sample Type: STREAM SEDIMENT

SAMPLE NUMBER	Element / Unit / Method	Cu ppm IC580	Pb ppm IC580	Zn ppm IC580	Ni ppm IC580	Co ppm IC580
1154372		5	10	25	15	10
1154373		5	5	10	10	<5
1154374		5	5	20	15	5
1154376		30	20	35	25	45
1154377		10	15	45	25	15
1154379		5	10	45	15	5
1154382		5	<5	10	10	<5
1154383		5	5	5	15	<5
1154384		15	15	25	40	10
1154387		10	15	30	30	10
1154389		10	20	20	35	5
1154390		10	10	15	20	<5
1154391		5	10	15	10	<5
1154392		10	10	10	15	<5
1154396		10	10	15	15	15
1154398		5	5	10	10	<5
Detection Limit		2	5	2	5	5

Comments

Signatory: G J Schneider

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230034

Australian Laboratory Services PTY. LTD.

CONSULTING ANALYTICAL CHEMISTS

LABORATORY REPORT

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

Client: CRA EXPLORATION PTY. LIMITED
Address: LEVEL 4, BELLERIVE QUAY
CAMBRIDGE ROAD
BELLERIVE TAS. 7018

Batch Number: A169-2

Contact: MR. J. WEIR

No. of Samples: 16
Date Received: 31/01/85
Date Completed: 25/02/85

Order No: D.P.O. 31968 Sample Type: STREAM SEDIMENT

SAMPLE NUMBER	Element Unit Method	As ppm IC580	Ag ppm IC580	Fe % IC580	Mn ppm IC580	Au ppb PM204
1154372		<1	<1	0.68	65	<3
1154373		<1	<1	0.51	35	<3
1154374		<1	<1	0.63	40	<3
1154376		<1	<1	1.42	100	<3
1154377		<1	<1	1.05	125	<3
1154379		<1	<1	0.66	70	<3
1154382		<1	<1	0.60	35	<3
1154383		<1	<1	0.69	40	<3
1154384		1	<1	2.40	55	<3
1154387		<1	<1	1.49	100	<3
1154389		<1	<1	1.60	40	<3
1154390		<1	<1	0.89	50	<3
1154391		<1	<1	0.66	30	<3
1154392		<1	<1	0.80	45	<3
1154396		<1	<1	1.03	165	<3
1154398		<1	<1	0.66	40	<3
Detection Limit		1	1	0.01	5	3

Comments:

Signatory: G J Schmeder

034

230035

Australian Laboratory Services PTY. LTD.

Incorporated in Queensland

CONSULTING ANALYTICAL CHEMISTS

LABORATORY REPORT

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

Client Address: CRA EXPLORATION PTY. LIMITED
LEVEL 4, BELLERIVE QUAY
CAMBRIDGE ROAD
BELLERIVE TAS. 7018

Batch Number: A169-3

Contact: MR. J. WEIR

No. of Samples: 16
Date Received: 31/01/85
Date Completed: 25/02/85

Order No. D.P.O. 31968

Sample Type: STREAM SEDIMENT

SAMPLE NUMBER	Element Unit Method	Sn ppm XRF 1A	W ppm XRF 1A	Ba ppm XRF 1A		
1154372		70	10	<10		
1154373		65	<10	<10		
1154374		660	10	<10		
1154376		6650	40	<10		
1154377		675	20	<10		
1154379		130	<10	<10		
1154382		185	<10	<10		
1154383		110	<10	<10		
1154384		420	<10	<10		
1154387		240	10	<10		
1154389		250	<10	<10		
1154390		120	<10	<10		
1154391		220	<10	<10		
1154392		60	<10	<10		
1154396		115	<10	<10		
1154398		55	<10	<10		
Detection Limit		5	10	10		

Comments:

Signatory: G J Klinsoler

KEY TO STREAM SEDIMENT SAMPLE FIELD SHEET

Sample No - CRAE 6 or 7 digit No.

East - AMG Coord in m.

North - AMG Coord in m.

Zone - AMG Zone.

Sample type - Mesh size.

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

Width - Stream width in m.

Catchment - Contributing catchment area in km^2.

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

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

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

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

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

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

Outcrop, Float - Rock type codes.

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

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

Scint - Scintillmeter reading in cps

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

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

ROCK TYPE CODE

Sediments - Clastic

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

Sediments - Chemical

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

Miscellaneous

Silcrete	SLRT
Calcrete	CLRT
Bauxite	BAUX
Ironstone	IRST
Laterite	LATR
Gossan	GOSS
Sulphides	SULP
Quart Vein	QTVN
Gneiss	GNEE
Fuchsite	FUSR

Volcanics

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

Metamorphics

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

Igneous - Intrusives

Greenstone	GREN
Ultrabasic Intr. Undiff	UIUD
Eclogite	ECLG
Peridotite	PERD
Serpentinite	SERP
Anorthosite	ANOR
Gabbro	GABR
Alkali Gabbro	ALGB
Norite	NORT
Picrite	PICR
Pyroxenite	PYRX
Dunite	DUNT
Carbonatite	CARB
Kimberlite	KIMB
Coarse Basic Intr.	CBIN
Med Basic Intr.	MBIN
Fine Basic Intr	FBIN
Lamprophyre	LAMP
Coarse Intermed Intr.	CIIN
Med Intermed Intr.	MIIN
Fine Intermed Intr.	FIIN
Syenite	SYEN
Dolerite	DOLR
Diorite	DIOR
Coarse Acid Intr.	CAIN
Medium Acid Intr.	MAIN
Fine Acid Intr.	FAIN
Granite	GRAN
Aplite	APLT
Adamellite	ADAM
Granodiorite	GRDR
Quartz Porphyry	QUPR
Quartz Feldspar Porphryry	QFPR
Granophyre	GRPH
Pegmatite	PEGM
Glass	GLAS

MINERALISATION/ALTERATION CODE

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

036

CRA EXPLORATION PTY LIMITED

STREAM SEDIMENT SAMPLE FIELD SHEET **SS**

SAMPLE NUMBER	LOCATION East	LOCATION North	Zone	SAMPLE DESCRIPTION Sample Type	Gravel %	Sand %	Silt %	Clay %	Org %	SITE DESCRIPTION Width	Catchment	Flow	Banks	Channel	Staining	Contam.	Site	GEOLOGY Outcrop	Float Major	Float Minor	Major Rock Unit	Min/Alt	Scint	Look	Veget.	GEOLOGICAL OBSERVATIONS
																										Duck Creek Traverse. Start 9300E/8200N. Heading SW.
1154501			55	-80#	40	50	18	2	—	10	5	S	C	W	ORG	—	SB	—	QTVN	QMSC	Pen				R	Float QTVN, GRAN, rare QTZT, QMSC + rare grey carbonate-silica rich.
503			55	-80#	5	80	12	1	3	5	6	S	C	W	—	—	T	—	GRAN	CRUD					R	Main ck. Float QTVN, GRAN, CRUD QTZT
504			55	-80#	5	80	12	1	2	5	2	S	B	W	—	—	T		GRAN	QTZT					R	Float: qtz gravel, QTZT, rare QMSC BASL. Tributary from N.
505			55	-80#	—	60	30	—	10	1	1	S	B	—	—	—	T	—	T	—					R	Float quartz sand. Trib. from S.
507			55	-80#	50	40	19	—	1	15	7	S	A	B	—	—	T	SILT	GRAN	QTZT					R	Main Creek. O/c Chloritic? Siltstone. Float gravels quartzite, sericite quartz schist
508			55	-80#	—	60	35	—	5	8		S	B	W	—	—	T	—	GRAN						R	Trib from East.
511			55	-80#	20	70	19	—	1	8		S	C	W	MNC	—	T	SHAL	GRAN	SHAL					R	Main Ck.
512			55	-80#	40	48	14	—	1	15	10	S	A		ORGE		T	—	GRAN	SHAL					R	Main Creek.
513			55	-80#	—	—	90	—	10	10		S	N	B			T	—	—	—					R	Trib from N.
514			55	-80#	40	50	19	—	1	2	10	S	A	W	—	—	T	—	GRAN	QTZT					R	Main Creek
515			55	-80#	50	45	5	—	—	6	10	S	A	W	—	—	T	—	SSUD						R	Major River.

5 cm

PROJECT Rocky Cape
TENEMENT EL 1/77
INVESTIGATION Alpine Anomaly
1:250 000 SHEET Queenstown SK55-5
SAMPLE NOS
DPO: 31921
COLLECTED BY P. Temby
DATE Nov '84

CRA

230037

KEY TO ROCK SAMPLE FIELD SHEET

Sample Number - CRAE 6 or 7 digit No.

East - AMG or Local Grid Co-ordinate in m.

North - AMG or Local Grid Co-ordinate in m.

Zone/LG - AMG Zone or L for Local Grid.

Sample Type - DSRS Code.

From - To - In m where applicable.

Width - Width of sample interval in m.

Exposure - Outcrop (O), Float (F), Uncertain (U), Core or Cuttings (C).

Rock Types - Rock Type Code.

Alteration - Alteration Code.

Mineralisation

- **Visible** - None visible (N), Trace (T), Disseminated (D), Abundant (A).
- **Style** - Mineralisation Style Code.
- **Major** - Mineral Code.
- **Min. 1 & 2** - Mineral Code.
- **Gangue** - Mineral Code.

Age - Geological Age Code.

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

Grain Size - Grain Size Code.

Texture - Texture Code.

Colour -

Look - Other item of interest recorded in the Geological observations column (Y/N).

ROCK TYPE CODE

Sediments - Clastic

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

Sediments - Chemical

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

Miscellaneous

Silcrete	SLRT
Calcrete	CLRT
Bauxite	BAUX
Ironstone	IRST
Laterite	LATR
Gossan	GOSS
Sulphides	SULP
Quart Vein	QTVN
Gneiss	GNES
Fuberite	FUBR

Volcanics

Agglomerate	AGLM
Lapilli Tuff	LPTF
Ash Flow Tuff	APTF
Ignimbrite	IGNM
Crystal Tuff	CRTF
Vitric Tuff	VTTF
Obsidian	OBSD
Mudflows	MUDF
Tuffaceous Sandstone	TFSS
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Basic Volc. Undiff	BVUD
Basalt	BASL
Basic Lava	BSLV
Basic Pyroclast	BSPY
Intermed Volc. Undiff	IVUD
Andesite	ANDS
Intermed. Lava	INLV
Intermed. Pyroclastic	INPY
Acid Volc. Undiff	AVUD
Rhyolite	RHYL
Rhyodacite	RHDC
Dacite	DACT
Tr yte	TRAC
An ava	ACLV
An /yroclast	ACPY

Metamorphics

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

Igneous - Intrusives

Greenstone	GREN
Ultrabasic Intr. Undiff	UIUD
Eclogite	ECLG
Peridotite	PERD
Serpentinite	SERP
Anorthosite	ANOR
Gabbro	GABR
Alkali Gabbro	ALGB
Norite	NORT
Picrite	PICR
Pyroxenite	PYRX
Dunite	DUNT
Carbonatite	CARB
Kimberlite	KIMB
Coarse Basic Intr.	CBIN
Med Basic Intr.	MBIN
Fine Basic Intr	FBIN
Lamprophyre	LAMP
Coarse Intermed Intr.	CIIN
Med Intermed Intr.	MIIN
Fine Intermed Intr.	FIIN
Syenite	SYEN
Dolerite	DOLR
Diorite	DIOR
Coarse Acid Intr.	CAIN
Medium Acid Intr.	MAIN
Fine Acid Intr.	FAIN
Granite	GRAN
Aplite	APLT
Adamellite	ADAM
Granodiorite	GRDR
Quartz Porphyry	QUPR
Quartz Feldspar Porphyry	QFPR
Granophyre	GRPH
Pegmatite	PEGM
Glass	GLAS

ALTERATION CODE

Argillisation	ARGL
Albitisation	ALBT
Calc Silicate	CLSL
Carbonatisation	CARB
Chloritisation	CHLR
Dolomitisation	DOLM
Ferruginisation	FERG
Kaolinisation	KAOL
Potassic	POTS
Propylitisation	PROP
Pyritisation	PYRT
Saussuritisation.	SAUS
Sericitisation	SERC
Silicification	SILC
Talcose	TALC
Tourmalinisation.	TOUR
Zeolitisation	ZEOL
Other	OTHR

MINERALISATION STYLE CODE

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

MINERAL CODE

Actinolite	ACTN
Adularia	ADUL
Agate	AGAT
Alkali Feldspar	ALFL
Albite	ALBT
Allanite	ALAN
Alunite	ALUN
Amblygonite	AMBL
Amethyst	AMET
Amphibole	AMPH
Andalusite	ANDL
Andesine	ANDS
Anhydrite	ANHY
Ankerite	ANKR
Anthophyllite	ANTH
Antimonite	ANTM
Antimony Native	SBNT*
Apatite	APAT
Aragonite	ARAG
Argentite	ARGN
Arsenic	ASNT*
Arsenopyrite	ARPY
Asbestos	ASBS
Augite	AUGT
Azurite	AZUR
Barite	BART
Bastnaesite	BAST
Bauxite	BAUX
Bentonite	BENT
Beryl	BERY
Biotite	BIOT
Bismuth	BINT*
Bismuthinite	BISM
Bitumen	BITM
Boracite	BORC
Borax	BORX
Boulangerite	BOUL
Bronzite	BRON
Brucite	BRUC
Calcite	CALC
Carbonate	CARB
Carnotite	CARN
Cassiterite	CASS
Celestite	CELS
Cerussite	CERS
Chalcedony	CHDN*
Chalcocite	CHCT
Chalcopyrite	CHPY
Chamosite	CHAM
Chert	CHER
Chlorite	CHLR
Chrome Diopside	CHDP
Chrome Spinel	CHSP
Chromite	CHRM
Chrysotile	CHRY
Cinnabar	CINN
Clay	CLAY
Clinopyroxene	CLPX*
Clinozoisite	CLZS
Cobaltite	COBL
Collophane	COLP
Columbite	COLM
Copper	CPNT*
Cordierite	CORD
Corundum	CORN
Covellite	COVL
Crocidolite	CROC
Cryolite	CRYL
Cubanite	CUBN
Cummingtonite	CUMM
Cuprite	CUPR
Diamond	DIAM
Digenite	DIGN
Diopside	DIOP
Dolomite	DOLM
Electrum	ELEC
Emerald	EMER
Enargite	ENAR
Enstatite	ENST
Epidote	EPID
Evaporites	EVAP
Fayalite	FAYL
Feldspar	FELD
Ferberite	FERB
Ferrodolomite	FRDL
Fluorite	FLUR
Franckeite	FRAN
Fuchsite	FUCH
Gahnite	GAHN
Galena	GALN
Garnet	GARN
Garnierite	GRRT*
Gibbsite	GIBS
Glass	GLAS
Glauconite	GLAC
Glaucophane	GLPH*
Goethite	GOET
Gold	AUNT*
Graphite	GRAP
Grossularite	GROS
Guano	GUAN
Gypsum	GYPS
Halite	HALT
Heazlewoodite	HEAZ
Hedenbergite	HEDN
Hematite	HEMT
Hornblende	HORN
Hubnerite	HUBN
Ilmenite	ILMN
Iron Oxides	FEOX*
Jadeite	JADT
Jarosite	JARS
Jasper	JASP
Kaolin	KAOL
Kyanite	KYAN
Labradorite	LABR
Lepidolite	LEPD
Leucite	LEUC
Leucoxene	LCXN
Limonite	LIMN
Loellingite	LOEL
Maghemite	MAGH
Magnesite	MGST*
Magnetite	MGTT*
Malachite	MALC
Manganite	MANG
Marcasite	MARC
Martite	MART
Melilite	MELT
Mercury	MGNT*
Mica	MICA
Microcline	MICR
Molybdenite	MOLY
Monazite	MONZ
Montmorillonite	MONT
Muscovite	MUSC
Nepheline	NEPH
Nephrite	NPRT*
Ochre	OCHR
Oligoclase	OLIG
Olivine	OLIV
Opal	OPAL
Orthoclase	ORCL*
Orthopyroxene	ORPX*
Pentlandite	PENT
Perthite	PERT
Phlogopite	PHLG
Phosphate	PHOS
Picro-ilmenite	PCIL*
Pitchblende	PITC
Plagioclase	PLAG
Platinum	PTMT*
Potash Feldspar	PTFL*
Prehnite	PREN
Proustite	PROS
Pumpellyite	PUMP
Pyrargyrite	PYAR
Pyrite	PYRT
Pyrochlore	PYCH*
Pyrolusite	PYLS
Pyroxenite	PYRX*
Pyrope	PYRP
Pyrophyllite	PYPH*
Pyroxene	PYRX
Pyrrhotite	PYRH
Quartz	QUAR
Rhodochrosite	RHCN*
Rhodonite	RHOD
Riebeckite	RIEB
Ruby	RUBY
Rutile	RUTL
Salts	SALT
Sanidine	SAND
Sapphire	SAPH
Scapolite	SCAP
Scheelite	SCHL
Sericite	SERC
Serpentine	SERP
Siderite	SIDR
Silica	SILC
Silicate	SICT*
Sillimanite	SILL
Silver	AGNT
Smithsonite	SMIT
Smoky Quartz	SMQT*
Specularite	SPEC
Spessartine	SPES
Sphalerite	SPHL
Sphene	SPHN
Spinel	SPIN
Stannite	STAN
Staurolite	STAR
Stibnite	STIB
Stilpnomelane	STIL
Sulphate	SLPT*
Sulphides	SLPD*
Sylvite	STLV
Talc	TALC
Tantalite	TANT
Telluride	TELR
Tennantite	TENT
Tetrahedrite	TETR
Thorite	THOR
Topaz	TOPZ
Torbernite	TORB
Tourmaline	TOUR
Tremolite	TREM
Uraninite	URNT*
Uranophane	URPH*
Uranothorite	URTH*
Vanadinite	VAND
Vermiculite	VERN
Vesuvianite	VESV
Willemite	WILM
Willyamite	WILY
Witherite	WITH
Wolframite	WOLF
Wollastonite	WOLS
Zeolite	ZEOL
Zincite	ZINC
Zircon	ZIRC

GEOLOGICAL AGE CODE

Quaternary	QU
Tertiary	TR
Cainozoic	CN
Cretaceous	KR
Jurassic	JR
Triassic	TR
Mesozoic	MS
Permian	PR
Carboniferous	CR
Devonian	DV
Silurian	SL
Ordovician	OR
Cambrian	CM
Palaeozoic	PL
Adelaidean	AD
Carpentarian	CP
Lower Proterozoic	LP
Proterozoic	PZ
Archaean	AR
Pre Cambrian	PC

GRAIN SIZE CODE

Clay	CL
Silt	SL
Fine Sand	FS
Coarse Sand	CS
Very Crse Sand	VC
Granules	GR
Pebbles	PB
Cobbles	CB
Glassy	GL
Aphanitic	AP
Very Fine Grained	VF
Fine Grained	FG
Medium Grained	MG
Medium To Coarse	MC
Coarse Grained	CG
Very Crse Grained	VG

TEXTURE CODE

Boxworks	BW
Massive	MS
Bedded	BD
Cross Bedded	CB
Graded Bedding	GB
Nodular	ND
Amygdaloidal	AM
Pyroclastic	PC
Flow Banded	FB
Granoblastic	GB
Aphanitic	AP
Porphyritic /Porphyroblastic	PR
Pegmatitic	PG
Migmatite	MG
Gneissic	--
Schistose	SC
Cataclastic	CC
Bioclastic	BC

038

CRA EXPLORATION PTY LIMITED — ROCK SAMPLE FIELD SHEET — RK

SAMPLE NUMBER	SAMPLE LOCATION			SAMPLE DESCRIPTION					ROCK TYPE			MINERALISATION											GEOLOGICAL OBSERVATIONS
	East	North	Zone/LD	Sample Type	From	To	Width	Exposure	Major	Minor	Alteration	Visible	Style	Major	Minor	Minor	Gangue	Age	Lithostratigraphic Unit	Grainsize	Texture	Colour	Leads	Duck Creek transect.
1154502			55	GRAB				F	CRUD		SILC									FG	BD	Grey		altered, silicified grey carbonate?
506			55	GRAB				0	FERC											CG		Brn		Recent ferricrete.
509			55	GRAB				0	SILT		CHLOR							Pe	Pcm	FG	BD	Brn		Chloritic siltstone.
510				GRAB.				0	SSND	SILT	Bio							Pe	Pcm	FG	BD			metaarenite sandstone & minor grey siltstone.

5 cm

PROJECT Rocky Cape — 1:250000 SHEET Queenstown SK 55-5 — COLLECTED BY P. Jenkey — DATE Nov 84

TENEMENT EL 1/77 — SAMPLE NOS — LOCAL GRID CROSS REF

INVESTIGATION Alpine anomaly — DPO's 31921

CRA

230039

Australian Laboratory Services PTY. LTD.
Incorporated in Queensland
CONSULTING ANALYTICAL CHEMISTS
Office & Laboratory
32 Shand Street
Stafford, Q. 4053
PO Box 66,
Everton Park, Q. 4053
Phone: (07) 352 5577
Telex: ALSEV 42344

LABORATORY REPORT

Alpine. Stream Sed's. (Peter. T.)

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

Batch Number: L067

Contact: MR. J. WEIR

Order No. D.P.O. 31921 Sample Type: STREAM SEDIMENT

No. of Samples: 10
Date Received: 13/11/84
Date Completed: 23/11/84

SAMPLE NUMBER	Element Unit Method	Cu ppm IC580	Pb ppm IC580	Zn ppm IC580	Ni ppm IC580	Co ppm IC580
1154501		5	10	40	20	5
1154503		5	10	40	20	10
1154504		5	15	30	20	10
1154505		10	15	20	20	5
1154507		5	10	25	15	5
1154508		5	10	20	10	5
1154511		5	10	25	15	5
1154513		5	10	15	10	<5
1154514		5	10	20	15	5
1154515		5	5	15	10	<5
Detection Limit:		2	5	2	5	5

Comments:

Signatory:

230040

040
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CONSULTING ANALYTICAL CHEMISTS

Office & Laboratory
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Telex: ALSEV 42344

LABORATORY REPORT

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

Batch Number: L067

Contact: MR. J. WEIR

No. of Samples: 10
Date Received: 13/11/84
Date Completed: 23/11/84

Order No. O.P.O. 31921 Sample Type: STREAM SEDIMENT

SAMPLE NUMBER	Element / Unit / Method	Fe % IC580	Mn ppm IC580	As ppm IC580	Ag ppm IC580	Mo ppm IC580
1154501		0.65	75	<1	<1	15
1154503		0.77	95	<1	<1	20
1154504		0.86	95	<1	<1	25
1154505		1.36	55	<1	<1	25
1154507		0.66	70	<1	<1	25
1154508		0.61	75	<1	<1	20
1154511		0.74	85	<1	<1	25
1154513		0.55	50	<1	<1	30
1154514		0.55	65	<1	<1	20
1154515		0.46	55	<1	<1	20
Detection Limit:		0.01	5	1	1	5

Comments:

Signatory: G. Lamm

230041

041

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CONSULTING ANALYTICAL CHEMISTS

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LABORATORY REPORT

Client: CRA EXPLORATION PTY. LIMITED
Address: 7 MARINE TERRACE,
BURNIE,
TAS. 7320

Batch Number: L047

Contact: MR. J. WEIR

No. of Samples: 4
Date Received: 08/11/84
Date Completed: 21/11/84

Order No. D.P.O. 31922 Sample Type: ROCK

SAMPLE NUMBER	Element / Unit / Method	Cu ppm IC580	Pb ppm IC580	Zn ppm IC580	Ni ppm IC580	Co ppm IC580
1154502		10	10	15	5	5
1154506		35	50	95	85	20
1154509		15	40	85	45	10
1154510		20	35	105	65	40
Detection Limit:		2	5	2	5	5

Comments:

Signatory:

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Telex: ALSEV 42344

LABORATORY REPORT

Client: CRA EXPLORATION PTY. LIMITED
Address: 7 MARINE TERRACE,
BURNIE,
TAS, 7320

Batch Number: L047

Contact: MR. J. WEIR

No. of Samples: 4
Date Received: 08/11/84
Date Completed: 21/11/84

Order No. D.P.O. 31922 Sample Type: ROCK

SAMPLE NUMBER	Element / Unit / Method	Fe % IC580	Mn ppm IC580	As ppm IC580	Ag ppm IC580	Mo ppm IC580
1154502		1.00	120	8	<1	10
1154506		22.5	220	10	2	15
1154509		5.30	90	5	2	15
1154510		4.15	310	6	2	15
Detection Limit:		0.01	5	1	1	5

Comments:

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Signatory:

230043

043
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Australian Laboratory Services LTD.

CONSULTING ANALYTICAL CHEMISTS

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Everton Park, Q. 4053
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Telex: ALSEV 42344

LABORATORY REPORT

Client: CRA EXPLORATION PTY. LIMITED
Address: 7 MARINE TERRACE,
BURNIE.
TAS. 7320

Batch Number: L047-1

Contact: MR. J. WEIR

No. of Samples: 4
Date Received: 08/11/84
Date Completed: 21/11/84

Order No. D.P.O. 31922 Sample Type: ROCK

SAMPLE NUMBER	Element Unit Method	Sn ppm XRF 1A	W ppm XRF 1A	Ba ppm XRF 1A	Au ppb PM204	
1154502		<5	<10	120	5	
1154506		<5	<10	100	30	
1154509		<5	<10	550	<3	
1154510		<5	<10	610	<3	
Detection Limit:		5	10	10	3	

Comments:

Signatory: G. Dunn

CRA EXPLORATION PTY LIMITED — STREAM SEDIMENT SAMPLE FIELD SHEET — SS

SAMPLE NUMBER	LOCATION East	LOCATION North	Zone	SAMPLE DESCRIPTION Sample Type	Gravel %	Sand %	Silt %	Clay %	Org %	SITE DESCRIPTION Width	Catchment	Flow	Banks	Channel	Staining	Contam	Site	GEOLOGY Outcrop	Float: Major	Float: Minor	Min/Hit	Scint	Look	Vegetation	GEOLOGICAL OBSERVATIONS
1142382	8900	9010	53	-80#	20	75	5	-	-	10	1	S	N	B	-	-	VS	—	GRAN					R	
383	8900	8875			20	75	5	-	-	7	1	S	B	N	—	-	T	—	GRAN					R	
384	8900	8505			65	30	5	-	-	5	1	S	C	B	—	-	SS	—	GRAN	IRST				R	
387	9100	8450			40	40	20	-	-	1	1	S	C	W	—	-	SS	—	GRAN	QMSC/FGGL				R	
389	9300	8485			40	40	20	-	-	10	1	S	B	B	—	-	T	—	GRAN					R	
390	9300	8690			45	45	10	-	-	7	1	S	B	B	—	-	T	—	GRAN					R	
391	9500	9375			45	50	5	-	-	1	1	S	B	W	—	-	T	—	GRAN					T	
392	9300	9515			20	40	40	-	-	1	1	S	C	W	—	-	SS	QMSC	GRAN	QTVN				R	
396	9300	9660			20	70	30	-	-	1.5	1	S	C	W	—	-	SS	QMSC	QMSC	QTVN				R	
398	9300	9915			20	50	30	-	-	3	1	S	B	W	—	-	SS	QMSC	QMSC	QTVN				R	

5 cm

PROJECT Rocky Capg — 1:250 000 SHEET Queenstown SE55-5 — COLLECTED BY DJW

TENEMENT EL 1/77 — SAMPLE NOS — DATE JAN '85

INVESTIGATION Alpine Anomaly — DPO: 31968

CRA

2300455

VVO

CRA EXPLORATION PTY LIMITED — ROCK SAMPLE FIELD SHEET — RK

SAMPLE NUMBER	SAMPLE LOCATION East	North	Zone/LG	SAMPLE DESCRIPTION Sample Type	From	To	Width	Exposure	ROCK TYPE Major	Minor	Alteration	MINERALISATION Visible	Style	Major	Minor	Minor	Comment	Type	Weathering	Grainsize	Texture	Colour	Layer	GEOLOGICAL OBSERVATIONS
1154385	8900E	8505	LG	Bkom	GRAB			F	IRST	—	FERG	—	-					Pe	Pen	MG	MA	Brn		weathered basalt? Possibly iron formation?
386	9100E	8375		GRAB				O	IRST					LIMN	GOET			Pe	Pen	MG	MA	Brn		weathered basalt? Possible iron formation?
388	9100E	8450		GRAB				F	IRST	FERL								?	?	MG	MA	Brn		massive sandy ferruginous rock → ferricrete??
393	9300	9515		GRAB				O	QMSC		CHLOR			@				Pe	Pen	FG	SC	Grn-Gry		Chloritic quartz mica schist.
394	9300	9610		GRAB				U	QMSC									Pe	Pen	FG	SC	Gry		V. weathered quartz mica schist.
395	9300	9635		GRAB				F	CHER?									Pe	Pen	FG	BD	White	Y	?FB. highly siliceous rock with silica after dolomite?
397	9300	9660		GRAB				O	QMSC		CHLOR							Pe	Pen	FG	SC	Grn-Gry		Chloritic quartz mica schist.
399	9300	9915		GRAB				O	QMSC		CHLOR							Pe	Pen	FG	SC	Grn-Gry		Chloritic quartz mica schist.

5 cm

PROTECT ROCKY CAPE — 1:250000 SHEET QUEENSTOWN SK 55-5 — COLLECTED BY DRN — DATE JAN 85

TENEMENT EL 1/77 — SAMPLE NO.S — LOCAL GRID CROSS REF

INVESTIGATION AIRLINE — DPO's 31968

CRA

230046

045

CRA EXPLORATION PTY LIMITED — ROCK SAMPLE FIELD SHEET — RK

SAMPLE NUMBER	SAMPLE LOCATION			SAMPLE DESCRIPTION					ROCK TYPE			MINERALISATION											GEOLOGICAL OBSERVATIONS
	East	North	Zone/LG	Sample Type	From	To	Width	Exposure	Major	Minor	Alteration	Visible	Style	Major	Minor	Minor	Gangue	Age	Stratigraphic Unit	Grainsize	Texture	Colour	Leached	
1142567	8335	10000	LG	GRAB				F	QTZT	CHER	SILC	D	DS	PYRT				PE	PGU	FG	BD	grey/blue		
1142568	9500	10975	LG	CHIP	10975N	10965N	10	O	QMSC		CHLOR							PE	PGU	MG	BD	grey		
1142571	9500	10760	LG	GRAB				O	QMSC		CHLOR							PE	PGU	MG	BD	grey		
1142575	9100	9615	LG	GRAB				O	IRST									T?	Tb				Y	Possibly after basalt.
1142576	8700	9405	LG	GRAB				O	BASL									T	Tb	CG	VS			Sericitised, vesicular basalt.
1142577	8500	9430	LG	GRAB				O	QMSC									PE	PGU	MG	SC			Miocene Sandstone.
1142578	8500	9390	LG	GRAB				O	BASL									T	Tb	MG	VS			
1142579	8500	9350	LG	GRAB				U	BASL									T	Tb	MG	ND	grey		
1142580	8500	9100	LG	GRAB				F	IRST									T					Y	Probable laterite after basalt.
1142583	8300	8790	LG	GRAB				O	BASL									T	Tb	MG	VS	Purple-grey		
1142585	8300	9120	LG	GRAB				O	QMSC	→ MICA SST	FERG							PE	PGU	MG	SC			
1142586	8300	9170	LG	GRAB				O	QMSC	→ MICA SST	FERG							PE	PGU	MG	SC		Y	- Gossan?
1154375	8100	9775	LG	GRAB				O	QMSC	→ MICA SST	SILC							PE	PGU	MG	SC	white		
1154376	8100	8875	LG	GRAB				O	QMSC		CHLOR							PE	PGU	MG	SC	grey		Miocene sandstone.

5 cm

PROJECT Rocky Cape — 1:250000 SHEET Queenstown SK 55-5 — COLLECTED BY DJW — DATE Oct 84

TENEMENT EL 1/77 — SAMPLE NO.S 8491 — LOCAL GRID CROSS REF

INVESTIGATION Alpine — DPO's 31956

CRA

2300477

940

PROJECT Rocky Cape

TENEMENT EL 1/77

AREA / PROSPECT Alpine

GEOCHEMICAL SAMPLING LEDGER

GEOLOGIST DJW

SAMPLE TYPE Rock Chip

DATES : Oct 84

LAB. ALS

PAGE NO.

