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E.L. 8/88 - LORINNA

AND

E.L. 36/88 - ROUND MOUNTAIN

ANNUAL REPORT 1989

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SUMMARY

E.L.'s 8/88 and 36/88 cover an area of 68 sq. kms. in Northern Tasmania. The area has been extensively examined in recent times by modern explorers whose priorities were the location of base metal or tin mineralisation. This work resulted in only one major resource being evaluated. It being the Moina fluorite deposit of 26Mt @ 18%CaF, 0.1%Sn & 0.1%W at the old Shepherd and Murphy Mine site.

RGCE is exploring for gold and Renison-style tin mineralisation associated with the intrusion of the Devonian Dolcoath Granite. The rocks hosting the mineralisation are the Ordovician Moina Sandstone and Gordon Limestone.

Landowners whose properties occur within the boundaries of the licences were located and presented with information pertaining to the operation of an E.L. by an Exploration Company and what rights they possess under the current Act.

An aeromagnetic survey covering all of our Northern tenements was planned and mobilised. However, due to severe magnetic storm disturbances and deteriorating weather conditions it was cancelled.

A comprehensive review of existing regional magnetic and gravity data was completed by Dr. D. Leaman of Hobart. The aim was to identify structures and lithologies that may act as a loci for mineralisation when they interact. Also, the examination of geophysical responses over known mineralisation has led to similar responses being identified remote from these. Regional mapping and stream sediment sampling by W. Herrmann was reported to RGCE in July, 1989. All of this regional data requires detailed assessment to identify areas requiring ground reconnaissance.

Three grids have been established on which investigations are ongoing. The Round Mountain Grid has been geologically mapped at a scale of 1:5,000, C-horizon soil sampled by auger, covered by ground magnetics and has had a test IP survey completed. Outcrop is scarce and limited primarily to river/creek beds, ridges and road cuttings.

Often thick accumulations of gravel make mapping and soil sampling impossible. The geophysical data is being processed; however, initial indications from the I.P. survey give strong support for the entire grid to be surveyed. The Five Mile Rise Grid has also been geologically mapped at a scale of 1:5,000, C-horizon soil sampled and covered by ground magnetics. It, too, suffers from a scarcity of outcrop. A test I.P. gradient array survey is planned covering the old workings to see if a response is obtainable. On both of these grids sampling of the bedrock by wackering is planned in areas where soil geochemical anomalies have occurred. The Mt. Jacob grid had been established at the time of this report. Detailed mapping is planned at a scale of 1:5,000, with ground magnetics, and possible soil geochemistry and/or other geophysical surveys depending on the results of the mapping.

Expenditure for the year 1988/89 totalled \$364767.

Expenditure planned for 1989/90 is \$270000.

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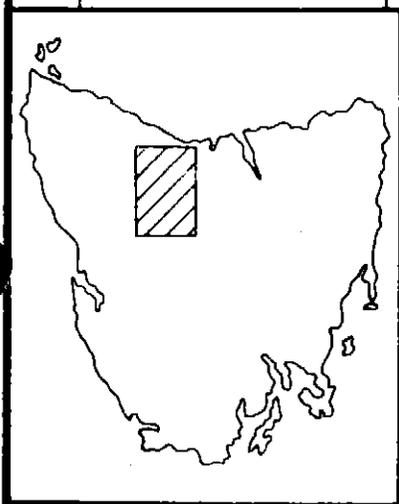
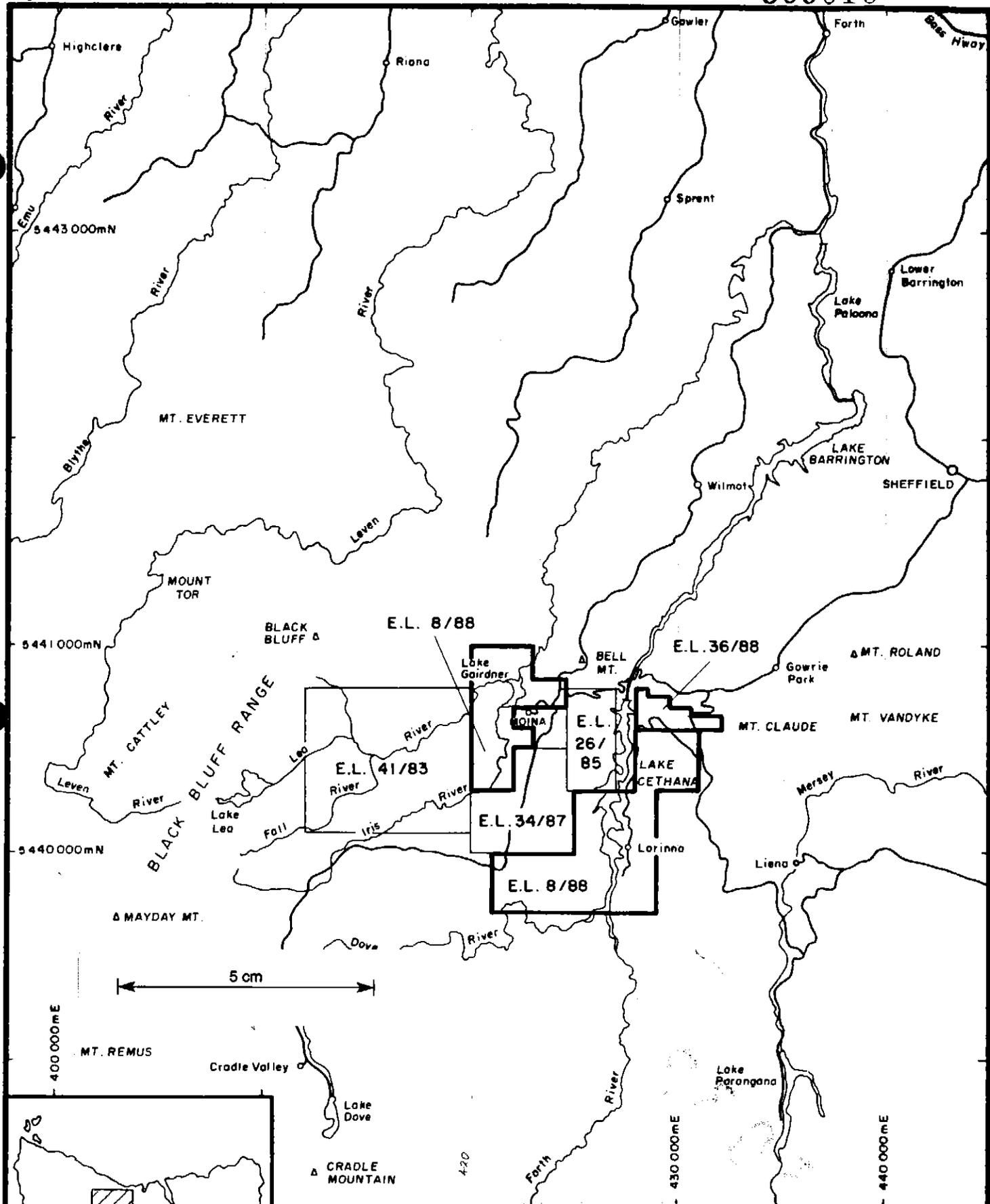
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1. INTRODUCTION

E.L.'s 8/88 and 36/88 cover areas of 63 sq. kms. and 5 sq. kms. respectively in the Moina/Lorinna region, south of Devonport, in Northern Tasmania (Figure 1). Two separate blocks exist, being bisected by the Cradle Mountain Road. Lake Gairdner falls within the northwest corner and Lake Cethana parallels closely the eastern boundary. The Dove River broadly correlates with the limit of the licences to the south and the Iris, Lea and Wilmot Rivers all touch upon the block in the northwest. The northern edge of E.L. 36/88 encroaches upon the proposed Mount Roland Protected Area.

The vegetation is variable, showing climatic and altitude control. In the more protected, wetter valley bottoms thick myrtle-sassafrass-manfern rainforest gives way to minor zones of horizontal scrub along the stream courses. Elsewhere thick eucalypt and wattle forest with a dense undergrowth characterised by tea-tree and Bauera dominates the lower slopes and extends onto the upper slopes. The higher, flatter areas are vegetated by open eucalypt forest with generally relatively open undergrowth, apart from occasional stands of dense tea-tree. A portion of the land is relatively open for grazing, and some is dominated by regrowth scrub.

Prior to 1974, the area was explored by Mt. Lyell Mining & Railway Co. Ltd., as part of E.L. 8/65-Moina. Their work included an aeromagnetic survey and regional stream geochemistry; looking for base metal or tin mineralisation. Anomalies identified were followed-up by more detailed ground investigations on grids. The main areas of interest were Olivers Hill/Lorinna and Moina/Iris River. The E.L. was relinquished in the early 1970's; the probability of locating an economically viable deposit was considered to be low.



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LOCATION MAP	
E.L. 8/88, E.L. 36/88	
BASE PLAN No.	SCALE 1:250,000
OVERLAY PLAN No.	FIG. 1

In 1974 Comalco acquired E.L. 7/74-Moina. The Moina fluorite prospect (Shepherd & Murphy mine area) became their principle target. A total of 26 diamond drill holes delineated a resource of 26 Mt @ 18% CaF_2 , 0.1% Sn and 0.1% W. In addition to this work, they completed a regional -20 mesh stream sediment and fluorine in water sample survey; reassessed Mt. Lyell's aeromagnetic data and followed up two anomalies near Lorinna; explored the Cambrian volcanics in the Black Bluff/Smiths Plains area for VMS mineralisation; and gridded the Tin Spur/Oliver's Hill area outlining an extensive zone of low grade Sn & Au mineralisation. Shell and Comalco entered into a Joint Venture early in 1980 with Shell being the managers. They continued detailed investigations at Moina looking for economic tin mineralisation associated with the fluorite deposit. A new aeromagnetic survey identified several anomalies, within E.L. 7/74; the majority of which were found to be related to either Tertiary basalt or Cambrian volcanics. Additional work at Tin Spur confirmed the low grade Sn-Au resource. Further work on the Cambrian volcanics at Black Bluff/Smiths Plains did not yield any encouraging results. In 1985 CRAE became managers in a 3-way Joint Venture. Their work included a study of the Au potential by conducting a regional bulk cyanide and -80 mesh stream sediment sampling survey with no serious follow-up of anomalies undertaken; a re-assessment of the Shell aeromagnetic data; and continued exploration for a VMS deposit at Black Bluff/Smiths Plains. The area was relinquished in 1987 with the Joint Venture still maintaining tenure, via a retention licence, over the Moina fluorite deposit.

The Round Mountain area and old workings have not been the target for a rigorous exploration programme by any modern explorer.

RGC is currently exploring a substantial block in Northern Tasmania. E.L.'s 8/88 and 36/88 contribute significantly to this block. Our aim is to discover economically viable Au mineralisation and Renison-style tin mineralisation associated to the Devonian Dolcoath Granite. Potential also exists for a VMS deposit being present in the Cambrian sequences.

This report details the work completed during 1988/89 on both E.L. 8/88 Lorinna and E.L. 36/88 Round Mountain.

2. LAND TENURE

An "Application for Land Exempt from the Mining Act" was submitted to the Department of Mines early in March, 1988 for a portion of ETA 22, P579; previously E.L. 7/74 - Moina. The application was successful and E.L. 8/88 - Lorinna, covering 56 sq. kms. in three(3) separate areas, was granted on 22nd August, 1988 (Figure 2). Approximately 20 sq. kms. of the land covered is privately owned; the remaining portions being State Forest areas, uncommitted Crown Land and around 1 sq. km. being HEC vested. Included within E.L. 8/88 is E.L. 38/88, a 1 sq. km. exploration licence which was pegged as two (2) 25ha Prospecting Licences by Mr. R. Gregory and Partners during the time gap between the relinquishment of E.L. 7/74 and the commencement of the tender period. E.L. 38/88 covers the Tin Spur Prospect and is totally excluded from E.L. 8/88.

E.L. 36/88 - Round Mountain was granted on 11th November 1988 following an application for a 6 sq. kms. portion of ETA 29, P589; previously E.L. 10/69 - Cethana. 5 sq. kms. were granted comprising State Forest and uncommitted Crown Land. Excluded is a 16ha Mining Lease, 92M/87, of Mr. N. McCoy and Partners. E.L. 36/88 encroaches upon the proposed Mt. Roland Protected Area to the east and HEC vested land to the west.

A request was made to the Department of Mines when applying for E.L. 36/88 that it be amalgamated with E.L. 8/88. The reason for this is because the adjacent licences are being explored as a single coherent block with the same exploration philosophy. However, the licence documents for E.L. 36/88 were signed by the Minister for Mines before amalgamation was accomplished. To amalgamate now would mean relinquishing E.L. 36/88 and re-tendering: this is not an appropriate option. It was suggested by the Department that common renewal and reporting could be implemented. This course of action is preferred.

In December, 1988 a further application was made for ETA58, P621 of 7 sq. kms.. It also was part of E.L. 7/74 but had been included in a 9 sq. kms. Retention Licence that covered the Moina fluorite prospect - now being reduced to an R.L. of 2 sq. kms. (Figure 2). In February, 1989 an application for approximately 2 sq. kms. covering the Bell Mount Alluvial field was submitted. The area was formerly part of the 9 sq. kms. R.L. at Moina, but had not been included into ETA58 and was not part of the new R.L.. Both applications were successful, the former being a 5 sq. kms. portion of the 7 sq. kms. applied for, E.L. 6/89; the latter being E.L. 17/89 of 2 sq. kms.. E.L. 6/89 is comprised of approximately 3 sq. kms. of privately owned land, 1.5 sq. kms. of Crown Land and excludes 0.5 sq. km. of HEC vested land. E.L. 17/89 comprises approximately 1 sq. km. of private land and 1 sq. km. of Crown Land and excludes 7 ha of Mining Leases. Notification that both E.L.'s were amalgamated into E.L. 8/88 was received on 15th June, 1989.

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3. EXPENDITURE

When application was made for E.L. 36/88, it was stated that the cost of the proposed exploration would be incorporated into the major expenditure already committed to E.L. 8/88. The budgetted figure for E.L. 8/88 within its first year of tenure was \$200,000.

Expenditure on E.L. 8/88, alone, to the end of August, 1989 amounts to \$220,723 (Appendix 1).

Expenditure on E.L. 36/88 to the end of October, 1989 is expected to be \$144,044 (Appendix 1). This figure includes an estimate of \$25,000 for the months of Sept. & Oct., 1989.

4. REGIONAL SETTING

The regional geological setting is dominated by the easterly trending Dundas Trough which wraps around the northern extent of the Precambrian Tyennan Nucleus. The sequences deposited within the trough consist of Cambrian volcanics which are characterised by volcanoclastic lithicwacke, chert, quartzose sandstone, felsic tuff and quartz porphyry of the Lorinna Greywacke, and the felsic quartz porphyries of the Bull Creek Formation (equivalents to the Mt. Read Volcanics). The Cambrian units are overlain unconformably by the well rounded quartzite, vein quartz pebble to boulder Roland Conglomerate; the marine quartzose sandstone, shale and marls of the Moina Sandstone; and the dolomitic to calcareous Gordon limestone. Contacts between these units are often gradational (Figure 3).

The Devonian Tabberabberan Orogeny produced major east-west trending structures, the folds being large scale, symmetrical and open. These were later overprinted by a prominent north-west trending pattern of smaller, asymmetrical folds, often accompanied by dragfolding, and faults which are deep seated and occur on the limbs of these folds (e.g. Bismuth Creek Fault).

The Dolcoath Granite intruded into the sequence late in the orogeny with the associated development of skarns and widespread related quartz or greisen vein deposits and fault related deposits. Extensive alkaline basalt flows covered much of the area during the Tertiary, occurring as mainly valley filling, often topping and overflowing from numerous small centres. The basalt often overlaid thin Tertiary, gravel and mud deposits.

A prominent feature of the Moina district is the broad zoning of mineralisation around the Dolcoath Granite. In general the following elemental pattern is observed away from the granite.

Sn-W → W-Mo-Bi → Cu-Bi-Au → Ag-Pb-Zn

In detail this "classic zonation" is disrupted by:

- (a) the pronounced north-west structural trend, which appears to have facilitated emplacement of the granite related mineralisation;
- (b) telescoping of assemblages around major structures;
- (c) the over-printing of earlier mineralisation by lower temperature assemblages;
- (d) an apparent stratigraphic control on mineralisation styles and deposition.

It is clear that a thorough understanding of the interplay of these lithological, structural and geochemical features on a regional scale is necessary to effectively evaluate target areas in detail.

5. WORK COMPLETED 1988/895.1 Regional Geophysical Appraisal

A comprehensive review of geophysical data was undertaken by Dr. David Leaman for RGC, over the Lorinna/Moina region which includes both EL 8/88 and 36/88. It is particularly relevant to the areas of influence of the Dolcoath granite, as the W boundary of EL 36/88 and the northern sector of EL 8/88, i.e. Round Mountain. The objective was to appraise the usefulness of previous regional gravity and magnetic surveys available for our own exploration efforts in the Moina region. More specifically, it aimed at identifying and defining the following: main regional structures, tectonic lineaments, their trends, correlations between magnetic/gravity signatures and lithology, 'roof' type of the Dolcoath granite and its associated altered zones, and finally estimation of the Tertiary basalt cover thickness and its underlying lithologies.

This large scope project was accomplished in 4 months, with 5 partial reports submitted on a monthly basis, which are included here as Appendix 2.

Although the preliminary results pointed to the incongruity between the gravity and magnetic sets of data, the final conclusion was that their integration is in general achievable, and quite productive. The magnetics in general are random and noisy, and yield no direct indication of the granite, main source of the Au. On the other hand, the gravity field is generally more dominated by the granitic body, although to elucidate its roof rocks and alteration it has to be correlated with magnetics. The structural lineaments in the area were defined relatively well by both methods within the area.

As a very general conclusion it can be said that this regional study has been a worthy exercise, and that it highlights the potential for further exploration within the large area covered by EL 8/88 and EL 36/88, provided a more refined application of classical methods as gravity and magnetics is achieved, and also points to the fact that the two techniques are in this case essentially complementary.

5.2 Regional Mapping and Stream Sediments

A broad programme of regional scale mapping, in conjunction with stream sediment sampling over the same areas, was undertaken by RGC through contract with W. Herrmann between the end of March and mid June of this year.

The programme included a number of E.L.'s held by RGC in the Moina-Lorinna region and their surroundings, however, care was taken during the planning of this campaign to avoid duplicating work in areas where grids were established, that is Mount Jacob, Round Mountain and Five Mile Rise. A 1:10,000 'factual geology' map was produced in 2 sheets covering about 100 km² from Mount Jacob in the N to the Dove River in the S, and as far to the E as Round Mountain. All rock outcrops were systematically examined as encountered in search of locations for stream sediment sampling, therefore the mapping was subordinate to the sampling in general. The geological observations were recorded on segmented 1:10,000 monochrome air photo enlargements. Subsequently, all this factual data was compiled and replotted on two 1:25,000 scale 'interpreted geology' maps, Figures 4 and 5 of this report. Of the vast number of rock chip samples (Figure 6) collected during this regional reconnaissance, only 5 for geochemical analysis fall within the boundaries of EL 8/88 and 35/88, Figure 7 this report, the rest taken as study specimens.