SAMPLE NUMBER	GRID REF.	ANALYSES													DPO NUMBER	GEOLOGICAL OBSERVATIONS	CORRESP. -80 MESH STREAM SAMPLE
		Cu	Pb	Zn	Ni	Co	Ag	As	Fe %	Mn	ppb Au	Ba	Sn	W			
1142567		105	15	10	<5	10	1	26	1.19	85	<3	70	<5	<10	31986		
568		85	20	135	80	40	1	14	5.43	760	<3	710	<5	<10	"		
571		10	15	75	35	25	1	10	3.50	370	<3	370	<5	<10	"		
* 576		65	10	40	85	15	2	22	6.44	180	<3	60	<5	<10	"		
577		45	10	30	45	10	1	12	3.96	85	<3	100	<5	<10	"		
578		90	15	135	115	15	3	92	11.5	290	<3	110	<5	<10	"		
579		60	25	100	330	75	1	7	7.77	880	<3	300	<5	<10	"		
581		190	35	240	165	115	3	41	59.9	560	<3	70	<5	<10	"		
583		80	15	70	220	15	2	28	5.47	70	<3	110	<5	<10	"		
585		155	30	105	85	45	1	41	29.2	100	<3	90	<5	40	"		
586		710	35	25	20	15	1	160	19.9	15	<3	70	<5	<10	"		
* 575		360	50	290	65	250	2	5	48.8	2.62	<3	970	<5	<10			
METHOD DET.LIMIT																	

230048

047

CRA EXPLORATION PTY LIMITED — STREAM SEDIMENT SAMPLE FIELD SHEET

SS

SAMPLE NUMBER	LOCATION East	LOCATION North	Zone	SAMPLE DESCRIPTION Sample Type	Gravel %	Sand %	Silt %	Clay %	Org %	SITE DESCRIPTION Width	Catchment	Flow	Banks	Channel	Staining	Contam	Site	Geology Outcrop	Float: Major	Float: Minor	Min/Alt	Scint	Look	Veg	GEOLOGICAL OBSERVATIONS
1142566	8400	10000	LG	-80#	2	98	-	-	-	0.5	0.5	F	B	N	-	-	R	-	GRAN					O	
1142569	9500	10965	LG	-80#	20	30	30	20	-	1.5	2	F	C	W	-	-	SB	QMSC	QMSC	QTVN				R	
1142570	9500	10760	LG	-80#	15	30	30	25	-	1	1	S	B	W	-	-	SB	QMSC	GRAN	QMSC				R	
1142572	9500	10375	LG	-80#	30	40	15	15	-	0.5	1	S	B	B	-	-	F		GRAN	QMSC				K	
1142573	9500	10350	LG	-80#	-	90	5	5	-	1	1	S	A	B	-	-	F		GRAN					O	
1142574	9240	10000	LG	-80#	40	40	15	5	-	2	1	S	C	W	-	-	SB		GRAN	QMSC				T	
1142580	8500E	9160	LG	-80#	10	30	30	20	10	5	1	S	B	B	-	-	F	-	IRST	-				R	
1142582	8300	8310	LG	-80#	10	20	35	35	-	6	2	S	B	W	-	-	VB	-	BASL	GRAN				R	
1142584	8300	8910	LG	-80#	20	50	15	15	-	5	1	S	A	B	-	-	VB	-	GRAN	-				O	
1142587	8300	9370	LG	-80#	60	40	20	20	-	1	1	S	A	W	-	-	F	-	GRAN	-				O	
1142588	8300	9480	LG	-80#	25	30	30	15	-	1	1	S	B	W	-	-	F	-	GRAN	QMSC				O	
1142589	8300	9925	LG	-80#	5	80	10	5	-	1	1	F	B	W	-	-	F	-	GRAN	-				O	
1154372	9300	10287	LG	-80#	10	60	30	-	-	2	1	S	C	D	-	-	SB	QMSC	GRAN	QMSC				R	
1154373	8500	10085	LG	-80#	20	70	10	-	-	0.5	1	S	B	N	-	-	F	-	GRAN	-				O	
1154374	8100	9880	LG	-80#	30	60	10	-	-	0.6	1	S	B	B	-	-	F	-	GRAN					O	
1154376	8100	9400	LG	-80#	40	40	20	-	-	0.5	1	S	B	W	-	-	R	-	QTVN	BLSH				O	Rare black shale float? → Dk grey-bl. Mica schist. Rare to black shale float.
1154377	8100	8950	LG	-80#	30	40	30	-	-	5	1	S	B	B	-	-	SB	-	QTVN	BLSH				R	
1154379	8100	8446	LG	-80#	20	60	20	-	-	10	1	S	B	B	-	-	SB	-	GRAN					R	

5 cm

PROJECT Rocky Cape — 1:250 000 SHEET Queenstown SA55-5 — COLLECTED BY DPW

TENEMENT EL 1/77 — SAMPLE NOS — DATE October 1984

INVESTIGATION Alpine — DPO's

CRA

2300049

840

PROJECT ROCKY CAPE
TENEMENT EZ 1/77
AREA / PROSPECT ALPINE.

GEOCHEMICAL SAMPLING LEDGER

GEOLOGIST djw
SAMPLE TYPE ~~Rock~~ STREAM SEDIMENT

DATES : Oct 84
LAB. ALS.
PAGE NO.

SAMPLE NUMBER	GRID REF.	ANALYSES													DPO NUMBER	GEOLOGICAL OBSERVATIONS	CORRESP. -80 MESH STREAM SAMPLE
		Cu	Pb	Zn	Ni	Co	Ag	As	Fe%	Mn	ppb Au	Ba	Sn	W			
1142566		2	<5	20	15	5	<1	<1	0.43	40	<3	40	240	20	31956		
569		5	5	25	5	10	1	3	0.90	70	<3	330	30	<10	"		
570		2	5	20	10	5	1	<1	0.40	45	<3	100	60	<10	"		
572		5	<5	25	10	5	1	<1	0.57	60	<3	30	60	20	"		
573		2	10	40	15	10	<1	<1	0.60	75	<3	20	170	20	"		
574		2	<5	10	5	<5	<1	<1	0.26	25	<3	30	55	<10	"		
580		105	10	.135	160	30	1	14	8.50	65	<3	130	60	<10	"		
582		10	10	40	25	15	<1	2	1.92	260	<3	80	65	20	"		
584		5	5	30	20	10	<1	<1	1.08	95	<3	40	295	30	"		
587		20	10	25	30	5	<1	10	2.18	75	<3	50	10	20	"		
588		35	15	35	30	10	1	16	3.49	100	<3	140	<5	<10	"		
589		2	<5	15	15	<5	1	1	0.45	35	<3	<10	115	30	"		
METHOD DET.LIMIT																	

2300050

049

230051

CRA EXPLORATION PTY LIMITED — ROCK SAMPLE FIELD SHEET — RK

SAMPLE NUMBER	SAMPLE LOCATION East	North	Zone/LG	SAMPLE DESCRIPTION Sample Type	From m	To m	Width	Exposure	ROCK TYPE Major	Minor	Alteration	MINERALISATION Visible	Style	Major	Minor	Minor	Gangue	Age	Strat. Unit	Grainsize	Texture	Colour	Looks	GEOLOGICAL OBSERVATIONS
																								STRINGER'S CK. ROAD (CS3→N)
1142501				CHIP	14	40	26	0	QTZT	QTVN	SERC							Pe	PEu	FG	BD	W		welded f.g. qtzite. minor chlorite?
502				CHIP	40	100	60	0	SILT		SERC							Pe	PEu	FG	BD	grey-bn		
503				CHIP	100	144	44	0	QTZT									Pe	PEu	MG	BD			white - brown qtzite.
504				CHIP	176	179	3	0	QTZT			T	DS	PYRT				Pe	PEu	MG	BD	Grey		grey, v. foliated qtzite Tr pyrite.
505				CHIP	213	231	18	0	SHAL									Pe	PEu	FG	BD	Or		well cleaved or. weath. shale → Black Shale?
506				CHIP	255	297	42	0	SHAL									Pe	PEu	FG	BD	Or		well foliated weathered shale.
507				CHIP	417	461	44	0	QTZT			T		PYRT				Pe	PEu	MG	BD	W		Grey-white quartzite. ferrug. in places after py?
508				CHIP	461	525	74	0	QTZT			T		PYRT				Pe	PEu	MG	BD	W		white bedded + sl zoned qtzite. ferrug spots after py?
509				CHIP	605	623	18	0	QTZT	QTVN	SILC							Pe	PEu	MG	BD	W		white welded quartzite. Qtz veining
510				CHIP	East 4 1210.		50	0	BASL									T	Tb	MG		blue-bn		blue-black-brown basalt lava. zeolite filled vesicles.
511				CHIP	East 4	1240.	50	0	BASL									T	Tb	MG				As above.
512				CHIP			15	0	BASL.															Logging Track. Dozer Cut @ 1429m.
																								l. weath. brown porphyritic rock. — basic lava?
																								STRINGERS CK. ROAD.
																								START 50N, Jacro hole.
513				CHIP	526	569	43	0	QMSC		FERG.							Pe	PEu		BD	Grey		grey quartz mica schist. ferruginous in places.
514				GRAB	East 4	618m		F	GOSS		FERG.	A		PYRT										Pyritic gossan float.
515				GRAB	"	"		F	GOSS			A		PYRT	PYRH.									Pyritic gossan + Po.
516				GRAB	"	"		F	CHER			A		PYRT	PYRH									Pyritic chert, up to massive Py, abundant Po.
517				CHIP	W4 1019m.		21	0	QMSC									Pe	PEu	MG	BD	Grey		Also — fractures.
518				CHIP	"	"	39	0	QMSC	QTZT	QTVN							Pe	PEu	MG	BD	Grey		quartz mica schist + minor quartzite + qtz veins.
																								STRINGERS CK Road
																								START 1050N Jacro hole.
519				CHIP	East of 4	119	30	0	QMSC	QTZT								Pe	PEu	MG	BD	Grey		grey quartz mica schist.
																								START 1800N Jacro hole.
520				CHIP	101	112	11	0	MUDS	QMSC?	TALC							Pe	PEu	FG	BD	Cream		Cream talcose mudstone. → weath. schist.

PROJECT ALPINE ANOMALY (ROAD MAPPING) 1:250000 SHEET Queenstown SK55-5 COLLECTED BY DJW DATE Sept 84

TENEMENT Rocky Cape EL 1/77 SAMPLE NO.S 1142501 — 520 LOCAL GRID CROSS REF

INVESTIGATION DPO'L 30496

CRA

5 cm

050

PROJECT Rocky CAPE — GEOCHEMICAL SAMPLING LEDGER — DATES : Sept 84

TENEMENT EL 1/77 — LAB. ALS.

AREA / PROSPECT ALPINE — GEOLOGIST JJW — SAMPLE TYPE Rock Chip — PAGE NO.

SAMPLE NUMBER	GRID REF.	ANALYSES										DPO NUMBER	GEOLOGICAL OBSERVATIONS	CORRESP. -80 MESH STREAM SAMPLE
		Cu	Pb	Zn	Ni	Co.	As	Ag	Fe%	Mn	ppm. Au.			
1142501		20	10	70	35	5	70	1	1.44	320	0.03	30u96.		
502		10	10	35	20	<5	26	<1	1.20	90	0.02			
503		15	10	40	30	5	44	<1	1.06	45	0.02			
504		10	10	45	35	10	50	<1	1.85	45	0.01			
505		100	320	450	110	35	2400	2	6.04	220	0.16			
506		25	10	45	20	5	30	<1	3.45	10	0.02			
507		30	120	125	15	<5	850	1	2.13	65	0.05			
508		5	20	10	5	<5	16	<1	0.79	10	0.01			
509		15	70	665	10	<5	500	<1	0.53	40	0.08			
510		75	<5	85	270	50	36	3	7.39	870	0.02			
511		70	50	120	130	25	610	2	8.02	230	0.06			
512		55	20	70	55	15	350	2	1.89	75	0.04			
513		80	15	25	15	<5	120	1	1.17	25	0.03			
514		6100	30	40	20	260	7	3	25.3	600	0.18			
515		900	20	60	25	35	125	3	11.0	140	0.03			
516		1850	30	45	15	490	16	2	17.2	50	0.04			
517		100	740	30	25	15	95	<1	4.74	120	0.02			
518		55	20	45	30	10	40	1	3.60	110	0.01			
519		70	10	25	30	10	55	<1	4.96	140	0.02			
520		65	<5	20	180	10	38	2	1.13	30	0.01			
METHOD DET.LIMIT														

230052

151

CRA EXPLORATION PTY LIMITED

ROCK SAMPLE FIELD SHEET

RK

SAMPLE NUMBER	SAMPLE LOCATION East	North	Zone/Lig	SAMPLE DESCRIPTION Sample Type	From	To	Width	Exposure	ROCK TYPE Major	Minor	Alteration	MINERALISATION Visible	Style	Major	Minor	Minor	Gangue	Age	Major Strat. Unit	Grainsize	Texture	Colour	Lodes	GEOLOGICAL OBSERVATIONS
																								TOP FARM ROAD.
					Plus: 381m																			START JNCT c STQRS CK RD.
1142521				CHIP	122	134	12	O	QMSC	QTVN								PE	PEu	MG	BD	grey		Qtz mica schist. Crenulated cleavage.
522				CHIP	134	161	24	O	SSUD		SERC							PE	PEu	MG	BD	buff		Micaceous sandstone poss. chloritic in part
523				CHIP	202	207	5	O	QMSC									PE	PEu	MG	BD	D. grey		
524				CHIP	366	372	6	O	SSUD		SERC							PE	PEu	MG	BD	buff		Micaceous sandstone.
526.	8700E	8200N						F	BASL									T	Tb	FG	MS	BL		Weakly magnetic.

PROJECT ALPINE EAST · 1:250000 SHEET QUEENSTOWN SK55-5 COLLECTED BY DJW DATE Sept 84

TENEMENT ROCKY CAPE EL 1/77 SAMPLE NO.S LOCAL GRID CROSS REF

INVESTIGATION ROAD MAPPING DPO \ 30496.

CRA

230053

052

PROJECT Rocky Cape

TENEMENT EZ 1/77

AREA / PROSPECT Alpine

GEOCHEMICAL SAMPLING LEDGER

GEOLOGIST JJW

SAMPLE TYPE Rock Chip

DATES : Sept 84

LAB. ALS.

PAGE NO.

SAMPLE NUMBER	GRID REF.	ANALYSES										DPO NUMBER	GEOLOGICAL OBSERVATIONS	CORRESP. -80 MESH STREAM SAMPLE
		Cu	Pb	Zn	Ni	Co	As	Ag	Fe%	Mn	ppm Au			
												30496		
1142521		10	<5	10	10	<5	9	<1	0.86	15	0.01			
522		10	<5	10	10	<5	16	<1	1.03	25	0.02			
523		20	10	35	35	15	36	1	2.24	45	0.02			
524		5	<5	10	10	<5	18	<1	0.41	10	0.01			
526		90	<5	125	210	45	12	2	16.7	210	0.04			
METHOD DETLIMIT														

2300534 053

CRA EXPLORATION PTY LIMITED — STREAM SEDIMENT SAMPLE FIELD SHEET

SS

SAMPLE NUMBER	LOCATION			SAMPLE DESCRIPTION						SITE DESCRIPTION								GEOLOGY							GEOLOGICAL OBSERVATIONS
	East Local Grid	North Local Grid	Zone	Sample Type	Gravel %	Sand %	Silt %	Clay %	Org %	Width	Catchment	Flow	Banks	Channel	Staining	Contam.	Site	Outcrop	Float: Major	Float: Minor	Major Lithology	Min/Alt	Scint	Lock	Veget.	
1142525	8700E	8200N	SS	-80#	40	80	5	5		1.5	2	F	B	W		-	SB	—	GRAN	BASL	PGN				R	
527	8700E	8300N	SS	-80#	30	30	20	20		1.0	0.5	F	B	W			VB		GRAN	BASL	PGN				R	

5 cm

PROJECT Rocky Cape — 1:250 000 SHEET Queenstown SK 55-5 — COLLECTED BY DJW

TENEMENT EL 1/77 — SAMPLE NOS — DATE Sept 84

INVESTIGATION Alpine — DPO's 30496

CRA

2300555

054

PROJECT Rocky Cape

TENEMENT EL 1/77

AREA / PROSPECT Alpine.

GEOCHEMICAL SAMPLING LEDGER

GEOLOGIST JPW

SAMPLE TYPE Stream Sediment.

DATES : Sept 84

LAB. Ans.

PAGE NO.

SAMPLE NUMBER	GRID REF.	ANALYSES												DPO NUMBER	GEOLOGICAL OBSERVATIONS	CORRESP. -80 MESH STREAM SAMPLE
		Cu	Pb	Zn	Ni	Co	As	Ag	Fe%	Mn	Sn	W	Ba			
1142585		10	5	30	15	5	<1	<1	0.62	80	125	<10	10	30496		
587		15	5	25	40	25	7	<1	2.43	90	70	<10	10.			
METHOD DET.LIMIT																

2300556

055

C.R.A. EXPLORATION . GEOCHEMICAL SAMPLE LODGER

Tenement name: ROCKY CAPE No. 1/77 Sample numbers: Collector by: R. J. PERRING Sheet no. 1

Area / Prospect: GRANVILLE / ALPINE Date: 29-7-83

Map / Photo reference: Analysed by: Aust. Lab. Services DPO no. 21857

A 02143

Sample No.	Type ss * oc f s	ss channel ** fl	wi	al	co	ca	pH	Carbon	Metal content ppm Cu	Pb	Zn	Ag	Mo	Bi	Au	As	Sn	W	Grid ref AMG	Geological Observations
		o/c sample type ***																		
		s sample type ****																		
KR12783	oc	gs							8000	25	35	3	30	<5		<20	<5	<10	5376300N 340800E	Banded chert 10% pyrite in fractures
KR12784	oc	gs							3800	20	30	3	35	<5		<20	<5	<10	"	black siliceous chert 20% py in pods
KR12785	oc	gs							1400	50	125	5	50	<5		<20	<5	<10	"	massive coarse grained pyrite
KR12786	oc	gs							1400	40	70	5	25	<5		<20	5	<10	"	pyrite gossan 10% unoxidized pyrite
KR12787	oc	gs							55	20	30	3	25	<5		<20	<5	<10	"	leached calcareous chert
KR12788	oc	gs							3000	35	40	4	25	<5		<20	<5	<10	"	massive pyrite
																				Ist Report to complete ...
																				...
																				...

230057 950

* 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)

**** Sample type auger hole or pit depth m A B or C horizon

TASMANIA

CRA EXPLORATION PTY. LTD.

230058

Sample Number	Co-ordinates AMG / Grid East	Co-ordinates AMG / Grid North	Depth (m)	Colour	Horizon	% Rock	% Sand	% Silt	% Clay	Organic	Soil Type	Rock Type	Alteration	Vis Min	Min Type	LOOK	Cu m	Pb m	Zn m	Ag m	Fe %	Bi m	Mo m	As m	Sn m	W m	Geological Observations
1140001		00	3.5	125	B-C	20			80	0	2	91	18	1			85	10	120	4	10.6	10	10	20	<5	<10	weathered undiff basic lava
1140002		25	4	125	C	10			90	0	2	91	18	1			120	10	100	4	16.2	20	10	<20	<5	<10	" " "
1140003		50	4.5	125	B-C				100	0	2	91	18	1			90	10	80	4	17.7	10	10	<20	<5	<10	" " "
1140004		75	3.5	125	B-C	5			95	0	2	91	18	1			85	10	60	5	17.2	15	10	<20	<5	<10	" " "
1140005		100	4	125	C	10			90	0	2	91	18	1			105	10	80	4	14.8	10	5	<20	<5	<10	" " "
1140006		125	11.5	125	C	10			90	0	2	91	18	1			95	10	110	4	14.3	5	5	<20	<5	<10	" " "
1140007		150	11	215	B-C				100	0	2	91	18	1			105	10	70	4	15.4	10	10	<20	<5	<10	" " "
1140008		175	8.5	255	B-C	10			90	0	2	123	18	1			90	10	90	4	10.2	10	<2	<20	<5	<10	weathered ironstone
1140009		200	8.5	255	C	10			90	0	2	123	18	1			95	10	90	4	9.15	10	10	<20	<5	<10	" "
1140010		225	4.5	255	C	20			80	0	2	123	18	1			85	10	135	3	10.1	10	5	<20	<5	<10	" "
1140011		250	4.8	255	C	10			90	0	2	123	18	1			115	10	215	4	10.6	15	5	<20	<5	<10	" "
1140012		275	4.5	125	B-C	35			65	0	2	123	18	1			105	10	100	4	14.8	20	5	<20	<5	<10	" "
1140013		300	11.5	125	B-C	20			80	0	2	123	18	1			95	10	120	4	18.6	20	10	<20	<5	<10	" "
1140014		325	11.5	215	B-C	10			90	0	2	123	18	1			90	10	75	4	20.2	15	10	<20	<5	<10	" "
1140015		350	11.5	255	B-C	10			90	0	2	123	18	1			100	10	110	4	17.2	10	5	<20	<5	<10	" "
1140016		375	11.5	255	B-C	35			65	0	2	91	18	1			105	10	120	4	14.5	10	5	<20	<5	<10	weathered undiff. basic lava
1140017		400	11.5	215	C	35			65	0	2	91	18	1			90	10	85	4	16.8	10	<2	<20	<5	<10	" " "
1140018		425	8	215	C	30			70	0	2	91	18	1			100	10	100	4	15.6	5	<2	<20	<5	<10	" " "
1140019		450	10.5	235	C	50	10	10	30	0	2	10	9	1			15	10	25	1	1.78	10	15	<20	5	10	black shale, sericitic
1140020		475	11	153	C	60	10	5	30	0	2	9	9	1			10	15	20	2	3.03	5	5	<20	5	<10	shale, sericitic.
DETECTION LIMIT																	1	1	1	1	0.01	5	5	10	5	10	
ANALYTICAL METHOD																	G001	G001	G001	G001	G001	G001	G010	G003	XRFIA	XRFIA	

GEOCHEMICAL SOIL SAMPLING LEDGER

Tenement Name: ROCKY CAPE

Area / Prospect:

Map / Photo Ref:

Project: ALPINE AMG Zone:

DPO's: 31862.

Sample No's: 1140001 — 1140020

Sheet No: 1

Laboratory: A.L.S. BRISBANE

Collected By: C J KENDALL Date: SEP 83

Updated to 058

TASMANIA

CRA EXPLORATION PTY. LTD.

230059

Sample Number	SOIL DESCRIPTION: Co-ordinates AMG / Grid East	North	Depth (m)	Colour	Horizon	% Rock	% Sand	% Silt	% Clay	Organic	Soil Type	BEDROCK: Rock Type	Alteration	Vis. Min.	Min. Type	LOOK	METAL CONTENT ppm / %: Cu ppm	Pb ppm	Zn ppm	Ag ppm	Fe %	Bi ppm	Mo ppm	As ppm	Sn ppm	W ppm	Geological Observations
1140021		500	4	294	C	70			30	0	2	10	9	1			15	10	25	1	2.93	5	10	<20	<5	<10	Black Shale, Sericitic
1140022		525	7.5	234	C					0	2	10	9	3	10		5	<5	30	3	1.49	10	15	<20	<5	10	? Dissem. pyrite
1140023		550	7	255	C	70		30		0	2	10	9	3	10		5	5	30	2	4.01	10	10	20	10	10	As above
1140024		562.5	2	234	C	80		20		0	2	10	9	1			45	10	55	1	2.30	<5	5	<20	<5	10	Black Shale, Sericitic.
1140025		575	11.5	234	C	60		40		0	2	105	9	1			50	10	60	2	2.82	<5	5	<20	<5	10	Schist, Micaceous
1140026		587.5	4	234	C	80		20		0	2	105	9	1			10	5	15	1	0.73	<5	10	<20	<5	10	" "
1140027		600	2.5	173	C	80		20		0	2	123	18	1		*	50	20	35	1	2.63	<5	10	<20	<5	<10	Weathered Ironstone
1140028		612.5	4.5	175	C	20		40	40	0	2	105	9	1			50	5	20	1	0.47	<5	10	<20	<5	10	Micaceous Schist
1140029		625	4	235	C	20		40	40	0	2	105	9	1			100	5	680	1	0.89	<5	10	<20	<5	10	"
1140030		637.5	11.5	294	C	80		20		0	2	105	9	3	10			5	75	1	2.98	<5	10	<20	<5	<10	Micaceous Schist ? Dissem pyrite.
1140031		✓ 650	5	294	B-C	60		40		0	2	105	9	3	10		280	15	75	3	1.24	<5	5	<20	<5	<10	Micaceous Schist Dissem Py
1140032		662.5	7.5	294	C	50		50		0	2	105	9	2	10		120	10	65	2	5.35	<5	5	<20	<5	<10	As above Tr pyrite
1140033		675	5	234	C	70		30		0	2	105	9	1			70	10	80	1	0.68	<5	<2	20	<5	<10	Micaceous schist
1140034		687.5	3.5	136	C	50		50		0	2	105	9	1			110	80	200	3	4.38	<5	10	<20	<5	10	" "
1140035		700	1.5	227	C	100				0	2	105	9	1			80	20	130	2	1.79	<5	5	20	<5	<10	" "
1140036		725	3.5	288	C	80			20	0	2	105	9	3	10		5	5	45	2	6.91	<5	10	<20	<5	<10	Dissem Py
1140037		750	5.5	132	C	50			50	0	2	105	9	3	10		5	<5	25	2	4.69	<5	5	<20	<5	<10	As above
1140038		775	8.5	165	C					0	2	105	9	1			25	20	30	2	5.50	<5	5	<20	<5	<10	Micaceous schist
1140039		800	6.5	355	C					0	2	105	18	1			80	10	60	3	6.82	5	10	<20	<5	<10	Weathered schist
1140040		825	6.5	243	C					0	2	11[illegible]	12	1			50	5	45	2	4.15	<5	5	<20	<5	<10	Ferruginous Skarn type rock.
																	DETECTION LIMIT										
GEOCHEMICAL SOIL SAMPLING LEDGER																	ANALYTICAL METHOD										
																	G001	G001	G001	G001	G001	G001	G010	G003	XRFIA	XRFIA	

Tenement Name: ROCKY CAPE

Area / Prospect:

Map / Photo Ref:

Project: ALPINE

DPO's: 31862

Sample No's: 1140021 – 1140040

AMG Zone:

Sheet No: 2

Laboratory: A.L.S. BRISBANE

Collected By: C J KENDALL

Date: SEP 83

Updated [illegible]

059

230060

TASMANIA

CRA EXPLORATION PTY. LTD.

Sample Number	Co-ordinates AMG / Grid East	Co-ordinates AMG / Grid North	Depth (m)	Colour	Horizon	% Rock	% Sand	% Silt	% Clay	Organic	Soil Type	Rock Type	Alteration	Vis Mn	Min. Type	LOOK	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Fe %	Bi ppm	Mo ppm	As ppm	Sn ppm	W ppm	Geological Observations
1140041		850	3	213	C					0	2	123	18	1			85	15	45	4	16.5	5	<2	<20	<5	<10	Ironstone
1140042		875	4	213	B-C					0	2	123	18	1			45	5	40	3	8.04	<5	<2	<20	<5	10	"
1140043		900	4.5	213	C					0	2	123	18	1			85	10	85	4	16.2	5	15	<20	<5	<10	"
1140044		925	5.5	182	C					0	2	91	18	1			25	5	20	2	5.98	<5	10	<20	<5	10	Undiff basic lava
1140045		950	5.5	182	C					0	2	91	18	1			10	5	20	2	4.39	<5	<2	<20	<5	<10	" " "
1140046		975	8	123	C					0	2	105	9	3	10		190	15	20	2	3.19	<5	5	<20	<5	<10	Micaceous schist Dissem Py
1140047		1000	5.5	234	A					0	2	105	9	2	10		80	10	150	3	8.96	10	<2	<20	<5	<10	Micaceous schist Tr Py
1140048		1025	6.5	225	C					0	2	105	9	1			195	20	35	3	6.97	10	10	20	<5	<10	Micaceous schist
1140049		1050	4.5	225	C					0	2	105	9	1			65	10	20	2	4.16	5	<2	<20	<5	<10	" "
1140050		1075	2	133	C					0	2	105	9	1			70	20	25	3	2.47	10	<2	<20	<5	<10	" "
1140051		1100	3.5	225	C					0	2	105	9	1			110	10	15	2	4.21	<5	10	<20	<5	10	" "
1140052		1125	2	293	C					0	2	105	9	1			45	10	55	1	3.22	<5	10	<20	<5	10	" "
1140053		1150	1	293	C					0	2	105	9	1			260	10	20	1	3.33	<5	<2	<20	<5	10	" "
1140054		1175	5	133	B-C					0	2	105	9	3	10		10	5	10	2	2.88	<5	<2	<20	<5	<10	Micaceous schist Dissem Py
1140055		1200	5	273	C					0	2	105	9	3	10		105	10	30	2	6.02	5	<2	<20	<5	<10	As above
1140056		1225	6.5	273	C					0	2	105	9	3	10		20	10	30	2	4.96	5	15	<20	<5	10	" "
1140057		1250	7.5	294	C					0	2	10	9	3	10		65	50	200	2	5.23	5	10	<20	<5	10	" "
1140058		1275	6.5	273	C					0	2	105	9	3	10		50	25	290	5	3.06	<5	5	<20	<5	10	" "
1140059		1300	3	274	C					0	2	10	9	3	10		85	10	10	2	0.94	<5	5	<20	<5	<10	" "
1140060		1325	2	231	C					0	2	105	9	3	10		10	10	10	1	0.82	<5	10	20	<5	10	" "
DETECTION LIMIT																											
ANALYTICAL METHOD																	G001	G001	G001	G001	G001	G001	G010	G003	XRF1A	XRF1A	

GEOCHEMICAL SOIL SAMPLING LEDGER

Tenement Name	ROCKY CAPE	Project:	ALPINE	AMG Zone	
Area / Prospect		DPO's:	3862.	Sheet No	3
				Laboratory	A.L.S. BRISBANE
Map / Photo Ref		Sample No's:	1140041 – 1140060	Collected By	C J KENDALL
				Date	SEPT 83

060

230061

TASMANIA

CRA EXPLORATION PTY. LTD.

Sample Number	SOIL DESCRIPTION											BEDROCK				LOOK	METAL CONTENT ppm / %										Geological Observations
	Co-ordinates AMG / Grid		Depth (m)	Colour	Horizon	% Rock	% Sand	% Silt	% Clay	Organic	Soil Type	Rock Type	Alteration	Vis. Min	Min. Type		Cu ppm	Pb ppm	Zn ppm	Ag ppm	Fe %	Bi ppm	Mo ppm	As ppm	Sn ppm	W ppm	
	East	North																									
1140061		1350	3	231	C					0	2	105	9	3	10		10	10	35	1	0·75	5	10	20	<5	10	Micaceous Schist Diogem Py
1140062		1375	4	234	C					0	2	105	9	2	10		350	45	10	1	1·93	5	5	40	<5	10	Mica Schist Tr Py.
1140063		1400	10	234	C					0	2	105	9	1			90	15	105	2	0·91	10	10	40	<5	<10	Mica Schist
1140064		1425	10	251	B·C					0	2	91	18	1			15	10	15	2	0·70	15	10	20	<5	<10	Undiff basic lava
1140065		1450	9	234	C					0	2	105	9	3	10		20	10	10	1	2·16	10	10	<20	<5	<10	Mica Schist Diogem Py.
1140066		1475	10	234	C					0	2	105	9	3	10		15	15	10	3	1·54	15	<2	<20	<5	10	As above
1140067		1500	10	135	C					0	2	105	9	1			10	10	35	1	0·60	10	5	<20	<5	10	Mica Schist
1140068		1525	6	135	B·C					0	2	105	9	3	10		10	10	30	3	1·02	5	10	<20	<5	10	Mica Schist Diogem Py
1140069		1550	5·5	264	C					0	2	105	9	1			30	10	20	2	2·86	<5	5	<20	<5	30	Mica Schist
1140070		1575	4·5	294	C					0	2	105	9	3	10		35	10	60	1	1·78	<5	5	<20	<5	10	Mica Schist Diogem Py
1140071		1600	3·5	294	C					0	2	105	9	3	10		120	10	390	2	2·21	<5	5	<20	<5	20	As above
1140072		1625	4	294	C					0	2	105	9	3	10		55	15	50	1	1·68	<5	10	<20	<5	<10	" "
1140073		1650	3·5	275	C					0	2	105	9	2	10		40	15	30	1	4·22	10	10	<20	<5	10	Mica Schist Tr Py
1140074		1662·5	4·5	275	C					0	2	105	9	2	10		20	15	20	1	2·53	10	10	<20	<5	<10	As above
1140075		1675	6·5	243	C					0	2	105	9	1			15	10	25	1	3·65	10	10	<20	10	<10	Mica Schist
1140076		1687·5	10	293	C					0	2	105	9	1			25	15	30	1	1·22	10	10	<20	<5	50	" "
1140077		1700	8·5	273	C					0	2	105	9	1			35	10	40	1	1·70	10	<2	<20	<5	10	" "
1140078		1712·5	9·5	244	C					0	2	10	9	3	10		35	15	60	1	3·07	10	10	<20	15	<10	Diogem Py
1140079		1725	10	133	B·C					0	2	105	9	1			40	10	65	1	1·22	10	10	20	10	<10	Mica Schist
1140080		1737·5	6·5	163	B·C					0	2	105	9	1			10	10	20	1	0·52	<5	10	20	5	20	" "
DETECTION LIMIT																	1	1	1	1	0·01	1	1	10	5	10	
ANALYTICAL METHOD																	G001	G001	G001	G001	G001	G001	G010	G003	XRFIA	XRFIA	

GEOCHEMICAL SOIL SAMPLING LEDGER

Tenement Name: Rocky Cape

Area / Prospect:

Map / Photo Ref:

Project: ALPINE

AMG Zone:

DPO's: 31862.

Sample No's: 1140061 - 1140080

Sheet No: 4

Laboratory: A.L.S. BRISBANE

Collected By: C.J. KENDALL

Date: SEP 83

061

TASMANIA

CRA EXPLORATION PTY. LTD.

230062

Sample Number	Co-ordinates AMG / Grid: East	Co-ordinates AMG / Grid: North	Depth (m)	Colour	Horizon	% Rock	% Sand	% Silt	% Clay	Organic	Soil Type	Rock Type	Alteration	Vis. Min.	Min. Type	LOOK	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Fe %	Bi ppm	Mo ppm	As ppm	Sn ppm	W ppm	Geological Observations
1140081		1750	10	133	B-C					0	2	105	9	1			50	15	35	2	1.18	5	10	<20	20	40	Mica Schist
1140082		1762.5	10	163	B					0	2	105	9	1			25	15	35	1	0.88	<5	10	<20	10	20	" "
1140083		1775	6	244	B					0	2	105	9	1			40	15	50	2	1.02	10	10	<20	15	50	" "
1140084		1787.5	8.5	244	B-C					0	2	105	9	1			50	15	130	2	1.24	10	10	20	15	20	" "
1140085		1800	6.5	244	B-C					0	2	105	9	2	10		55	15	40	2	0.71	15	10	<20	10	20	Mica Schist Tr py
1140086		1812.5	9.5	244	C					0	2	105	9	1			25	10	25	1	0.84	5	5	<20	<5	10	Mica Schist
1140087		1825	8.5	244	B					0	2	11	18	1			25	10	70	1	0.56	5	10	<20	25	40	Gravels
1140088		1837.5	10	242	B					0	2	11	18	1			35	10	25	1	1.15	15	10	<20	10	20	Gravels
1140089		1850	10	247	B-C					0	2	105	18	1			50	10	30	2	1.57	10	5	<20	35	20	Mica Schist
1140090		1862.5	5	133	B-C					0	2	100	18	1			20	5	30	1	0.47	15	<2	<20	<5	10	Quartzite
1140091		1875	10	235	B					0	2	100	18	1			50	5	100	2	4.58	20	<2	<20	<5	<10	Quartzite
1140092		1887.5	10	273	B-C					0	2	105	18	3	10		15	10	160	3	8.29	15	5	<20	5	<10	Mica Schist Dissem py
1140093		1900	10	126	B-C					0	2	100	18	2	10		25	5	45	2	4.67	15	5	<20	<5	<10	Quartzite Tr py
1140094		1912.5	12.5	137	C					0	2	100	18	2	10		20	20	45	3	3.94	<5	10	<20	<5	<10	" "
1140095		1925	12.5	137	B-C					0	2	100	18	2	10		80	20	100	3	3.91	<5	<2	<20	<5	<10	" "
1140096		1937.5	10	137	B-C					0	2	100	18	2	10		145	15	125	3	4.17	<5	5	<20	<5	<10	" "
1140097		1950	12.5	137	B-C					0	2	100	18	2	10		10	10	40	2	2.86	5	<2	<20	<5	<10	" "
1140098		1975	12.5	173	B-C					0	2	100	18	1			40	15	50	2	3.18	<5	10	<20	<5	<10	Quartzite
1140099		2000	12.5	173	B-C					0	2	100	18	1			15	15	20	2	2.08	5	<2	<20	<5	<10	Quartzite
1140100	REPEAT *	1800	9.5	254	C					0	2	105	9	2	10		30	10	30	1	0.62	5	<2	<20	5	10	Mica Schist Tr py
DETECTION LIMIT																											
ANALYTICAL METHOD																	G001	G001	G001	G001	G001	G001	G010	G003	XRF1A	XRF1A	

GEOCHEMICAL SOIL SAMPLING LEDGER

Tenement Name: Rocky Cape
Area / Prospect:
Map / Photo Ref:

Project: ALPINE
AMG Zone:
DPO's: 31862
Sample No's: 1140081 - 1140100

Sheet No: 5
Laboratory: A.L.S. BRISBANE
Collected By: CJ KENDALL
Date: SEP 83

TASMANIA

CRA EXPLORATION PTY. LTD.

230063

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Sample Number	Co-ordinates AMG / Grid East	Co-ordinates AMG / Grid North	Depth (m)	Colour	Horizon	% Rock	% Sand	% Silt	% Clay	Organic	Soil Type	Rock Type	Alteration	Vis Min	Min Type	LOOK	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Fe %	Bi ppm	Mo ppm	As ppm	Sn ppm	W ppm	Geological Observation
1140101		2025	11.5	137	C					0	2	105	18	3	10		40	15	95	3	5.21	<5	5	<20	<5	<10	Mica Schist Diocem Py
1140102		2050	9.5	137	C					0	2	105	18	2	10		25	15	70	4	2.26	<5	10	<20	<5	<10	Mica Schist Tr Py
1140103		2075	4	137	B-C					0	2	105	18	2	10		20	10	15	1	0.72	<5	10	<20	15	100	" " " "
1140104		2100	9.5	137	C					0	2	105	18	3	10		50	20	350	3	2.70	<5	10	<20	<5	20	" " Diocem Py
1140105		2125	4.5	155	C					0	2	100	18	1			20	15	30	1	0.87	<5	10	<20	10	180	Quartzite
1140106		2150	4.5	254	C					0	2	100	18	2	10		25	20	50	2	1.14	<5	10	<20	5	60	Quartzite
1140107		2175	12.5	254	C					0	2	100	18	2	10		100	20	195	4	4.62	<5	5	20	<5	10	Quartzite
1140108		2200	12	253	B-C					0	2	100	18	2	10		20	15	100	2	1.88	<5	10	40	5	50	Quartzite
1140109		2250	8	254	B					0	2	11	18	1			20	15	5	1	0.46	<5	15	<20	5	50	Gravels
1140110		2300	12.5	234	B-C					0	2	100	18	1			10	10	20	<1	1.06	<5	10	20	5	50	Quartzite
1140111		2350	10	163	B					0	2	11	18	1			10	10	15	<1	1.02	<5	10	20	5	50	Gravels
1140112		2400	12.5	274	B					0	2	10	18	1			10	10	90	1	1.52	<5	10	20	5	30	Black shale
1140113		2450	12.5	275	B					0	2	100	18	1			10	15	50	1	1.58	5	10	40	<5	20	Quartzite
1140114		2500	12.5	254	B					0	2	105	18	1			15	10	20	<1	0.94	<5	10	20	5	10	Mica Schist
1140115		2550	8.5	283	B					0	2	105	18	1			10	5	<5	<1	0.33	<5	10	<20	<5	10	Mica Schist
1140116		2600	10	273	C					0	2	100	18	3	10		15	15	25	2	2.46	5	5	<20	<5	10	Quartzite Diocem py

GEOCHEMICAL SOIL SAMPLING LEDGER

DETECTION LIMIT

ANALYTICAL METHOD — G001 G001 G001 G001 G001 G001 G010 G003 XRFIA XRFIA

Tenement Name: ROCKY CAPE

Area / Prospect:

Map / Photo Ref:

Project: ALPINE

AMG Zone:

DPD's: 31862

Sample No's: 1140101 – 1140116

Sheet No: 6

Laboratory: A.L.S. BRISBANE

Collected By: C J KENDALL

Date: SEPT 85

SL 063

CRA EXPLORATION PTY LIMITED — SOIL SAMPLE FIELD SHEET.

SAMPLE NUMBER	LOCATION EAST	LOCATION NORTH	Zone/LG	SAMPLE DESCRIPTION: Sample Type	Rock %	Sand %	Silt %	Clay %	Org. %	Depth	Colour	Horizon	Soil Type	BEDROCK: Exposure Type	Est. Rock Depth	Rock Type	Alteration	Vis. Min.	Min. Type 1.	Min. Type 2.	Lode	GEOLOGICAL OBSERVATIONS.
1154111	9100E	9950	LG	Rock Perc.	100					1.5		C			1.7	SSUD.	SERC.					grey micaceous sandstone.
112		9900			10	90				2.8		C			3.0	SSUD.						brown, stony sand + minor grey qtz mica schist pasterge.
113		9850			80	20				1.9		B/C			2.1	QMSC.						brown, v. weath. org. stng. quartz mica schist. Quite sandy.
114		9800			100					4.7		C			4.9	QMSC						grey quartz mica schist. - weathered
115		9750			100					5.7		C			5.9	SSUD.	SERC					grey micaceous sandstone.
116		9700			100					4.7		C			4.9	QMSC	SERC					grey - blk grey quartz mica schist. micac sl. Chloritic.
117		9650			20	80				6.8		A			6.9	GRAV						white-grey sand + rounded quartz pebbles 1-5mm.
118		9600			100					2.6		C			2.8	BLSH.?						black carbonaceous schistose rock + quartz. → Orig ally black shale?
119		9550			100					7.6		C			7.8	QMSC						grey quartz mica schist.
120		9525			100					5.3		C			5.5	QMSC		T	PYRT.			grey qtz mica schist, very sandy in part → Micaceous sst.
121		9500			100					6.0		C			6.2	QMSC		T	PYRT.			grey qtz mica schist,
122.		9475			100					4.8		C			5.0	QMSC		T	PYRT			grey qtz Mica schist.
123		9450.			100					4.9		C			5.1	SSUD						grey micaceous sandstone.

5 cm

PROJECT ALANE EAST. — 1:250 000 SHEET Queenstown — SK 55-5 — COLLECTED BY N. Pollock. — DATE Sept 84 1of2

TENEMENT Rocky Cape EL 1/77. — SAMPLE NOS 1154111 — 123. — LOCAL GRID CROSS REF

INVESTIGATION 9100E/10000N — DS. — DPO's 30498

CRA

230064

CRA EXPLORATION PTY LIMITED — SOIL SAMPLE FIELD SHEET.

SL 064

SAMPLE NUMBER	LOCATION EAST	LOCATION NORTH	Zone/16	SAMPLE DESCRIPTION. Sample Type	Rock %	Sand %	Silt %	Clay %	Org %	Depth	Colour	Horizon	Soil Type	BEDROCK. Exposure Type	Bedrock Depth	Rock Type	Alteration	Vis. Min	Min. Type 1.	Min Type 2.	Lode	GEOLOGICAL OBSERVATIONS.
1154124	9100	9425	LG	Rock Gerc	100					6.6	- -	C			6.8	QTZT.	SERC	A	PYRT.			brown Micaceous weathered pyritic QTZ ite PY 10% - 20% ī weath. black pelitic fragments, Sl. schistose - Sericitic.
125		9400			100					6.2		C			6.4	QMSC?	SERC					grey Clayey, talcose micaceous schist. Quite ferruginous.
126		9375			5	30		65		7.7		C			7.9	CLAY.	SERC					Weathered greyish Clay → brownish ferruginous, ī rounded QTZ grains 1-3mm.
127		9350			5			95		13.5		C			13.7	SILT ??						green-khaki, stiff Clay, minor quartz frags. After Siltstone? Tuff?
128		9300			100					5.8		C			6.0	BSLV						grey Clayey v. weathered rock ī rounded f.g. White Zeolites? — infill of Vesicles
129		9250				100				1.1		A			1.3	GRAV						Dk grey-brown sands ī rounded quartz grains 1-3mm
130		9200			30	70.				1.8		A			2.0	GRAV						As above.
131		9150			20	80				1.0		A			1.2	GRAV						As above.
132		9125			100					5.8		C			6.0	BSLV?						grey, f.g. Clayey rock. Poss. f.g Zeolites. Sl talcose. Basic lava? v. weathered.
133		9100			40	60				1.6		A			1.8	GRAV						grey brown sand ī rounded QTZ Pebbles 1-10mm.
134		9075			20	80				4.2		A			4.4	GRAV.						As above
135		9050			20			80		7.3		C			7.5	BSLV.						v. weath grey green Stiff Clays - texture of bedrock f.g. ?? talcose. - basic lava?
136		9000			20	80				0.8		A			1.0	GRAV.						White-brown- sands ī rounded QTZ Pebbles 1-5mm.

PROJECT ALPINE EAST — 1:250 000 SHEET Queenstown SK 55-5 — COLLECTED BY N. Pollock — DATE Sept 84 26/2

TENEMENT Rocky Cape EL 1/77 — SAMPLE NOS 1154124 - 136 — LOCAL GRID CROSS REF

INVESTIGATION 9100E/10000N → S — DPO's 30498

5 cm

230065

CRA EXPLORATION PTY LIMITED — SOIL SAMPLE FIELD SHEET — SL 065

SAMPLE NUMBER	LOCATION EAST	LOCATION NORTH	Zone/LG	Sample Type	Rock %	Sand %	Silt %	Clay %	Org %	Depth	Colour	Horizon	Soil Type	Exposure Type	Depth to Bedrock	Rock Type	Alteration	Vis. Min	Min. Type 1.	Min Type 2.	Look	GEOLOGICAL OBSERVATIONS.
1154137	9500E	10000	LG	ROCK PERC.	100					7.3	-	C			7.5	QMSC	TALC.					buff - pale green, v. weath. f.g. quartz mica schist. — talcose. — Sericitic?
138		10 025			50	50				7.2		Ak			7.4	QMSC.						weath. mica schist. org. stained c̄ tertiary sands.
139		10 050			100					2.3		C			2.5	SSUD.	SERC.					buff-greenish micaceous sandstone c̄ quartz fragments
140		10 075			20	80				7.6		A			7.8	GRAV						buff brown sand c̄ 1-3mm rounded quartz grains.
141		10100			50	10		40		5.6		C			5.8	SILT	SERC.					v. weathered micaceous siltstone. greenish - brown
142		10125			100					4.5		C			4.7	QMSC	SERC.					greenish-yellow quartz mica schist. v. weathered. f.g. talcose.
143		10150			100					7.8		[illegible]			8.0	QMSC	SERC					f.g. pale buff-green. quartz mica schist. c̄ talcose/ minor ferruginous partings.
144		10175			100					9.3		C			9.5	QMSC.	SERC/TALC.					pale grey green quartz mica schist. — v. talcose.
145		10200			15	85				12.5		A			12.7	GRAV.						brown org. stained sand c̄ quartz grains - well rounded 1-3mm.
146		10250				100				9.6		A			9.8	GRAV.						Dk brown - black. org stained sands. c̄ 1-3mm well rounded qtz grains.
147		10300				100				11.6		A			11.8	GRAV.						As above.
148		10 350				100				1.6		A			1.8	GRAV						As above
149		10400				100				6.3		C			6.5	QMSC	SERC	D	PYRT			v. weathered greenish buff-grey quartz mica schist. Dissem Py.

PROJECT ALPINE EAST

1:250 000 SHEET Queenstown SK 55-5

COLLECTED BY N. Pollock. DATE Sept 84 1/2

TENEMENT ROCKY CAPE EL 1/77

SAMPLE NO.S 1154137 - 149

LOCAL GRID CROSS REF

INVESTIGATION 9500E/10000N → N

DPO's 30498

CRA

5 cm

230066

CRA EXPLORATION PTY LIMITED

SOIL SAMPLE FIELD SHEET. SL 066

SAMPLE NUMBER	LOCATION EAST	LOCATION NORTH	Zone/LG	Sample Type	Rock %	Sand %	Silt %	Clay %	Org %	Depth	Colour	Horizon	Soil Type	Exposure Type	Depth to Bedrock	Rock Type	Alteration	Vis. Min	Min. Type 1.	Min Type 2.	Look	GEOLOGICAL OBSERVATIONS.
1154150	9500	10450	LG.	Rock/ PERC	100					0.8	–	C			1.0	SSUD	SERC.					v. weath. orange-green micaceous sandstone.
151		10500			100					4.7		C			4.9	QMSC	SERC					pale grey-blue f.g. Quartz mica schist, sl. talcose.
152		10550			20	80				1.5		A			1.7	GRAV.						brown-black org stained sands + rounded qtz pebbles 1-5mm.
153		10600			100					1.1		C			1.3	QMSC	SERC					weathered brown mica sandst. m-coarse grained. minor org. staining.
154		10650.			80			20		3.2		C			3.4	QMSC	SERC.					greenish blue-grey quartz mica schist. v. weathd.
155		10700			20	10	20	70		1.0					1.2	TFUD?						brown-greenish sl. micaceous pelitic rock, possibly volcanic? undiff. Tuff.? quartz fragments

5 cm

PROJECT ALPINE EAST 1:250000 SHEET Queenstown SK 55-5. COLLECTED BY N. Pollock. DATE Sept 84. 2/12.

TENEMENT ROCKY CAPE EL 1/77. SAMPLE NO.S 1154150– LOCAL GRID CROSS REF

INVESTIGATION 9500E/10000N → N. DPO's 30498

CRA

230067

CRA EXPLORATION PTY LIMITED — SOIL SAMPLE FIELD SHEET.

SL 067

SAMPLE NUMBER	LOCATION EAST	LOCATION NORTH	Zone/16	SAMPLE DESCRIPTION: Sample Type	Rock %	Sand %	Silt %	Clay %	Org. %	Depth	Colour	Horizon	Soil Type	BEDROCK: Exposure Type	Depth to Bedrock	Rock Type	Alteration	Vis. Min	Min. Type 1.	Min Type 2.	Lode	GEOLOGICAL OBSERVATIONS.
1154089	9100	10000	16	Rock Pepe	100					6.7	-	C			6.9	SSUD	SERC.					greyish green slightly micaceous sandstone. Minor rounded white quartz grains 2mm.
090		10025			10	90				1.6		A			1.8	GRAV/SSUD.						Dk. brown - black poorly consolidated sands. - Organic? stain-g - Underlying gravels. white rounded quartz.
091		10050			100					3.6		C			3.8	SSUD	SERC.					grey-brown micaceous sandstone + some quartz stain-g.
092		075			10	90				2.6		A			2.8	GRAV/SSUD.						Dk brown - black poorly consolidated sand/stone? sands. Organic stain-g - Underlying gravels. well rounded quartz pebbles 3mm.
093		100			10	90				1.3		A			1.5	GRAV/SSUD.						brown - Dk brown sands & well rounded qtz pebbles 1-3mm
094		125			15			85		4.7		C			4.9	QMSC ?	TMLC					pale buff - grey v. talcose clay + qtz - often quartz mica schist.
095		150			5	10		85		8.2		C			8.4	?	TMLC.	Tr	PYRT			pale grey - v. pale green v. talcose clay - micaceous schist? v. weathered.
096		175			5	90		5		1.4		A			1.6	GRAV/SSUD						Dk Brown poorly consolidated sand Abundant well rounded qtz gravels, 1-3mm. Underlying gravels. Organic Stng.
097		200			5	90		5		3.7		A			3.9	GRAV/SSUD.						Dk brown - black sands - Abundant well rounded qtz gravs 1-3mm. - Organic / Mn Stain-g.
098		225			20	80				4.6		A			4.8	GRAV						white sand & abundant well rounded qtz pebbles 1-5mm.
099		250			10	90				8.4		C			8.6	SSUD	SERC.					buff-brown sandstone slightly micaceous.
100		275			10	90.				9.9		A.			10.1	GRAV/SSUD.						buff sands & rounded quartz pebbles 1-5mm.
101		10 300			10	90.				7.8		A.			8.0	GRAV.						White-Cream sands & rounded qtz pebbles - 1-2mm.

5 cm

PROJECT ALPINE EAST — 1:250 000 SHEET Queenstown SK 55-5 — COLLECTED BY N. Pollock — DATE Sept 84.

TENEMENT ROCKY CAPE EL 1/77 — SAMPLE NO.S 1154089 - 101 — LOCAL GRID CROSS REF

INVESTIGATION 9100E — DPO's 30498

1072

2200688

CRA

CRA EXPLORATION PTY LIMITED

SOIL SAMPLE FIELD SHEET. **SL** 068

SAMPLE NUMBER	LOCATION EAST	NORTH	Zone/IG	Sample Type	Rock %	Sand %	Silt %	Clay %	Org %	Depth	Colour	Horizon	Soil Type	Exposure Type	Depth to Bedrock	BEDROCK Rock Type	Alteration	Vis. Min	Min. Type 1.	Min Type 2.	Look		GEOLOGICAL OBSERVATIONS.
1154102	9100E	10350N	4G	Rock Perc.	15	80		5		8.6	–	A			8.8	GRAV.							buff-brown sands c̄ abundant well rounded quartz grains 1-3mm
103		10400N			20	80				6.5		A			6.7	GRAV.							buff-brown sands c̄ abundant well rounded qtz grains 1-3mm
104		450			10	90				6.6		A			6.8	GRAV.							As above lt. Org staining in part.
105		500			5	90		5		4.6		A			4.8	GRAV.							buff-brown – Dk brown Org stained sand c̄ 1-3mm rounded quartz grains.
106		550				100				0.8		A			1.0	SSUD/GRAV.							Dk. brown – black Org. stained sand.
107		600			100					0.8		C			1.0	QMSC	TALC						buff, v. talcose, weathered quartz mica schist.
108		650			100					1.0		C			1.2	SSUD.	TALC?						~~Mica~~ ~~Sd~~ white-buff sandstone very micaceous. – talcose in part.
109		700			100					1.1		C			1.3	SSUD.	TALC?						pale green micaceous sandstone & mica schist interbeds.
110		750			100					1.0		C			1.2	QMSC	TALC						pale buff-green quartz mica schist – talcose

5 cm

PROJECT ALPINE EAST 1:250 000 SHEET Queenstown SK55-5 COLLECTED BY N. Pollock. DATE 2/2

TENEMENT Rocky Cape EL1/77 SAMPLE NO.S LOCAL GRID CROSS REF

INVESTIGATION 9100E/10000N → N DPO's 30498

CRA

220069

CRA EXPLORATION PTY LIMITED — SOIL SAMPLE FIELD SHEET.

SL 069

SAMPLE NUMBER	LOCATION EAST	LOCATION NORTH	Zone/16	SAMPLE DESCRIPTION: Sample Type	Rock %	Sand %	Silt %	Clay %	Org. %	Depth	Colour	Horizon	Soil Type	BEDROCK: Exposure Type	Exposure Distance	Rock Type	Alteration	Vis. Min	Min. Type 1.	Min Type 2.	Lode	GEOLOGICAL OBSERVATIONS.
1154058	8900	10000	16	Rock Pelc	100					1.4		C			1.6	QMSC		D	PYRT			Grey-green quartz Mica Schist Disseminated pyrite ± 5%
059		9975			30	70				3.8		C			4.0	SSUD.						buff-grey micaceous sandstone.
060		9950			20	80				8.3		A/C			8.5	SSUD						grey micaceous sandstone ± underlying qtz sand + gravel.
061		9925			20	80				7.0		A			7.2	GRAV						white - or-buff sands ± 1-3mm rounded qtz grains.
062		9900			30	70		20		8.3		A			8.5	GRAV						Or-brown ferruginous sands + clays ± rounded qtz grains 1-3mm
063		9850				70		30		5.5		A			5.7	GRAV						Or-brown ferrug. sands ± rounded qtz grains 1-3mm minor clayey matrix.
064		9800			100					8.8		C			9.0	SSUD.		T	PYRT			v. weath micaceous sandstone. — Or — green/brown. → grey Schistose fragments. Py?
065		9750.			100					9.8		C			10.0	QMSC						grey quartz Mica Schist.
066		9700				100				11.0		C			11.2	QTZT?						lt. orange well rounded, well sorted Sands, 30% qtz grains 1-2mm. Pre Camb?
067		9650						100.		9.4		C			9.6	BSLV.						greenish brown, stiff clays ± Zeolite vesicle filt. — rounded & angular. pl. sericitic.
068		9600			10			90		7.7					7.9	BSLV						grey - DK Or-brown f.g. ol. sericitic. Basic lava? v. weath. Dom. clay.
069		9550						100		9.5		C			9.7	BSLV?						Dark Or brown clays ± pale yellow weathered rock. — Dominantly Zeolitic? Basic lava?
070		9550A			50			50		9.0		C			9.2	BSLV						Red-yell-brown/brown earthy leached weathered rock — basic lava.

PROJECT ALPINE EAST — 1:250 000 SHEET Queenstown S/C 55-5 — COLLECTED BY N. Pollock — DATE Sept 84

TENEMENT Rocky Cape EL 1/77 — SAMPLE NOS 1154048 – 070 — LOCAL GRID CROSS REF

INVESTIGATION 8900E/10000N → S. — DPO's 30498

CRA

5 cm

2300:70

070

CRA EXPLORATION PTY LIMITED

SOIL SAMPLE FIELD SHEET. SL

SAMPLE NUMBER	LOCATION: EAST	LOCATION: NORTH	Zone/LG	Sample Type	Rock %	Sand %	Silt %	Clay %	Org %	Depth	Colour	Horizon	Soil Type	Exposure Type	Depth to Bedrock	BEDROCK: Rock Type	Alteration	Vis. Min	Min. Type 1	Min Type 2	Look	GEOLOGICAL OBSERVATIONS.
1154071	8900	9450	LG	Rock/PERC	100					10,8	—	C			11,0	QMSC.						grey quartz Mica Schist.
1154072		9400						100		7,6		B/C			7,8	BSLV??						Dark Blue grey clay/weathered f.g rock. Possible zeolites basic lava?
073		9375						100		10,5		C			10,7	BSLV						greenish - or brown v. weath rock. dominantly clay. Poss chlorite + zeolites. - basic lava.
074		9350.						100		8,5		C			8,7	BSLV		T	PYR:			grey-greenish clay T small ferrug streaks. Mn coatings on joints. Tr v.v. fine Pyrite.
075		9325.			50	50				0,6		A.			0,8	GRAV.						black - Dk brown org. stained sands. Poss. drift coal. Rounded milky quartz grains.
076		9300.			50	50				0,8		A			1,0	GRAV.						As Above.
159		9275				70	30			5,0		A			5,2	GRAV.						light grey - white poorly sorted sand (mod rounded quartz grains) - sandy - silty matrix
078		9250			50.	50.				0,6		A.			0,8	GRAV						Dk brown org. stained sands T rounded milky quartz.

5 cm

230071

PROJECT Alpine East — 1:250 000 SHEET Queenstown SK55-5. — COLLECTED BY N. Pollock — DATE Sept 84

TENEMENT Rocky Cape EL 1/77 — SAMPLE NO.S 1154071 - 078 — LOCAL GRID CROSS REF

INVESTIGATION 8900E → S. — DPO's 30498

CRA

CRA EXPLORATION PTY LIMITED — SOIL SAMPLE FIELD SHEET

SL 071

SAMPLE NUMBER	LOCATION EAST	LOCATION NORTH	Zone/16	SAMPLE DESCRIPTION: Sample Type	Rock %	Sand %	Silt %	Clay %	Org %	Depth	Colour	Horizon	Soil Type	BEDROCK: Exposure Type	Extent	Rock Type	Alteration	Vis. Mix	Min. Type 1.	Min. Type 2.	Lode	GEOLOGICAL OBSERVATIONS.
1154077	8900	9275	LG	Soil Perc.	30	70				1.1					12	GRAV						Dk brown sand & quartz gravels of varying size.
079		9225			40	60				0.6					08	GRAV						Lt. grey sand & poorly sorted quartz gravels.
080		9200			30	70				0.8					1.0	GRAV.						Dk grey sand & poorly sorted quartz gravels.
081		9175			30	70				0.8					1.0	GRAV						Dk grey sand & poorly sorted quartz gravels.
082		9150			30	70				1.3					1.5	GRAV.						As above.
083		9125			30	70				1.0					1.2	GRAV.						As above. but light grey sand.
084		9100			30	70				0.8					1.0	GRAV						As above.
085		9075			30	70				1.1					1.3	GRAV						As above
086		9050			100					6.1					6.3	SSUD	CHLOR					Greenish, chloritic? quartz rich rock. Some quartzite fragments. Chloritic ppt. & qtz veins?
087		9025			80			20		3.1					5.3	BSLV						Dk green sl. chloritic clays. - weathered rock. St. cooling texture, local blue-grey in part.
088.		9000			80			20		6.6					6.8	BSLV						Lt. green sl. talcose rock, f-g. Possibly weathered basalt.

5 cm

2300172

PROJECT 82 ALPINE EAST — 1:250 000 SHEET Queenstown SI 55-5 — COLLECTED BY N. Pollock — DATE Sept 84

TENEMENT EL 177 ROCKY CAPE. — SAMPLE NO.S 1154077-079, 080-088 — LOCAL GRID CROSS REF

INVESTIGATION 8900E → S. — DPO's 3954

CRA

CRA EXPLORATION PTY LIMITED — SOIL SAMPLE FIELD SHEET

SL 072

SAMPLE NUMBER	LOCATION EAST	NORTH	Zone/LG	SAMPLE DESCRIPTION Sample Type	Rock %	Sand %	Silt %	Clay %	Org %	Depth	Colour	Horizon	Soil Type	BEDROCK Exposure Type	Depth to Bedrock	Rock Type	Alteration	Vis. Min	Min. Type 1.	Min Type 2.	Lode	GEOLOGICAL OBSERVATIONS.
1154001	8300	10000	LG	Rock. PERC.	100					5.0		C	B		5.2	SSUD	SERC.				Y	grey-green v. weathered sandstone. Often possibly slightly micaceous.
																						minor quartz vein fragments.
002		10025			100					2.1					2.3	SCQM	SERC.					grey sericite – Muscovite Schist.
																						± quartz. minor ferruginous partings – weathering
003		10050			100					5.0					5.2	SSUD	SERC.					greenish, sl Chloritic? Sericitic sandstone. Weathered. minor qtz xtals in matrix.
004		10075			100					4.0					4.2	SSUD	SERC					green chloritic dirty sandstone
																						minor sericite. Sort of clayey → Siltstone.
005		10100			100					2.8					3.0	SILT	SERC					Orange-green v. weathered Siltstone. – Sl. Sericitic.
006		10125			100					0.8					1.0	SSUD	SERC					green-brown, v. weathered micaceous
																						sandstone. Earthy textured → Volcanic?
007		10150			100					0.8					1.0	SSUD	SERC.					greenish-brown V. weathered
																						Sandstone, Sl. micaceous. Earthy textured → Volcanic?
008		10200			100					0.8					1.0	SCQM						grey brown mica schist. minor quartz.
009		10250			100					0.6					0.8	SSUD	SERC					buff coloured micaceous sandstone → Siltstone.

5 cm

PROJECT ALPINE EAST ANOMALY — 1:250 000 SHEET Queenstown SK 55-3 — COLLECTED BY N. Pollock — DATE Aug–Sept 84

TENEMENT EL 1/77 ROCKY CAPE — SAMPLE NOS 1154001 – 009 — LOCAL GRID CROSS REF

INVESTIGATION 8300E/10 000N — DPO's 30497

CRA

230073

CRA EXPLORATION PTY LIMITED — SOIL SAMPLE FIELD SHEET

SL 013

SAMPLE NUMBER	LOCATION EAST	LOCATION NORTH	Zone/LG	SAMPLE DESCRIPTION: Sample Type	Rock %	Sand %	Silt %	Clay %	Org %	Depth	Colour	Horizon	Soil Type	BEDROCK: Exposure Type	Depth to Bedrock	Rock Type	Alteration	Vis. Min	Min. Type 1.	Min Type 2.	Lock	GEOLOGICAL OBSERVATIONS.
1154010	8700	10000	LG	ROCK PERC	100	90				3.2		A			3.4	GRAV.						White quartz gravel in brown sandy matrix.
011		10025			100	90				1.2		A			1.4	GRAV.						White rounded quartz gravels in white sandy matrix.
012		10050			10	90				0.9		A			1.1	GRAV						White rounded quartz gravels in white sand.
013		10075			100					8.8		C			9.0	SCME/SCQM	TALC					White - buff micaceous (Muscovite) Schist. Very talcose. Minor quartz weathered
014		10100			100					4.0		C			4.2	SSUD/SILT	SERC					greenish orange sl. micaceous sandstone - siltstone.
015		10125			100					5.6		C			5.8	SILT.	SERC					bedded siltstone, slightly Micaceous - more psammitic - grey, minor ferrug./weath
016		10150			100					1.1		C			1.3	SSUD	SERC					drainage bedr. → grey micaceous sandstone. - Grain
017		10175			100					0.5		C			0.7	QMSC						grey-green quartz Mica Schist.
018		10200			100					0.8		C			1.0	SCMC						greenish brown v. weathered mica schist.
019		10250			50	50				1.6		C			1.8	QTZT						White angular quartzite fragments in DK. grey sandy matrix
020		10300			50	50				2.8		C			3.0	QTZT						white angular quartzite fragments in grey-brown sandy matrix. DK brown Mn? weathering.
021		10350			100					1.3		C			1.5	QMSC						Dark brown. v. weathered quartz mica schist.
022		10400			100					8.6		C			8.8	SSUD	SERC					buff micaceous sandstone.