The stream sediment sampling involved the collection of a panned concentrate, and also one minus 200 mesh fraction from 84 locations (Figure 8 and 9) within these E.L., which were analysed by the Neutron Activation technique. Unfortunately, some notable omissions occurred in large streams of the Round Mountain grid, as the sediment sampling was restricted to small to medium scale streams.

Most samples were taken upstream of confluences, and at a fixed distance of about 1km along the stream.

The sampling procedure for the minus 200 mesh fraction was designed by S. Gatehouse from RGC's Research Group, and a thorough description of it is included in Appendix 3 of this report. It basically involves the wet screening of gravel size stream sediment to $< 0.5\text{mm}$, and the further agitation and washing of this fraction through a 200 mesh screen. The resulting muddy water was then flocculated and subject to filtering until the water was extracted, thus producing the minus 200 mesh sample. The fraction remaining between the 0.5mm and the 200 mesh was panned, and generated the pan concentrated sample for that locality. Both samples were later consigned to Becquerel Laboratories in NSW for Neutron Activation analysis after weighing and drying, avoiding any other intermediate steps and therefore aiming at minimizing contamination. Appendix 4(a) documents the assay results for the 31 elements analysed.

5.3 General Geological Work

5.3.1 Round Mountain Area

5.3.1.1 Gridding

A thorough coverage of the Round Mountain sector geology has been obtained through the cutting of about 26.3km of grid with lines orientated in a NE/SW direction, shown in Figure 10. The lines were cut

every 200m over the Tin Spur/Tin Spur Creek area SW of the base line, and every 100m in the Claude Creek/Round Mount district, and pegged every 25m all over.

Cutting of all the grid and tie lines in this area was carried out while there were pending negotiations with N. McCoy, which affected a sector where ML13M/58 was once located within EL 8/88. This generated the need to cut more than 3km of grid line extensions in that sector, posterior to those negotiations, and after the original plan had been fully implemented.

5.3.1.2 Mapping

The grid was surveyed with tape and compass, and simultaneously mapped at 1:5,000. This scale proved satisfactory to delineate the factual geology at this initial stage. Mapping lacks complexities in the stratigraphic/structural aspect, with well defined NW/SE lineaments, bedding mostly parallel or semiparallel to the topographic contours, and predominantly compressional tectonic style with good definition of reverse faulting and folding, as shown in Figure 11.

The availability of outcrop is relatively scarce and patchy in most of the lines, although the best part of it is covered by variable amounts of float and scree material, which help the mapping. As expected, the best geological sections are obtained from road cuts and along the main rivers and creeks.

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Geologically, the area covered by the grid comprises a very minor amount of Cambrian felsic porphyries, unconformably overlain by Ordovician conglomerates (Roland Conglomerate), quartz sandstones and quartzites with some minor pebbly and shaly intervals of the Moina Sandstone and Limestones (Gordon Limestone). At the top of the sequence the Tertiary basalts, which together with the Ordovician limestones are very scarce exposures in the sector.

The evidence of mineralisation is restricted, and clearly follows the pattern of intense structural deformation which has affected the Ordovician sequence. Unfortunately work in the old Round Mount works was not possible during this period due to the legal situation mentioned previously, however, a number of small adits and old exploratory shafts were examined.

5.3.1.3 Soil Geochemistry

A soil geochemistry survey was carried out by augering and aimed at obtaining one sample every 25m along lines from the 'C' horizon. This exercise proved demanding in large portions of the grid, given the rugged nature of the topography and the presence of outcrop ridges, also in the lower sectors due to the abundance of shallow covered boulders. A total of 990 samples were obtained, for which assays were conducted for Au, Cu, Pb, Zn, Ag, Bi, As and Sn, all documented in Appendix 4(b) of this report. Also, soil geochemistry profiles were prepared for each grid line and for each assayed element, presented in Figures 13 to 30. In general the anomalies detected are very weak, a fact that, apart from the apparent generally lean character of the rocks, can be largely attributed to the inherent limitations of the sampling method itself as observed above.

5.3.1.4 Rock Geochemistry and Petrography

A total of 32 rock chip samples were collected from various outcrops, in most cases, and also from float material, from dump material off adits and old trenches and from adit or shaft walls. Most of the old workings visited are merely exploratory, and fairly or entirely inaccessible or covered.

Of those collected, 23 samples (Figure 31) were analysed for Au, Cu, Pb, Zn, Ag, Bi, As and Sn, with full results shown on Figure 32, with some interesting values in samples in the vicinity of old workings.

Only 4 rock chip samples taken in the Round Mountain grid were sent out for petrological analysis to D. Mason, of Amdel in Adelaide. Complete petrographic and mineragraphic descriptions, together with assay data are presented in Appendix 5. In this report, the Round Mountain area samples correspond to T-8700, T-11903, T-14008 and T-14016. Samples T-11903 and T-14008 were also assayed for the typical suite of elements previously mentioned in this report. The samples were examined in hand specimen, and thin sections prepared. To study the opaque mineralogy, a polished thin section was prepared for sample T-11903.

Petrographic and mineragraphic descriptions were carried out using conventional transmitted and reflected microscopy. Colour photomicrographs were produced to illustrate important mineralogical and textural features.

The specimens correspond to Ordovician meta-sedimentary rocks which are mainly quartzites except for one which is a Cambrian metavolcanic rock, specifically a meta-rhyolite (T-11903).

5.3.1.4 Ground Magnetics

A ground magnetics survey was carried out on the whole of the grid, utilizing 4 memory magnetometers and 2 field operators. One magnetometer was used as a base station, in conjunction with 2 roving magnetometers.

The base station magnetometer was set up with a timing of not more than 20 seconds. The raw data from the base station required a 3 point filter to be applied (i.e. a running average) before the base station correction was applied to the survey data. The 3 point filter removed high frequency noise. Plots of the processed data on profiles were required at a 1:5000 scale. A plot of the raw base station data was also required. Data presentation was on an MS-DOS diskette with formatting compatible to RGC system. At the closing time for the period covered in this report, this data was being processed by Surtec Geosurveys.

5.3.1.5 Induced Polarization

An orientation gradient array IP survey was conducted to test the response produced by mineralised bodies in the old Round Mount mine workings area. The contractor was Surtec Geosurveys, with co-operation from RGC personnel. The survey was conducted using a gradient array configuration employing a 50m potential dipole spacing and a 25m station spacing. Four test lines were surveyed (4900E, 5000E, 5100E and 5200E) to the north of the 5000N baseline. Two IP (chargeability) responses were detected within the test area, one of which is approximately coincident with the location of known mineralisation. Both responses are strong relative to 'background', this being of the order of >18msecs. This result clearly

indicates the usefulness of the gradient array IP method as a mapping tool for detecting sulphidic orebodies in the district, and on this basis a decision was made to proceed with a complete survey covering the whole Round Mountain grid.

5.3.2 Five Mile Rise Area

5.3.2.1 Gridding

As in the case of Round Mountain, a grid with an EW base line and 15 NS lines separated by 200m was cut, covering a total distance of about 20.5km (Figure 33).

The grid covers an area which includes some very high and steep cliffs, but apart from that the terrain is moderately rugged with mostly relatively gentle slopes. The main difficulty in this area proved to be the access to the grid, as most of it is by the old VDL road, a great portion of which is blocked even to 4 x 4 vehicles.

5.3.2.2 Mapping

Mapping at 1:5,000 was carried out in conjunction with the tape and compass surveying of the grid. The availability of outcrop is very scarce, and most of the area is well covered, with a limited number of spots with rock float material. However, the stratigraphy is straight-forward and simple, with the Moina Sandstone unit covering most of the grid, and some marginal exposure (mainly float) of Tertiary basalts of undifferentiated felsic volcanics of the Cambrian, and a one-spot presence of granodiorite/adamelite (Dove Granite) in float material. The evidence of old workings is extremely scarce and poor, as most of these are covered and/or totally collapsed.

5.3.2.3 Soil Geochemistry

The same procedure adopted at the Round Mountain grid was followed here, that is auger sampling to C horizon. In contrast with that grid, in this case the samples obtained were more representative, as the soil profile is well developed over most of the area. The same suite of elements were analysed, and although at the closing period for this report only very partial batches of assays had been received, there was evidence for an increase in number of small anomalies, although still of a rather slight magnitude probably due, again, to the inherent limitations of soil geochemistry in this sort of country and terrain. Whichever the magnitude of the anomalies detected, they ought to be considered with attention.

5.3.2.4 Rock Geochemistry and Petrography

A total of 41 rock chip samples were collected from outcrop and from float material, the locations of which are presented in Figure 35. Of these, 35 were for geochemical analysis with full results presented in Figure 36, and the rest were petrographic specimens. As no old workings were sufficiently exposed, none of these samples originated from adits. Of the few work remnants only samples from dumped material in the surroundings were obtained, which did not appear to belong to stockpiled material, or to be of evident economic value.

Complete results of the petrological and mineragraphic studies appear in Appendix 5. Petrographic studies were requested for 9 rock chip samples from this area, which in the report are numbered T-14017, T-14018, T-14019, T-14022, T-14027, T-14028, T-14032, T-14035, and T-14044.

Assays were requested for only one sample (T-14022). As in the case of Round Mountain, some polished thin sections for mineragraphic descriptions were prepared for samples T-14022, T-14032 and T-14044.

Of the samples analysed, 6 correspond to metasediments, mainly quartzite and well-sorted quartzose sands, 2 are meta-rhyolites, and one is a basaltic lava: Ordovician, Cambrian and Tertiary respectively. The low-grade, pervasive hydrothermal alteration suggests their location within the contact aureole of a granitic intrusion, which can have interesting implications in terms of the local prospectivity.

5.3.2.5 Ground Magnetism

A ground magnetism survey was carried out over the grid based on the same specifications requested for the survey at Round Mountain. The data, as well, was being processed by Surtec Geosurveys at the closing of the period.

5.3.3 Mount Jacob Area

A total of almost 22km of grid have been cut in the area including Mount Jacob, with an EW base line and 12NS lines spaced at 200m. The grid is being surveyed and is to be geologically mapped at 1:5,000 during the forthcoming field season. A base map at this scale, showing the grid plan is included in this report as Figure 37. No further work was carried out on this area during the past field season.

6. WORK PLANNED 1989/90

Few conclusions can be drawn to date as the process of data collection is still ongoing.

The work planned during the next twelve months includes:

- (i) Round Mountain Grid - the completion of a gradient array IP survey over the entire grid.
- wacker sampling of anomalous soil geochemical results.
 - detailed mapping of Claude Creek and the Round Hill workings at a scale of 1:1,000. This may require some infill grid lines to be cut.
 - compilation of the geochemical and geophysical data with the mapped geology to define areas requiring more detailed investigations.
 - 400m of core drilling around the Round Hill workings.
- (ii) Five Mile Rise Grid - a test IP gradient array survey to see if the mineralisation style associated with the old workings has a response. If so, the entire grid will be surveyed.
- wacker sampling of anomalous soil geochemical results.
 - compilation of the geochemical and geophysical data with the mapped geology to define areas requiring more detailed investigations. This will involve infill grid lines being cut and detail geological mapping at scales of 1:1,000 or 1:500.

(iii) Mt. Jacob Grid - a tape/compass survey of the grid is to be completed.

- the grid will be geologically mapped at a scale of 1:5,000.

- a ground magnetics survey will be completed.

- the area will then be assessed to see if a soil geochemical and/or further geophysical surveys are required.

- areas will then be assessed that required more detailed ground follow-up.

(iv) The entire licence area will be evaluated based on the regional geophysical appraisal and the regional mapping and stream sediment sampling programmes completed during 1988/89. Targets, other than those currently being explored in detail, will be identified and ground reconnaissance implemented. This will lead to additional areas being gridded to allow detailed mapping, geochemistry and geophysics. One area for immediate attention is the Bell Mount alluvial field.

Planned expenditure for 1989/90 is \$270,000.

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APPENDIX 1

EXPENDITURE

RGC EXPLORATION PTY. LIMITED

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APPENDIX 1

E.L. 8/88 LORINNA

EXPENDITURE TO AUGUST, 1989

<u>Item</u>	<u>Cost (\$)</u>
Salaries, wages & on-costs	59571
Travel & accommodation	8564
Consultants & contractors	96387
Sample prep. & analysis	3645
Stores & supplies	12390
Vehicles, plant & equipment	11483
Land acquisition & tenement costs	2636
Computing	296
Office costs	<u>5685</u>
	200657
Overheads (10%)	<u>20066</u>
TOTAL	<u>\$220723</u>

RGC EXPLORATION PTY. LIMITED

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E.L. 36/88 ROUND MOUNTAIN

EXPENDITURE TO OCTOBER, 1989

<u>Item</u>	<u>Cost (\$)</u>
Salaries, wages & on-costs	23635
Travel & accommodation	6836
Consultants & contractors	43605
Sample prep. & analysis	20849
Stores & supplies	1352
Vehicles, plant & equipment	3776
Land acquisition & tenement costs	2438
Office costs	<u>3458</u>
	105949
Estimated expenditure, Sept. & Oct. '89	<u>25000</u>
	130949
Overheads (10%)	<u>13095</u>
TOTAL	<u>\$144044</u>

033

569034

APPENDIX 2

LEARN REPORTS - REGIONAL GEOPHYSICAL APPRAISAL

REPORT 1 - MAGNETICS DATA: INITIAL REVIEW

035

LEAMAN GEOPHYSICS

Survey Review, Specification, Reduction, Interpretation
Wide Experience Most Methods
Specialties:- Gravity, Magnetics, Seismic Methods

Registered Office:

21 Zomay Ave, Dynnyrne, Tas 7005

All Correspondence to:

G.P.O. BOX 320 D, HOBART, TAS. 7001.

TELEPHONE: (002) 24 0319

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GRAVITY AND MAGNETIC EVALUATION MOINA REGION

1. MAGNETIC DATA: INITIAL REVIEW

for

RGC EXPLORATION PTY LTD

by

Dr. D.E. Leaman

August 1988

MDINA1

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 Diagram original included as Figure 18

SUMMARY

Preliminary review of the available magnetic data for the Moina region of north west Tasmania indicates that most mineralised sites possess a recognisable response. That response may be clear cut or subtle depending on the style or mineralisation or, more importantly, on the changes induced in the host rocks. Recognition of any magnetic response or association of any feature inferred to be associated with new prospects as an exploration aid may be a tenuous exercise unless those factors which may modify the field responses are appreciated. Proper specification, observation and compensation of the survey are critical to the success of such direct exploration usage. The present review indicates that the Shell data is adequate for this purpose but that the Mines Department data probably is not. Many of the more subtle effects may be clarified by full drape correction which has not been undertaken.

The aeromagnetic data offer other forms of indirect exploration assistance. Although only a subset of the available data has been examined this is sufficient to define regional trends and gross elements of lithological continuity within the region. Units to be correlated with the Lorinna Greywacke are identifiable and quite widespread, if relatively thin. Substantial volumes of mafic rocks are present within the region north of Stormont and south of Oliver Hill and none of this material is exposed. The material is clearly folded and blocked, however, and is almost certainly truncated by base Ordovician unconformities.

Most major trends affecting pre-Ordovician rocks are NW-SE or NE-SW although some N-S elements can be recognised. One major and one minor belt of E-W structuring is also evident. Structures identified by surface mapping can be correlated with these features and there is little doubt that most are re-activations of various magnitudes. Some mineralised sites can be related to these features, for example the gold deposits at the headwaters of Devonport Creek. Most other mineralised sites in the Moina and Lorinna region are clustered within the volume enclosed by the northern aspect of the intersection of the conjugate trend pattern and lie either on or adjacent to an E-W axis.

Much of the structural information is only accessible after comprehensive compensation for terrain and flight path factors but it is now in a form which can be modelled and correlated with gravity data.

The issue of Tertiary basalt has also been assessed. Although there are some problems with definitive assessment in the absence of control drilling the cover appears to be very patchy and generally quite thin (<50 m) although some thick pockets which may comprise several flows are also present.

INTRODUCTION

Aeromagnetic data from the mineralised Moina-Cethana region of NW Tasmania has been reviewed. The area examined, and relevant licence holdings, are shown in Figure 1. This diagram also indicates a provisional interpretation of the form of the Devonian Dolcoath Granite (after Leaman, 1988) based on gravity data. Refinement of this interpretation will be reported separately.

Figure 1 also displays many established mineralised sites and it appears likely that there is some fundamental relationship between the granite - or its form and structural control - and much of the mineralisation. The nature of basement or Cambrian controls are not obvious in surface mapping. Skarns and various vein style deposits occur in the region. The total value of recovered mineralisation has been substantial (see Bamford and Green, 1988).

Magnetite is associated with many prospects and the magnetic method is an obvious choice for exploration on this account but many of the local rocks, including Tertiary basalt, are also magnetic. Basalt cover, or derived material, is extensive and much exploration interest may be concealed.

The review of aeromagnetic data described in this report takes the form of a feasibility and regional assessment. The study was directed toward description of

1. relationships between magnetic field and particular lithologies in order to assess normal response patterns and identify abnormalities,
2. unit continuity and/or distribution beneath basalt or other cover,
3. basalt contributions to the field and estimates of thickness and flow forms,
4. mineralisation responses (including associated skarns),
5. gross structural features.

This initial work was not intended to be exhaustive or ultimately definitive with respect to the available data or the topics listed. The basic aims of the present study (reported here as stage 1) was provision of regional indications, method application potential and feasibility, and supply of feedstock information for an expansion and integration with gravity and geological data.

DATA USED

Two aeromagnetic surveys exist. Both are available in digital forms. Each was flown as a nominal drupe and essentially N-S lines.

The first survey, by Shell (refer to Mines Department open file records 82/1728), is of higher quality but somewhat fragmental and does not offer complete coverage of the area of interest (see Figure 1). The important Cethana area, for example, was not flown. The nominal line spacing was 250 m with a specified clearance of 100 m. The actual clearance varies within a general envelope of 80 to 160 m with important exceptions. The effective sample interval was about 40 m.

The second survey, by the Mines Department in 1985, was flown with a line spacing of 500 m and a specified clearance of 150 m. It covers the entire area of interest with a comparable sample spacing but the clearance condition was rarely approached across those parts of the area where the Shell coverage was broken.