5 cm

PROJECT ALPINE EAST ANOMALY — 1:250000 SHEET Queenstown SK 55-5 — COLLECTED BY — DATE

TENEMENT Rocky Cape EL1/77 — SAMPLE NO.S 1154010 - 022. — LOCAL GRID CROSS REF

INVESTIGATION 8700E/10000N → N. — DPD's 30497

CRA

2300 74

CRA EXPLORATION PTY LIMITED — SOIL SAMPLE FIELD SHEET

SL 074

SAMPLE NUMBER	LOCATION EAST	LOCATION NORTH	Zone/LG	SAMPLE DESCRIPTION: Sample Type	Rock %	Sand %	Silt %	Clay %	Org. %	Depth	Colour	Horizon	Soil Type	BEDROCK: Exposure Type	Depth to Bedrock	Rock Type	Alteration	Vis. Min	Min. Type 1.	Min Type 2.	Lode	GEOLOGICAL OBSERVATIONS
1154023	8700	10450	LG	Rock Perc.	5	85		20	5	1.14	- -	A			1.14	GRAN.						Dark brown sand & minor clay component. Min Stng? – rounded quartz pebbles.
024		10500			100					0.7		C			0.9	QMSC						brown – grey-brown quartz mica schist. – weathered.
025		10550			100					0.8		C			1.0	SSUD.						buff-brown micaceous sandstone.

5 cm

PROJECT ALPINE GRID

TENEMENT ROCKY CAPE EL 1/77

INVESTIGATION 8700E/10000N → N

1:250000 SHEET Queenstown SK 55-5

SAMPLE NOS 1154023 – 025

DPO's 30497

COLLECTED BY N. Pollock DATE Sept 84

LOCAL GRID CROSS REF

CRA

2300755

CRA EXPLORATION PTY LIMITED — SOIL SAMPLE FIELD SHEET

SL 075

SAMPLE NUMBER	LOCATION EAST	LOCATION NORTH	Zone/16	SAMPLE DESCRIPTION: Sample Type	Rock %	Sand %	Silt %	Clay %	Org. %	Depth	Colour	Horizon	Soil Type	BEDROCK: Exposure Type	Sample Number	Rock Type	Alteration	Vis. Min.	Min. Type 1.	Min. Type 2.	Lock	GEOLOGICAL OBSERVATIONS.
1154026	8700	9975	44	Rock Perc.	20	80				0.8		A			1.1	GRAV						White rounded qtz gravels in white sand
027		9950			20	80				2.6		A			2.8	GRAV						Weakly cemented rounded quartz gravels in dark sand & mica matrix → gravels.
028		9925			10	90				0.8		A			1.0	GRAV						Poorly cemented rounded white/translucent quartz gravels ≤ 3mm in a DK brown-black stained sandy matrix
029		9900				5		95		2.2					2.4	BROWN MUDS						grey-buff grey clay, very stiff ± possible quartz or zeolite? grains. → grey shale? / mudstone.
030		9875				5		95		3.0					3.2	MUDS						grey-buff grey stiff clay. → grey mudstone.
031		9850			40	20		Fine Clay		6.1		A			6.3	GRAVEL						grey-green clay with rounded white quartz gravels 3-5mm.
032		9800			100					1.9		C			2.1	QMSC.						grey quartz mica schist.
033		9750			100					1.1		C			1.3	QMSC.	CHLOR?					grey-green quartz mica schist → micaceous siltstone ± quartz veining. Slightly chloritic.
034		9700			100					6.5		C			6.7	QMSC						grey quartz mica schist + 5% veins
035		9650			100					6.8		C			7.0	QMSC						grey quartz mica schist. Quite sandy
036		9600			100					7.8		C			8.0	SSOD	SERC	Tr	PYRT			grey micaceous sandstone. Minor pyrite (Trace.
037		9550			100					3.5		C			3.7	QMSC		D	PYRT			greenish-grey quartz mica schist. → chloritic! 1-2% pyrite.
																						minor ferruginous laminations.
~~038~~		9500			10	90				10.9		A			11.1	GRAV						Brown ferruginous sand. Rounded 5% gravels 2-3mm.

PROJECT ALPINE EAST ANOMALY — 1:250 000 SHEET Queenstown SK 55-5 — COLLECTED BY N. Pollock — DATE Sept 84

TENEMENT ROCKY CAPE EL 1/77 — SAMPLE NO.S 1154026 - 038. — LOCAL GRID CROSS REF

INVESTIGATION 8700E/10000N → S. — DPO's 30497

CRA

5 cm

230076

CRA EXPLORATION PTY LIMITED — SOIL SAMPLE FIELD SHEET. — SL

076

SAMPLE NUMBER	LOCATION EAST	LOCATION NORTH	Zone/LG	SAMPLE DESCRIPTION: Sample Type	Rock %	Sand %	Silt %	Clay %	Org %	Depth	Colour	Horizon	Soil Type	BEDROCK: Exposure Type	Depth to Bedrock	Rock Type	Alteration	Vis. Min.	Min. Type 1.	Min. Type 2.	Lode	GEOLOGICAL OBSERVATIONS.
1154039	8700	9450	LG	Rock Peck	100					3.7	-	C			3.9	SSUD.	SERI.					grey-green micaceous Sandstone Rel. Chloritic.
040		9425			100					12.5		M/C			12.7	SSUD.?	SERI FERG					ferruginous micaceous Sandstone? → Gossanous??? rounded quartz grains 2-3mm
041		9400			5	50		45		2.0		B/C			2.2	?						greenish brown Clay overlain by orange, ferug Sands
042		9375			5	60		35		5.5		B/C			5.7	MUDS.						Stiff grey Clay ? quartz frags Overlain by Br-brown sand.
043		9350			15	40		45		7.6		B/C			7.8	QTZT?						Dark grey green Clay ? rounded quartz frags 2-3mm. plus. Lr. Quartzite fragments. grey.
044		9325			100					6.8		C			6.5	SILT	FERG/ tmc					yellow-grey bedded Siltstone. — ferruginous.
045		9300			5	5	45	45				B/C				BUUD.?	FERG					v. ferug Clayey rock. Dominantly red-brown → Basic Volcanic. Earthy textured.
046		9275					50	50		0.9		B/C			1.1	BUUD	FERG					v. weathered red brown, earthy textured rock. → Basic Volcanic.
047		9250			10	20	35	35		9.4		B/C			9.6	SHALE	FERG.					Red-brown, yellowish = part sandy ferruginous Clays. ? grey fresh Shalely fragments. Basically? — Siltstone?
048		9225			100					7.6		C			7.8	SILT						→ Pale grey-buff Siltstone with overlain by dark grey-gsur Chloritic patches.
049		9200			50		5	50		6.0		C			1.2	BASL.						→ hard black f.g. rock. — Hornblende? Basalt? non magnetic Orange-brown weath. earthy textured soil — Clayey.
050		9175			100	10	40	40		9.9		C			10.1	SILT						grey non Siltstone, ferruginous — Fe Oxide patches — Earthy textured. → tuff?

230077

PROJECT Alpine East — 1:250 000 SHEET Queenstown SH 55-5 — COLLECTED BY N. Pollock — DATE Sept 84

TENEMENT Rocky Cape EL 1/77 — SAMPLE NOS 1154039 — 050 — LOCAL GRID CROSS REF

INVESTIGATION LINE 8700E → S. — DPO's 30497

5 cm

CRA EXPLORATION PTY LIMITED   SOIL SAMPLE FIELD SHEET.   SL 07

SAMPLE NUMBER	LOCATION EAST	LOCATION NORTH	Zone/LG	Sample Type	Rock %	Sand %	Silt %	Clay %	Org %	Depth	Colour	Horizon	Soil Type	Exposure Type	Depth to Bedrock	Rock Type	Alteration	Vis. Min	Min. Type 1.	Min Type 2.	Look		GEOLOGICAL OBSERVATIONS.
1154051	8700	9150	Lg	Rock frag.	5	15	35	35		1.6	-	C			1.8	BASL.							ferruginous earthy textured rock. - "siltstone" component Basalt - Sand. - Tuff.?
052		9125			20	30		60		16.5		C			16.7	SILT	Talc						grey/green greasy siltstone v. weath. - talcose? sl. chloritic, tuffaceous?
053		9100			100					5.10		C			5.2	SILT/ QMSC?	Talc						buff grey v. weathered micaceous siltstone - very talcose.
054		9075			80	20.				3.4		C			3.6	QMSC		Tr	PYRT				Quartz Mica schist, grey Overlain by black, Organic? rich sand.
055		9050			100					5.3		C			6.5	SDD/QMSC.		Tr	PYRT				grey qtz-mica schist → micaceous sandstone.
056.		9025			100					3.5		C			3.7	QMSC		Tr	PYR				quartz mica schist grey, quartz veining, / interbedded qtzite.
057		9000			100					2.5		C			2.7	SILT	CHLR						grey mic. siltstone c/ quartz fragments. part chloritic

5 cm

PROJECT ALPINE EAST.   1:250 000 SHEET Queenstown SK 55-5   COLLECTED BY N. Pollock.   DATE Sept 84

TENEMENT Rocky Cape EL 1/77.   SAMPLE NO.S 1154051 – 057   LOCAL GRID CROSS REF

INVESTIGATION LINE 8700E → S.   DPO's 30497

CRA

230078

REPEATS. BIG HAMMER.

CRA EXPLORATION PTY LIMITED

SOIL SAMPLE FIELD SHEET. SL 078

Sample Number	Location: East	Location: North	Zone/LG	Sample Type	Rock %	Sand %	Silt %	Clay %	Org %	Depth	Colour	Horizon	Soil Type	Exposure Type	Depth ex Bedrock	Bedrock: Rock Type	Alteration	Vis. Min	Min. Type 1	Min Type 2	Look		Geological Observations
1154156.	8700	10050	LG	Rock PERC.	30	70				4.0	—	A.			4.2	GRAV.							DK grey-brown sands with milky, rounded quartz pebbles 1-3mm.
157	8700	9975			30	70				4.0		A.			4.2	GRAV							grey brown sands ang to Quartz fragments.
158	8700	10450			100.					4.5		C			4.7	QMSC							grey-brown sl. greenish. V. weath. mica schist. Some humus/Mn staining on joints.

5 cm

PROJECT ALPINE EAST

1:250 000 SHEET Queenstown SK 55-5

COLLECTED BY N. Pollock DATE Sept 94

TENEMENT Rocky Cape EL 1/77

SAMPLE NO.S 1154156 - 158

LOCAL GRID CROSS REF

INVESTIGATION Repeats.

DPO's 30498.

CRA

230079

079

230080

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CONSULTING ANALYTICAL CHEMISTS

LABORATORY REPORT

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

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

Batch Number: J115

Contact: MR. J. WEIR

No. of Samples: 91
Date Received: 19/09/84
Order No. D.P.O. 30498 Sample Type: SOILS-BEDROCK Date Completed: 27/09/84

SAMPLE NUMBER	Element Unit Method	Cu ppm IC580	Pb ppm IC580	Zn ppm IC580	Ni ppm IC580	Co ppm IC580
1154089		2	5	50	30	10
1154090		5	5	10	20	<5
1154091		5	15	15	20	<5
1154092		5	5	15	10	<5
1154093		2	<5	5	20	<5
1154094		10	<5	30	60	65
1154095		2	<5	30	55	25
1154096		2	<5	15	10	<5
1154097		5	10	30	15	<5
1154098		5	<5	5	20	<5
1154099		5	<5	20	15	<5
1154100		5	<5	5	15	<5
1154101		2	<5	10	15	<5
1154102		10	5	10	10	<5
1154137		55	5	60	60	30
1154138		5	<5	15	10	<5
1154139		2	<5	5	<5	<5
1154140		15	10	10	15	<5
1154141		5	<5	100	45	35
1154142		45	<5	55	65	25
1154143		25	<5	35	40	15
1154144		60	<5	45	50	55
1154145		10	<5	5	15	10
1154146		5	5	10	10	<5
1154147		10	5	15	20	<5
1154148		15	15	25	70	80
1154149		320	<5	65	230	200
1154150		10	<5	35	20	10
1154151		45	<5	490	55	70
1154152		5	<5	20	25	5
Detection Limit:		2	5	2	5	5

Comments:

Signatory: [signature]

230081

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Phone: (07) 352 5577
Telex: ALSEV 42344

Client: CRA EXPLORATION PTY. LIMITED

Address: P.O. BOX 138
ROSNY PARK. TAS. 7018

Batch Number: J115

Contact: MR. J. WEIR

No. of Samples: 91
Date Received: 19/09/84
Date Completed: 27/09/84

Order No. D.P.O. 30498 Sample Type: SOILS-BEDROCK

SAMPLE NUMBER	Element Unit Method	Mn ppm IC580	Fe % IC580	Ag ppm IC580	As ppm IC580
1154089		20	0.84	<1	20
1154090		15	0.56	<1	6
1154091		25	0.54	<1	12
1154092		15	0.19	<1	2
1154093		15	0.29	<1	6
1154094		115	5.73	2	14
1154095		65	2.79	1	10
1154096		10	0.21	<1	2
1154097		20	0.45	<1	9
1154098		15	0.25	<1	<1
1154099		15	0.25	<1	1
1154100		20	0.23	<1	2
1154101		20	0.26	<1	<1
1154102		20	0.25	<1	2
1154137		490	5.42	2	18
1154138		15	0.43	<1	5
1154139		10	0.20	<1	2
1154140		30	0.56	<1	4
1154141		195	2.17	2	10
1154142		450	5.32	2	12
1154143		160	2.39	2	9
1154144		55	3.50	2	50
1154145		20	0.60	<1	6
1154146		15	0.29	<1	3
1154147		25	1.12	<1	22
1154148		30	2.33	<1	60
1154149		175	5.50	1	32
1154150		130	5.45	1	6
1154151		1550	7.12	2	10
1154152		70	0.48	1	3
Detection Limit:		5	0.01	1	1

Comments:

Signatory: L. J. Finlayson

Registered Laboratory

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Phone: (07) 352 5577
Telex: ALSEV 42344

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

Batch Number: J115

Contact: MR. J. WEIR

No. of Samples: 91
Date Received: 19/09/84
Date Completed: 27/09/84

Order No. D.P.O. 30498 Sample Type: SOILS-BEDROCK

SAMPLE NUMBER	Element Unit Method	Cu ppm IC580	Pb ppm IC580	Zn ppm IC580	Ni ppm IC580	Co ppm IC580
1154153		5	<5	10	25	<5
1154154		2	<5	15	45	15
1154155		200	<5	40	75	10
1154111		5	<5	20	20	<5
1154112		35	5	15	45	<5
1154113		10	<5	30	65	5
1154114		5	<5	30	45	20
1154115		710	<5	90	60	25
1154116		230	<5	150	75	40
1154117		5	<5	10	10	<5
1154118		165	15	350	70	35
1154119		85	<5	40	45	<5
1154120		75	<5	800	100	25
1154121		40	20	540	250	95
1154122		55	10	195	60	40
1154123		90	<5	940	125	20
1154124		380	15	40	30	25
1154125		220	<5	105	100	20
1154126		85	<5	140	120	45
1154127		65	<5	80	80	15
1154128		40	<5	35	55	10
1154129		5	<5	10	5	<5
1154130		10	<5	35	20	<5
1154131		2	<5	10	5	<5
1154132		95	<5	170	330	85
1154133		5	<5	15	20	<5
1154134		5	5	10	25	10
1154135		105	<5	180	320	105
1154136		5	<5	5	15	<5
1154058		15	<5	230	55	40
Detection Limit:		2	5	2	5	5

Comments:

Signatory: A.F. Finlayson

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CONSULTING ANALYTICAL CHEMISTS

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Phone: (07) 352 5577
Telex: ALSEV 42344

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

Batch Number: J115

Contact: MR. J. WEIR
No. of Samples: 91
Date Received: 19/09/84
Order No. D.P.O. 30498 Sample Type: SOILS-BEDROCK
Date Completed: 27/09/84

SAMPLE NUMBER	Element Unit Method	Mn ppm IC580	Fe % IC580	Ag ppm IC580	As ppm IC580	
1154153		10	0.58	1	6	
1154154		35	2.48	1	8	
1154155		55	3.64	1	7	
1154111		15	0.46	<1	4	
1154112		20	1.35	<1	12	
1154113		40	0.93	1	5	
1154114		10	0.77	<1	14	
1154115		20	1.11	1	42	
1154116		80	2.48	1	7	
1154117		25	0.28	<1	<1	
1154118		20	1.17	1	12	
1154119		5	0.21	1	22	
1154120		25	0.94	<1	20	
1154121		65	5.60	1	38	
1154122		25	2.57	<1	20	
1154123		75	4.63	1	14	
1154124		10	11.6	1	450	
1154125		85	16.8	3	8	
1154126		300	9.66	2	16	
1154127		70	10.3	3	18	
1154128		25	2.07	3	12	
1154129		10	0.16	<1	<1	
1154130		15	0.20	<1	2	
1154131		10	0.19	<1	<1	
1154132		180	2.45	2	9	
1154133		20	0.27	<1	<1	
1154134		20	1.94	<1	8	
1154135		95	2.17	3	16	
1154136		15	0.22	<1	<1	
1154058		450	6.91	2	8	
Detection Limit:		5	0.01	1	1	

Comments:

Signatory:

085

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Client: CRA EXPLORATION PTY. LIMITED

Address: P.O. BOX 138
ROSNY PARK. TAS. 7018

Batch Number: J115

Contact: MR. J. WEIR

No. of Samples: 91
Date Received: 19/09/84
Date Completed: 27/09/84

Order No. D.P.O. 30498 Sample Type: SOILS-BEDROCK

SAMPLE NUMBER	Element Unit Method	Cu ppm IC580	Pb ppm IC580	Zn ppm IC580	Ni ppm IC580	Co ppm IC580
1154059		5	<5	25	20	<5
1154060		5	<5	10	10	<5
1154061		5	5	15	15	<5
1154062		65	<5	25	35	<5
1154063		105	<5	30	50	10
1154064		340	<5	30	55	10
1154065		320	25	15	80	30
1154066		80	10	10	25	<5
1154067		70	<5	165	145	20
1154068		105	<5	100	120	25
1154069		105	<5	100	85	70
1154070		115	<5	75	115	20
1154071		570	5	25	60	30
1154072		120	<5	165	430	155
1154073		80	<5	220	260	70
1154074		55	<5	165	185	60
1154075		5	<5	10	15	<5
1154076		5	5	10	10	<5
1154078		5	<5	5	10	<5
1154156		5	5	10	15	<5
1154157		5	10	10	35	<5
1154158		5	<5	200	35	10
1154159		5	<5	10	25	<5
1154103		5	5	15	20	<5
1154104		5	<5	15	15	<5
1154105		5	<5	25	20	<5
1154106		10	<5	15	10	<5
1154107		2	<5	15	20	5
1154108		<2	<5	10	<5	<5
1154109		2	<5	25	25	10
Detection Limit:		2	5	2	5	5

Comments:

Signatory: A.F. Finlayson

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Client: CRA EXPLORATION PTY. LIMITED

Address: P.O. BOX 138
ROSNY PARK. TAS. 7018

Batch Number: J115

Contact: MR. J. WEIR

No. of Samples: 91
Date Received: 19/09/84
Date Completed: 27/09/84

Order No. D.P.O. 30498 Sample Type: SOILS-BEDROCK

SAMPLE NUMBER	Element Unit Method	Mn ppm IC580	Fe % IC580	Ag ppm IC580	As ppm IC580
1154059		30	0.82	<1	3
1154060		15	0.20	<1	1
1154061		15	0.35	<1	4
1154062		20	3.19	1	12
1154063		15	6.96	2	48
1154064		25	4.57	1	60
1154065		10	1.65	1	20
1154066		10	1.72	<1	14
1154067		120	5.94	3	12
1154068		135	13.4	3	8
1154069		930	22.7	3	6
1154070		175	20.9	3	4
1154071		125	4.03	1	50
1154072		70	2.18	2	16
1154073		210	4.56	2	10
1154074		140	3.40	2	10
1154075		15	0.31	<1	1
1154076		15	0.26	<1	<1
1154078		15	0.24	<1	<1
1154156		20	0.36	<1	<1
1154157		45	0.89	<1	4
1154158		990	3.02	2	8
1154159		35	0.34	<1	3
1154103		15	0.23	<1	<1
1154104		15	0.26	<1	1
1154105		20	0.26	<1	1
1154106		10	0.15	<1	<1
1154107		20	1.53	1	6
1154108		5	0.18	<1	<1
1154109		30	1.45	<1	2
Detection Limit:		5	0.01	1	1

Comments:

Signatory: A. J. Finlayson

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Phone: (07) 352 5577
Telex: ALSEV 42344

Client: CRA EXPLORATION PTY. LIMITED

Address: P.O. BOX 138
ROSNY PARK. TAS. 7018

Batch Number: J115

Contact: MR. J. WEIR

Order No. D.P.O. 30498

Sample Type: SOILS-BEDROCK

No. of Samples: 91
Date Received: 19/09/84
Date Completed: 27/09/84

SAMPLE NUMBER	Element / Unit / Method	Cu ppm IC580	Pb ppm IC580	Zn ppm IC580	Ni ppm IC580	Co ppm IC580
1154110		2	<5	40	20	15
Detection Limit:		2	5	2	5	5

Comments:

Signatory: A. Finlayson.

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Phone: (07) 352 5577
Telex: ALSEV 42344

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

Batch Number: J115

Contact: MR. J. WEIR

No. of Samples: 91
Date Received: 19/09/84
Date Completed: 27/09/84

Order No. D.P.O. 30498 Sample Type: SOILS-BEDROCK

SAMPLE NUMBER	Element Unit Method	Mn ppm IC580	Fe % IC580	Ag ppm IC580	As ppm IC580	
1154110		60	1.23	<1	4	
Detection Limit:		5	0.01	1	1	

Comments:

Signatory: A Hinchcliffe

087

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PO Box 66,
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Phone: (07) 352 5577
Telex: ALSEV 42344

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

Batch Number: J087

Contact: MR. J. WEIR

No. of Samples: 57
Date Received: 14/09/84
Date Completed: 20/09/84

Order No. D.P.O. 30497 Sample Type: BEDROCK SOILS

SAMPLE NUMBER	Element Unit Method	Cu ppm IC580	Pb ppm IC580	Zn ppm IC580	Ni ppm IC580	Co ppm IC580
1154001	10 000	15	5	80	65	40
1154002	025	15	15	45	25	20
1154003	050	360	15	130	40	45
1154004	075	25	20	210	120	190
1154005	100	85	10	220	45	70
1154006	125	15	10	70	35	10
1154007	150	15	<5	45	40	15
1154008	200	25	5	15	10	<5
1154009	250	20	<5	10	15	5
1154010	10000	5	10	5	20	<5
1154011	025	5	5	5	20	<5
1154012	050	2	<5	5	15	<5
1154013	075	35	<5	25	45	10
1154014	100	50	<5	20	85	10
1154015	125	5	<5	25	75	10
1154016	150	5	<5	15	70	20
1154017	175	20	5	15	50	10
1154018	200	10	<5	15	95	<5
1154019	250	5	5	2	230	<5
1154020	300	5	10	5	250	<5
1154021	350	5	<5	5	195	<5
1154022	400	2	<5	2	10	<5
1154023	450	55	<5	10	20	<5
1154024	500	2	<5	2	30	<5
1154025	550	2	<5	30	10	<5
1154026	9375	2	<5	2	15	<5
1154027	9550	2	<5	2	20	<5
1154028	9925	2	5	2	15	<5
1154029	9900	120	<5	110	580	120
1154030	9875	115	<5	440	820	210
Detection Limit:		2	5	2	5	5

Comments:

Signatory: G J Kelmore

088

230089

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CONSULTING ANALYTICAL CHEMISTS

LABORATORY REPORT

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

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

Batch Number: J087

Contact: MR. J. WEIR

No. of Samples: 57
Date Received: 14/09/84
Order No. O.P.O. 30497 Sample Type: BEDROCK SOILS
Date Completed: 20/09/84

SAMPLE NUMBER		Element Unit Method	As ppm IC580	Ag ppm IC580	Fe % IC580	Mn ppm IC580	
1154001	10000		36	2	3.84	320	
1154002	025		14	<1	3.68	90	
1154003	050		9	1	3.99	700	
1154004	075		26	1	7.79	570	
1154005	100		14	1	1.83	300	
1154006	125		7	1	3.39	370	
1154007	150		10	1	5.67	155	
1154008	200		3	<1	0.09	<5	
1154009	250		6	<1	0.19	<5	
1154010	10000		3	<1	0.29	15	
1154011	025		<1	<1	0.27	15	
1154012	050		<1	<1	0.24	15	
1154013	075		12	2	2.96	25	
1154014	100		16	2	2.34	70	
1154015	125		9	1	2.26	60	
1154016	150		7	<1	2.71	65	
1154017	175		7	<1	2.16	55	
1154018	200		7	1	2.46	90	
1154019	250		2	<1	0.31	25	
1154020	300		3	<1	0.30	25	
1154021	350		6	<1	0.32	15	
1154022	400		4	<1	0.23	20	
1154023	450		4	<1	0.29	35	
1154024	500		5	<1	0.55	10	
1154025	550		3	1	0.22	5	
1154026	9975		1	<1	0.22	10	
1154027	950		2	<1	0.26	15	
1154028	925		3	<1	0.20	10	
1154029	9900		22	2	1.03	35	
1154030	9875		20	2	3.15	35	
Detection Limit:			1	1	0.01	5	

Comments:

Signatory: G J Kolmeder

085

230090

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CONSULTING ANALYTICAL CHEMISTS

LABORATORY REPORT

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PO Box 66,
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Phone: (07) 352 5577
Telex: ALSEV 42344

Client: CRA EXPLORATION PTY. LIMITED

Address: P.O. BOX 138
ROSNY PARK. TAS. 7018

Batch Number: J087

Contact: MR. J. WEIR

No. of Samples: 57

Order No. D.P.O. 30497

Sample Type: BEDROCK SOILS

Date Received: 14/09/84

Date Completed: 20/09/84

SAMPLE NUMBER	Element Unit Method	Cu ppm IC580	Pb ppm IC580	Zn ppm IC580	Ni ppm IC580	Co ppm IC580
1154031	9850	40	<5	1600	630	220
1154032	9800	30	<5	380	420	55
1154033	9750	15	<5	410	490	200
1154034	9700	20	<5	120	200	30
1154035	9650	30	5	55	60	20
1154036	9600	340	30	40	145	35
1154037	9550	100	5	40	155	35
1154038	9500	10	5	10	260	<5
1154039	9450	10	<5.	50	115	20
1154040	9425	80	<5.	55	175	55
1154041	9400	30	<5.	35	85	10
1154042	9375	90	<5.	20	40	10
1154043	9350	70	<5.	120	860	130
1154044	9325	90	<5.	185	180	70
1154045	9300	85	<5.	85	180	85
1154046	9275	75	<5.	115	290	55
1154047	9250	115	<5.	100	140	25
1154048	9225	85	<5.	360	380	95
1154049	9200	105	<5.	105	280	55
1154050	9175	85	<5.	115	220	190
1154051	9150	100	<5.	80	135	25
1154052	9125	80	<5.	185	300	110
1154053	9100	30	<5.	40	65	5
1154054	9075	10	5	350	170	50
1154055	9050	15	15	300	175	60
1154056	9025	80	<5	55	70	20
1154057	9000.	60	5	80	330	80
Detection Limit:		2	5	2	5	5

Comments:

Signatory:

090

230091

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Phone: (07) 352 5577
Telex: ALSEV 42344

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

Batch Number: J087

Contact: MR. J. WEIR

No. of Samples: 57
Date Received: 14/09/84
Date Completed: 20/09/84

Order No. D.P.O. 30497 Sample Type: BEDROCK SOILS

SAMPLE NUMBER	Element Unit Method	As ppm IC580	Ag ppm IC580	Fe % IC580	Mn ppm IC580
1154031	9950	20	1	1.75	20
1154032	800	20	1	2.75	140
1154033	750	36	1	2.84	60
1154034	700	18	<1	2.06	75
1154035	650	28	<1	2.18	65
1154036	600	60	<1	2.29	85
1154037	550	18	<1	2.54	60
1154038	500	5	<1	1.42	30
1154039	450	8	1	3.45	125
1154040	425	18	1	8.58	460
1154041	400	14	1	4.25	30
1154042		9	<1	3.42	60
1154043		16	1	1.53	50
1154044		12	2	11.4	520
1154045		12	2	15.2	940
1154046		10	2	12.5	410
1154047		9	2	16.2	65
1154048		16	1	5.98	390
1154049		9	1	11.1	570
1154050		12	2	11.6	2450
1154051		10	2	16.5	145
1154052		16	1	2.07	45
1154053		14	<1	1.97	20
1154054		55	<1	2.40	30
1154055		22	<1	2.66	40
1154056		18	<1	1.33	25
1154057		8	<1	9.26	1600
Detection Limit:		1	1	0.01	5

Comments:

Signatory: G J Kilmister

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

Client: CRA EXPLORATION PTY. LIMITED Alpine extra Soils.

Address: LEVEL 4
BELLERIVE QUAY
BELLERIVE TASMANIA 7018

Page 1 of 5

Batch Number: K088

Contact: MR. G. CLIFT

No. of Samples: 148
Date Received: 11/10/84
Date Completed: 19/10/84

Order No. D.P.O. 31953 Sample Type: EX J115, J087

SAMPLE NUMBER	Element Unit Method	Sn ppm XRF 1A	W ppm XRF 1A	Ba ppm XRF 1A		
1154001		<5	<10	240		
1154002		<5	<10	300		
1154003		<5	<10	410		
1154004		<5	<10	260		
1154005		<5	<10	310		
1154006		<5	<10	300		
1154007		<5	<10	160		
1154008		<5	<10	150		
1154009		<5	<10	170		
1154010		5	<10	40		
1154011		20	<10	<10		
1154012		20	<10	<10		
1154013		<5	<10	340		
1154014		<5	<10	<10		
1154015		<5	<10	<10		
1154016		<5	<10	<10		
1154017		<5	<10	420		
1154018		<5	<10	280		
1154019		10	20	10		
1154020		25	20	30		
1154021		<5	10	80		
1154022		<5	<10	320		
1154023		<5	<10	40		
1154024		<5	<10	160		
1154025		<5	<10	90		
1154026		10	<10	<10		
1154027		<5	<10	<10		
1154028		<5	<10	20		
1154029		<5	<10	30		
1154030		<5	<10	120		
Detection Limit:		5	10	10		

Comments:

Signatory: G J Kilmister

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Everton Park, Q. 4053
Phone: (07) 352 5577
Telex: ALSEV 42344

Client: CRA EXPLORATION PTY. LIMITED

Page 2 of 5

Address: LEVEL 4
BELLERIVE QUAY
BELLERIVE TASMANIA 7018

Batch Number: K088

Contact: MR. G. CLIFT

No. of Samples: 148
Date Received: 11/10/84
Date Completed: 19/10/84

Order No. D.P.O. 31953

Sample Type: EX J115, J087

SAMPLE NUMBER	Element Unit Method	Sn ppm XRF 1A	W ppm XRF 1A	Ba ppm XRF 1A		
1154031		<5	<10	60		
1154032		<5	20	200		
1154033		<5	<10	120		
1154034		<5	<10	30		
1154035		<5	<10	60		
1154036		<5	<10	60		
1154037		5	10	270		
1154038		<5	<10	30		
1154039		<5	<10	10		
1154040		<5	<10	140		
1154041		<5	<10	20		
1154042		<5	<10	10		
1154043		<5	10	<10		
1154044		<5	<10	60		
1154045		<5	<10	30		
1154046		5	<10	50		
1154047		<5	<10	160		
1154048		<5	<10	930		
1154049		<5	<10	270		
1154050		<5	<10	380		
1154051		<5	<10	430		
1154052		<5	<10	<10		
1154053		5	<10	210		
1154054		<5	<10	70		
1154055		<5	<10	100		
1154056		<5	<10	190		
1154057		<5	<10	230		
1154058		<5	<10	<10		
1154059		<5	<10	120		
1154060		<5	<10	<10		
Detection Limit:		5	10	10		

Comments

Signatory: G J Kilmore

093

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Telex: ALSEV 42344

Client: CRA EXPLORATION PTY. LIMITED

Page 3 of 5

Address: LEVEL 4
BELLERIVE QUAY
BELLERIVE TASMANIA 7018

Batch Number: K088

Contact: MR. G. CLIFT

No. of Samples: 148
Date Received: 11/10/84
Date Completed: 19/10/84

Order No.: D.P.O. 31953

Sample Type: EX J115, J087

SAMPLE NUMBER	Element Unit Method	Sn ppm XRF 1A	W ppm XRF 1A	Ba ppm XRF 1A
1154061		<5	<10	10
1154062		<5	<10	<10
1154063		5	<10	<10
1154064		<5	<10	260
1154065		<5	<10	720
1154066		<5	<10	<10
1154067		5	<10	<10
1154068		<5	<10	30
1154069		<5	<10	100
1154070		<5	<10	20
1154071		<5	<10	250
1154072		<5	<10	710
1154073		<5	<10	180
1154074		<5	<10	40
1154075		<5	<10	<10
1154076		5	<10	<10
1154078		5	<10	<10
1154089		<5	<10	<10
1154090		10	<10	<10
1154091		5	<10	<10
1154092		<5	<10	<10
1154093		<5	<10	<10
1154094		5	<10	<10
1154095		<5	<10	<10
1154096		<5	<10	<10
1154097		<5	<10	<10
1154098		<5	<10	<10
1154099		<5	<10	<10
1154100		<5	<10	<10
1154101		5	<10	<10
Detection Limit		5	10	10

Comments:

Signatory: G J Kilmister

094

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Everton Park, Q. 4053
Phone: (07) 352 5577
Telex: ALSEV 42344

Client: CRA EXPLORATION PTY. LIMITED

Address: LEVEL 4
BELLERIVE QUAY
BELLERIVE TASMANIA 7018

Batch Number: K088

Contact: MR. G. CLIFT

Order No.: D.P.O. 31953

Sample Type: EX J115, J087

No. of Samples: 148
Date Received: 11/10/84
Date Completed: 19/10/84

SAMPLE NUMBER	Element Unit Method	Sn ppm XRF 1A	W ppm XRF 1A	Ba ppm XRF 1A		
1154102		<5	<10	170		
1154103		<5	<10	<10		
1154104		<5	<10	<10		
1154105		<5	<10	<10		
1154106		<5	<10	<10		
1154107		<5	<10	120		
1154108		<5	<10	20		
1154109		<5	<10	270		
1154110		<5	<10	440		
1154111		<5	<10	170		
1154112		<5	<10	30		
1154113		<5	<10	230		
1154114		<5	<10	190		
1154115		<5	<10	80		
1154116		5	<10	1250		
1154117		5	<10	<10		
1154118		5	<10	990		
1154119		<5	<10	320		
1154120		<5	<10	60		
1154121		5	<10	430		
1154122		<5	<10	320		
1154123		<5	<10	30		
1154124		<5	<10	240		
1154125		<5	<10	40		
1154126		<5	<10	30		
1154127		<5	<10	<10		
1154128		<5	<10	<10		
1154129		<5	<10	<10		
1154130		5	<10	<10		
1154131		5	<10	<10		
Detection Limit		5	10	10		

Comments:

Signatory: G J Kilmister

230096

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Telex: ALSEV 42344

Client: CRA EXPLORATION PTY. LIMITED

Address: LEVEL 4
BELLERIVE QUAY
BELLERIVE TASMANIA 7018

Batch Number: K088

Contact: MR. G. CLIFT

No. of Samples: 148
Date Received: 11/10/84
Date Completed: 19/10/84

Order No.: D.P.O. 31953 Sample Type: EX J115, J087

SAMPLE NUMBER	Element Unit Method	Sn ppm XRF 1A	W ppm XRF 1A	Ba ppm XRF 1A
1154132		<5	<10	610
1154133		10	<10	20
1154134		5	<10	<10
1154135		5	<10	120
1154136		<5	<10	<10
1154137		<5	<10	10
1154138		<5	<10	190
1154139		5	<10	120
1154140		15	<10	<10
1154141		<5	<10	30
1154142		<5	<10	120
1154143		<5	<10	<10
1154144		5	<10	460
1154145		5	<10	20
1154146		<5	<10	<10
1154147		<5	<10	<10
1154148		<5	<10	<10
1154149		<5	<10	30
1154150		<5	<10	230
1154151		<5	<10	130
1154152		15	<10	<10
1154153		<5	<10	230
1154154		<5	<10	200
1154155		<5	<10	40
1154156		5	<10	<10
1154157		25	20	<10
1154158		<5	<10	<10
1154159		10	<10	<10
Detection Limit:		5	10	10

Comments:

Signatory: G J Schneider

096

230097

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Telex: ALSEV 42344

Client: CRA EXPLORATION PTY. LIMITED

Page 1 of 3

Address: LEVEL 4,
BELLERIVE QUAY,
BELLERIVE. TAS. 7018

Batch Number: K088-I

Contact: MR. G. CLIFT.

No. of Samples: 80
Date Received: 11/10/84
Date Completed: 26/10/84

Order No: D.P.O. 31953

Sample Type: EX J115, J087

SAMPLE NUMBER	Element Unit Method	Au ppb PM204
1154001		<3
1154002		<3
1154003		<3
1154004		<3
1154005		<3
1154006		<3
1154007		<3
1154028		<3
1154029		<3
1154030		<3
1154031		<3
1154032		<3
1154033		<3
1154034		<3
1154035		<3
1154036		<3
1154037		3
1154038		3
1154039		3
1154040		<3
1154041		<3
1154042		<3
1154043		<3
1154044		<3
1154045		<3
1154046		<3
1154047		<3
1154048		<3
1154049		<3
1154050		<3
Detection Limit		3

Comments:

Signatory: G J Kilmister

097

230098

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Everton Park, Q. 4053
Phone (07) 352 5577
Telex. ALSEV 42344

Client: CRA EXPLORATION PTY. LIMITED

Address: LEVEL 4,
BELLERIVE QUAY,
BELLERIVE. TAS. 7018

Batch Number: K088-1

Contact: MR. G. CLIFT.

No. of Samples: 80

Date Received: 11/10/84

Order No: D.P.O. 31953 Sample Type: EX JII5, J087

Date Completed: 26/10/84

SAMPLE NUMBER	Element Unit Method	Au ppb PM204				
1154051		<3				
1154052		<3				
1154053		<3				
1154054		<3				
1154055		<3				
1154056		<3				
1154057		<3				
1154062		<3				
1154063		<3				
1154064		<3				
1154065		<3				
1154066		<3				
1154067		<3				
1154068		<3				
1154071		<3				
1154072		<3				
1154073		<3				
1154074		<3				
1154075		<3				
1154076		<3				
1154077		N.R.				
1154078		<3				
1154079		N.R.				
1154080		N.R.				
1154081		N.R.				
1154082		N.R.				
1154083		N.R.				
1154084		N.R.				
1154085		N.R.				
1154086		N.R.				
Detection Limit		3				

Comments:

Signatory: G J Kilmister

098

230099

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Telex: ALSEV 42344

Client: CRA EXPLORATION PTY. LIMITED

Address: LEVEL 4,
BELLERIVE QUAY,
BELLERIVE. TAS. 7018

Batch Number: K088-1

Contact: MR. G. CLIFT.

No. of Samples: 80
Date Received: 11/10/84
Date Completed: 26/10/84

Order No: D.P.O. 31953

Sample Type: EX J115, J087

SAMPLE NUMBER	Element / Unit / Method	Au ppb PM204				
1154112		<3				
1154113		<3				
1154114		<3				
1154115		<3				
1154116		<3				
1154118		<3				
1154119		<3				
1154120		<3				
1154121		<3				
1154122		<3				
1154123		15				
1154124		10				
1154125		<3				
1154126		<3				
1154127		<3				
1154128		<3				
1154132		<3				
1154135		<3				
1154144		<3				
1154089		<3				
Detection Limit		3				

Comments:

Signatory: G J Kelmore

APPENDIX 3

ALPINE ANOMALY

MEMORANDUM FROM T STROKIRCH RE GEOPHYSICAL INVESTIGATIONS

100

230101

CRA EXPLORATION PTY LIMITED
(INC. IN N.S.W.)

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

P.O. BOX 138
ROSNY PARK 7018
TELEGRAMS: CRAEX
TELEX: AA57144
TELEPHONE: 44 3533
AREA CODE: (002)

IN REPLY PLEASE QUOTE

MEMO TO :J. D. WEIR
COPY TO :T. W. DICKSON

MEMO FROM :T. VON STROKIRCH

SUBJECT: ALPINE PROSPECT GENIE AND GROUND MAGNETIC SURVEYS

INTRODUCTION

As ground follow up on the Alpine grid, further gridding, geological mapping, ground magnetics, soil geochemistry and reconnaissance EM was performed. The following is concerned primarily with the geophysics. Ground magnetics was completed over all the lines at 12.5 metre reading spacing as soon as the lines were gridded. This data was interpreted to determine if we had located the ground representation of the airborne anomaly. When the Scintrex GENIE system (see appendix) became available we decided to make use of its reconnaissance capabilities to test the possibility of conductors associated with the magnetic anomalies. The EM survey was conducted over a two week period during October 1984. Readings were taken at 25m spacings using two frequency pairs, 337Hz/112Hz and 3037Hz/112Hz at a receiver/transmitter spacing of 100m. The transmitter was not consistently in the same direction from the receiver but fortunately overlap readings seem to indicate that there has been no significant migration of anomalies even over the fairly conductive basaltic cover that extends over much of the south eastern portion of the area.

INTERPRETATION

Line 8100E
Basalt cover interpreted between 8500N and 9505N. There are no conductors visible on this line. The sharp magnetic peak at 9800N looks to be due to a cultural feature.

Line 8300E
Possible very small conductor at 8410N. Interpreted depth 55m, dip 85deg. north, width 10m. It lies under basalt and

is a very subtle feature. I would recommend further EM to determine whether the conductor is real before proceeding to another phase of exploration. Basalt cover is interpreted between 8200N and 9050N.

Line 8500E
Basalt interpreted between 8200n and 9200N though this is complicated by the presence of two conductors in this region. The stronger of these is a moderately strong feature at 8425N. It dips at 45deg. to the north, is at 25-30 metres depth and has a width of less than 20 metres. It is associated with a very variable magnetic response, typical of fresh basalt and as its dip is fairly shallow it is possible that it may be due to an internal contact in the basalt. The second conductor on the line is at 8980N. The conductor itself is poorly defined but it is coincident with the highest point of the a 1500nT magnetic peak. As the conductor lies under but near the edge of the weathered basalt it is difficult to do any quantitative interpration. The best I can manage is that its dip is near vertical and that its width is less than 25metres. Its depth is of the order of 30 metres but this would require follow up to determine more accurately. Assuming a narrow dike like body the depth to the magnetic source is approximately 125 metres and the position of the source is at 8900N.

Line 8700E
The presence of a variable thickness cover of basalt is interpreted between 8200N and 9475N. There is a strong conductor at 9125N coincident with a small (150nT) peak on the flank of the major (4000nT) feature. The magnetics indicates a source of less than 50 metres depth which ties in reasonably well with the depth of 20 metres interpreted from the EM. The EM indicates a dip of 55deg. to the south. Due to the interference of the basalt it is not possible to determine the conductivity of the source but this appears to be high. This is considered an interesting target.

Line 8900E
Conductive overburden, presumably basalt, is present from 8200N to approximately 9700N. The northern boundary is difficult to determine because of the presence of a strong conductive response centered on 9525N. The conductor, while similar in appearance to the feature on line 8700E, in this

case the magnetic high lies to the south and is in no way associated with the conductor. The conductor may be enhanced by the presence of the basalt edge. It is interpreted as lying at a depth of 25 metres, which may be related to the thickness of basalt, and it dips at 40deg. to the south. The magnetic response is flat so the conductor is most likely due to a carbonaceous unit.

Line 9100E

Conductive overburden covers the area between 8300N and 9650N. A major conductor is present at 9425N which is associated with a very high succeptibility shallow magnetic body. The conductor has a depth of 20 metres, a dip of 45deg. to the south, a width of 15 metres and a conductivity of 3-6 siemens. Poorer conductors occur at 9000N dipping 70deg. north at a depth of 40 metres, and 10940N dipping 80deg. south at a depth of 50 metres.

Line 9300E

Basalt occurs from 8500N to 9100N. Conductors occur at 8775N and 9450N. The first is a very indistinct feature obscured by the basalt. It lies at 40 metres depth and has a dip of 65deg. north and a width of 10 metres. The second conductor is a somewhat stronger response though still poor. It dips to the south at 60 degrees, is at a depth of 25 metres and has a width of 25-30 metres. It is probably a somewhat more conductive rock type. A magnetic peak of very similar character to the one associated with the conductor on line 9100E occurs at 9600N on this line but in this case there is no conductor discernible.

Line 9500E

An area of highly conductive surface material lies between 10200N and 10400N. This is probably due to a swamp or to local basalt cover. There are two small magnetic anomalies but no conductors of any note.

General

The GENIE sytem appears to be effective in locating the extent of the basalt even where the weathering is so deep as to have destroyed its magnetic response. Where th basalt is fresher the magnetics is characterised by extremely variable readings but not by a particularly increased background response which tends to indicate that the basalt

itself has no significant magnetisation. The EM appears to show the presence of two distinct rock groups in the area in the south and the north which have broadly different conductivities, the northern rocks being generally less conductive though this is somewhat complicated by the basalts. The magnetics and the EM both show differing strike trends in these two zones. The major magnetic anomaly of amplitude 5000nT is essentially a localised elliptical body probably produced by a shallow mafic intrusive of very high magnetite content which I feel is unlikely to be the source of the basalt because of its exceptionably high susceptibilty and lack of noise.

CONCLUSIONS AND RECOMMENDATIONS

A number of anomalies of interest have come to light. The best ones in order of preference are:

1. 8700E/9125N
2. 9100E/9425N
3. 8500E/8980N
4. 8900E/9525N

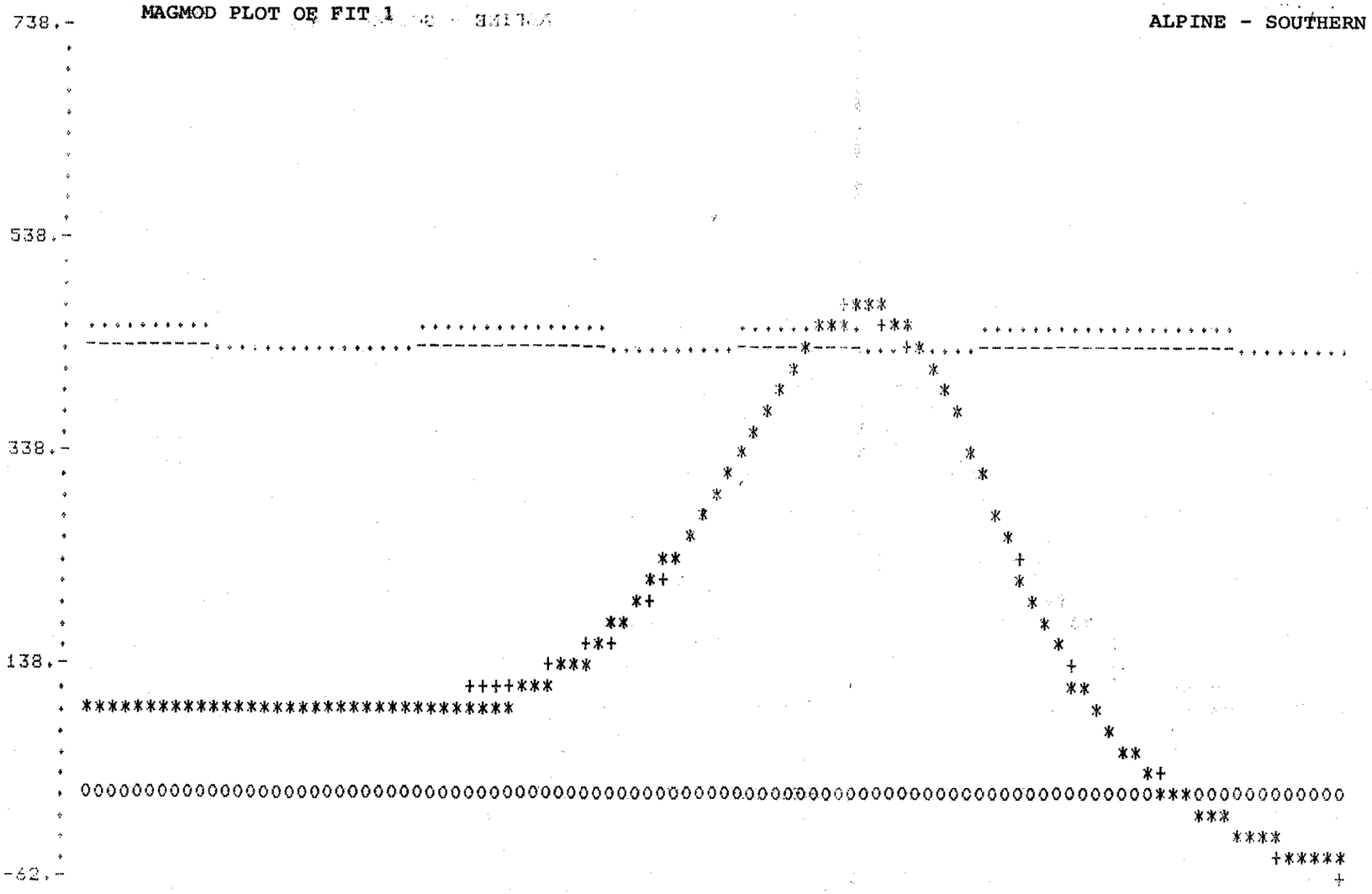
Further EM using a large loop system such as UTEM would be useful to accurately define these conductors but due to contraints in time and money it would appear that shall just be considered in the light of geochemical data and perhaps shallow drilling. As none of the targets is at any great depth it should be sufficient to test them with shallow percussion holes. If anything comes of this program I would recommend resurveying the whole grid with a better EM system to attempt to locate any large bodies at greater depth.

101

230105

MAGMOD PLOT OF FIT 1

ALPINE - SOUTHERN ANOMALY



MODEL TABULAR TITLE ALPINE

NUMBER OF STATIONS 99 MAX AMPLITUDE 524. X INCREMENT 1 COLUMNS PER STATION. Y INCREMENT OF 20. GAMMAS PER LINE.
FIELD DATA CURVE...%*% FITTED CURVE...%+% ERROR CURVE...%.%
NORMALIZED WEIGHTED STANDARD DEVIATION OF FIT .0254 PARFIT FLAG 2 ERROR CURVE DATUM 438.463

Anomaly	=	ALPINE	Model Type	=	TABULAR	Std. Dev. Fit=	0.02540
Line Number	=	1550	Magnetization	=	174.9	Depth =	192.9
Central Fid.	=	6552	Position	=	255.0		
Mean	=	171.95	Width	=	376.6		
Interp. dx	=	20	Strike	=	0.0	Thickness =	376.5
Res. Const.	=	0.000	Dip	=	88.9		
Res. Grad.	=	0.000					

to which I should add that because I have chosen to use a tabular model not withstanding the fact that we have a limited strike extent the calculated depth will actually be less by a factor of about 20% (ie 155m).

CRA EXPLORATION PTY. LIMITED

ROCKY CAPE E.L. 1/77
PROSPECT AND GRID LINE
LOCATION PLAN 001

85-2335

Ref: SX55 - 3 5	
Scale: 1 : 100 000	Drawn: R.T.
Author: I.W.	Report No. 9705
Date: 25 - 2 - 1985	Plan No. TAS 2533

ALPINE

EL 1/77

BLACKWATER RIVULET

GREEN

ANOMALIES

WALLABY

ROSE BLUE

ELECTRIC BLUE

ARTHUR

RED

WHITE

NORTH

RUBY

FRANKLAND RIVULET

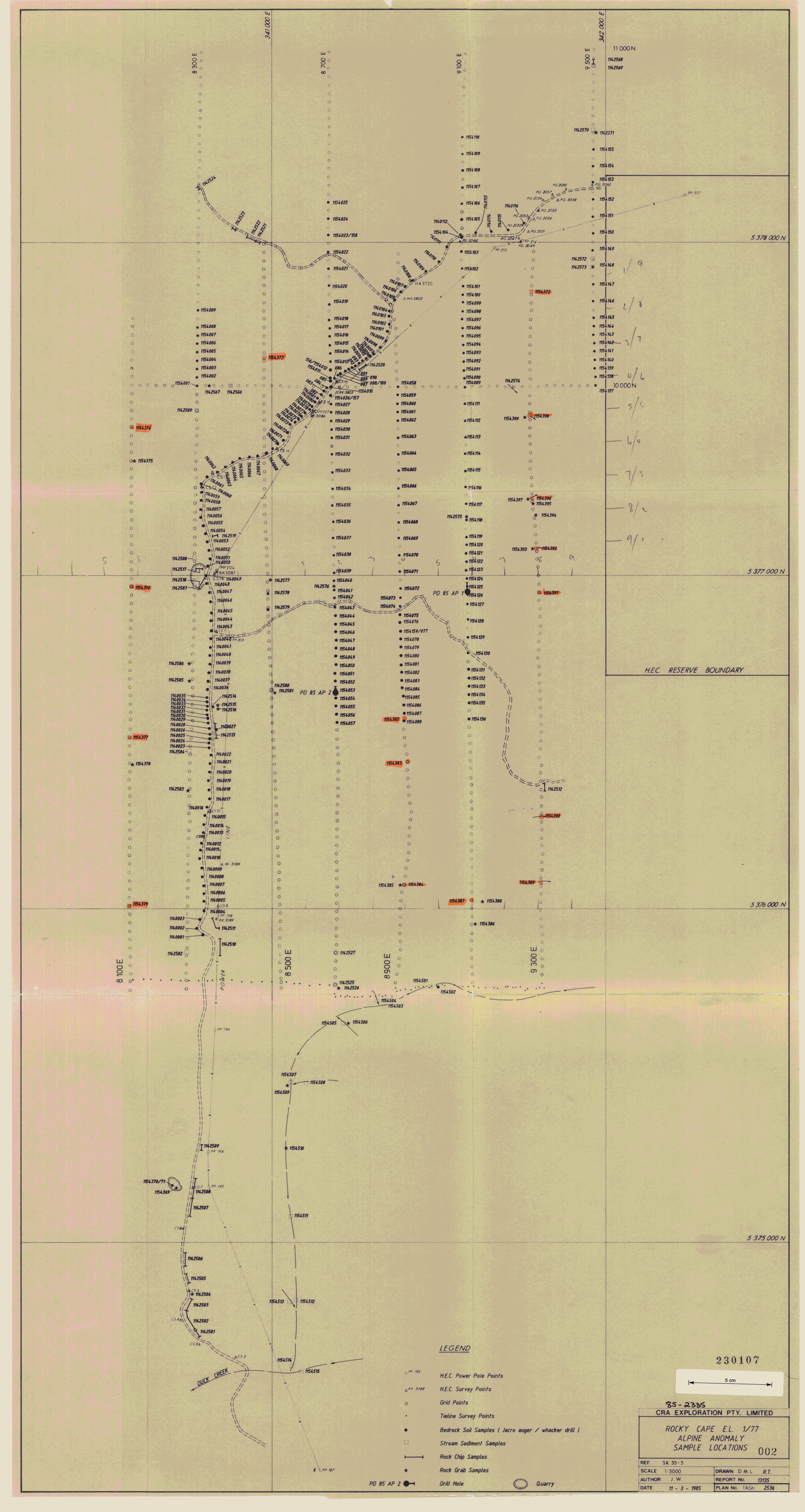
SUNDOWN CHERT

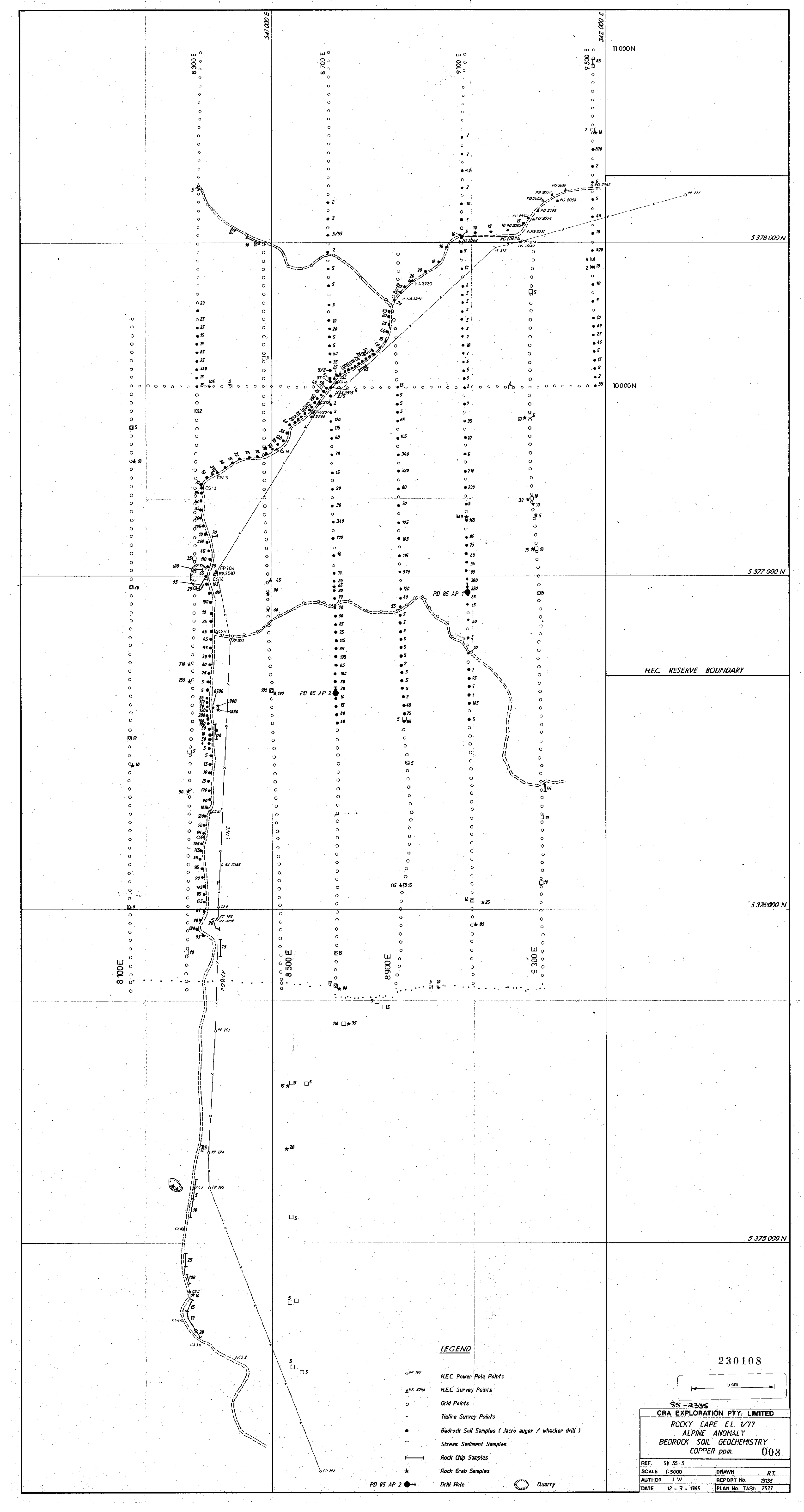
SALMON RIVER

ALERT CREEK (TIN)

EL. 1/77

85-2335


341 000 E
342 000 E
8 300 E
8 700 E
9 100 E
9 500 E
11 000 N
10 000 N
5 378 000 N
5 377 000 N
5 376 000 N
5 375 000 N
8 100 E
8 500 E
8 900 E
9 300 E
H.E.C. RESERVE BOUNDARY
PD 85 AP 1
PD 85 AP 2
DUCK CREEK
POWER
LEGEND
H.E.C. Power Pole Points
H.E.C. Survey Points
Grid Points
Tieline Survey Points
Bedrock Soil Samples (Jacro auger / whacker drill)
Stream Sediment Samples
Rock Chip Samples
Rock Grab Samples
Drill Hole
Quarry
230107
5 cm
85-2335
CRA EXPLORATION PTY. LIMITED
ROCKY CAPE E.L. 1/77
ALPINE ANOMALY
SAMPLE LOCATIONS 002
REF. SK 55-5
SCALE 1:5000
DRAWN D.M.L R.T.
AUTHOR J.W.
REPORT No. 13135
DATE 11 - 3 - 1985
PLAN No. TASh 2536



LEGEND

- PP 193 — H.E.C. Power Pole Points
- RK 3088 — H.E.C. Survey Points
- Grid Points
- Tieline Survey Points
- Bedrock Soil Samples (Jacro auger / whacker drill)
- Stream Sediment Samples
- Rock Chip Samples
- Rock Grab Samples
- PD 85 AP 2 — Drill Hole
- Quarry

230108

5 cm

95-2335

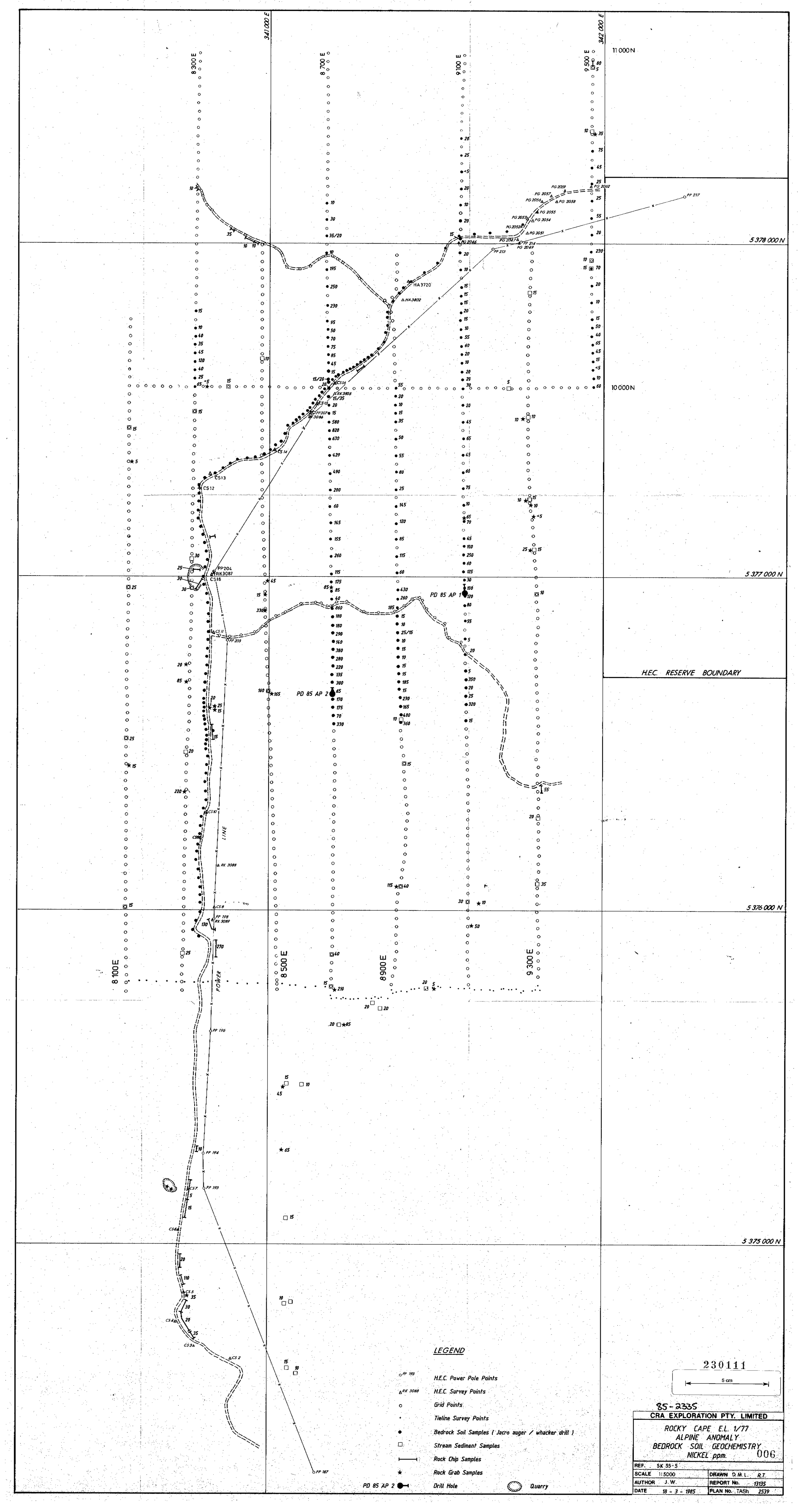
CRA EXPLORATION PTY. LIMITED

ROCKY CAPE E.L. 1/77
ALPINE ANOMALY
BEDROCK SOIL GEOCHEMISTRY
COPPER ppm. 003

REF.	SK 55-5		
SCALE	1:5000	DRAWN	R.T.
AUTHOR	J.W.	REPORT No.	13135
DATE	12 - 3 - 1985	PLAN No. TASH	2537

341 000 E
342 000 E
11 000 N
10 000 N
5 378 000 N
5 377 000 N
5 376 000 N
5 375 000 N
8 100 E
8 300 E
8 500 E
8 700 E
8 900 E
9 100 E
9 300 E
9 500 E
H.E.C. RESERVE BOUNDARY
POWER LINE
PD 85 AP 1
PD 85 AP 2
LEGEND
H.E.C. Power Pole Points
H.E.C. Survey Points
Grid Points
Tieline Survey Points
Bedrock Soil Samples (Jacro auger / whacker drill)
Stream Sediment Samples
Rock Chip Samples
Rock Grab Samples
Drill Hole
Quarry
230109
5 cm
85-2335
CRA EXPLORATION PTY. LIMITED
ROCKY CAPE E.L. 1/77
ALPINE ANOMALY
BEDROCK SOIL GEOCHEMISTRY
ZINC ppm.
004
REF. SK 55-5
SCALE 1:5000
AUTHOR J.W.
DATE 20 - 3 - 1985
DRAWN D.M.L. R.T.
REPORT No. 13135
PLAN No. TASh 2538