For this review the more resolving Shell survey was used wherever possible in order to avoid loss of spectral information. In order to mate surveys and provide a reasonable feasibility evaluation promptly each second line was used. Considerable data thus remains for evaluation in those areas which may be deemed of interest from present work. A single compilation was generated from the two surveys by matching positions and continuation to equivalent levels. Lines wholly sourced from the Shell survey retain their Sxxx number code while those that included Mines Department data are numbered 106x. Lines east of Oliver Hill which carry the Shell designator do not cover the area north of the Round Mt. escarpment. In this area it was not feasible to combine the Mines Department data without an effort which could not be justified for such preliminary study.

The raw profile data as used from either source is presented in Figures 2 to 8. The contour presentation given in Figures 9 and 10 (9A and 10A with geology) is the contractor's compilation for the Mines Department.

METHODS

In order to provide basic evaluation of the data with respect to the several topics and objectives defined in the Introduction, the aeromagnetic data has been considered in both raw and various processed forms.

The raw data (Figures 2 to 8) are potentially deceptive due to an array of terrain effects but carry the highest resolution of local features - especially the Shell source data with nominal clearance of 100 m. Source and prospect signatures have been reviewed using this data.

In order, however, to obtain a broader perspective on structure, lithological units (continuity, characteristics) and minimise misleading terrain aspects the data have been continued from the approximate drape as observed to a fixed level. Such presentation improves definition of deep or gross sources, allows reliable modelling but excludes small or shallow sources.

Terrain compensation and continuation was undertaken by first matching the level of surface topography at the located sampling positions with the recorded height difference to obtain the spatial location of the magnetometer. An observed file relating position, magnetic field (IGRF residual value) and absolute elevation was constructed. (This file can be used to calculate the magnetic field on any surface - terrain parallel/drape or fixed level) Due to the quantity of data involved and the limited, essentially regional and feasibility objectives of this phase of the project only each second line was used. (This means that ample scope exists for superdetailing where this is judged necessary)

Some problems were encountered in this process which reflect survey location errors. Fiducial markers used for position control are erratically distributed and it was evident that the aircraft position, as defined by the stated coordinates and clearance information, could not always have been recovered correctly. The flight path was often too irregular or too elevated and not consistent with a flight trajectory. In such cases a smooth function based on reliable segments and trends in the flight path was used instead but it would be possible to fully and accurately recover the actual flight path from the indicated flight trajectory and height difference (radar altimeter) records. This was not warranted by the present study which emphasized upward continuation processing but it would be essential if a low level drape correction was to be made.

Due to the gappy nature of the Shell survey near Lake Cethana infill using the Mines Department survey was attempted. This was essential across the Lake and near Lorinna but north and east of Cethana it was not generally justified due to the magnitude of

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the problems and the quality of the Mines Department data immediately north of the Round Mt. escarpment. The two surveys involve different specification and produce a step in raw profile form (see 1060 at 403500, Figure 6 for example). Proper justification can only occur when the two surveys are adjusted to the same spatial position. A smooth function then results. The continuation procedure based on absolute height corrected records (above) effects this. Mating the Shell survey was, however, awkward since the pilot had begun manoeuvres for the next line well before data recording ceased and, in a region with extreme topography, large anomalies and imperfect position control, some mismatches are inevitable unless precise location is recovered and the profiles of each survey are in the same vertical plane. This does not occur.

An elevation of 1200 m was required for a regional presentation of the magnetic field and this level will form the basis for modelling and reference. Assembly of the transfer calculations from the observed levels (500 to 1300 m ASL) to 1200 m involved some nasty juxtapositions between the observed gradients and the terrain and some blemishes have persisted (e.g., line 1063 - Figure 13 and plot - Figure 14). Each spike reflects a critical terrain or position condition. Most were checked and the flight path corrected, edited or compensated where such a problem had affected the stability of the continuation process. This selective, manual filtering yielded Figure 15 and a data set for derivative calculation. Note that it still contains some apparent imperfections which may or may not be real; further and more detailed evaluation would be required to establish the reasons.

First and second vertical derivatives are shown in Figures 16 and 17. There is some suggestion of line bias but most large features are independent and several N-S effects are certainly real.

The magnetic field south of Moira and across the Daisy Dell - Middlesex Plains area has been especially examined in order to provide some assessment of the Tertiary basalt. An original tuned, auto-correlated spectral analysis followed by weighted adjustment of the energy spectrum has been used. All such methods require at least one or two control points but none exist here. Figures 19 to 30 present output from this procedure with some interpretation. An indication of the scaling problem can be obtained from comparison of Figures 28 and 30 using quite different property/spectral functions. Until at least one hole has been drilled in a substantial patch of basalt fine tuning and depth description must remain formal rather than definitive; the shape of sources is suggested but their depth is only crudely estimated.

All presentations of the field from either data set have been reduced by 1750 nT from the stated IGRF plus constant generated by the contractors.

DISCUSSION OF OBSERVATIONS AND RESULTS

The following comments are grouped in terms of the first order objectives of the evaluation. Since the present study has extracted only the fundamental implications of the magnetic data, implications which may be refined by further work or varied after correlation with gravity data or model study, the notes must be considered interim.

The implications and observations are, however, elemental to further evaluation and many may possess exploration significance.

UNIT CHARACTER AND RESPONSES

Indications of the magnetic character of rock units can be derived from the contour maps (e.g. Figures 9 and 10) or, more reliably from the observed profiles and modelling studies (e.g., Figures 2 to 8 and 33 to 34). Detailed modelling has been beyond the brief for this first phase of data review.

The possible distortions induced by terrain or flight path effects must be considered separately where any deviation from implied patterns has been inferred. This has not yet been done and would involve precise conversion of the profiles to pure drape form.

Limited deductions are possible from the contour maps.

The Dove Schist is not sufficiently sampled but appears non magnetic.

The Lorinna Greywacke presents no reliable pattern but limited modelling shows it to possess a significant magnetic contrast (e.g., Figures 30 and 34).

The felsic Cambrian rocks also do not offer a consistent pattern. The unit, as mapped, is clearly variable and may consist of at least two gross members. See the profile discussion below. One of these is non magnetic, as north of Oliver Hill but south of Oliver Hill part appears strongly magnetic. (This may be due to a mafic unit at shallow depth - see models, Figures 33 and 34)

The Dove Granite offers ambiguous indicators. It is relatively uniform in properties but apparently non magnetic. Modelling indicates that its surface skin or metamorphic aureole may be reverse magnetised and that this contrast generates the negative field in the region of the Dove Granite.

The Ordovician rocks offer no pattern and it is clear that variations in the field across Ordovician exposures are produced by concealed Cambrian units. Some minor anomalies may be related to faults. Note that even the Gordon Limestone at Lorinna is

associated with a large anomaly. This reflects an intense source at shallow depth since the limestone is non magnetic.

The Dolcoath Granite is also non magnetic and generates a subtraction in field intensity although the response is modified by the combined effects of thermal alteration at the contacts and the intruded Cambrian rocks.

The Tertiary basalt is strongly but variably magnetised and the response pattern is modified by sizeable geometric terrain effects.

The profiles demonstrate that many responses are overprinted. The dominant character is that of the Tertiary basalt due to its extensive exposure. Yet, it is not the most magnetic material. Basalt effects tend to be relatively low amplitude but high frequency and more significant deeper sources control the magnetic field (e.g., line 5480 and 5500 - Figure 4). In many cases the basalt response is very subtle or absent. Most basalt features are suggestive of either multiple flows nearly equally magnetised in normal and reverse senses or very thin (<<50 to 100 m) cover. (see also discussion on basalt thickness below)

The Precambrian rocks generate smooth anomaly tails from other sources and these are slightly negative overall with respect to the reference field (5320 to 5480; 5620 to 1064). The controlling regional influence of the basement is best seen in the line groups of Figures 5 to 7.

The response due to the Dove Granite is not markedly different unless the Lorinna Greywacke is present (lines 5460 to 5540).

The Lorinna Greywacke, however, is shown to be a significant magnetic unit although outcrop limitations and contouring approximations limit display of this character in plan. Relatively subtle expressions on major gradients illustrate this property. For example, the bulge on the gradient at 5399 N on lines 5660 to 1060 and 5401 N on 1062 and 1063 near Lorinna.

The major increase in field intensity north of 5409 N on lines 5240 to 5480 is directly related to Cambrian rocks. Although it would be easy to relate this to the felsic rocks this is simply impossible. The magnitude of the response exceeds 500 to 600 nT but carries a superimposed sub-effect with amplitude of 50 to 100 nT. These values may be contrasted with the Tertiary basalt which induces amplitudes of 50 to 200 nT generally and rarely up to 500 nT. The response noted north of 5409 N and west of 419500 E is due to Cambrian mafic rocks which are not exposed and that the subsidiary anomalies are due to felsic tuffs and volcanics.

The large anomaly at about 5407 N (lines 5420 to 5540 especially), but which trails ENE north of Lake Gairdner, is of comparable amplitude and certainly of the same origin. Its regional extent and scale implies a major mafic unit and is not related in any way to the exposed Ordovician rocks.

Anomalies of comparable magnitude and scale occur near 5401 N (lines 5640 to 5660) and 5401-2 N (lines 1063 to 5900) with the effect increasing but persistent to the ENE south of Oliver Hill

(to line 5820). Much smaller (200 to 300 nT) anomalies of comparable type can be recognised on lines 5700 (5403400 N) and 1061 (5404200 N) which are not due to basalt and are larger than any mineralisation response (see section on prospect signatures) due to contact metamorphism around the crest of the Dolcoath Granite. This form of alteration may account for the local variation from the normal subdued response due to felsic rocks and is restricted to the Oliver Hill, SW Dolcoath Hill region where these rocks are in contact with the granite. There is no other direct evidence of contact metamorphic effects in the surveyed area and if this inference is correct then the anomaly/unit is terminated unconformably to both east and west near the granite roof.

No consistent patterns have been recorded for the Ordovician rocks although shallow-sourced anomalies can be associated with fold axes (near 5404 N on lines 5340 to 5360), a fold limb (5405 N lines 5520 to 5580) and contact anomalies between Cambrian and Ordovician rocks at 54028 N (line 1060) and 54018 N (line 1061).

Some topographic anomalies may also be listed; e.g., 5405 N (line 5380) and south of 5402 N on lines 5820 to 5840.

Property contrast perspective is best summarised by line 5820. The low field region from 5405 to 5407 N represents Devonian granite and a neutral response. The surrounding rocks are more magnetic but the effect is localised and this scales the possible metamorphic effect. It will be noted that the response due to Gordon Limestone and Dove Granite is positive and significantly negative with respect to this pattern. These properties suggest penetration responses for underlying materials and/or negative magnetisation for the granite. The latter option is not generally acceptable and gross geometric effects due to a deeply buried unit are implied. The contact of the Dove Granite is evident to both north and south and the response is not markedly different from that of the Dolcoath Granite. No stabilised level is available for the Precambrian rocks but lines 1062 to 5820 would indicate levels comparable with the Dolcoath Granite. Underlying mafics must generate the very large anomaly on the line while the covering basalts are best seen in lines 5880 and 5900 and are inconsequential by comparison. This implies either lower contrasts or smaller volumes for the Tertiary pile.

Inspection of Figures 2 to 8 indicates that much of the character of either exploration interest or nuisance is low-moderate amplitude and relatively high frequency and superimposed on larger, longer wavelength features.

It is instructive to compare Figures 11 to 13 since these present the primary structural units. The profiles, as would be seen at 1200 m, are generally at least 400 m clear of the terrain and free of major terrain effects. Tertiary basalts do not contribute significantly indicating that these are quite thin (below) and the balance of gross contrasts is more reliably recognised.

Reversely magnetised units occur adjacent to basement or beneath basalt on lines 5260, 5380, 5400, 5480 and 5500. The contrast is of similar intensity to that producing the positive responses in the Mt Jacob or north Tiger Plains regions. A mafic suite is implied. The effect is generally too wide to be due to thermal or boundary conditions. The form of profiles 1060 to 1064 suggest a thick wedge of mafic rocks adjacent to the basement margin, enclosing the Dove Granite, but none are exposed unless components of the Lorinna Greywacke are outer members.

TERTIARY BASALT

Reference has been made throughout the previous qualitative discussion that the basalt cover in this region is either thin or patchy or both. Several profiles across the basalt area from Moira to Daisy Dell and Middlesex Plains were analysed. The examined profiles were selected to provide a general sampling but also allow a lower (than 1200 m) reference level to be used. Each profile analysed was recalculated to a level of either 900 or 1000 m from the absolute height observations (see methods). The results are presented in Figures 19 to 30. Most lines were calculated for the region south of Stormont but three lines extend across the entire area (5600, 5620, 5640 - Figures 27 to 29) and line 5620 has been recalculated using an extreme property conditioner.

In the absence of any control on the thickness of basalt in the region studied the reliability of the interpretation is unknown. Problems were experienced in definition of an appropriate scale for the analysis or even selecting which estimates represent the base of the basalt. Once some control exists a more comprehensive analysis will be possible but the present provisional outline does suggest flow forms and that the basalt is very patchy. Comparison of the 15 km profiles for line 5620 (Figures 28 and 30) using differing parameters illustrate the difficulty although there is sufficient consistency to suggest and interpretation. The operator designated 128/3 more satisfactorily outlines the source skin (land surface) form and is more believable with respect to outcrop limits and landform relationships. This presumes, of course, that mapping is accurate and it is apparent that this is not the case in many areas; talus has been included in the basalt distribution. This may also be the case on line 5620.

Irrespective of current scaling problems due to absence of control the analysis suggests the form of the magnetic sources and in all cases basalt cover would appear to be generally less than 50 to 70 m thick and often absent.

SIGNATURES FOR MINERALISED SITES

The subset of available data examined in this review has been inspected for suggestions of any patterns associated with known mineralisation. Note that the entire data set has been used between 425500 and 427500 mE since on 500 m spaced Mines Department data exists in this zone but at greater clearance than the Shell data.

If patterns can be recognised, with or without full drape correction, and other like effects can be noted then the entire data set should be comparably processed and re-examined. The data has been considered as an observed implied drape. The effect of this assumption is discussed at the end of this sub-section.

It must also be recognised that the mineralised zones contain many prospects and it is unlikely that many have been adequately sampled or defined. The family response, however, may be of value. The data has been reviewed within these admitted constraints and in full appreciation that changes in the host rock volume are more likely to produce recognisable effects in the magnetic field at 100 to 200 m than any changes which directly mirror ore.

Examination of plots of the contoured magnetic field (e.g., Figures 9 or 10) and geology/prospects reveals that a particular wedge immediately west of the Dolcoath Granite displays an odd high frequency E-W lamination (see also structural blocks) but no individual character is identifiable. Comparable character is not evident at other clusters of prospects. It must be concluded that the contoured forms offer few indications of magnetic signatures in this terrain. It is not clear whether the effort of full drape correction would make a difference. I suspect not.

The profiles, however, offer a different view. Virtually every site sampled by a profile offers a characteristic and comparable response. Prospect/site numbers refer to Bamford and Green (1988) and Figures 9A and 10A.

Line	Prospect number	comment	amplitude	element
5380	007	on broad rise crest		Au
5400	097	local spike	100 nT	Au
5460	009	sharp spike	50-70	Au
5480	076	beside basalt crest		
	010	confused by basalt	25	Au
5500	083	small local spike	40	Au
5540	014	step on gradient	30	
	077/078	bulge near crest peak	30 on 180	
5580	095	not recognised		
5600	061	small rise	20	Au
	054	nick point on profile	30	Au
5620	011/012	large spike	600	
5640	094	very subtle		

Line	Prospect number	comment	amplitude	element
5640	011/012/013/098 003	spike crest	300 nT	
	006	suggested on 5620/5640		
5660	062/089 086	not recognised spike	150	
	0157	small peak	50	
5680	090	small bulge	20	Au
	019/020/028 015	spike	>100 50	
5700	055/056 021	gradient bulges peak	20-30 100	Au
1060	027/029 023/024/026	spike gradient bulge	50+ 20	Au+ Au
1061	058 030	very subtle small local peak	<20 30	Au
1062	059	very subtle evidence of alteration		Au
	057	not recognised		
	038/034	resolution too low		
1063	060 064	step in gradient small gradient variation	100 25	Au
	040/090	resolution too low		
1064	096 064	spike spike	700 100	Au
	093/039	resolution too low		
5820	042/043 072	small peak no data	50	
5840	044/088	not recognised		
5860	044 008/063	small gradient change no data	30	
5880	050/043 048	small ill-defined crest no data		

These notes indicate that identifiable responses exist in real and imperfect data but whether many would be reviewed without the known association is a moot point. All gold-bearing sites generate relatively small deviations at 100 m clearance but the gradient or peak changes are consistently present. Note that a comparable response appears to be present in the region of 097 - an alluvial deposit. This would imply a source nearby, or that the magnetic response is mapping a structure nearby. It is unfortunate that clearances around the northern part of Lake Cethana are extreme and survey patching and compensation cannot recover what has been lost. Comparison of observed and 1200 m level profiles illustrates the importance of highly resolving data at low elevations.

An attempt has been made, based on the implied nature of the responses listed above, to infer other possibly mineralised sites. Some extraneous sources, such as minor basalt contacts, may be confused but all are considered abnormal in some way.

Sites of possible exploration interest

Line	Easting	Northing	comment
5380	417000	5408500	compare 097 (even if alluvial)
5400			check 097 and headwaters of Devonport Creek
5480	4195	54025	mineralised fault zone?
		54017	check Paddock Creek
5520	4205	54064	basalt??
5540	421	54035	inferred fault axis
5560	4215	5407	other than edge of basalt at Iris River?
5580	422	54055	peak unlikely to be Tb
		54062	Tb?
		54085	review fault zone
5600	4225	5406	Tb effect?
		54076	fault zone beneath L Gairdner
		5408	fault zone on shore
5660	424	5408	check not basalt contact
		54088	along fault in Bell Creek
		5410	in felsic volcanics
5700	425	54069	
		54075	?
		54097	
1060	4255	53993	
		53996	gold style?
1061	426	5403	contact zone above mafics
		5404	contact with mafics
		54072	?
1063	427	54032	?in felsics
1064	4275	54034	fault zone/contact
5820	428	54045	near granite in felsics
		54025	? large spike
		54074	fold axis
5840	4285	54001	Tb contact?
5880	4295	5403	possible fault contact/edge Tb?

The discussion above has presumed a drape relationship with the geology, i.e., an equal representation with respect to the surface at least. Where this assumption fails due to landform or clearance conditions, or the sources are more deeply buried or located, then the response may be modified. The Shell data carries a typical clearance of 80 to 150 m but may exceed 300 m locally. The Mines Department clearances are greater. Figure 31 shows the effect of changing sensor - source range. The green profile is as observed (and may be misleading) while the others show the smoothing effect of increasing distance. Note that an extra 100 m beyond observed levels reduces many distinct features to the gradient "bumps" so often seen in other profiles. Such distortions may be important. Note also that the observed profile may not have been obtained at a regular clearance and many described features may already have been modified by this process.