341 000 E
342 000 E
11 000 N
10 000 N
5 378 000 N
5 377 000 N
5 376 000 N
5 375 000 N
8 100 E
8 300 E
8 500 E
8 700 E
8 900 E
9 100 E
9 300 E
9 500 E
CORINNA TRACK
TO PROCTORS FARM
H.E.C. RESERVE BOUNDARY
PD85 AP1
PD85 AP2
COSTEAN LOCATION sulphide o/c py,Cpy
bulldozed clearing qtz gravels
LEGEND
RECENT
GRAVELS White well rounded poorly sortedquartz gravels in fine grained sandy matrix often highly compacted. (±
unconformity
TERTIARY
BASALT LAVA Blue-grey amygdaloidal mafic lava. Weathers to red-brown. Highly vesicular, vesicles filled with zeolites. ± 10-20m thick, thickening to south
unconformity
METASEDIMENTS
UPPER PRECAMBRIAN / CAMBRIAN
QUARTZ (MICA) SCHISTS Light brown to tan, quartz mica schists with minor mica and chlorite. Minor interbedded quartzite. Minor highly chloritic zones.
QUARTZITE Grey-white poorly bedded quartzite.
MSc
MICA SCHISTS Domminantlyaa mica schist with minor quartz and chlorite. -Probable facies change to the quartz (mica) schist.
GRAPHITIC SCHISTS Dark grey - black graphitic mica schists.
IRONSTONE Brown to red brown limonite / goethite, possibly after basalt or banded iron formation.
CARBONATE - CHERT Fine grained, banded chert, vuggy. Highly deformed in places. 1 - 5% pyrite with minor chalcopyrite. Semi massive to massive pyrite in places.
SEDIMENTS
ORDOVICIAN?
ARENITE Buff, fine to medium grained arenite with traces of pyrite & hematite.
SILTSTONE - SHALE Greenish brown fine grained siltstones, possibly slightly chloritic.
PD85 AP1 DRILLHOLE LOCATION
VEHICULAR TRACK
80 SCHISTOSITY
80 CLEAVAGE
35 DIP & STRIKE
GEOLOGICAL CONTACT POSITION
CONTACT POSITION APPROXIMATE
CONTACT POSITION INFERRED
PP 193 H.E.C. POWER POLE POINTS
RK 3088 H.E.C. SURVEY POINTS
SOIL SAMPLE SITES
GRID POINTS
TIELINE SURVEY POINTS
230110
5 cm
CRA EXPLORATION PTY. LIMITED
RAPID RIVER E.L. 1/77
ALPINE ANOMALY
GEOLOGICAL PLAN 005
REF. SK 55-5
SCALE 1:5000
DRAWN R.T.
AUTHOR J.W.
REPORT No. 13135
DATE 13 - 3 - 1985
PLAN No. TASh 2535
85-2335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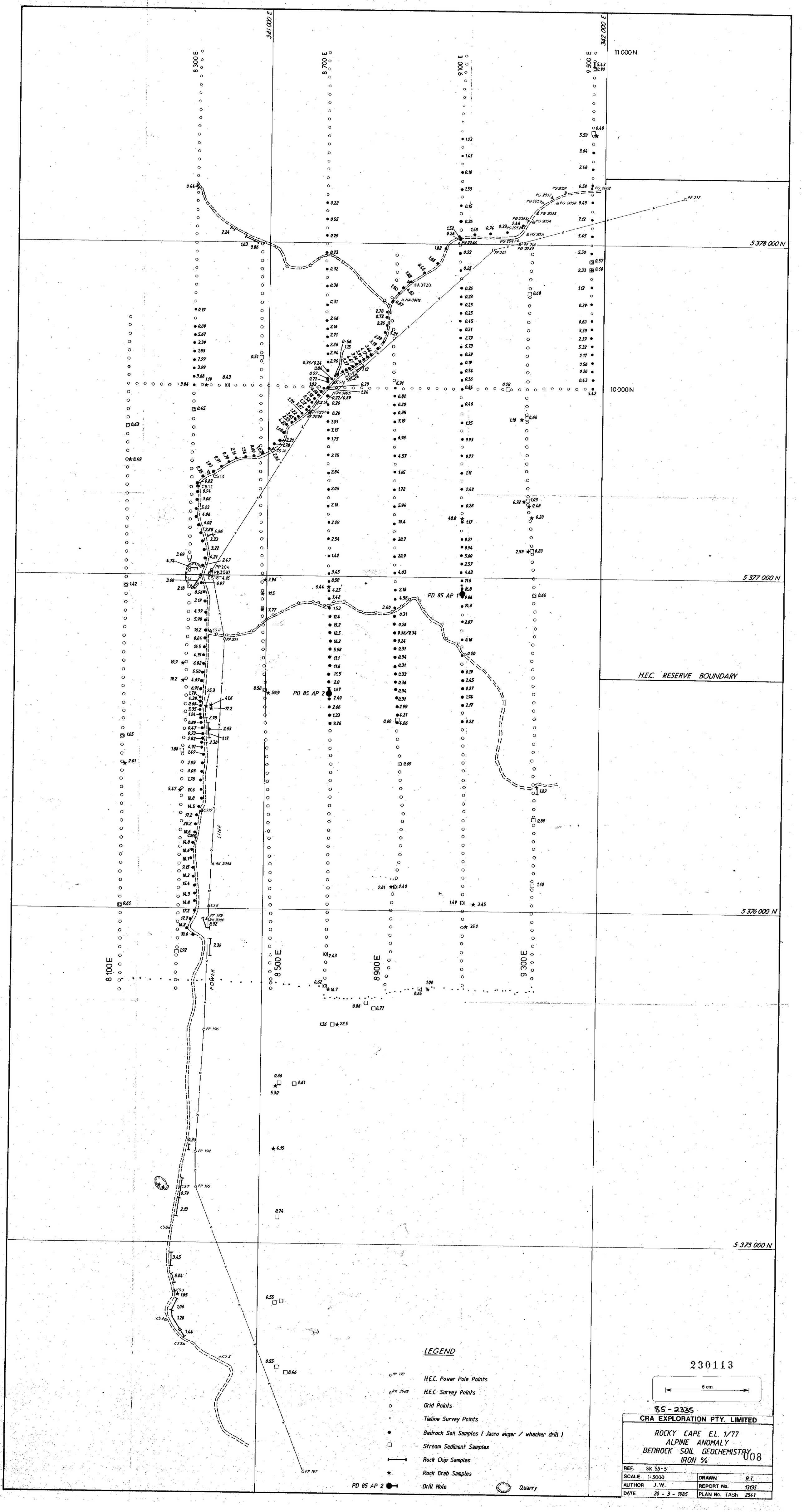
342 000 E
8 300 E
8 700 E
9 100 E
9 500 E
11 000 N
10 000 N
5 378 000 N
5 377 000 N
5 376 000 N
5 375 000 N
8 100 E
8 500 E
8 900 E
9 300 E
H.E.C. RESERVE BOUNDARY
PD 85 AP 1
PD 85 AP 2
LINE
POWER
LEGEND
H.E.C. Power Pole Points
H.E.C. Survey Points
Grid Points
Tieline Survey Points
Bedrock Soil Samples (Jacro auger / whacker drill)
Stream Sediment Samples
Rock Chip Samples
Rock Grab Samples
Drill Hole
Quarry
230111
5 cm
85-2335
CRA EXPLORATION PTY. LIMITED
ROCKY CAPE E.L. 1/77
ALPINE ANOMALY
BEDROCK SOIL GEOCHEMISTRY
NICKEL ppm.
006
REF. SK 55-5
SCALE 1:5000
DRAWN D.M.L. R.T.
AUTHOR J.W.
REPORT No. 13135
DATE 18 - 3 - 1985
PLAN No. TASh 2539

341 000 E
342 000 E
11 000 N
10 000 N
5 378 000 N
5 377 000 N
5 376 000 N
5 375 000 N
8 100 E
8 300 E
8 500 E
8 700 E
8 900 E
9 100 E
9 300 E
9 500 E
H.E.C. RESERVE BOUNDARY
POWER
LINE
PD 85 AP 1
PD 85 AP 2
HA 3720
HA 3802
PP 204
RK 3087
PP 217
PP 213
PP 214
PP 203
PP 196
PP 194
PP 193
PP 187
RK 3088
RK 3089
CS 2
CS 5
CS 7
CS 8
CS 11
CS 12
CS 13
CS 14
CS 16
CS 18
LEGEND
H.E.C. Power Pole Points
H.E.C. Survey Points
Grid Points
Tieline Survey Points
Bedrock Soil Samples (Jacro auger / whacker drill)
Stream Sediment Samples
Rock Chip Samples
Rock Grab Samples
Drill Hole
Quarry
230112
6 cm
85-2335
CRA EXPLORATION PTY. LIMITED
ROCKY CAPE E.L. 1/77
ALPINE ANOMALY
BEDROCK SOIL GEOCHEMISTRY
COBALT ppm.
007
REF. SK 55-5
SCALE 1:5000
AUTHOR J.W.
DATE 19 - 3 - 1985
DRAWN R.T.
REPORT No. 13135
PLAN No. TASh 2549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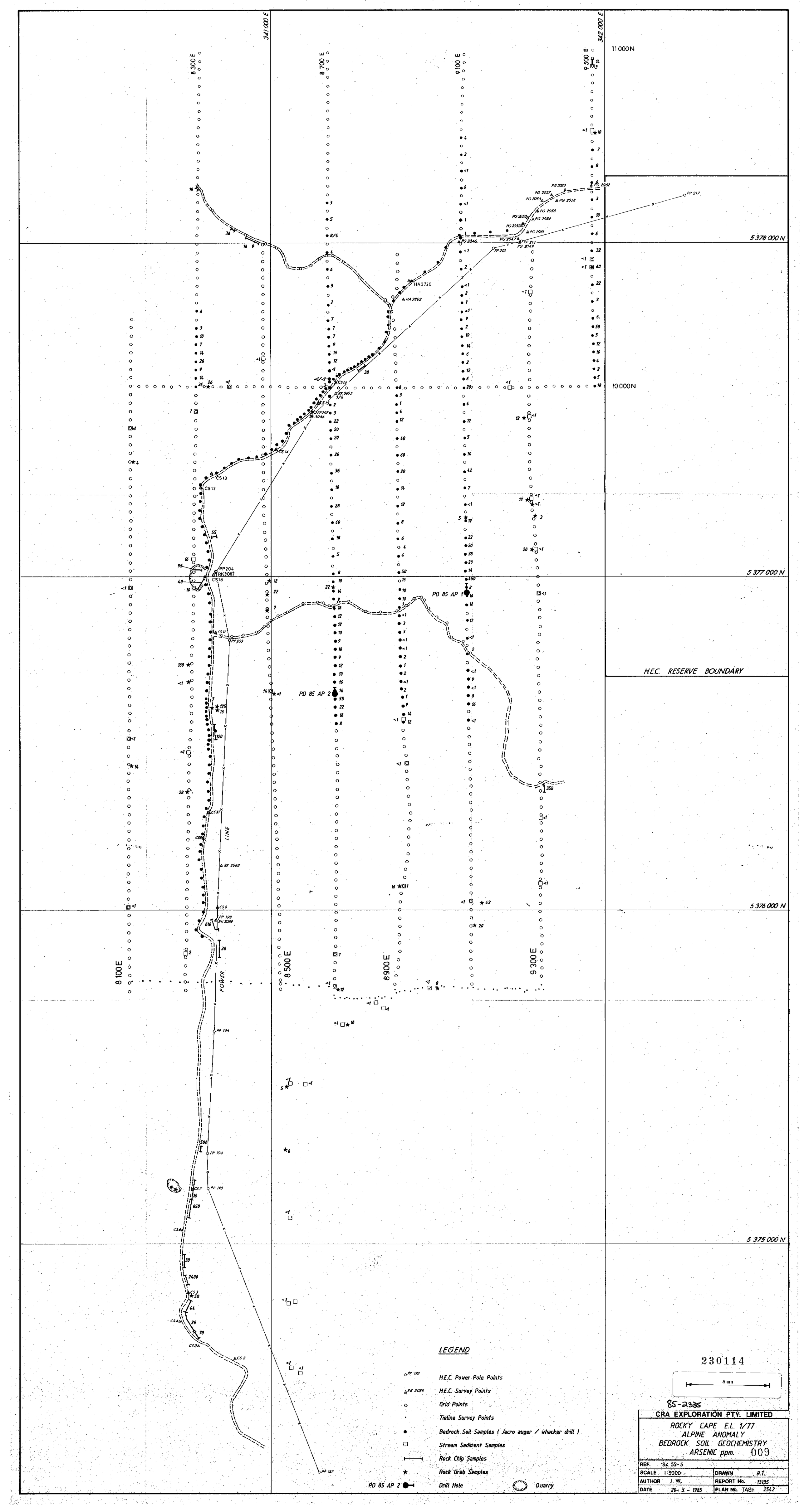
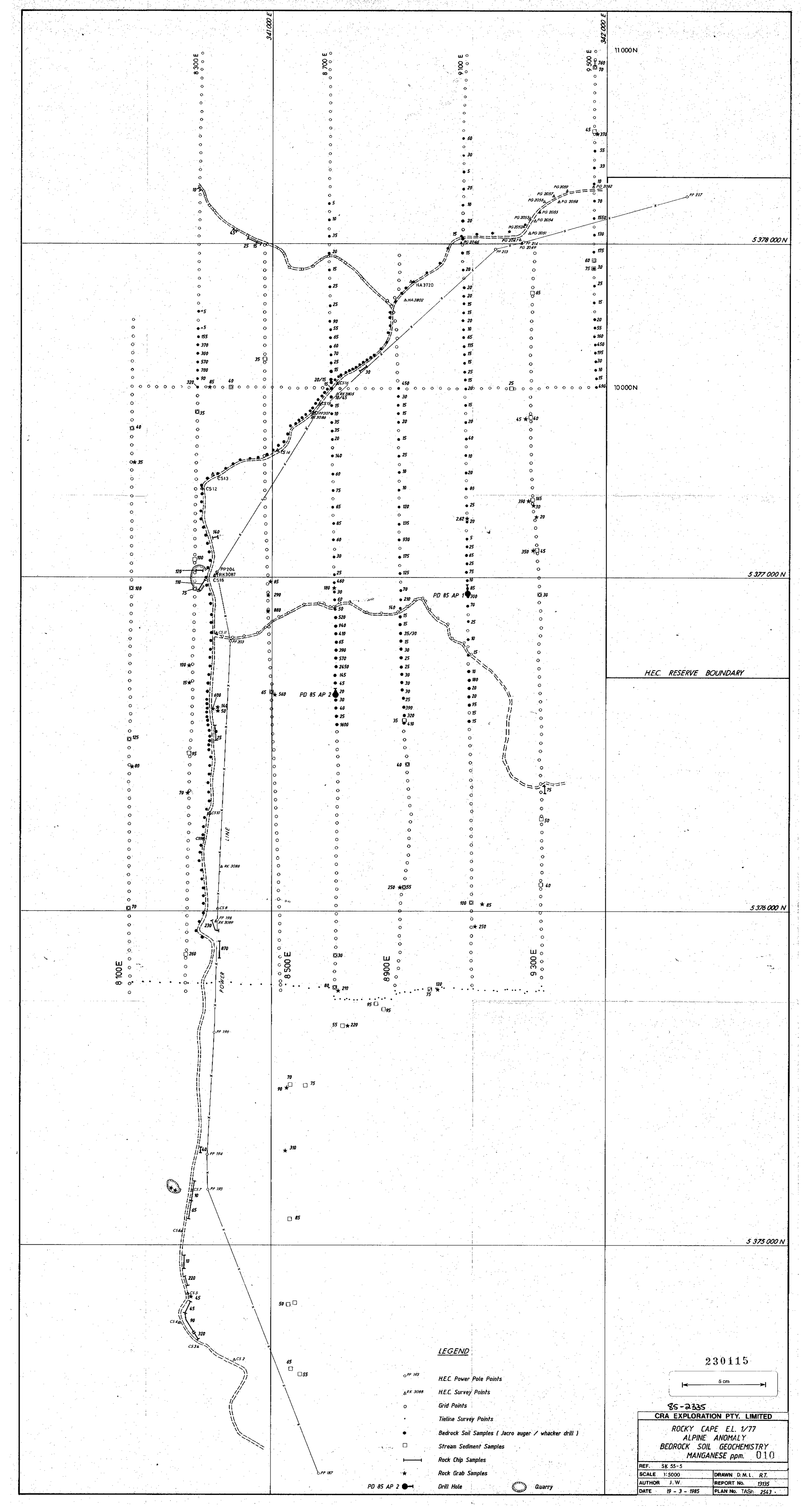
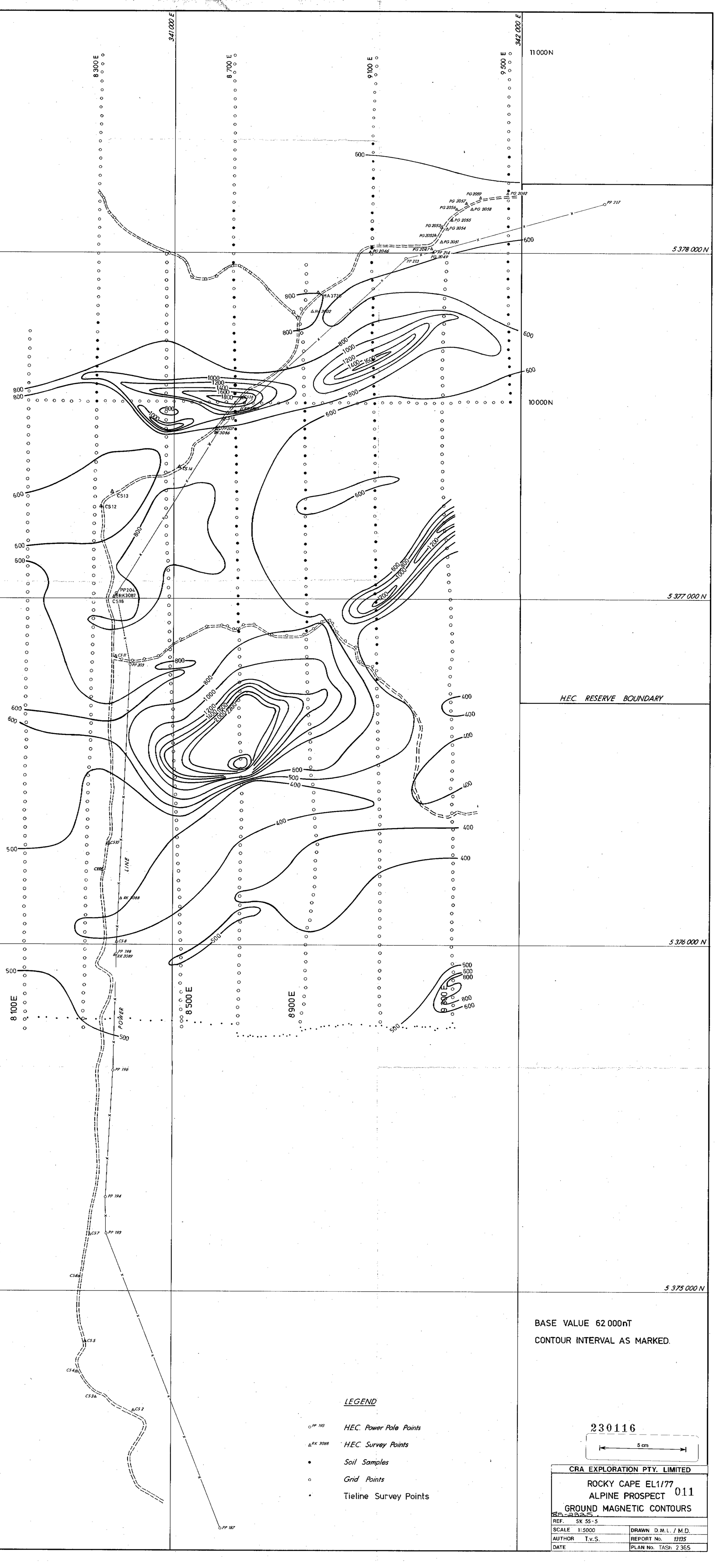
342 000 E
8 300 E
8 700 E
9 100 E
9 500 E
11 000 N
5 378 000 N
10 000 N
5 377 000 N
5 376 000 N
5 375 000 N
H.E.C. RESERVE BOUNDARY
PD 85 AP 1
PD 85 AP 2
LINE
POWER
8 100 E
8 500 E
8 900 E
9 300 E
LEGEND
H.E.C. Power Pole Points
H.E.C. Survey Points
Grid Points
Tieline Survey Points
Bedrock Soil Samples (Jacro auger / whacker drill)
Stream Sediment Samples
Rock Chip Samples
Rock Grab Samples
Drill Hole
Quarry
230113
5 cm
85-2335
CRA EXPLORATION PTY. LIMITED
ROCKY CAPE E.L. 1/77
ALPINE ANOMALY
BEDROCK SOIL GEOCHEMISTRY
IRON %
008
REF. SK 55-5
SCALE 1:5000
DRAWN R.T.
AUTHOR J.W.
REPORT No. 13135
DATE 20 - 3 - 1985
PLAN No. TASh 2541


341 000 E
342 000 E
11 000 N
10 000 N
5 378 000 N
5 377 000 N
5 376 000 N
5 375 000 N
8 300 E
8 700 E
9 100 E
9 500 E
8 100 E
8 500 E
8 900 E
9 300 E
H.E.C. RESERVE BOUNDARY
PD 85 AP 1
PD 85 AP 2
POWER LINE
HA 3720
HA 3802
RK 3063
RK 3065
RK 3067
RK 3088
RK 3089
PP 187
PP 193
PP 194
PP 196
PP 198
PP 203
PP 204
PP 207
PP 213
PP 214
PP 217
CS 1
CS 2
CS 3
CS 5
CS 6
CS 7
CS 8
CS 10
CS 11
CS 12
CS 13
CS 14
CS 15
CS 16
CS 18
CS 64
CS 64A
CS 64B
PG 2046
PG 2049
PG 2051
PG 2052
PG 2053
PG 2054
PG 2055
PG 2056
PG 2057
PG 2059
PG 2062
LEGEND
PP 193 H.E.C. Power Pole Points
RK 3088 H.E.C. Survey Points
Grid Points
Tieline Survey Points
Bedrock Soil Samples (Jacro auger / whacker drill)
Stream Sediment Samples
Rock Chip Samples
Rock Grab Samples
PD 85 AP 2 Drill Hole
Quarry
230114
5 cm
85-2335
CRA EXPLORATION PTY. LIMITED
ROCKY CAPE E.L. 1/77
ALPINE ANOMALY
BEDROCK SOIL GEOCHEMISTRY
ARSENIC ppm. 009
REF. SK 55-5
SCALE 1:5000
DRAWN R.T.
AUTHOR J. W.
REPORT No. 13135
DATE 20- 3 - 1985
PLAN No. TASh 2542


341 000 E
342 000 E
8 300 E
8 700 E
9 100 E
9 500 E
11 000 N
5 378 000 N
10 000 N
5 377 000 N
5 376 000 N
5 375 000 N
H.E.C. RESERVE BOUNDARY
PD 85 AP 1
PD 85 AP 2
8 100 E
8 500 E
8 900 E
9 300 E
LINE
POWER
LEGEND
H.E.C. Power Pole Points
H.E.C. Survey Points
Grid Points
Tieline Survey Points
Bedrock Soil Samples (Jacro auger / whacker drill)
Stream Sediment Samples
Rock Chip Samples
Rock Grab Samples
Drill Hole
Quarry
230115
5 cm
85-2335
CRA EXPLORATION PTY. LIMITED
ROCKY CAPE E.L. 1/77
ALPINE ANOMALY
BEDROCK SOIL GEOCHEMISTRY
MANGANESE ppm.
REF. SK 55-5
SCALE 1:5000
DRAWN D.M.L. R.T.
AUTHOR J.W.
REPORT No. 13135
DATE 19 - 3 - 1985
PLAN No. TASh 2543



LEGEND

- PP 193 — H.E.C. Power Pole Points
- RK 3088 — H.E.C. Survey Points
- Soil Samples
- Grid Points
- Tieline Survey Points

BASE VALUE 62 000nT

CONTOUR INTERVAL AS MARKED.