STRUCTURAL NOTES

Structural features determined at the present level of analysis have been summarised in Figure 32.

Some N-S features are indicated and are unrelated to any aspects of line bias. Some features have been mapped, as near Tiger Plain, west of the Dove River and along the Mersey River. More persistent structures are either NW-SE or NE-SW. E-W elements are also present but less obvious. The NW-SE set is presumably related to the Claude-Roland thrust sheets but there is little surface evidence for the NE-SW set. Several E-W features are evident in surface mapping (including the alignment of mineralisation west of the Dolcoath Granite).

While there is no obvious relationship between magnetic field and mineralisation at low levels (100 to 150 m nominal) there is at high level. All sites from Mt Claude to the Lea River lie on a single trend evident at 1200 m. It is a band of perhaps two structures about 1 km wide. Other groups have loci on comparable E-W (actually EENE trends). This possible relationship does not account for all sites. Inspection of identified trend relationships, inferred section composition and known sites suggests that mafic rocks are either thick or relatively shallow beneath mineralised areas, especially gold-bearing areas, and that most lie in the extensional stress field in the northern face of the intersection of the conjugate set. Most mineralisation appears to be related to this "V" corner where it is in an E-W band. Several other such features exist.

Surface mapping has indicated an array of apparently minor or relatively discontinuous faults and structures. Most can be directly correlated with underlying implied gross fractures. This would indicate Tabberabberan re-activation at least.

Figure 32 attempts to show the distribution of thick accumulations of mafic rocks within the Cambrian sequences. These appear to be close to basement and may be generally present but thin due to form, folding or truncation. The greatest accumulation lies east of Lake Cethana. The Dolcoath Granite may have removed much of this material.

Two profiles have been modelled to test some of the implications of this interpretation (Figures 33 and 34). It is not claimed that this simple assessment is adequate but Figure 33 does prove that thick mafic units are present; that near the Dove Schists in the south being either overturned or reversely magnetised. Line 1063 presented more problems and these have not been resolved. It is possible to obtain a solution of the type shown for line 5500 but the shift differentials are not consistent. The option shown accounts for the salient features and implies thick, fault-sliced, compound mafic sources. These issues will be examined in later study in association with gravity data.

CONCLUSIONS

As this is a stage or progress report, and further work is in train, the conclusions offered are general and interim but do summarise present achievements.

1. Magnetic data offer much structural information relevant to understanding of the area and its history. This topic to be studied in association with gravity data.
2. Cambrian mafic suites are concealed and appear block bounded. Many marginal structures have been re-activated and surface expressions exist.
3. Mineralisation is concentrated on such re-activated boundaries or along major crustal trend systems and stress release corner. The northern side of the conjugate appears frequently and most sites occur when this is close to E-W features.
4. Many deposit styles have expression in magnetic data at about 100 m clearance. Gold deposits display very subtle expressions while tin or tungsten deposits are more definitive. Effects are modified by clearance variations and exploration appraisal may well require checking of the clearance envelope.
5. Many regional/signature features or controls are not identified in low level contour maps and a best seen in profile forms. High level presentations able to yield structural settings and controls can be modelled.
6. Tertiary basalts are variable in character but may be resolved. There is need for some control. The basalts are generally thin but several flows are indicated in some areas.
7. A number of unexplained signature style features have been noted and are worthy of immediate review. Exploration may need to be based on presumptions of major structures and alteration of materials above boundaries of underlying mafic rocks.
8. Little evidence for alteration effects has been noted but this may be due to the erratic nature of the magnetic field and poor definition of rock properties in this area. Another key element is the dominance of the mafic suites on the magnetic field. Virtually every feature in the northeastern two thirds of the area studied contains a significant contribution from this source.

RECOMMENDATIONS

1. Some discussion and review of the implications of this early work is required. Are mineralisation concepts implied feasible and useful? What roles could the granite and the mafic suite have? Are there major internal thrust boundaries and do these control loci for mineralisation? Are these reflected in some E-W features?
2. The anomalous sites should be reviewed and visited. The coordinates offered may carry a precision of +/- 200 m so an area of 400 x 400 m should be checked. Geochemistry is advised for independent checking. In each case the effects of basalt boundaries, previously unmapped pods of basalt or fault oxidation effects need to be assessed.
3. Some drilling control on the thickness of basalt is required in order to finally remove this variable. Magnetic analysis can provide the regional stripping once this is done.
4. Magnetic property analysis is recommended for all units but special attention should be directed at Dove Granite, Lorinna Greywacke contents and the felsic rocks since there are suggestions that these contain a range of lithologies. Some remanence determinations will be essential but I suggest all determinations use field magnetometer methods. This is cheaper, more representative and permits more samples to be measured.
5. Second stage work should review the known or suspected mineralised zones for drape imperfections. It may be that some aspects of mineralisation signatures have already been modified by the survey and its relation to the land surface.
6. Where structures appear favourable, or other information indicates interest the alternate lines not used in this study should be reviewed. These areas may be advised.
7. More comprehensive structural analysis using both gravity and 1200 m data sets can be constrained by the implications of this work.

Note that the compensations and corrections for the lines examined do not need to be repeated unless line position problems are to be removed completely. Most parts of most lines are free of this problem and the corrected data sets can be used to calculate or examine the field on any surface.

REFERENCES

- Bamford, A.L., and Green, G.R., 1988. Cethana. Metallic mineral deposits map 8114(IV)-8115(III). Mines Department Tasmania.
- Leaman, D.E., 1988. Granites of W and NW Tasmania. Part 9. The Dolcoath Granite. Mt Read Volcanics Project Report, Mines Department Tasmania.

Report submitted on behalf of
Leaman Geophysics
by

D. Leaman

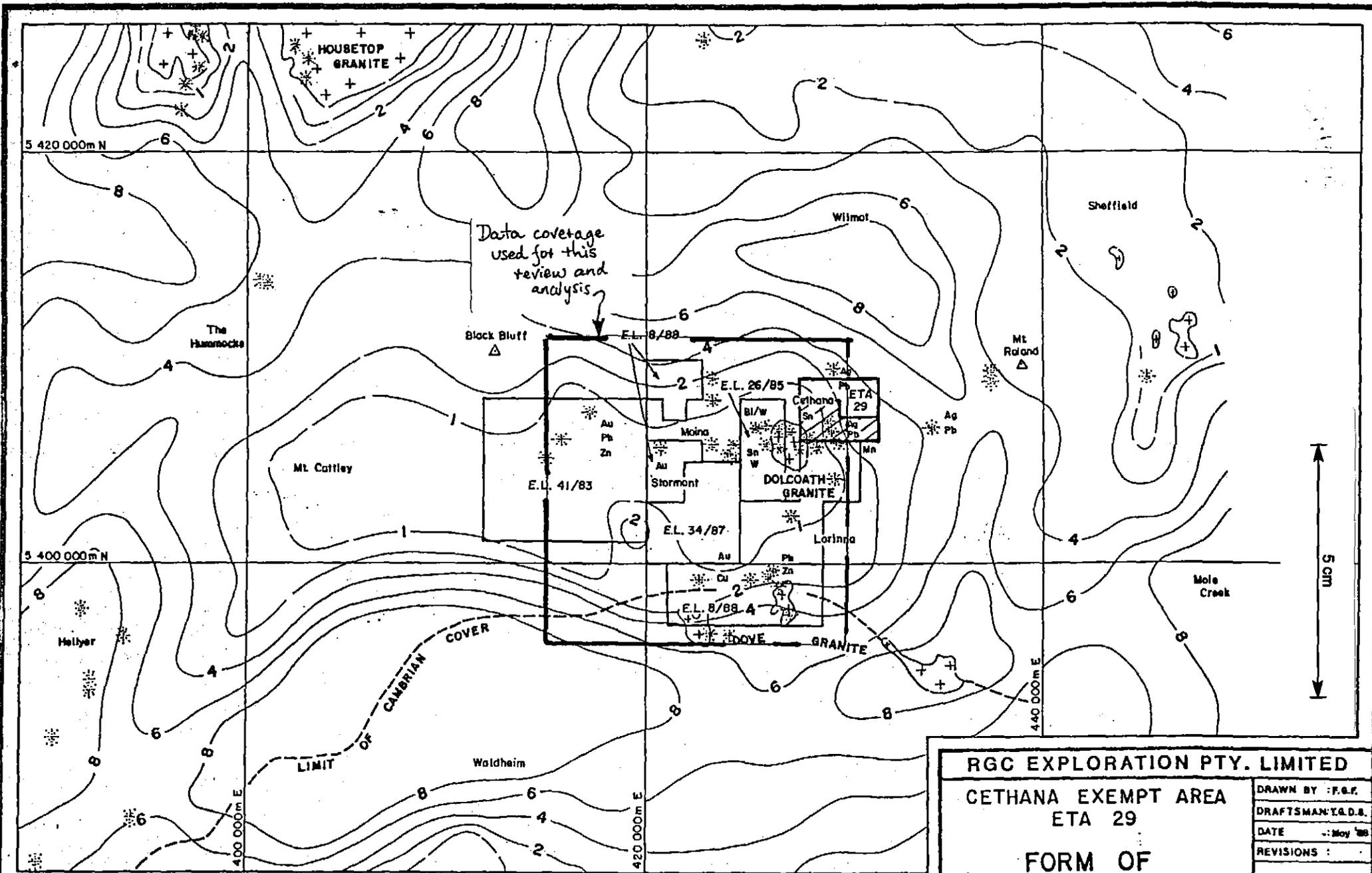
Dr. D.E. Leaman, B.Sc., Ph.D
M.Aus.I.M.M., M.M.I.C.A

22-8-88

FIGURES

1. Licence area, locality map
2. Observed magnetic profiles 5240 to 5340
3. 5340 to 5440
4. 5440 to 5540
5. 5540 to 5640
6. 5640 to 1061
7. 1061 to 5840
8. 5840 to 5900
9. Contours of magnetic field, Moina west, Mines Dept survey
10. Moina east
- 9a, 10a Magnetic field with geological basemap
11. Magnetic profiles at 1200 m 5340 to 5440
12. 5540 to 5640
13. 1061 to 5840
14. Magnetic field at 1200 m, unfiltered
15. filtered
16. First vertical derivative at 1200 m
17. Second vertical derivative at 1200 m
18. Overlay basemap for Figures 14 to 17 (film in pocket)
19. Magnetic depth estimate plot line 5360 7.5 km
20. 5400
21. 5440
22. 5480
23. 5520
24. 5560
25. 5600
26. 5640
27. Magnetic depth estimate plot line 5600 15 km
28. 5620
29. 5640
30. Magnetic depth estimate plot line 5620 15km spec operator
31. Effect of observation height on resolution line 5640
32. Regional trend and source summary
33. Model implications for line 5500
34. 1063

Note: transparent overlay for Figures 14 to 17 in pocket
 Diagram original included as Figure 18



* MINERALISED SITES

Provisional Interpretation : contours showing top of granite below surface in km. (Leaman, Jan. 1988)

RGC EXPLORATION PTY. LIMITED

CETHANA EXEMPT AREA
ETA 29

FORM OF
DOLCOATH GRANITE

SCALE 1:250,000 Kilometres

DRAWN BY : F.G.F.
DRAFTSMAN: T.D.S.
DATE : May '88
REVISIONS :
FILE NO.

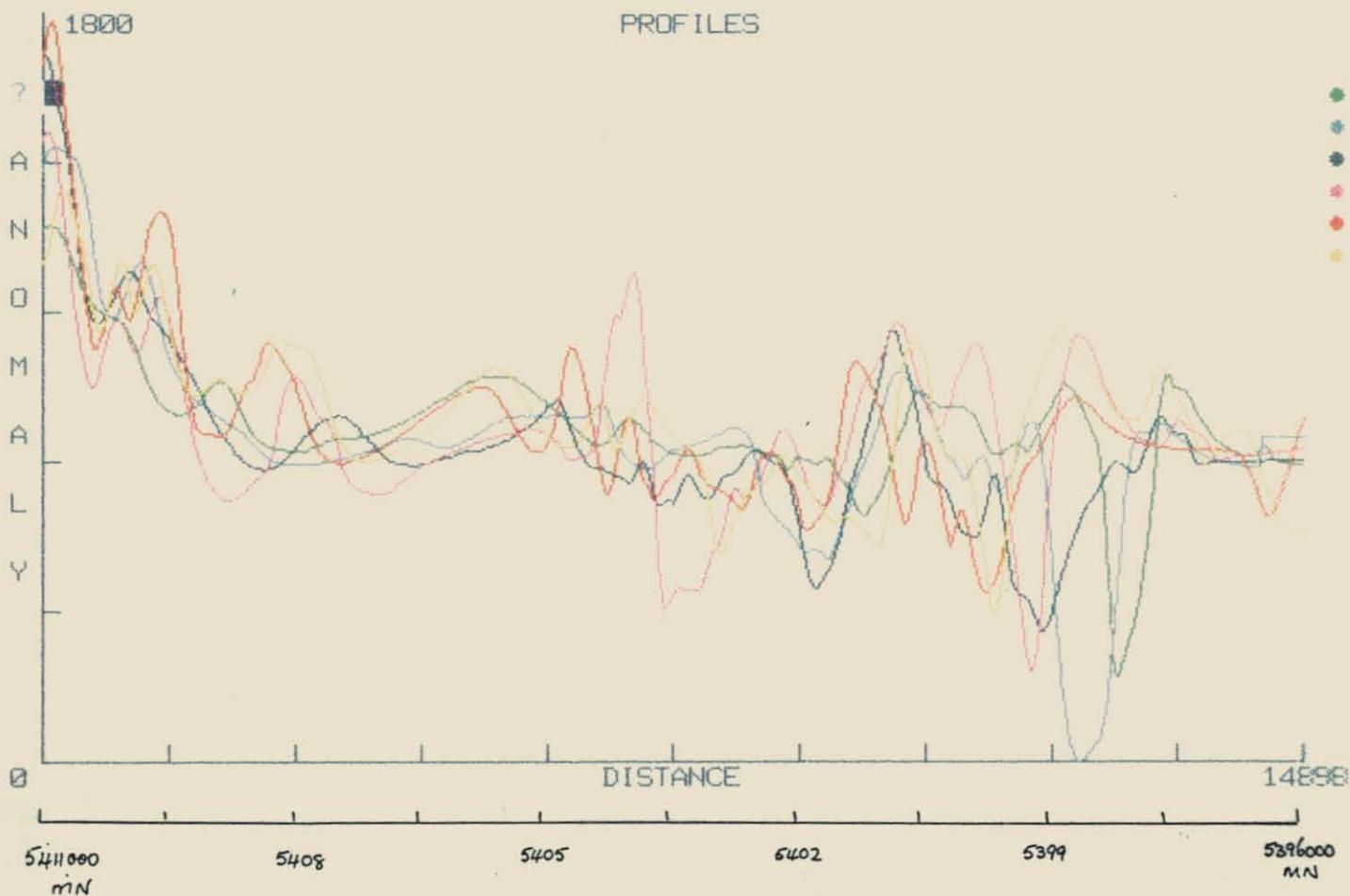
FIG. 1

569057

LEAMAN GEOPHYSICS

Survey Review, Specification, Reduction, Interpretation
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Specialties:- Gravity, Magnetics, Seismic Methods

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TELEPHONE: (002) 24 0319



1	B:M5240	MOINA PROJECT LINE 5240	nominal easting
2	B:M5260	MOINA PROJECT LINE 5260	413 500
3	B:M5280	MOINA PROJECT LINE 5280	414 000 ME
4	B:M5300	MOINA PROJECT LINE 5300	414 500
5	B:M5320	MOINA PROJECT LINE 5320	415 000
6	B:M5340	MOINA PROJECT LINE 5340	415 500
ZERO SHIFT : 780.2			416 000

569058

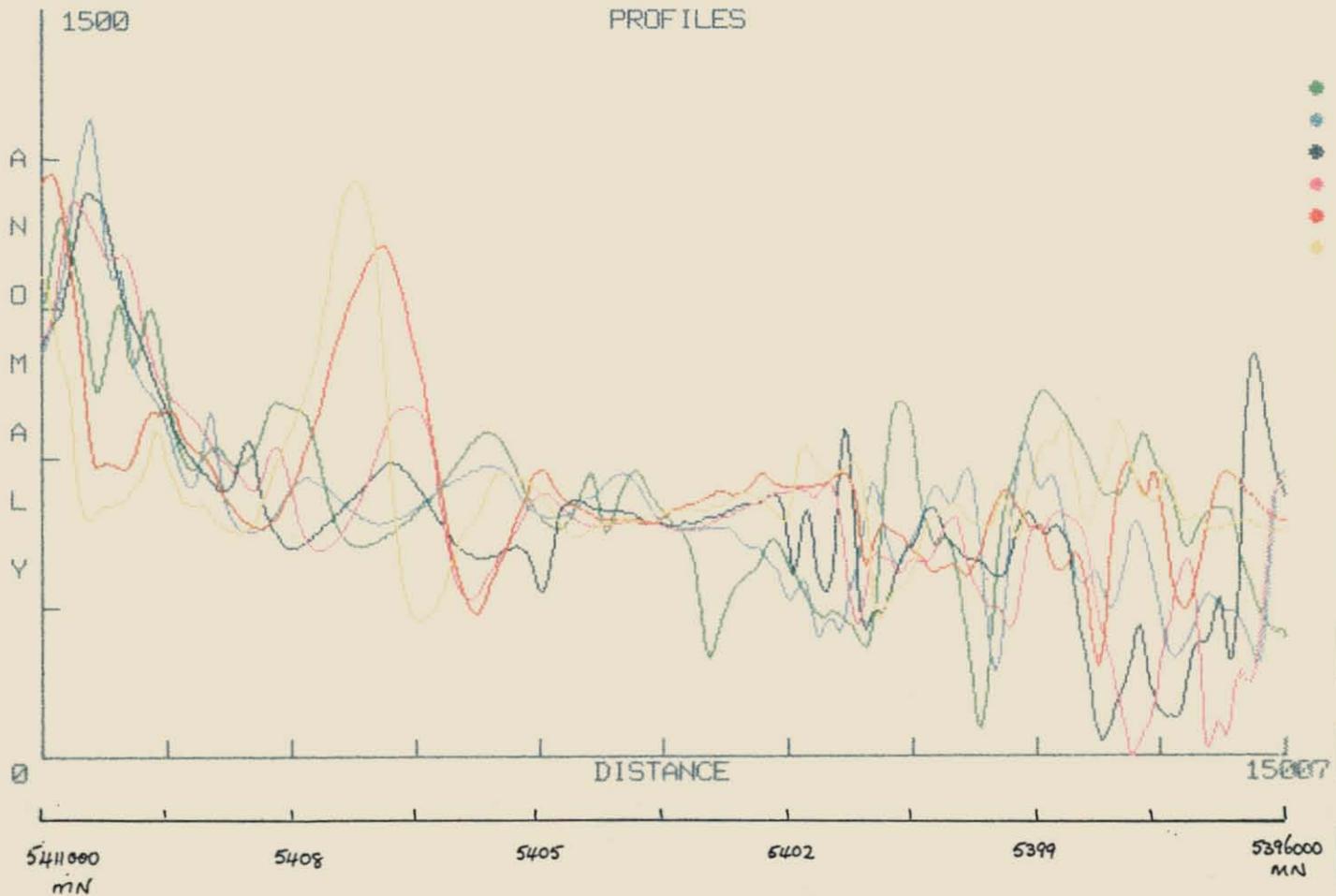
AEROMAGNETIC PROFILES nominal clearance 100m

FIGURE 2

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			nominal easting
1	B: M5340	MOINA PROJECT LINE 5340	416 000 mE
2	B: M5360	MOINA PROJECT LINE 5360	416 500
3	B: M5380	MOINA PROJECT LINE 5380	417 000
4	B: M5400	MOINA PROJECT LINE 5400	417 500
5	B: M5420	MOINA PROJECT LINE 5420	418 000
6	B: M5440	MOINA PROJECT LINE 5440	418 500
ZERO SHIFT : 483			

569059

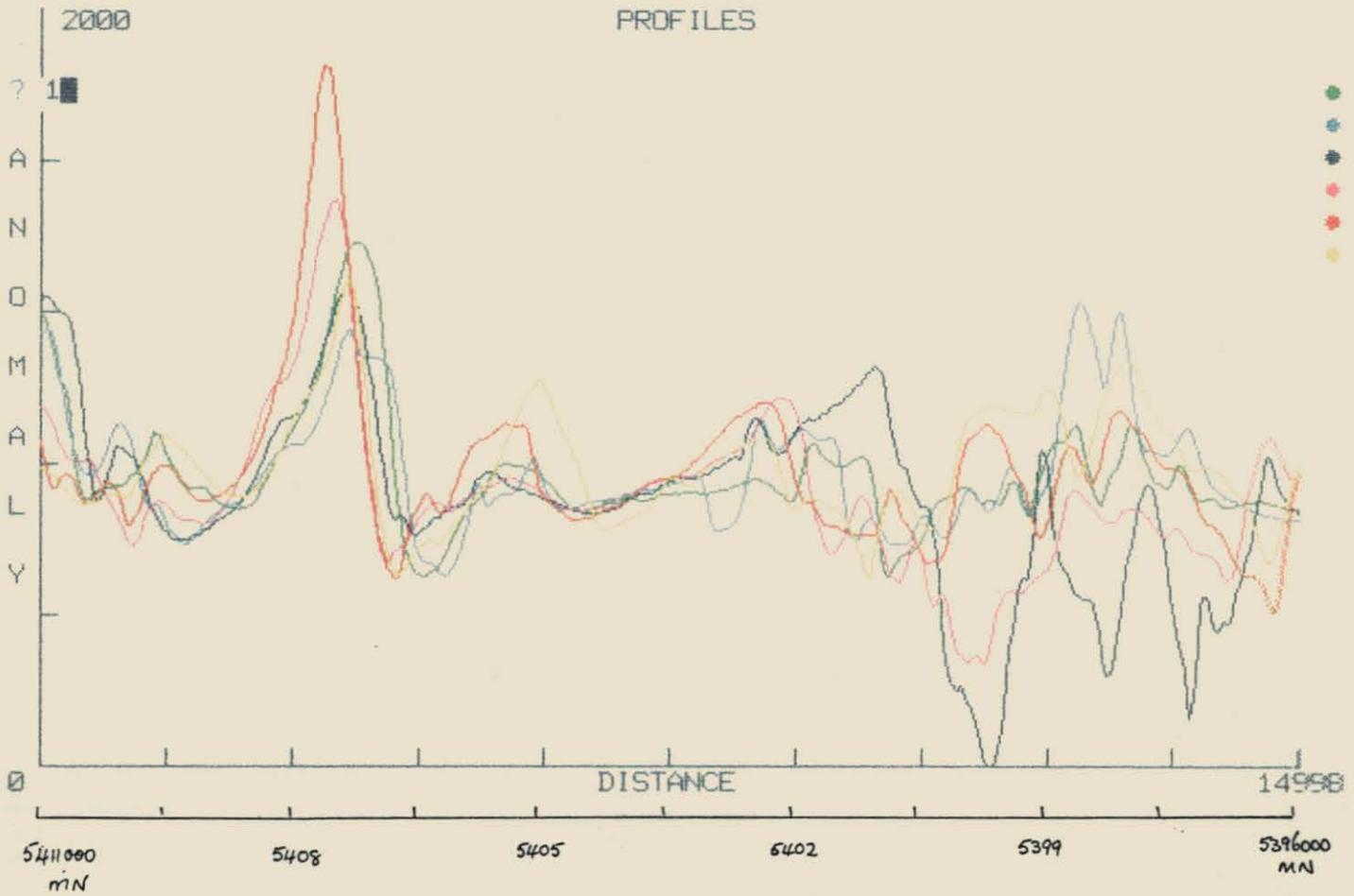
AEROMAGNETIC PROFILES nominal clearance 100m

FIGURE 3

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1	B:M5440	MOINA PROJECT LINE 5440	nominal easting 418500 mE
2	B:M5460	MOINA PROJECT LINE 5460	419000
3	B:M5480	MOINA PROJECT LINE 5480	419500
4	B:M5500	MOINA PROJECT LINE 5500	420000
5	B:M5520	MOINA PROJECT LINE 5520	420500
6	B:M5540	MOINA PROJECT LINE 5540	421000

ZERO SHIFT : 713.4

569060

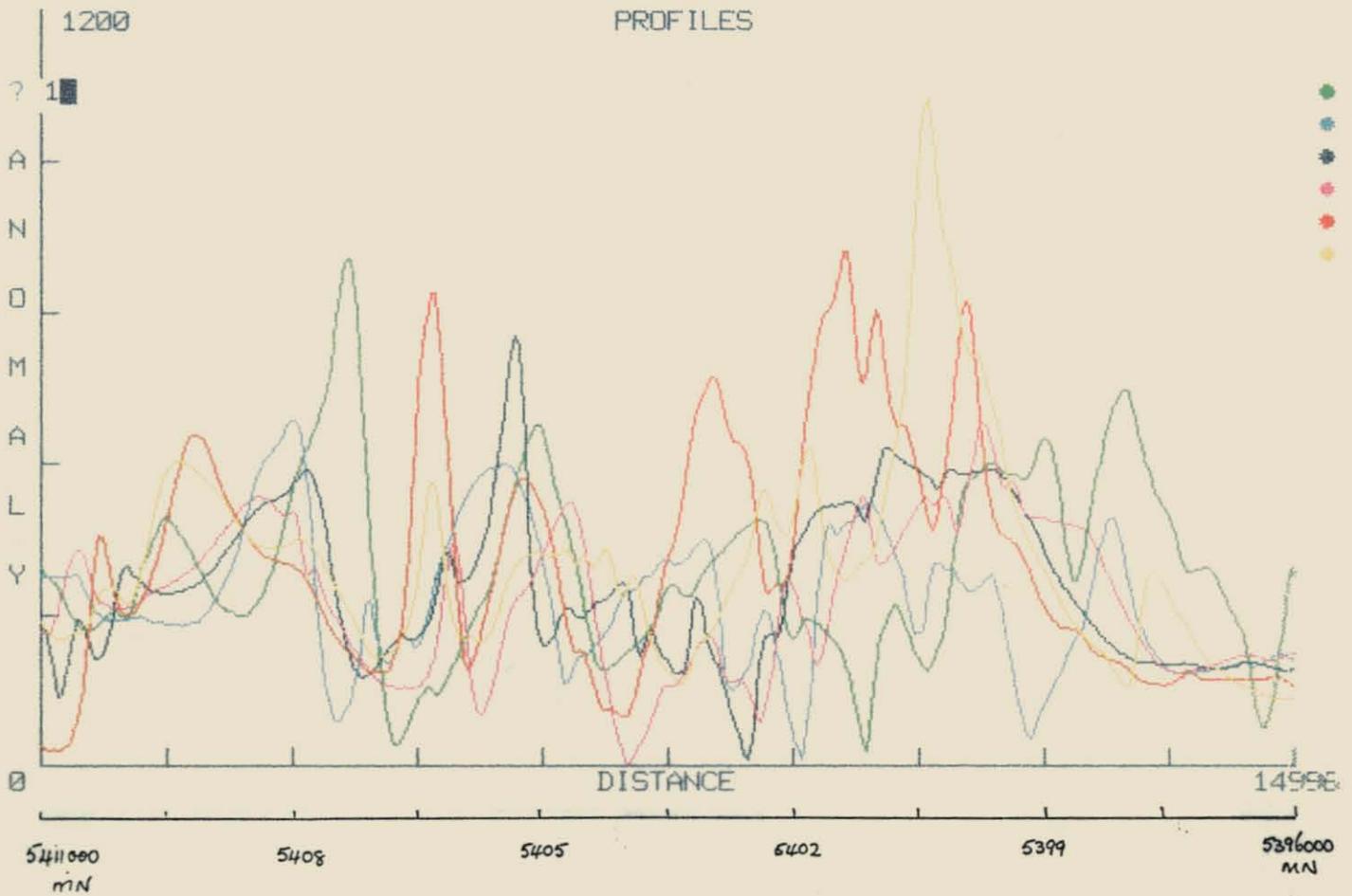
AEROMAGNETIC PROFILES nominal clearance 100m

FIGURE 4

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1	B: M5540	MOINA PROJECT LINE 5540	Nominal easting
2	B: M5560	MOINA PROJECT LINE 5560	421 000 ME
3	B: M5580	MOINA PROJECT LINE 5580	421 500
4	B: M5600	MOINA PROJECT LINE 5600	422 000
5	B: M5620	MOINA PROJECT LINE 5620	422 500
6	B: M5640	MOINA PROJECT LINE 5640	423 000
ZERO SHIFT : 239.3001			423 500

569061

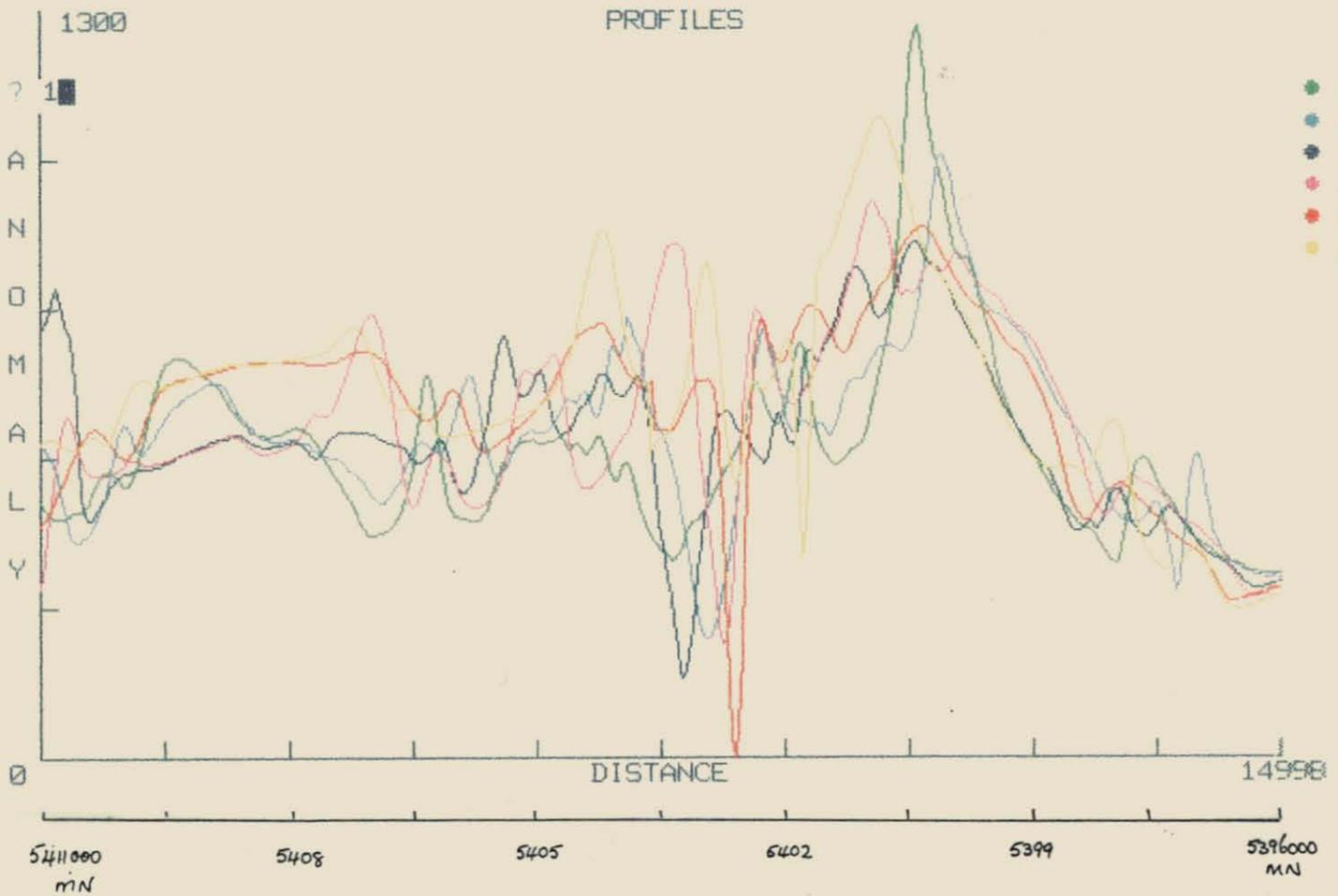
AEROMAGNETIC PROFILES nominal clearance 100m

FIGURE 5

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1	B: M5640	MOINA PROJECT LINE 5640	nominal easting 423500
2	B: M5660	MOINA PROJECT LINE 5660	424000
3	B: M5680	MOINA PROJECT LINE 5680	424500
4	B: M5700	MOINA PROJECT LINE 5700	425000
5	B: M1060	MOINA PROJECT LINE 1060	425500
6	B: M1061	MOINA PROJECT LINE 1061	426000
ZERO SHIFT : 452.3001			

569062

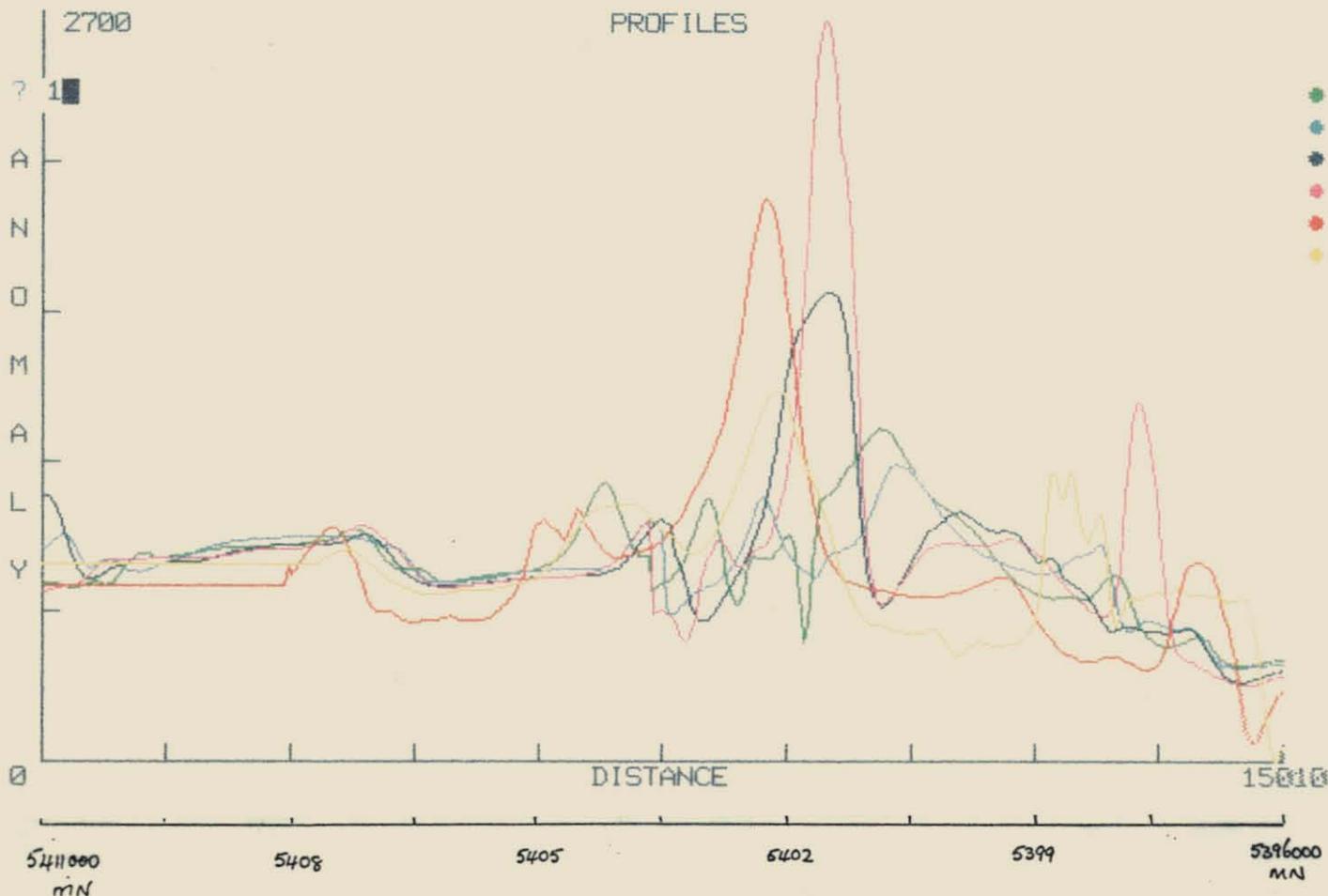
AEROMAGNETIC PROFILES nominal clearance 100m
 (150m for 1060-1061)
 FIGURE 6

052

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1	B:M1061	MOINA PROJECT LINE 1061	nominal easting 426 000 mE
2	B:M1062	MOINA PROJECT LINE 1062	426 500
3	B:M1063	MOINA PROJECT LINE 1063	427 000
4	B:M1064	MOINA PROJECT LINE 1064	427 500
5	B:M5820	MOINA PROJECT LINE 5820	428 000
6	B:M5840	MOINA PROJECT LINE 5840	428 500