230116

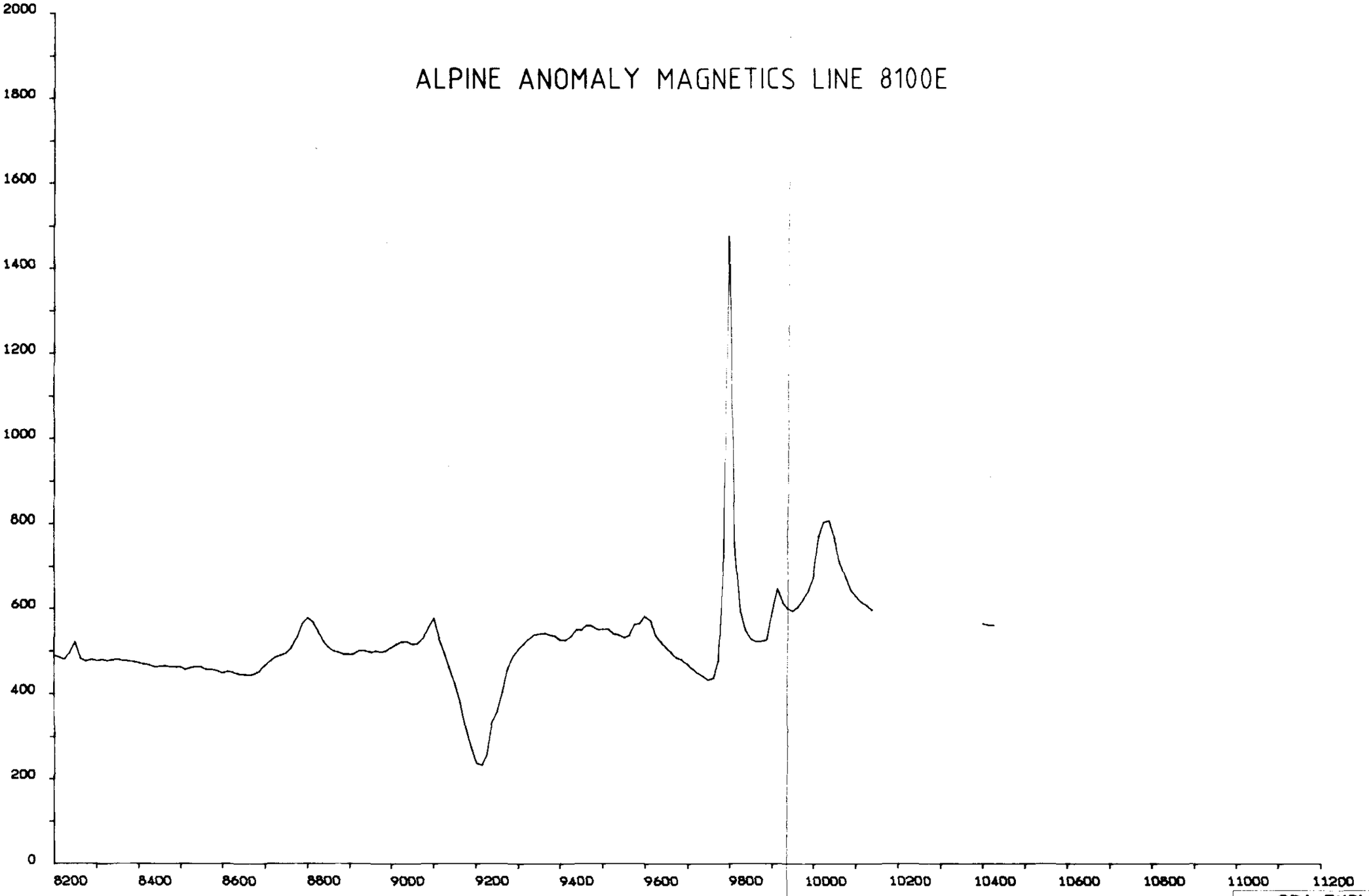
5 cm

CRA EXPLORATION PTY. LIMITED

ROCKY CAPE EL1/77
ALPINE PROSPECT 011
GROUND MAGNETIC CONTOURS

REF. SK 55-5	
SCALE 1:5000	DRAWN D.M.L. / M.D.
AUTHOR T.v.S.	REPORT No. 13135
DATE	PLAN No. TASh 2365

ALPINE ANOMALY MAGNETICS LINE 8100E



230117

5 cm

CRA EXPLORATION PTY. LIMITED

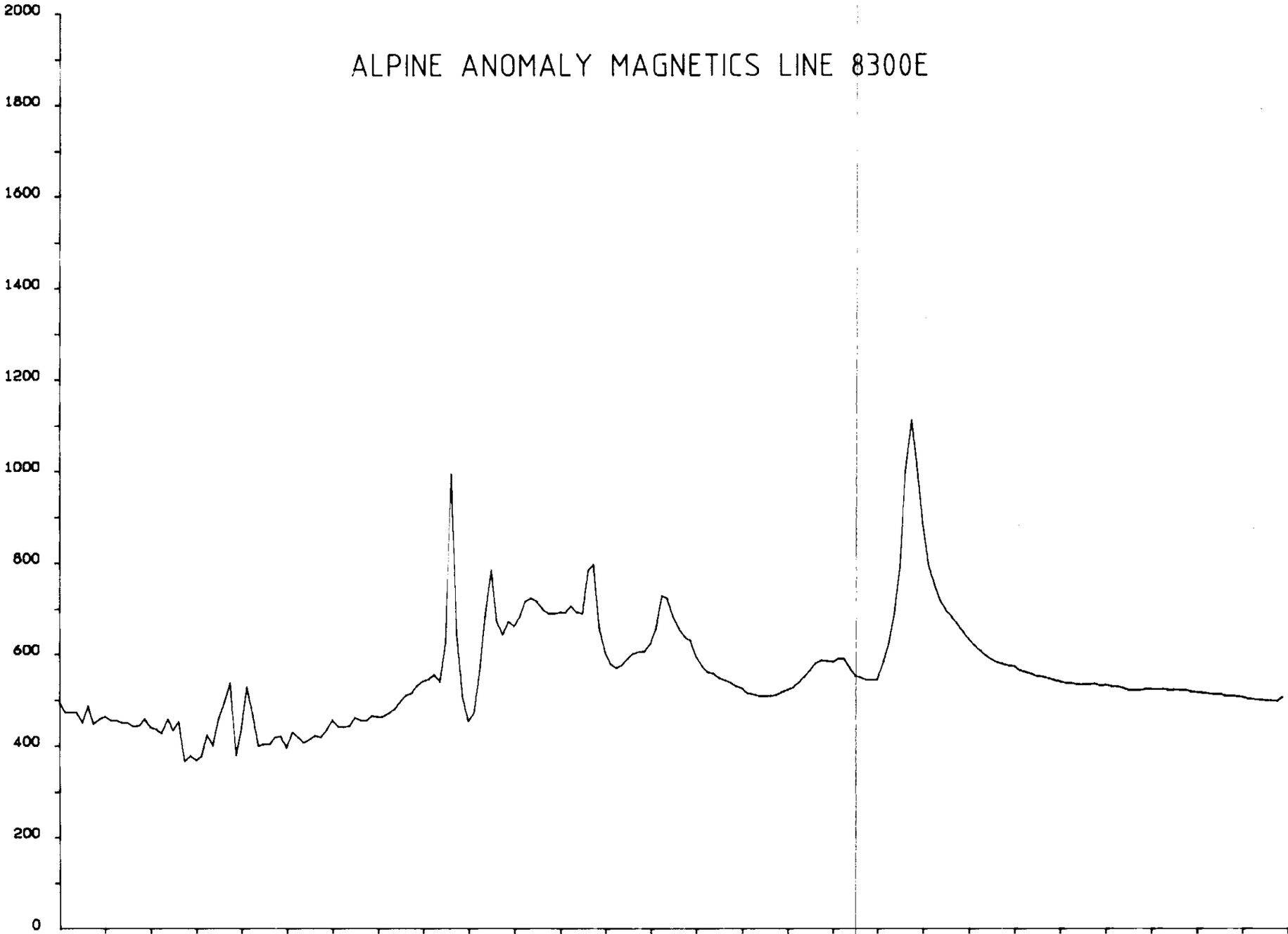
ROCKY CAPE EL1/77
ALPINE ANOMALY
GROUND MAGNETICS
LINE 8100E

012

85-2335

REF.	SK55-5		
SCALE	1:5000	DRAWN	T.v.S.
AUTHOR	T.v.S.	REPORT No.	13135
DATE	14-12-1984	PLAN No.	TASh 2396

ALPINE ANOMALY MAGNETICS LINE 8300E



230118

CRA EXPLORATION PTY. LIMITED

ROCKY CAPE EL1/77
ALPINE ANOMALY
GROUND MAGNETICS
LINE 8300E

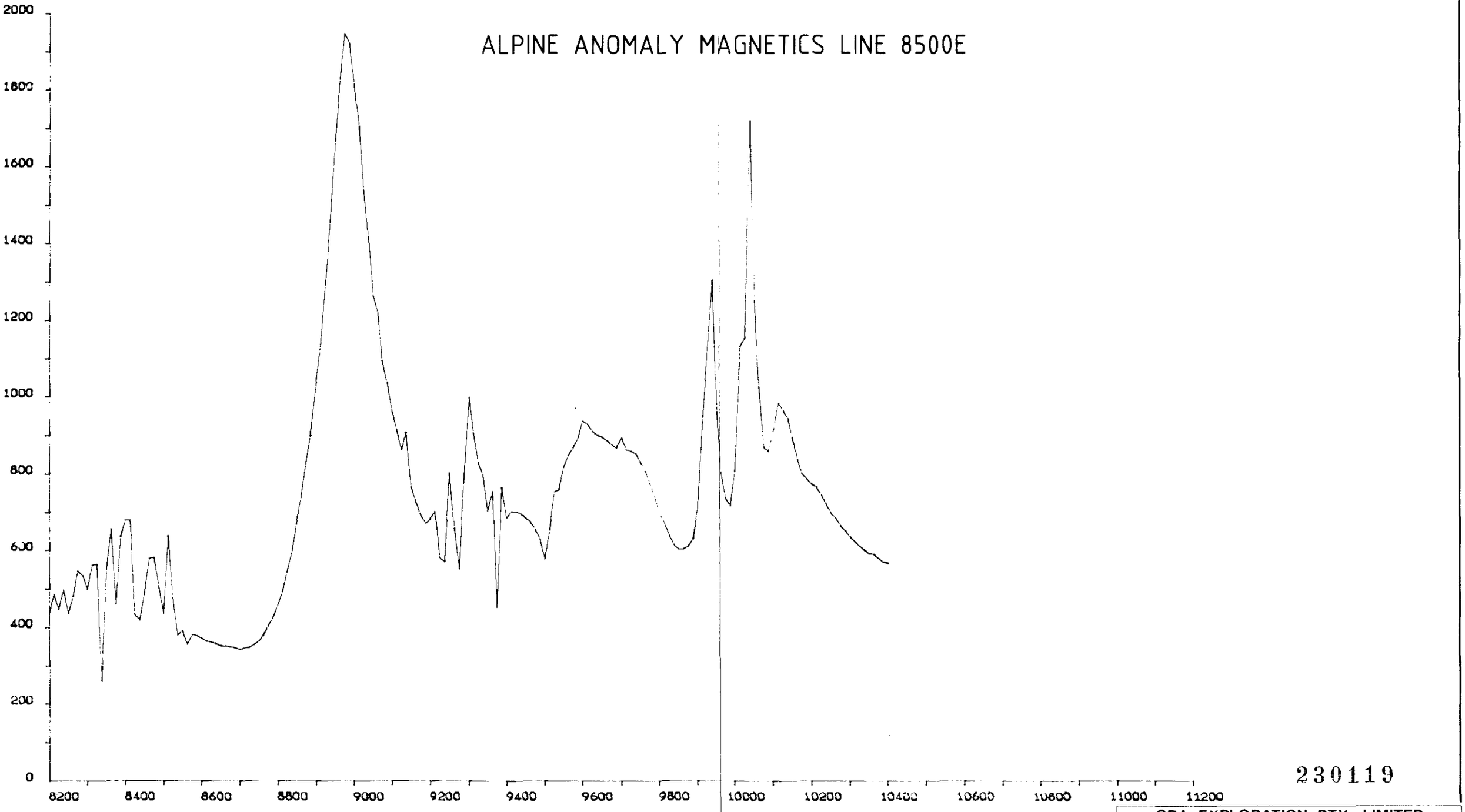
013

85-0228

REF.	SK55-5		
SCALE	1:5000	DRAWN	T.v.S.
AUTHOR	T.v.S.	REPORT No.	13135
DATE	14-12-1984	PLAN No.	TASh 2397

5 cm

ALPINE ANOMALY MAGNETICS LINE 8500E



230119

5 cm

CRA EXPLORATION PTY. LIMITED

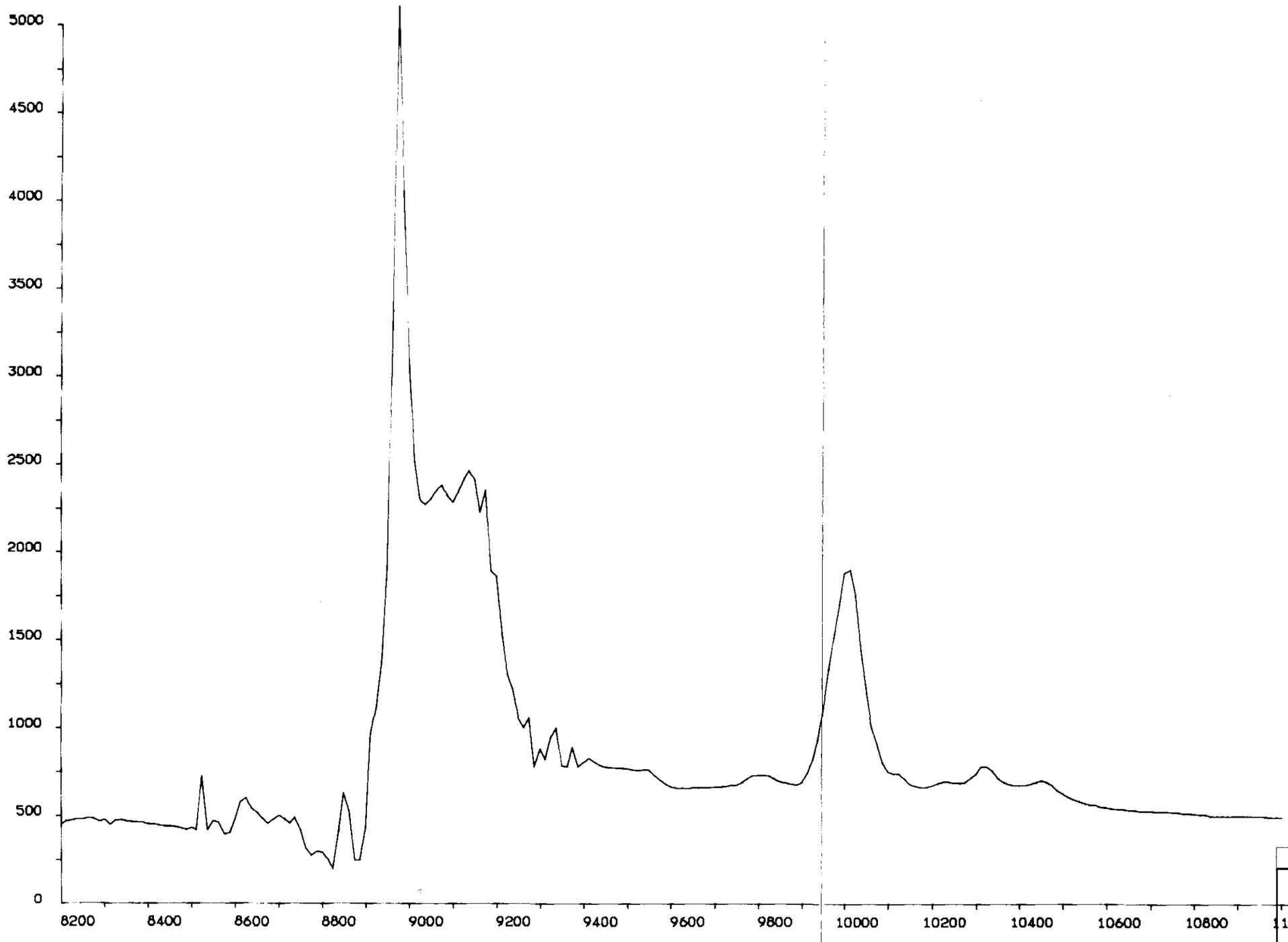
ROCKY CAPE EL1/77
ALPINE ANOMALY
GROUND MAGNETICS
LINE 8500E

014

85-2335

REF.	SK55-5		
SCALE	1:5000	DRAWN	T.v.S.
AUTHOR	T.v.S.	REPORT No.	13135
DATE	14-12-1984	PLAN No.	TASh 2398

ALPINE ANOMALY MAGNETICS LINE 8700E



230120

5 cm

CRA EXPLORATION PTY. LIMITED

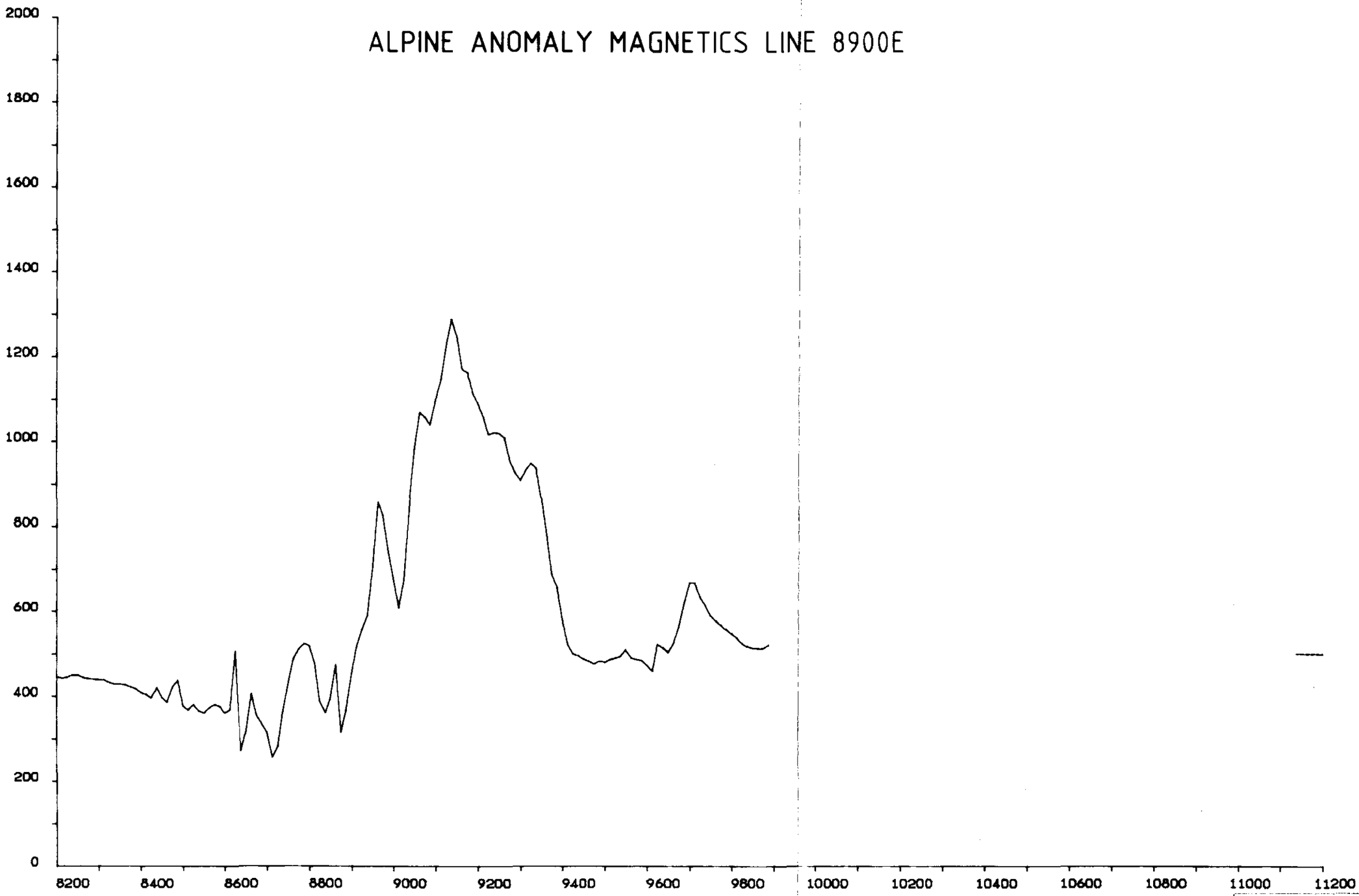
ROCKY CAPE EL1/77
ALPINE ANOMALY
GROUND MAGNETICS
LINE 8700E

85-2335

015

REF.	SK55-5		
SCALE	1:5000	DRAWN	T.v.S.
AUTHOR	T.v.S.	REPORT No.	13135
DATE	14-12-1984	PLAN No.	TASh 2399

ALPINE ANOMALY MAGNETICS LINE 8900E



230121

5 cm

CRA EXPLORATION PTY. LIMITED

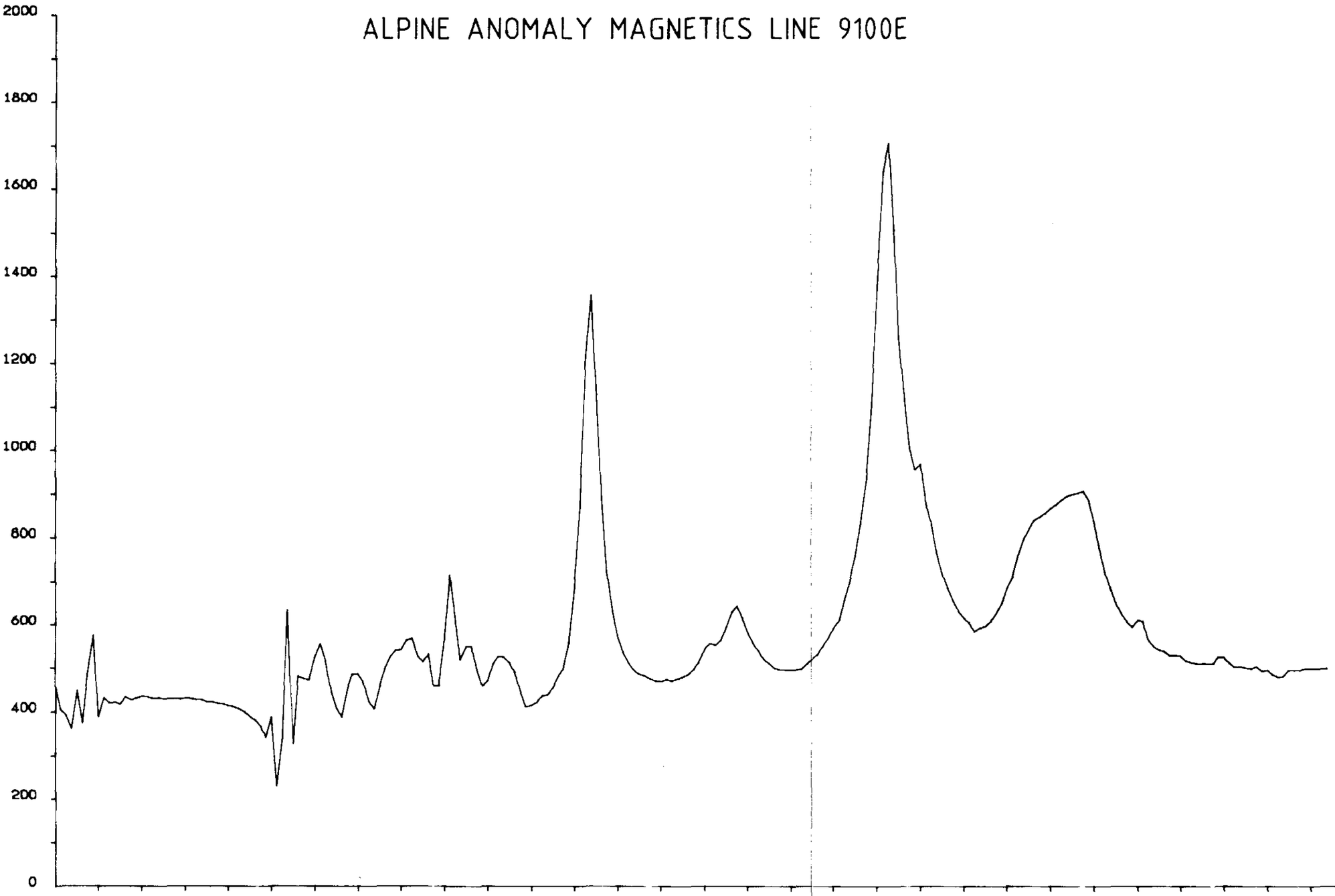
ROCKY CAPE EL1/77
ALPINE ANOMALY
GROUND MAGNETICS
LINE 8900E

85-2335

016

REF.	SK55-5		
SCALE	1:5000	DRAWN	T.v.S.
AUTHOR	T.v.S.	REPORT No.	13135
DATE	14-12-1984	PLAN No.	TASh 2400

ALPINE ANOMALY MAGNETICS LINE 9100E



230122

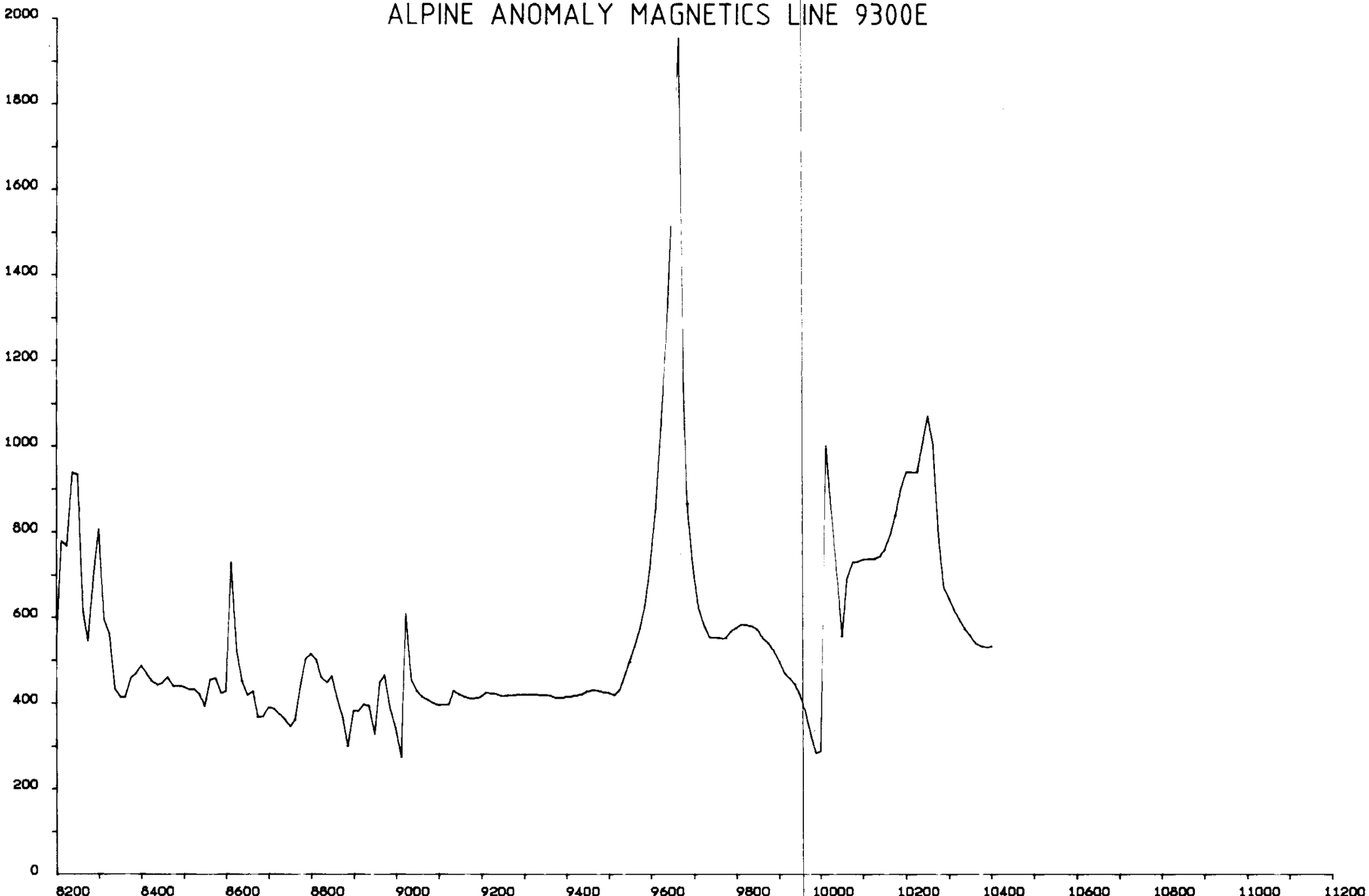
5 cm

CRA EXPLORATION PTY. LIMITED

ROCKY CAPE EL1/77
ALPINE ANOMALY
GROUND MAGNETICS 017
LINE 9100E
85-2335

REF.	SK55-5		
SCALE	1:5000	DRAWN	T.v.S.
AUTHOR	T.v.S.	REPORT No.	13135
DATE	14-12-1984	PLAN No.	TASn 2401

ALPINE ANOMALY MAGNETICS LINE 9300E



230123

5 cm

CRA EXPLORATION PTY. LIMITED

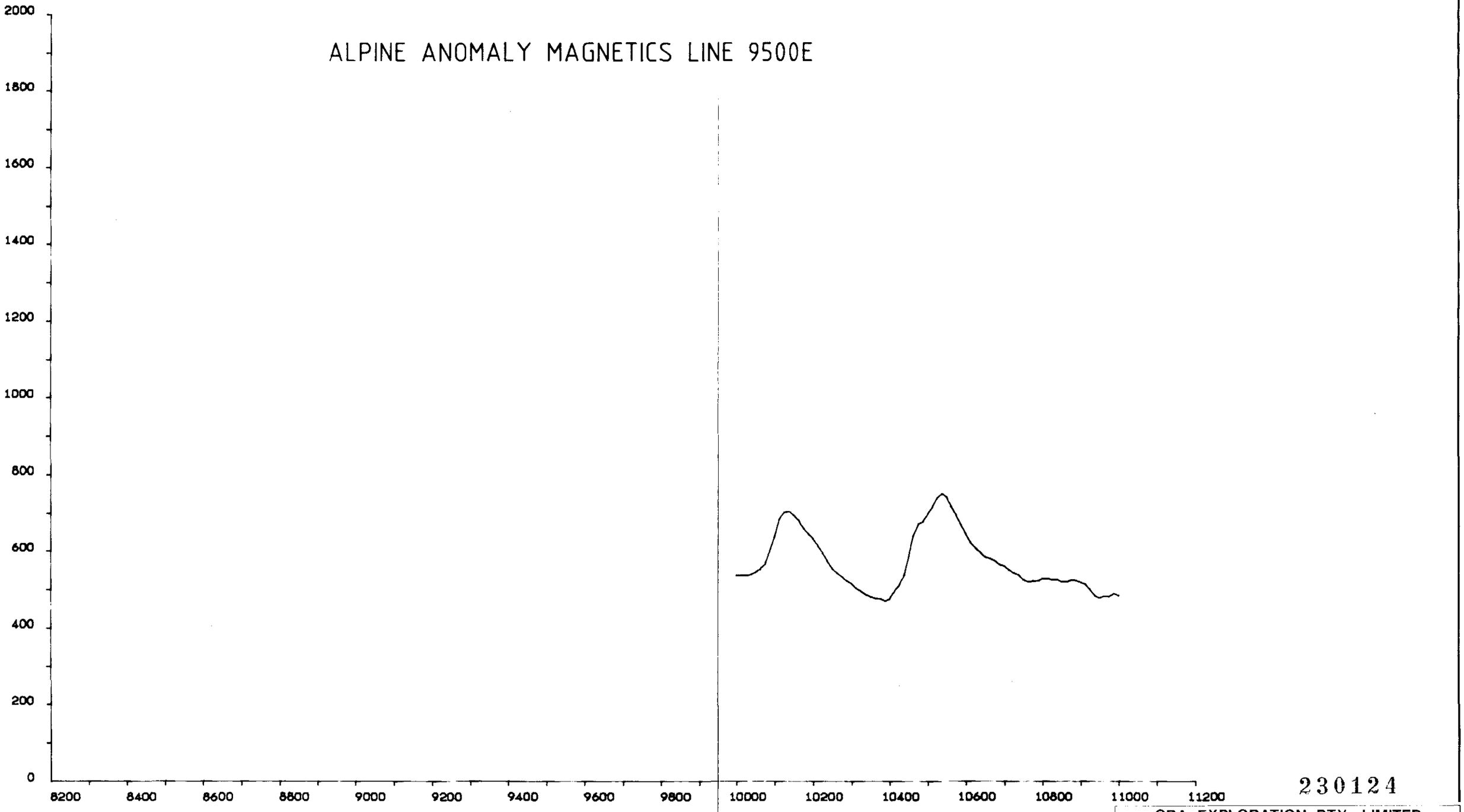
ROCKY CAPE EL1/77
ALPINE ANOMALY
GROUND MAGNETICS
LINE 9300E

018

85-3300

REF.	SK55-5		
SCALE	1:5000	DRAWN	T.v.S.
AUTHOR	T.v.S.	REPORT No.	13135
DATE	14-12-1984	PLAN No. TASh	2402

ALPINE ANOMALY MAGNETICS LINE 9500E



230124

5 cm

CRA EXPLORATION PTY. LIMITED

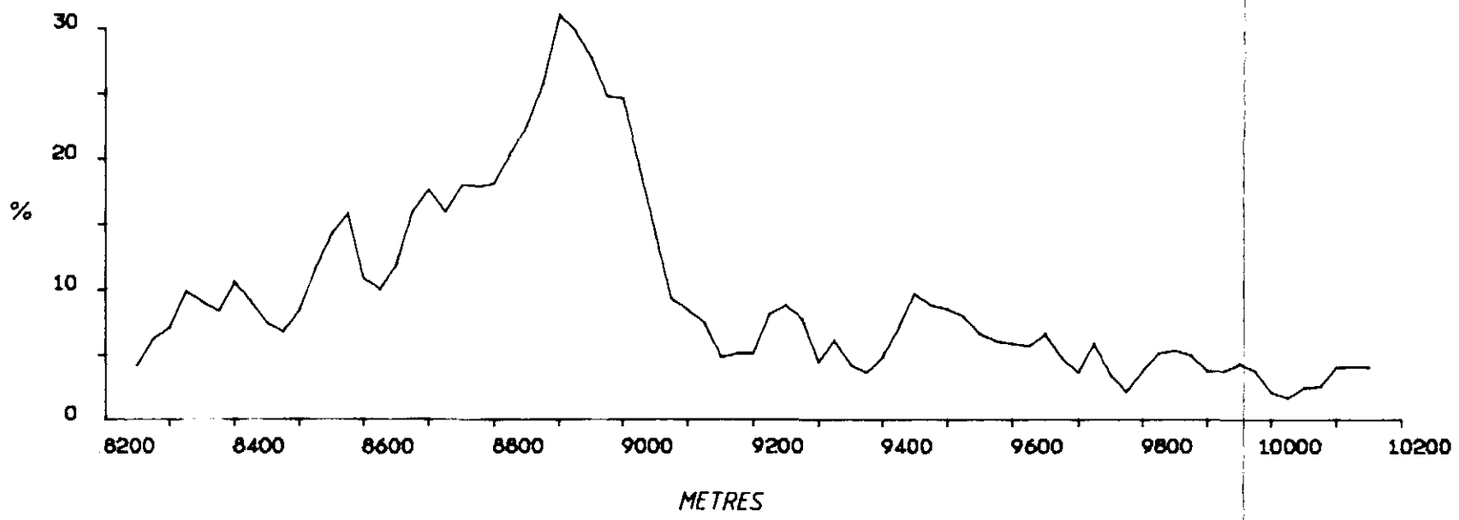
ROCKY CAPE EL1/77
ALPINE ANOMALY
GROUND MAGNETICS
LINE 9500E

019

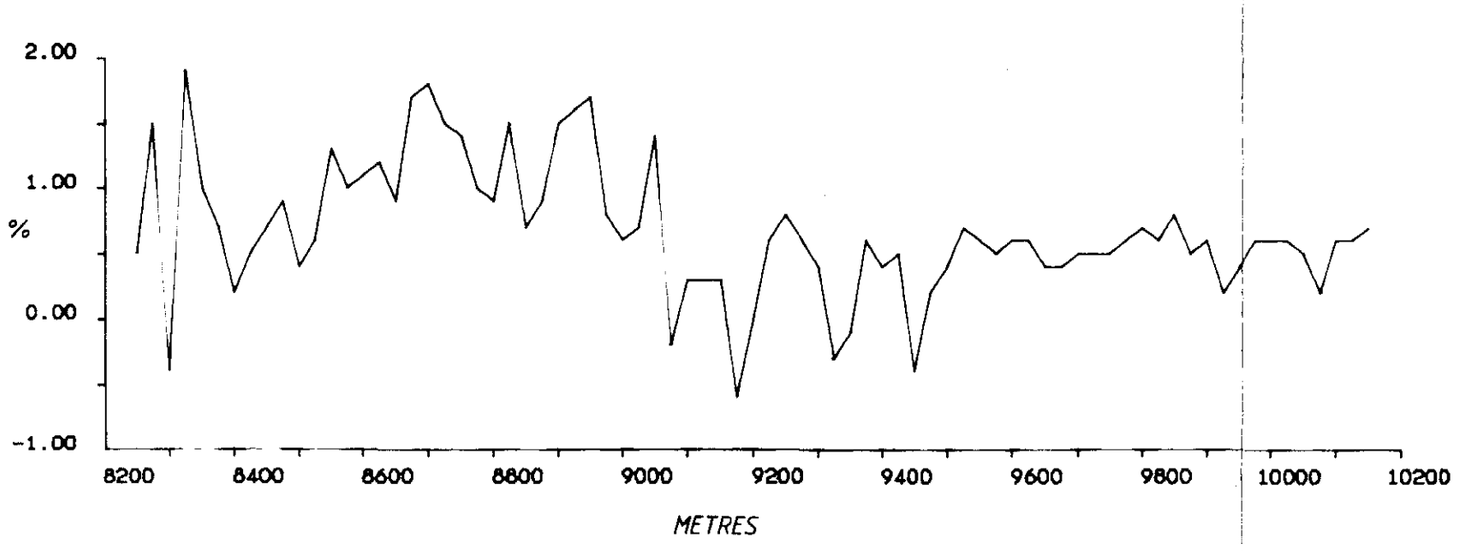
85-3335

REF.	SK55-5		
SCALE	1:5000	DRAWN	T.v.S.
AUTHOR	T.v.S.	REPORT No.	13135
DATE	14-12-1984	PLAN No.	TASh 2403

ALPINE: LINE 8100E EM



3037 Hz / 112 Hz



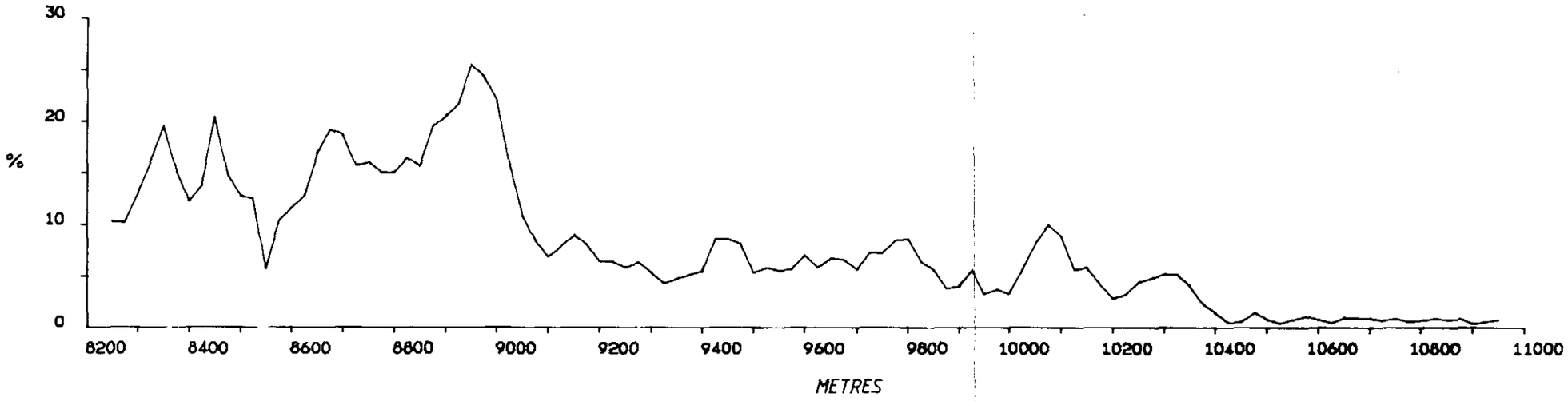
337 Hz / 112 Hz

5 cm

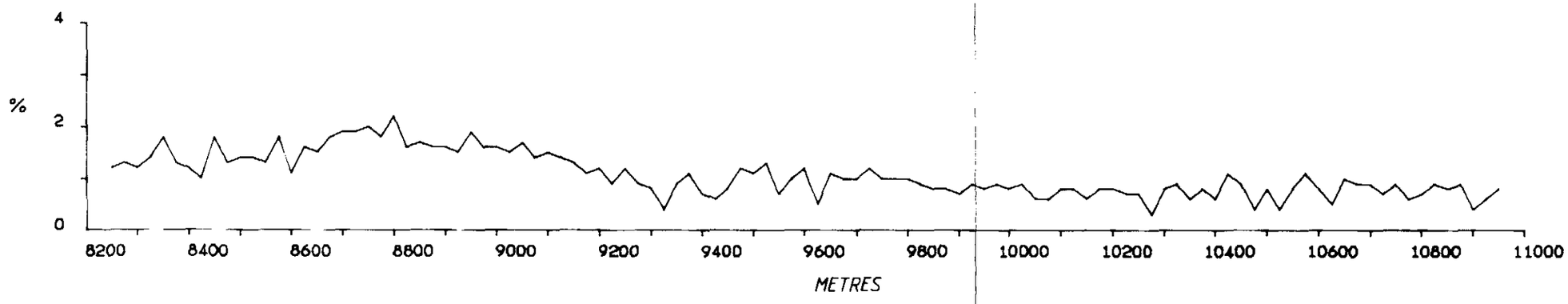
230125

CRA EXPLORATION PTY. LIMITED			
ROCKY CAPE E.L. 1/77 ALPINE ANOMALY LINE 8100 mE GENIE PROFILES			020
85-2305			
REF.	SK55 - 3		
SCALE	1 : 10 000	DRAWN	T.vS.
AUTHOR	T.vS.	REPORT No.	13135
DATE	23 - 11 - 1984	PLAN No. TASh	2304