ZERO SHIFT : 541.7

569063

AEROMAGNETIC PROFILES

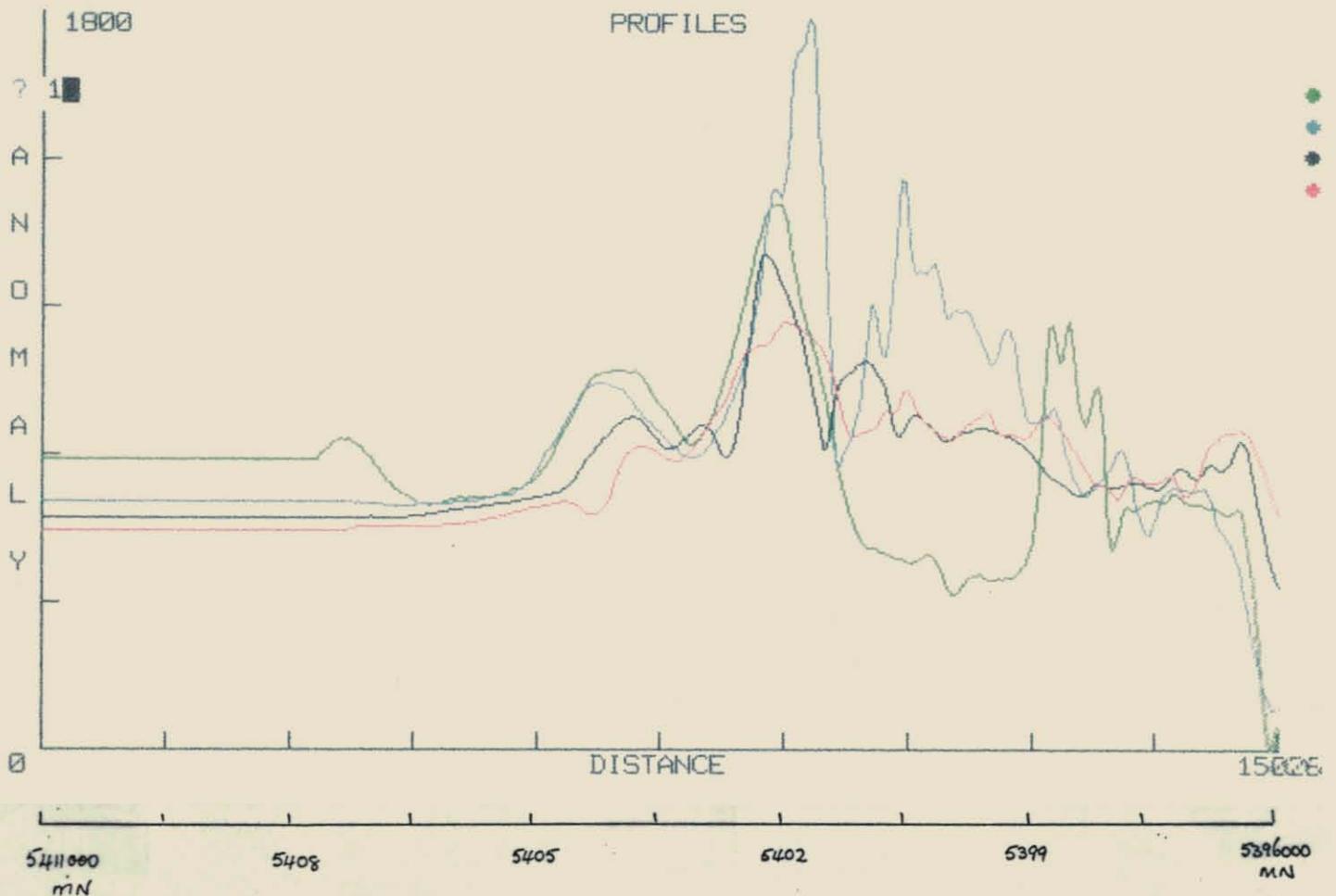
nominal clearance 100m
 (150 m for 1061-1064)

FIGURE 7

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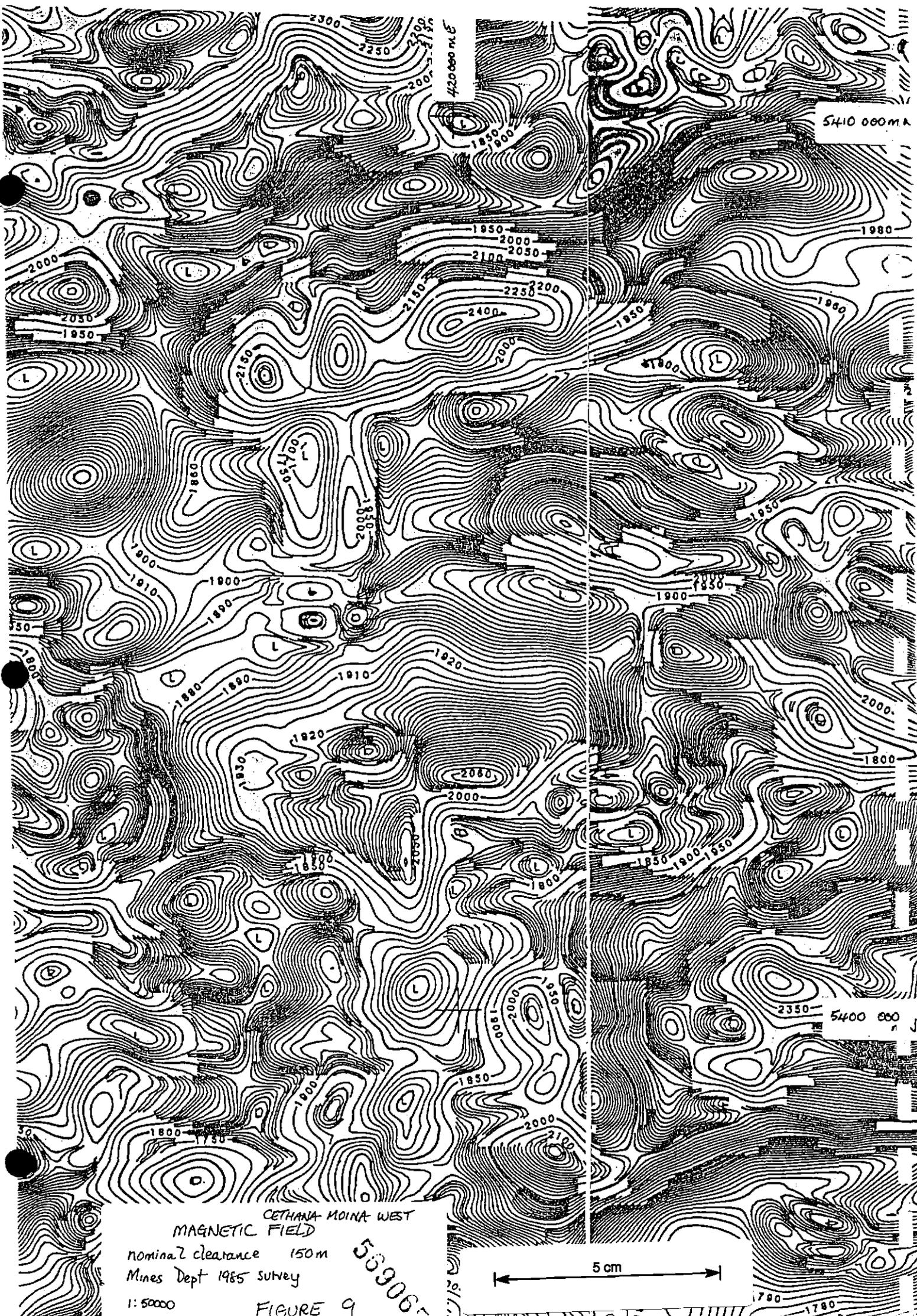
1	B:M5840	MOINA PROJECT LINE 5840	428500
2	B:M5860	MOINA PROJECT LINE 5860	429000
3	B:M5880	MOINA PROJECT LINE 5880	429500
4	B:M5900	MOINA PROJECT LINE 5900	430000 mE

ZERO SHIFT : 541,7

569064

AEROMAGNETIC PROFILES nominal clearance 100m

FIGURE 8



5410 000 m

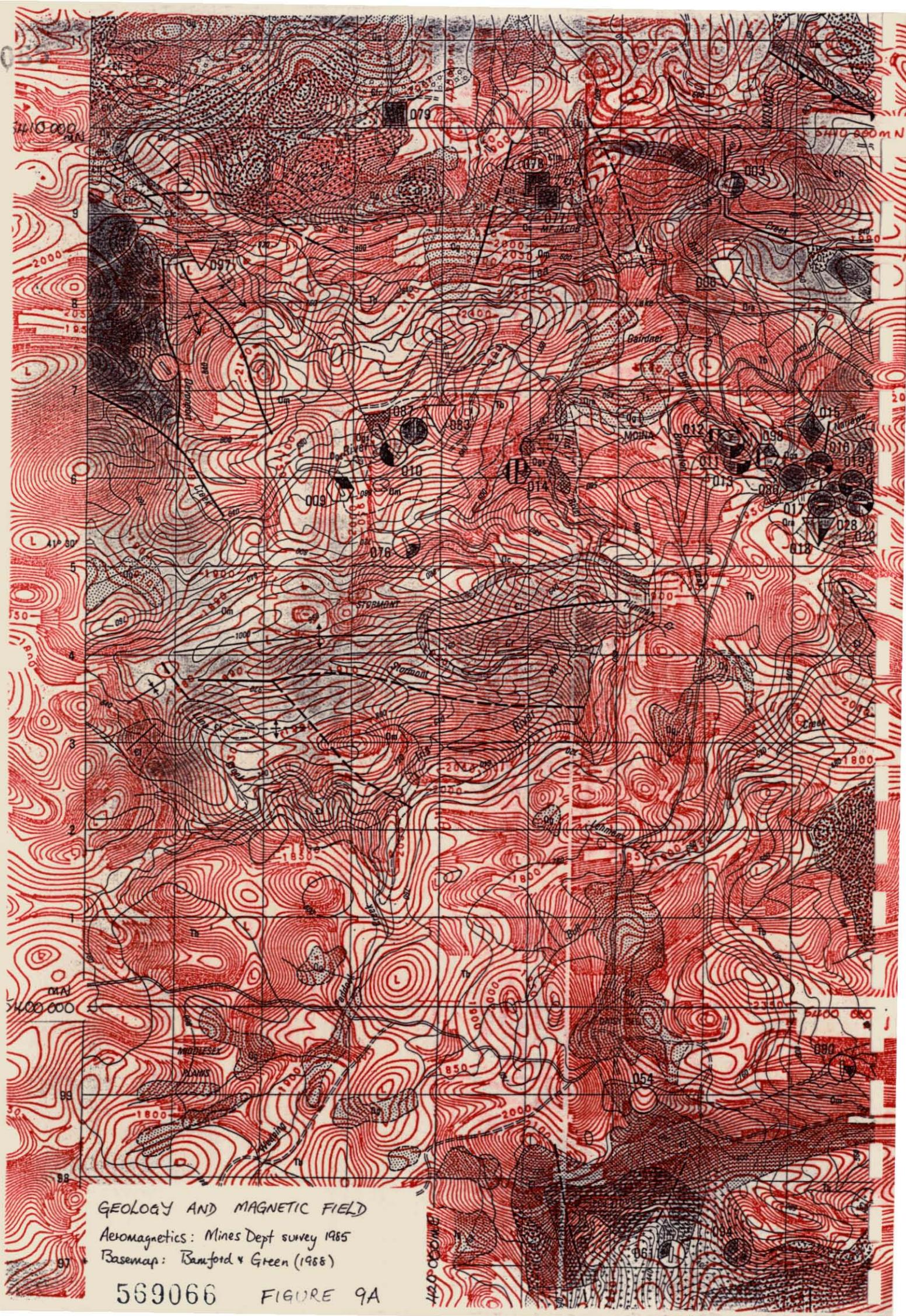
420 000 m E

CETHANA MOINA WEST
 MAGNETIC FIELD
 nominal clearance 150 m
 Mines Dept 1985 survey
 1:50000

569065

FIGURE 9

5 cm



GEOLOGY AND MAGNETIC FIELD
 Aeromagnetics: Mines Dept survey 1965
 Basemap: Bamford & Green (1968)

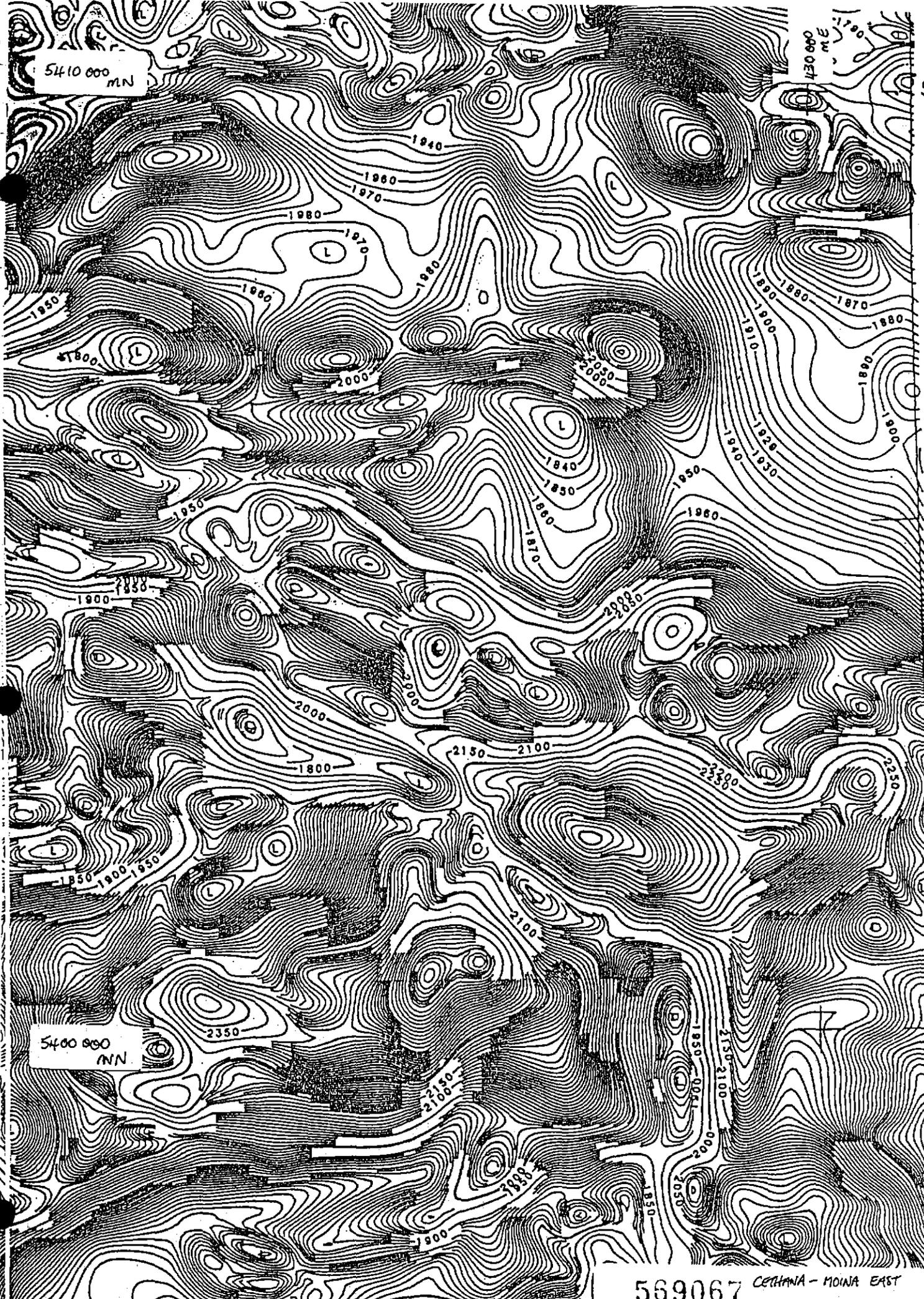
569066 FIGURE 9A

266

541

5410 000
MN

430 000
ME



5400 000
MN

5 cm

569067 CETHANA - MOINA EAST
 MAGNETIC FIELD
 Nominal clearance 150m
 Mines Dept 1985 survey
 1:50000 FIGURE 10



GEOLOGY AND MAGNETIC FIELD

Aeromagnetics: Mines Dept survey 1985
Basemap: Bamford & Green (1988)

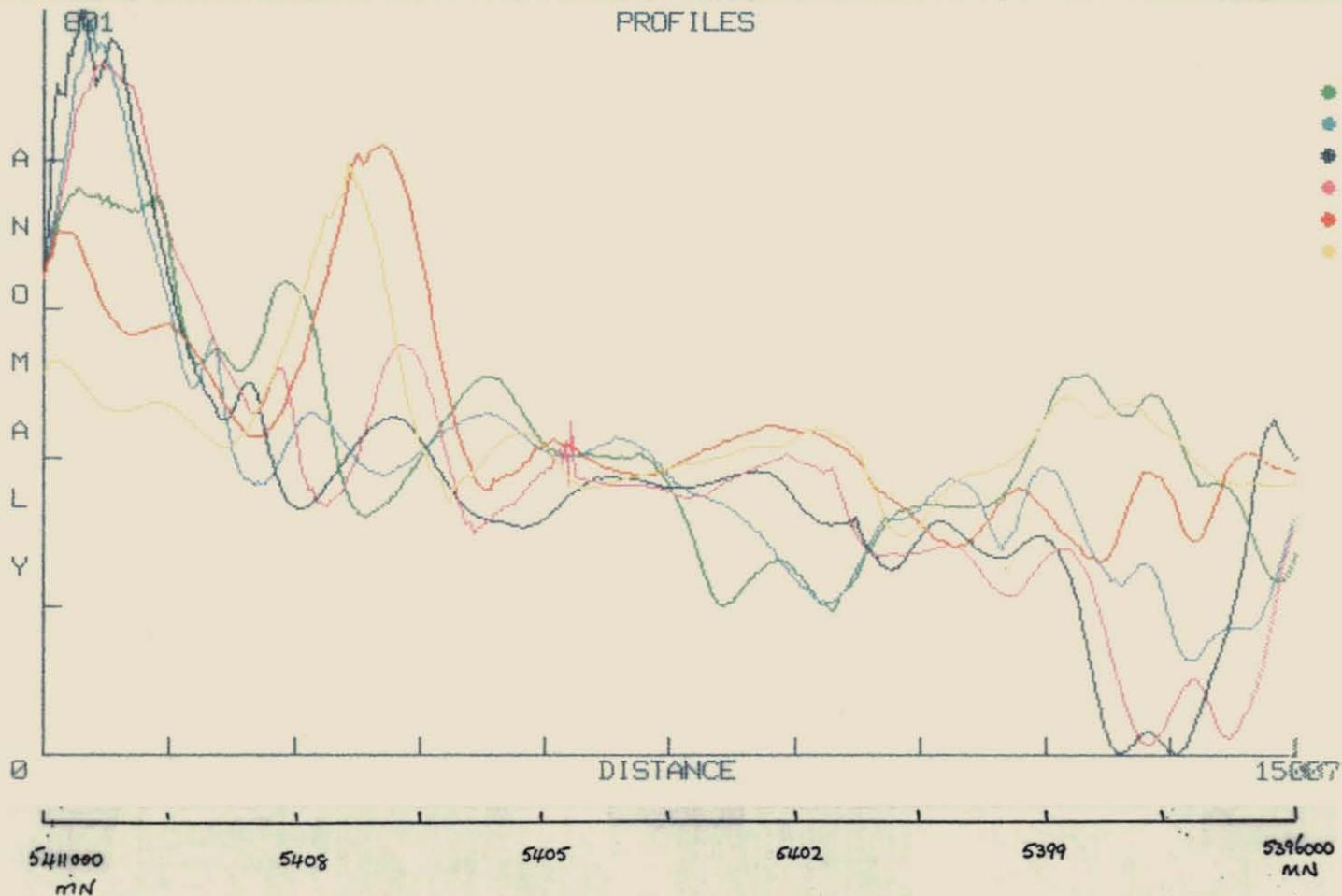
569068 FIGURE 10A 067

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1	B:M12L5340	MOINA MAGNETICS 5340 AT 1200 M	416000 mE
2	B:M12L5360	MOINA MAGNETICS 5360 AT 1200M	416500
3	B:M12L5380	MOINA MAGNETICS 5380 AT 1200M	417000
4	B:M12L5400	MOINA MAGNETICS 5400 AT 1200 M	417500
5	B:M12L5420	MOINA MAGNETICS 5420 AT 1200 M	418000
6	B:M12L5440	MOINA MAGNETICS 5440 AT 1200 M	418500
ZERO SHIFT : 300.9977			

569069

COMPENSATED

AEROMAGNETIC PROFILES :

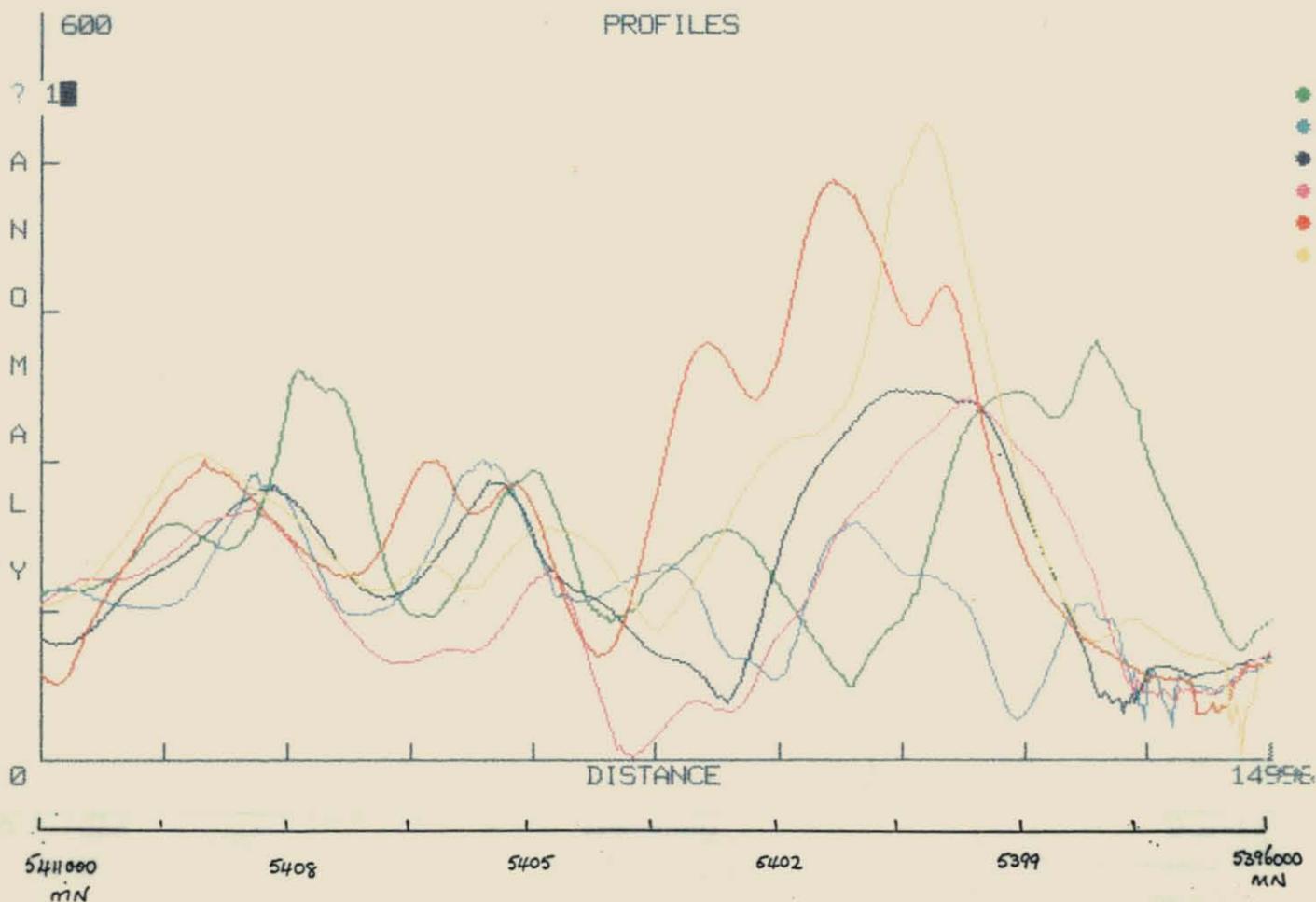
CALCULATION FOR
1200 M LEVEL ASL

053

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				nominal casting
1	B:M12L5540	MOINA MAGNETICS	5540 AT 1200 M	421 000 mE
2	B:M12L5560	MOINA MAGNETICS	5560 AT 1200 M	421 500
3	B:M12L5580	MOINA MAGNETICS	5580 AT 1200 M	422 000
4	B:M12L5600	MOINA MAGNETICS	5600 AT 1200 M	422 500
5	B:M12L5620	MOINA MAGNETICS	5620 AT 1200 M	423 000
6	B:M12L5640	MOINA MAGNETICS	5640 AT 1200 M	423 500
ZERO SHIFT : 110.4018				

569070

COMPENSATED AEROMAGNETIC PROFILES : CALCULATION FOR 1200m LEVEL ASL

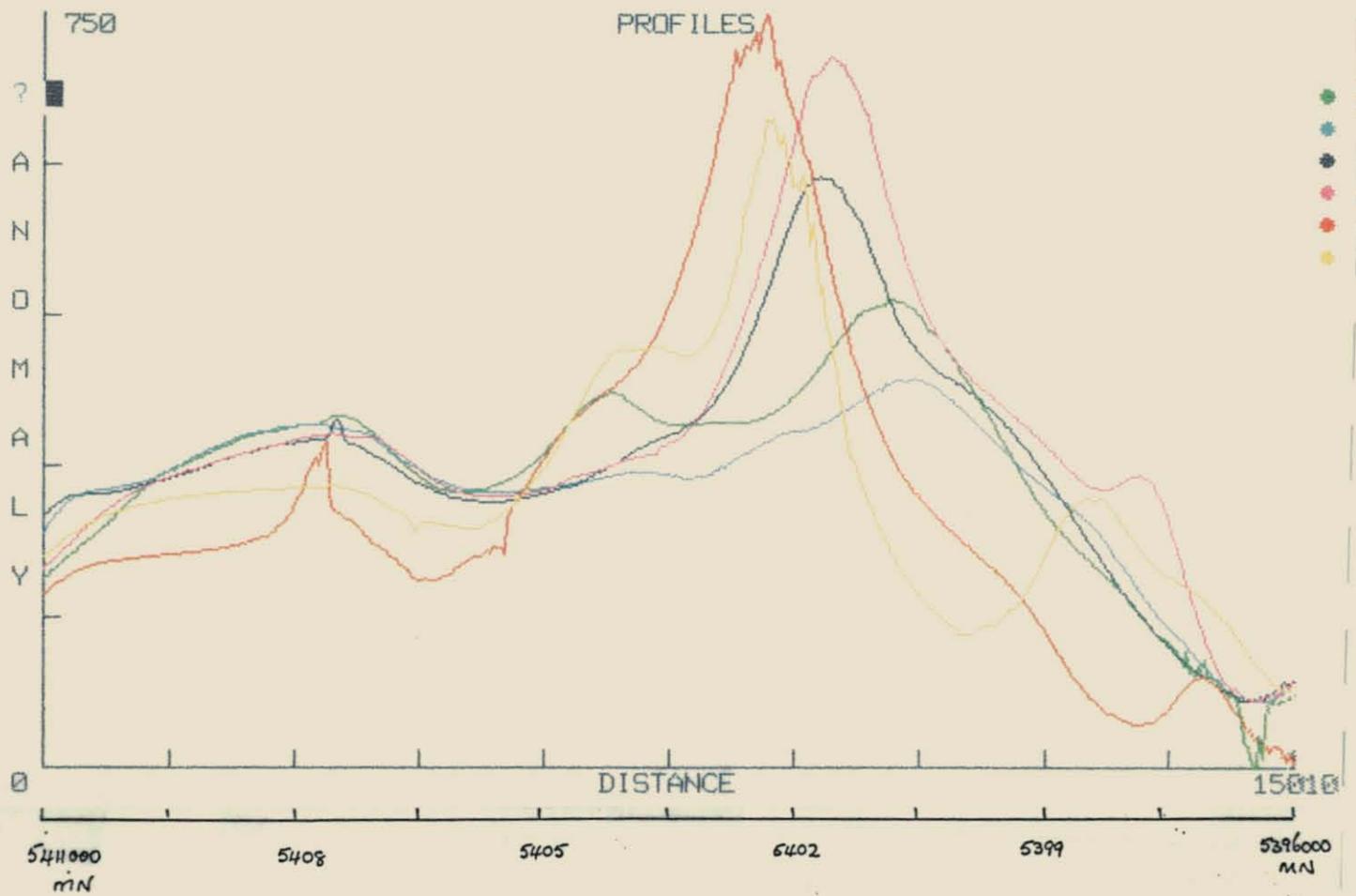
FIGURE 12

870

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				Nominal easting
1	B:M12L1061	MOINA MAGNETICS	1061 AT 1200 M	426000 mE
2	B:M12L1062	MOINA MAGNETICS	1062 AT 1200 M	426500
3	B:M12L1063	MOINA MAGNETICS	1063 AT 1200 M	427000
4	B:M12L1064	MOINA MAGNETICS	1064 AT 1200 M	427500
5	B:M12L5820	MOINA MAGNETICS	5820 AT 1200 M	428000
6	B:M12L5840	MOINA MAGNETICS	5840 AT 1200 M	428500

ZERO SHIFT : 120.744

569071

COMPENSATED AEROMAGNETIC PROFILES : CALCULATION FOR 1200 m LEVEL ASL

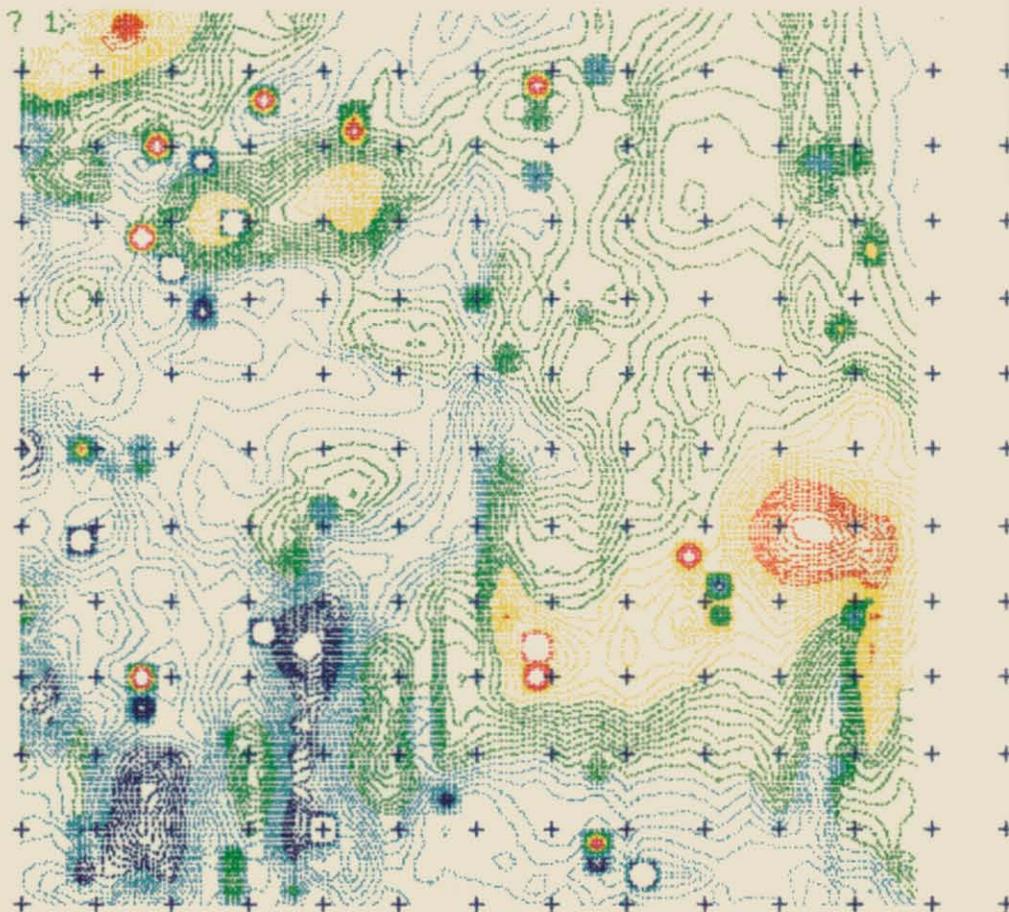
FIGURE 13

671

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5396 000mN

415000 ME

MOINA MAGNETICS 1200 M
MOINA MAGNETICS COMPENSATED DATA LEVEL 1200 M
SCALE 125000
SAMPLE SPACING 250

(UNFILTERED)

Aug 88

Use geographic overlay (Fig 18 - in pocket)

Colour code:	-300 to -140	mauve	
	-140 to 40	blue	
nT	40 to 220	green	20nT interval
	220 to 400	yellow	
	400 to 580	red	
	580 to 700	pink	

569072

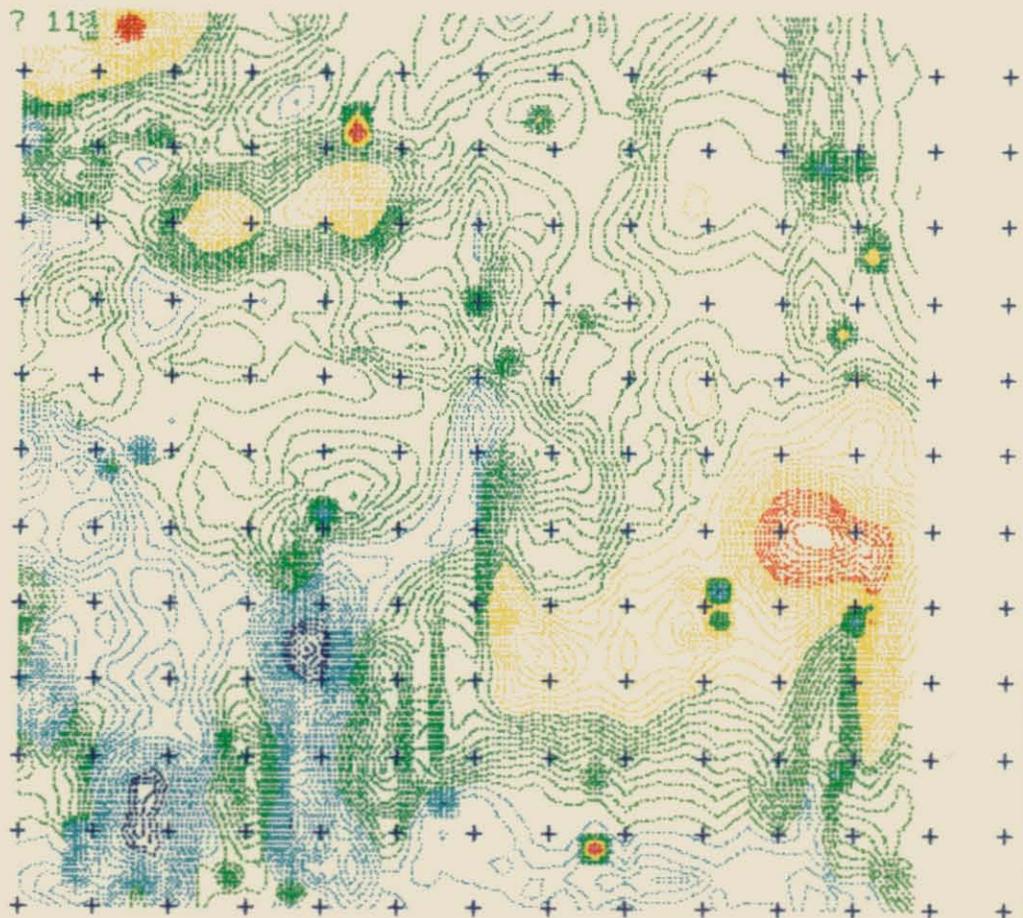
Figure 14

072

LEAMAN GEOPHYSICS

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Wide Experience Most Methods
Specialties:- Gravity, Magnetics, Seismic Methods

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5396 000mN

415000 ME

MOINA MAGNETICS 1200 M
MOINA MAGNETICS COMPENSATED DATA LEVEL 1200 M
SCALE 125000
SAMPLE SPACING 250

(FILTERED VERSION)

Aug 88

Use geographic overlay (Fig 18 - in pocket)

Colour code :	- 440 to - 240	purple	20nT interval
	to - 20	blue	
	to 200	green	
	to 420	yellow	
	to 640	red	
	to 820	pink	