ALPINE: LINE 8300E EM



3037 Hz / 112 Hz



337 Hz / 112 Hz

230126

5 cm

CRA EXPLORATION PTY. LIMITED

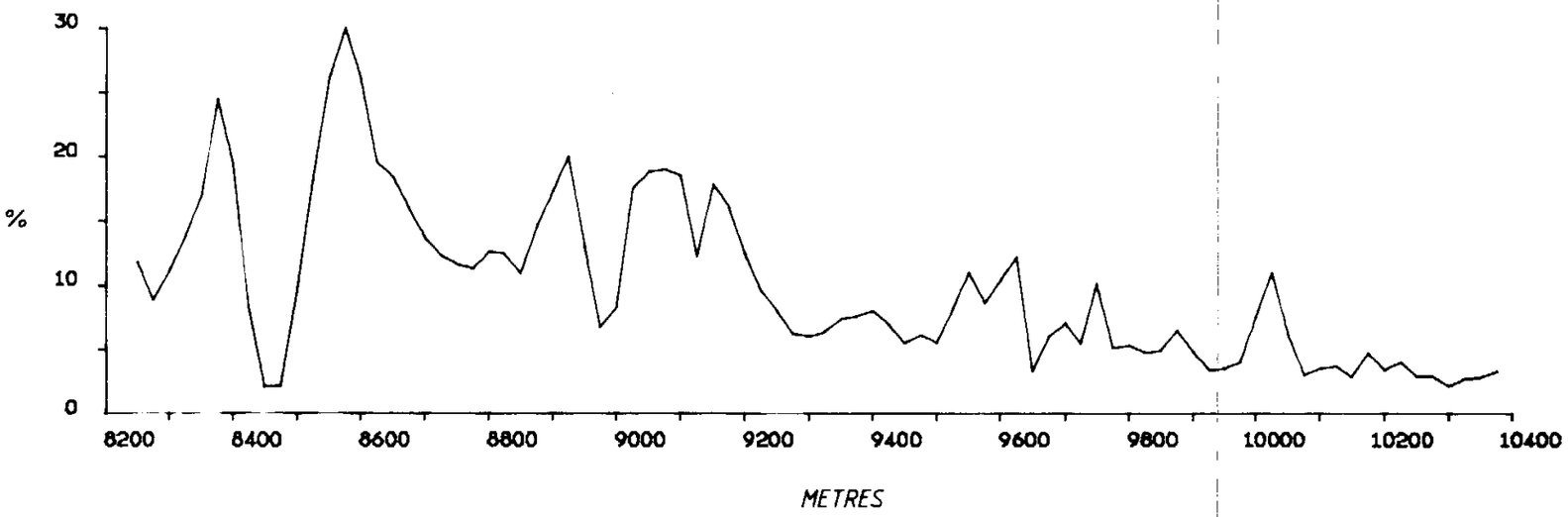
ROCKY CAPE E.L. 1/77
ALPINE ANOMALY
LINE 8300 mE
GENIE PROFILES

021

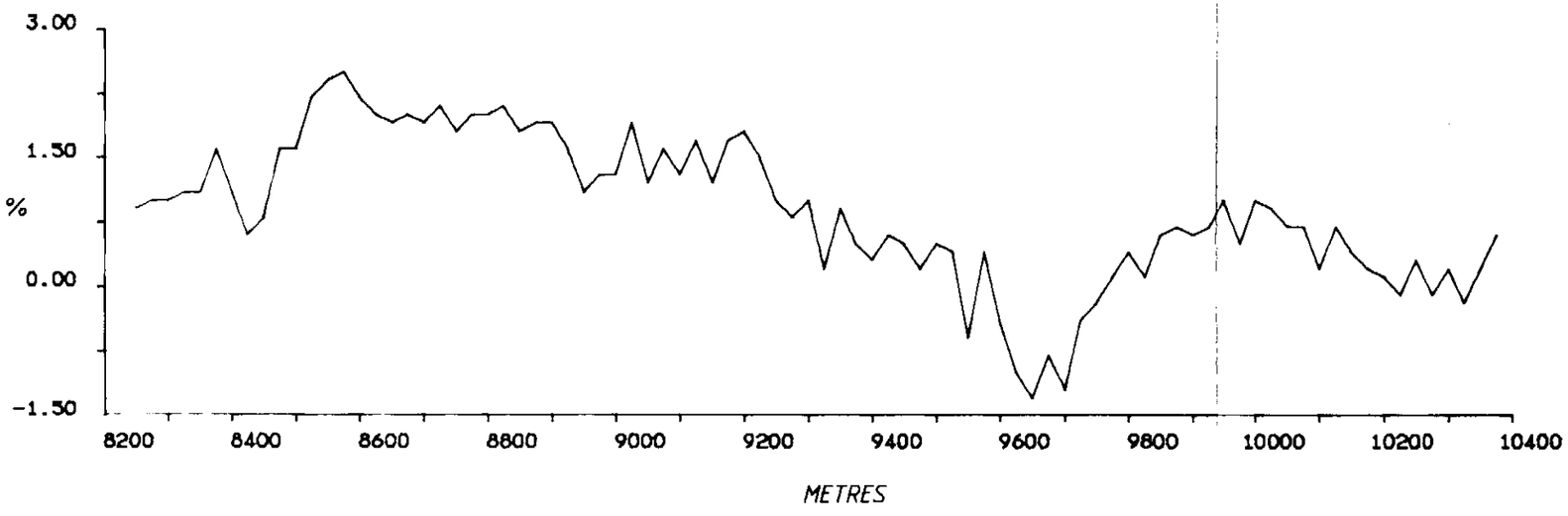
85-2335

REF.	SK55 - 3		
SCALE	1 : 10 000	DRAWN	T.vS.
AUTHOR	T.vS.	REPORT No.	13135
DATE	23 - 11 - 1984	PLAN No. TASh	2305

ALPINE: LINE 8500E EM



3037 Hz / 112 Hz



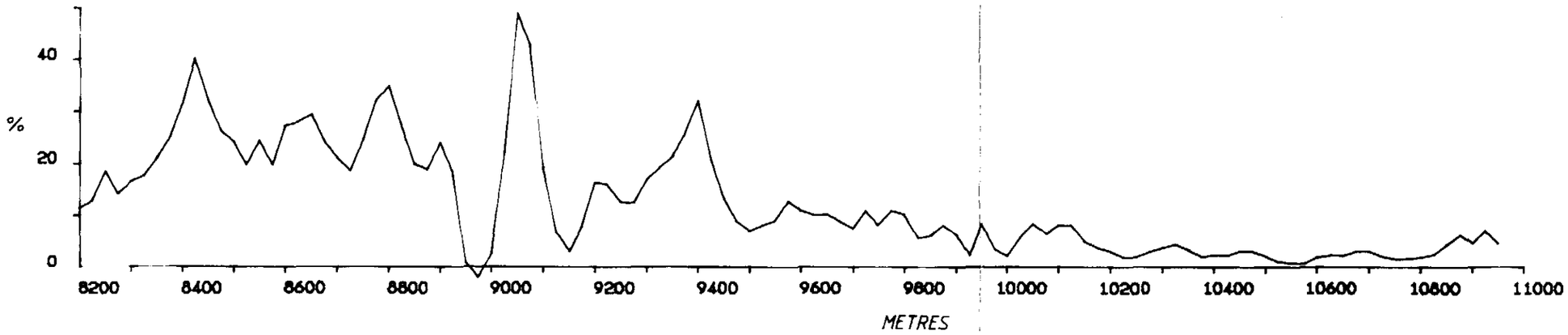
337 Hz / 112 Hz

230127

CRA EXPLORATION PTY. LIMITED			
ROCKY CAPE E.L. 1/77 ALPINE ANOMALY LINE 8500 mE GENIE PROFILES			022
85-2335			
REF.	SK55 - 3		
SCALE	1 : 10 000	DRAWN	T.v.S.
AUTHOR	T.v.S.	REPORT No.	13135
DATE	23 - 11 - 1984	PLAN No. TASh	2306

5 cm

ALPINE: LINE 8700E EM



3037 Hz / 112 Hz

337 Hz / 112 Hz

230128

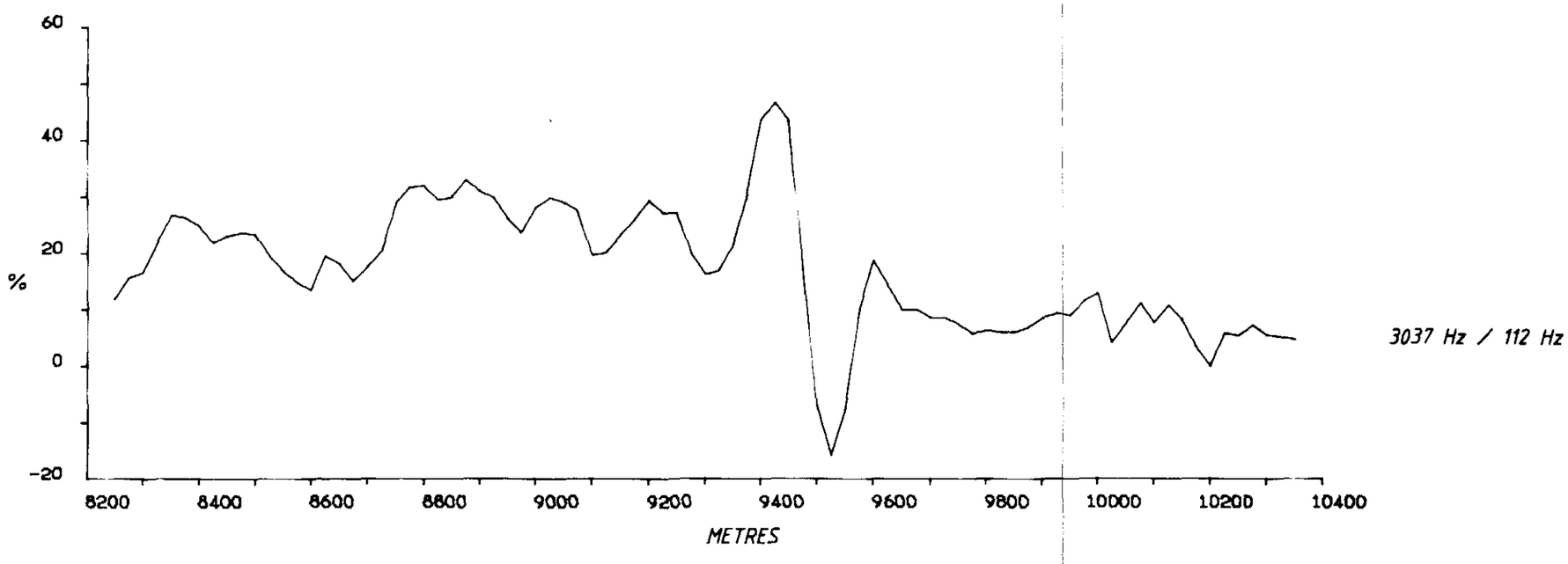
CRA EXPLORATION PTY. LIMITED

ROCKY CAPE E.L. 1/77
ALPINE ANOMALY
LINE 8700 mE 023
GENIE PROFILES
83-2335

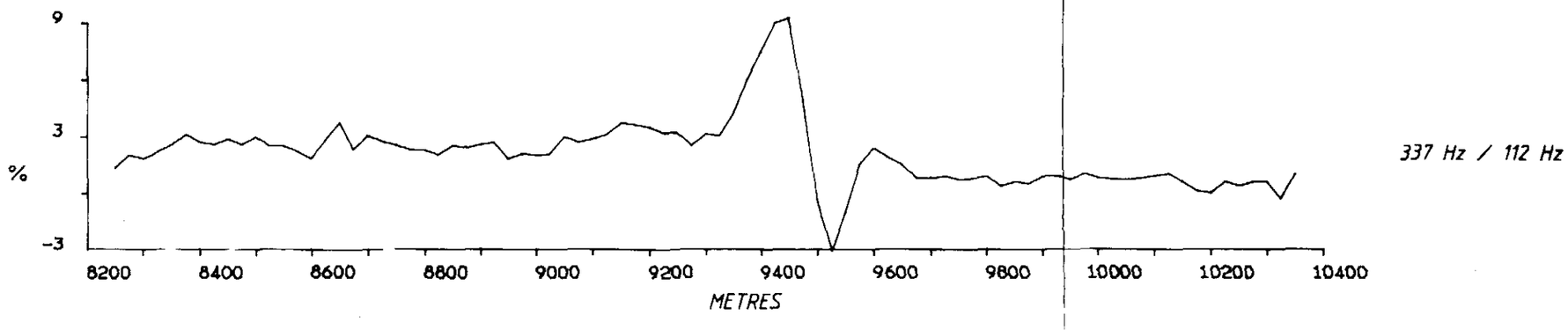
REF.	SK55 - 3		
SCALE	1 : 10 000	DRAWN	T.vS.
AUTHOR	T.vS.	REPORT No.	13135
DATE	23 - 11 - 1984	PLAN No. TASh	2307

5 cm

ALPINE: LINE 8900E EM



3037 Hz / 112 Hz



337 Hz / 112 Hz

5 cm

230129

CRA EXPLORATION PTY. LIMITED

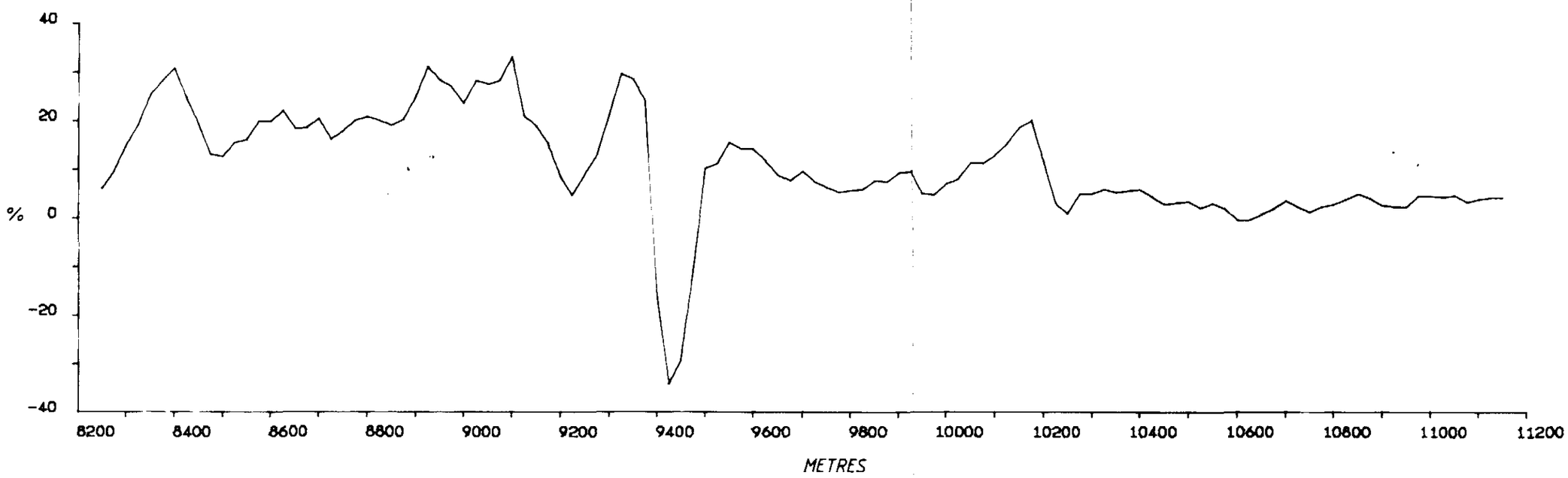
ROCKY CAPE E.L. 1/77
ALPINE ANOMALY
LINE 8900 mE
GENIE PROFILES

024

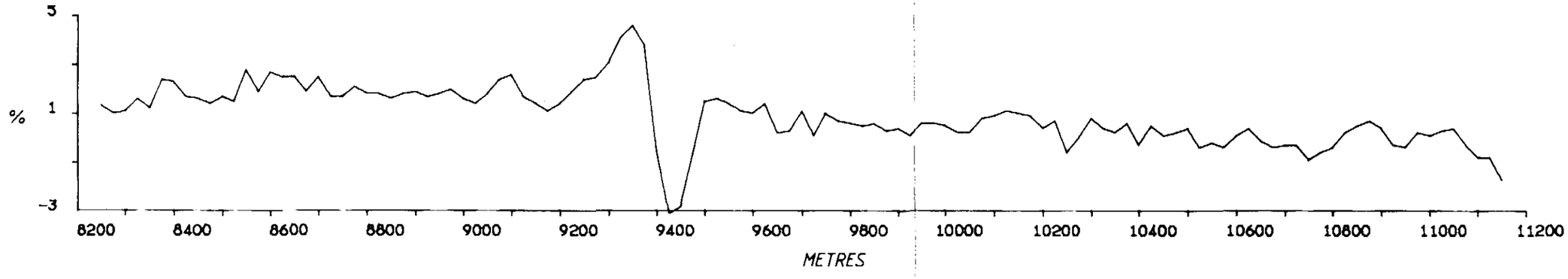
85 - 2333

REF.	SK55 - 3		
SCALE	1 : 10 000	DRAWN	T.vS.
AUTHOR	T.vS.	REPORT No.	13135
DATE	23 - 11 - 1984	PLAN No. TASh	2308

ALPINE: LINE 9100E EM



3037 Hz / 112 Hz



337 Hz / 112 Hz

230130

CRA EXPLORATION PTY. LIMITED

ROCKY CAPE E.L. 1/77
ALPINE ANOMALY
LINE 9100 mE
GENIE PROFILES

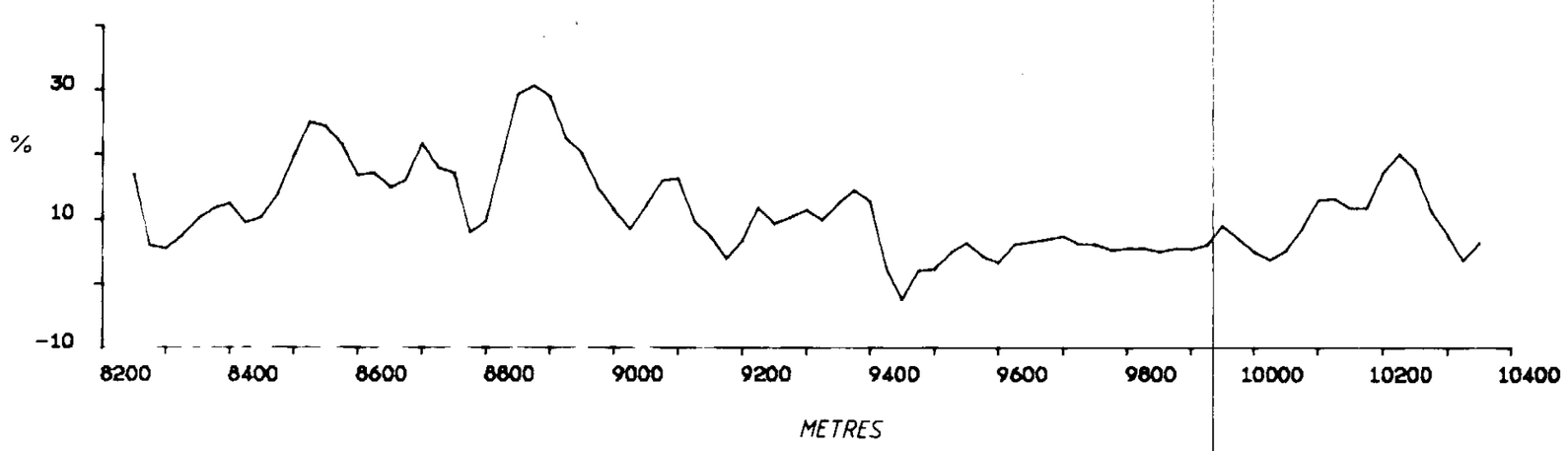
85-2335

025

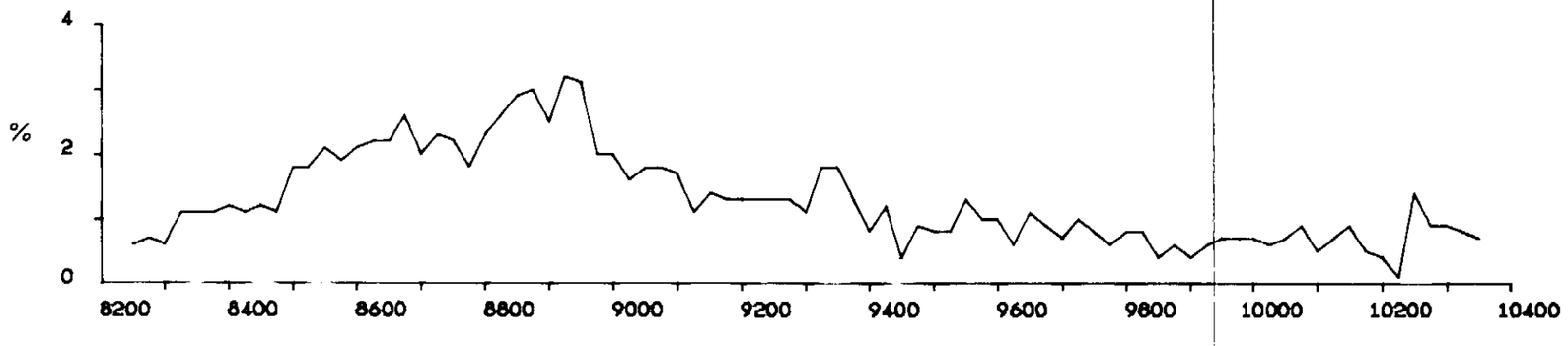
5 cm

REF.	SK55 - 3		
SCALE	1 : 10 000	DRAWN	T.vS.
AUTHOR	T.vS.	REPORT No.	13135
DATE	23 - 11 - 1984	PLAN No. TASh	2309

ALPINE: LINE 9300E



3037 Hz / 112 Hz



337 Hz / 112 Hz

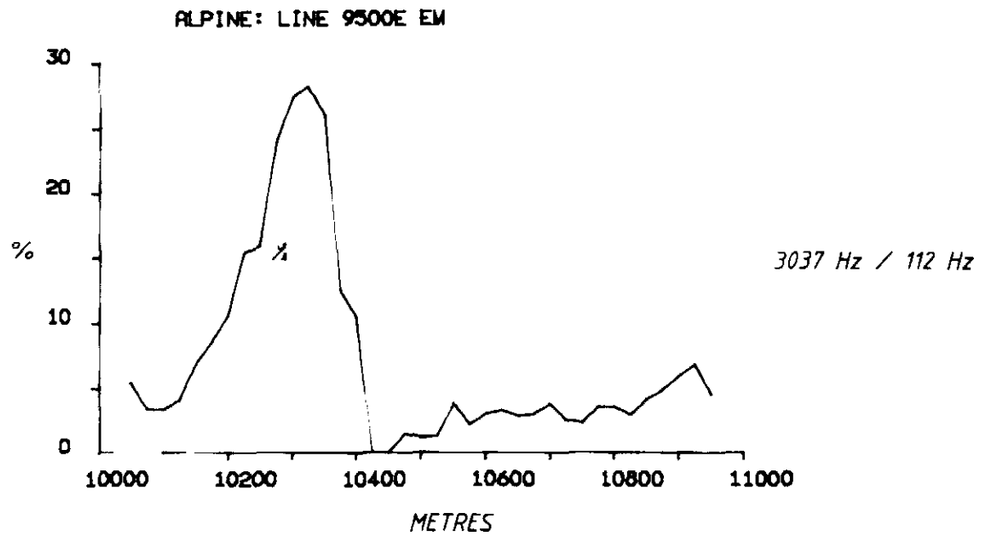
230131

5 cm

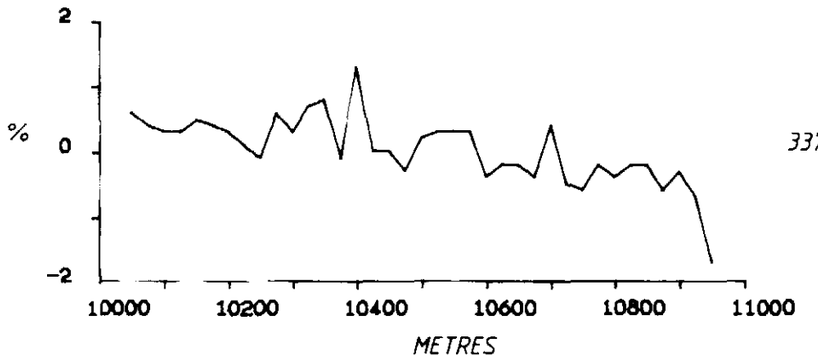
CRA EXPLORATION PTY. LIMITED

ROCKY CAPE E.L. 1/77
ALPINE ANOMALY
LINE 9300 mE 026
GENIE PROFILES
85-2335

REF.	SK55 - 3		
SCALE	1 : 10 000	DRAWN	T.vS.
AUTHOR	T.vS.	REPORT No.	13135
DATE	23 - 11 - 1984	PLAN No. TASh	2310



3037 Hz / 112 Hz



337 Hz / 112 Hz

5 cm

230132

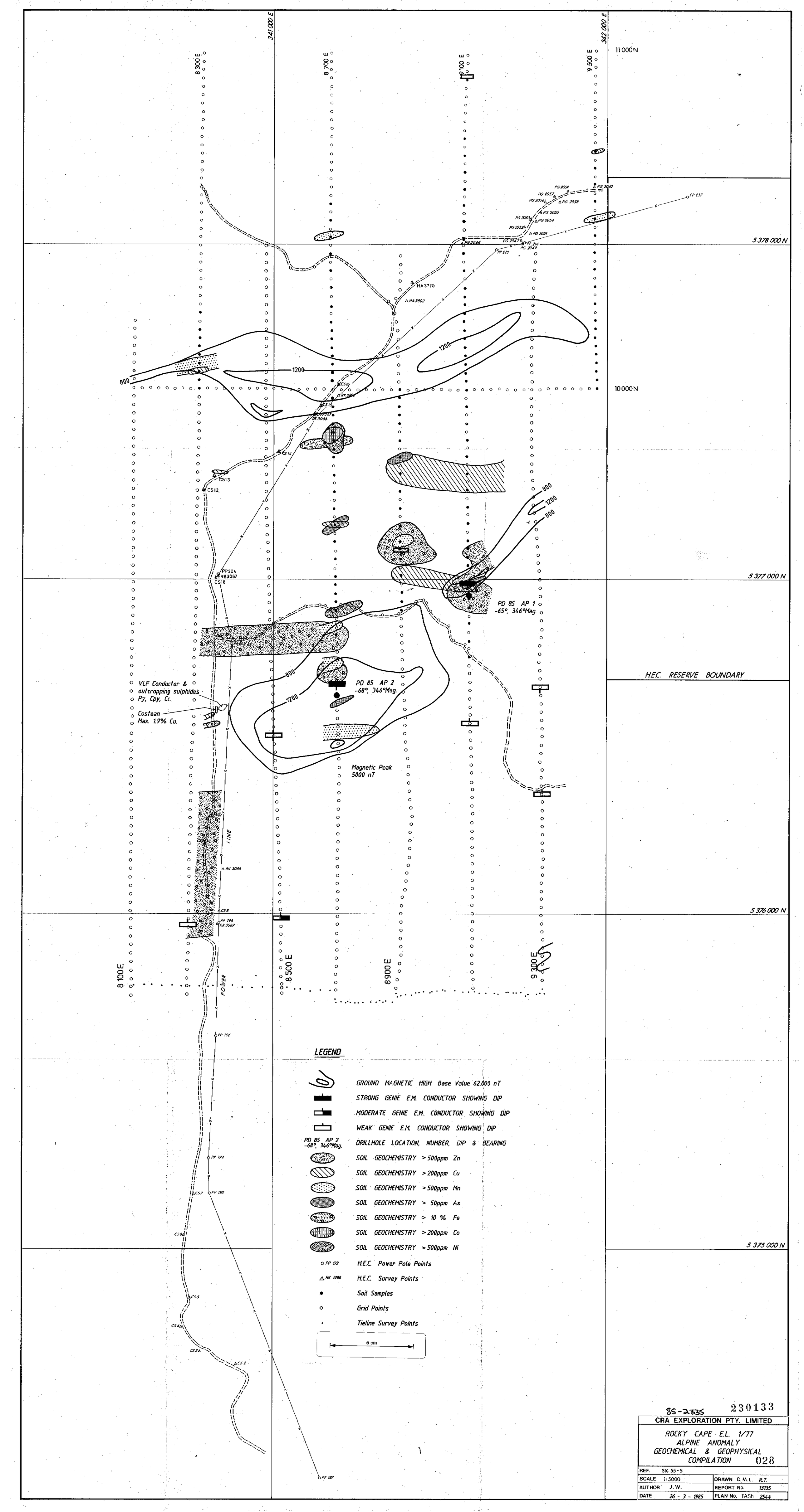
CRA EXPLORATION PTY. LIMITED

ROCKY CAPE E.L. 1/77
ALPINE ANOMALY
LINE 9500 mE
GENIE PROFILES

027

85-2335

REF.	SK55 - 3		
SCALE	1 : 10.000	DRAWN	T.v.S.
AUTHOR	T.v.S.	REPORT No.	13135
DATE	23 - 11 - 1984	PLAN No. TASh	2311



85-2335 230133

CRA EXPLORATION PTY. LIMITED

ROCKY CAPE E.L. 1/77
ALPINE ANOMALY
GEOCHEMICAL & GEOPHYSICAL
COMPILATION 028

REF.	SK 55-5		
SCALE	1:5000	DRAWN	D.M.L. R.T.
AUTHOR	J.W.	REPORT No.	13135
DATE	26 - 3 - 1985	PLAN No.	TASh 2544