569073

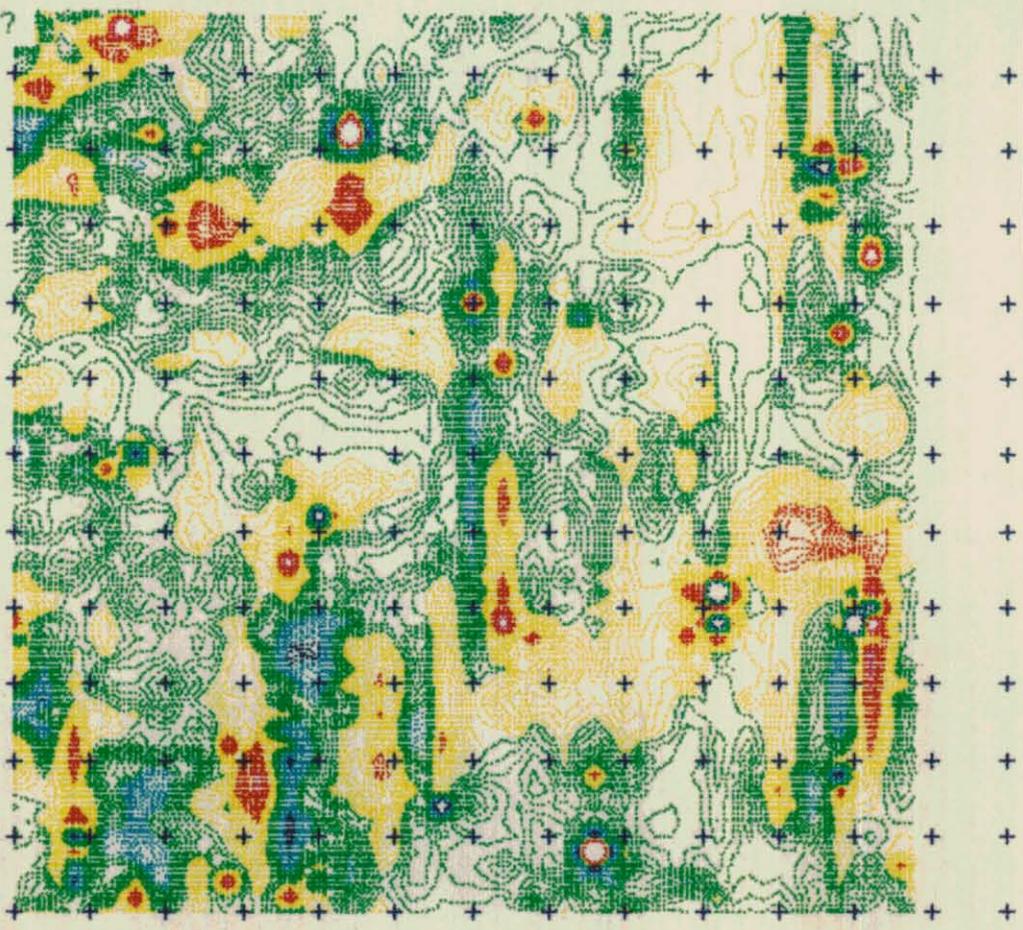
Figure 15

073

LEAMAN GEOPHYSICS

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Specialties:- Gravity, Magnetics, Seismic Methods

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TELEPHONE: (002) 24 0319



5396 000mN

415000 ME

MOINA MAGNETICS 1200 M
MOINA MAGNETICS COMPENSATED 1200M FIRST DERIVATIVE
SCALE 125000
SAMPLE SPACING 250

Colour code: -250 to -170 nt/m purple
 to -80 blue
 to 10 green
 to 100 yellow
 to 190 red
 > 190 pink

10 unit contour interval

Use geographic overlay (Fig 18 - in pocket)

569074

Aug 88

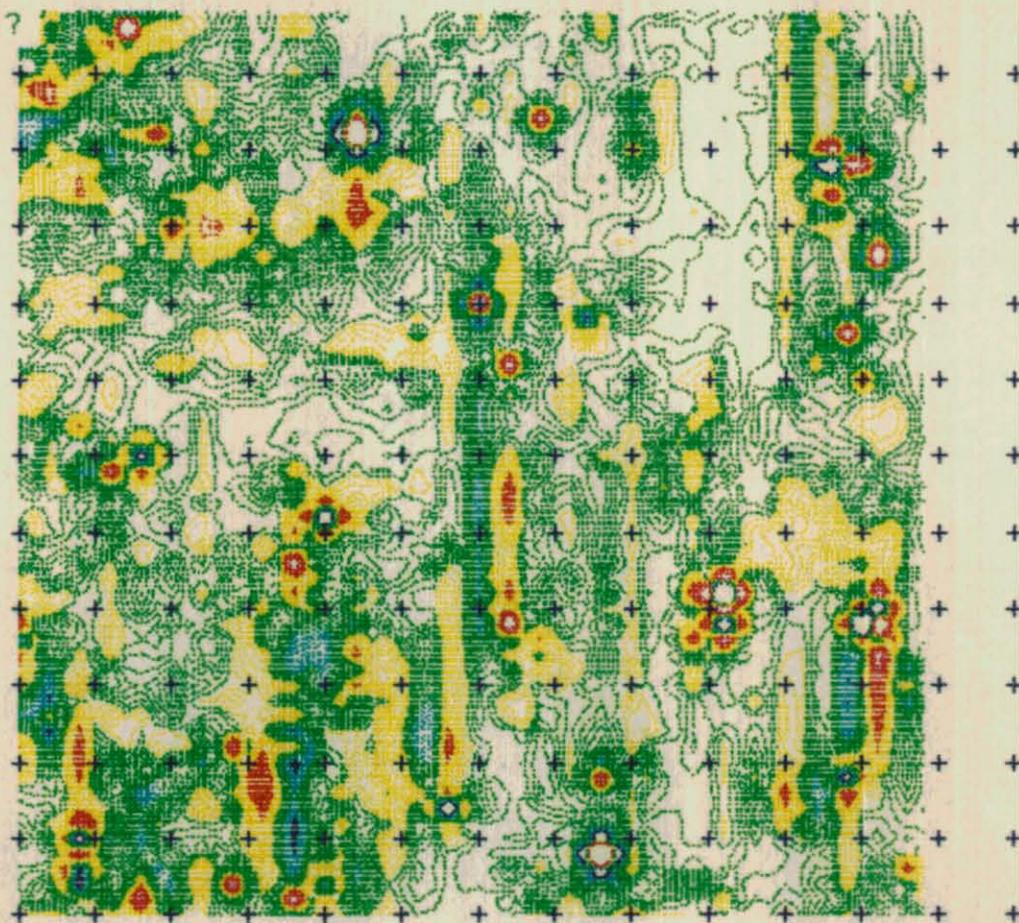
Figure 16

074

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5396 000mN

41500 ME

MOINA MAGNETICS 1200 M
MOINA MAGNETICS COMPENSATED 1200M SECOND DERIVATIVE
SCALE 125000
SAMPLE SPACING 250

Colour code: -250 to -170 purple
 to -80 blue
 to 10 green
 to 100 yellow
 to 190 red
 >190 pink

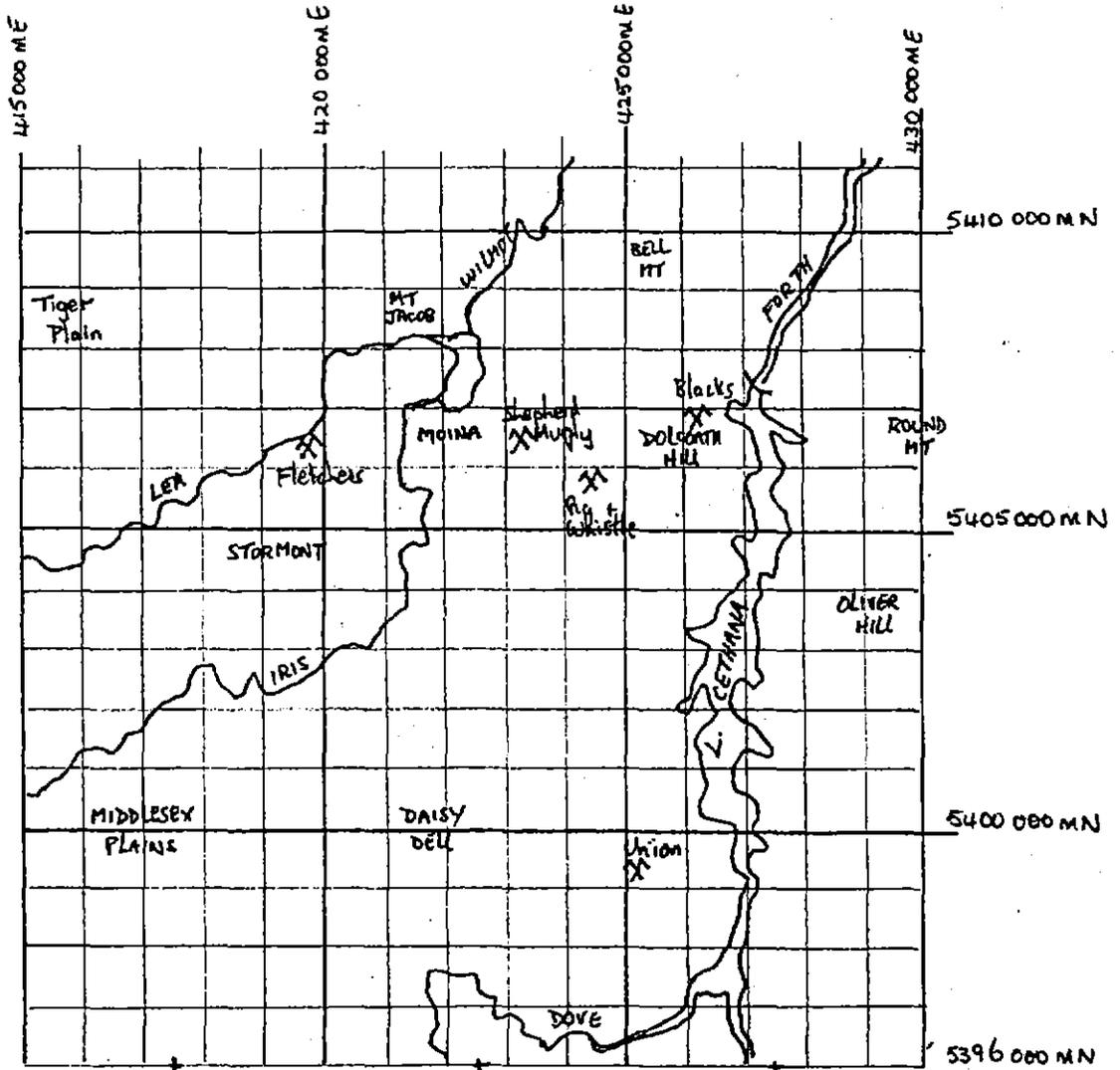
10 unit contour interval

Use geographic overlay (Fig 16 - in pocket)

569075

Aug 88

Figure 17



OVERLAY
 MOINA MAGNETICS - COMPENSATED FIELD

For diagrams :

Intensity at 1200m
 First, Second derivatives at 1200m.

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 Hobart, Tasmania 7001

076

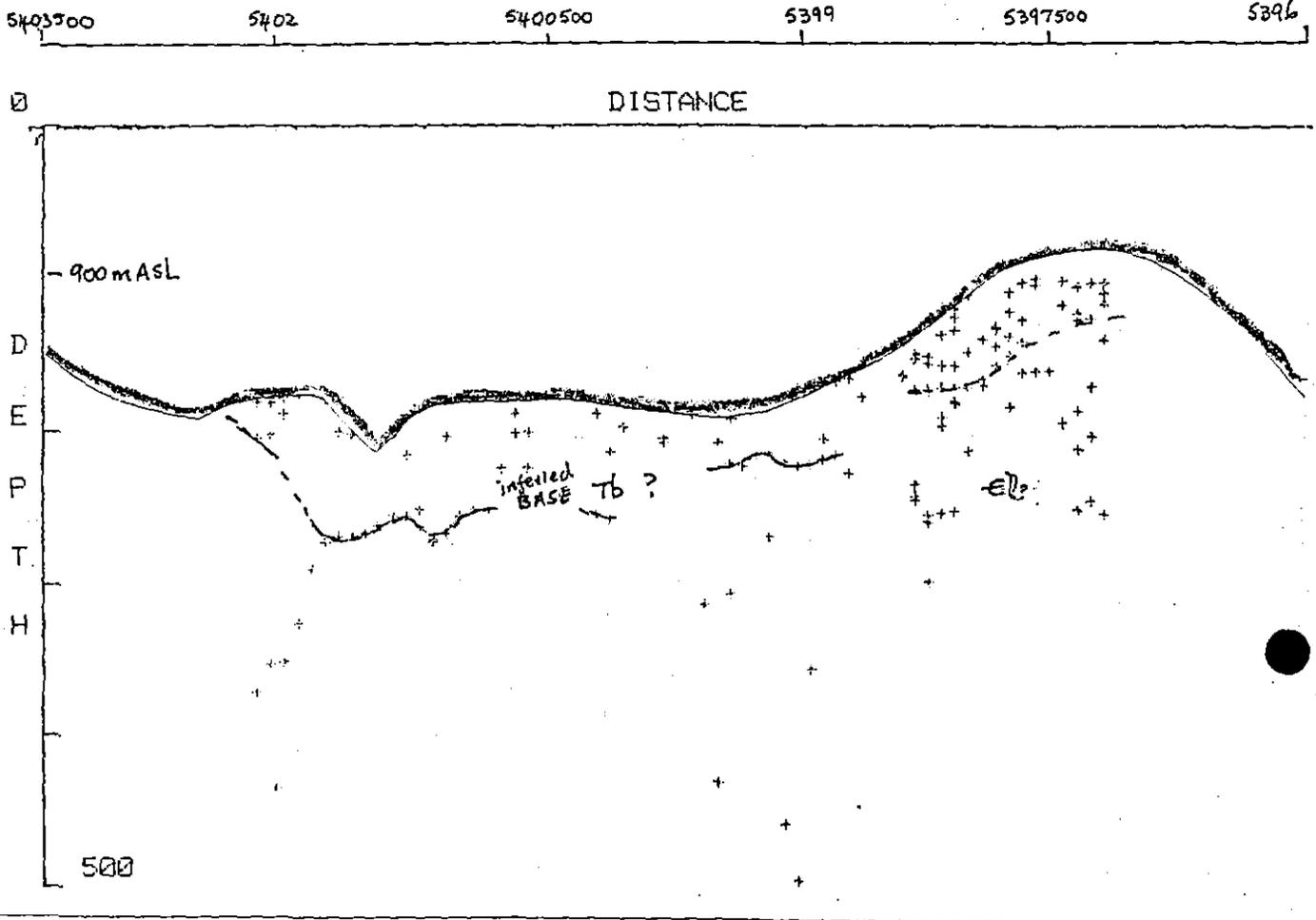
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Nominal easting: 416500 mE



MAGNETIC DEPTH ESTIMATE PLOT

B: D5360H64

BASALT DEPTH ESTIMATES LONG PROPERTY OPERATOR (64) 5360

Aug 85

FIGURE 19

077

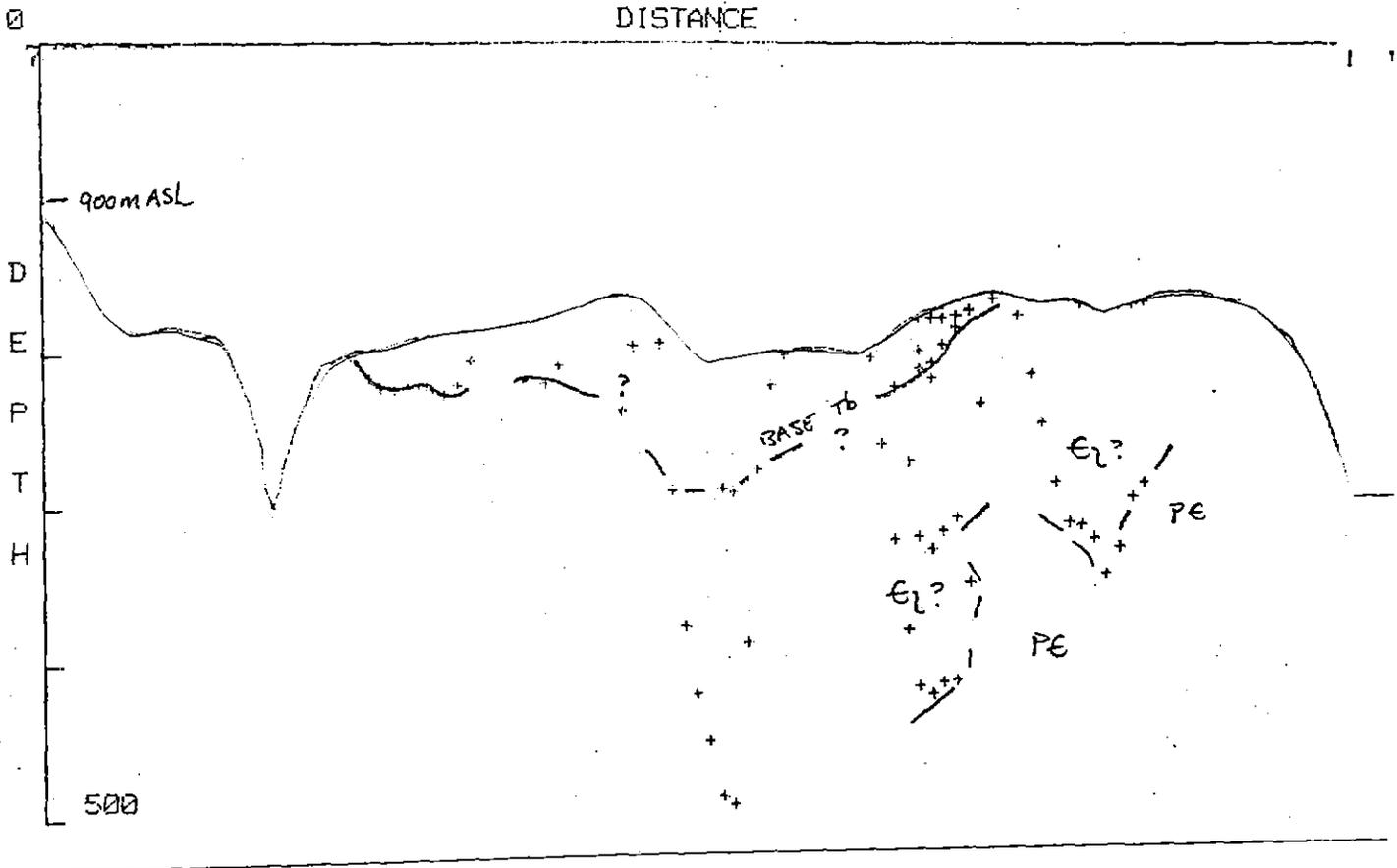
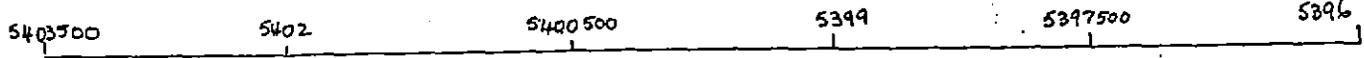
569078

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MAGNETIC DEPTH ESTIMATE PLOT

B:D5400H64

BASALT DEPTH ESTIMATES LONG PROPERTY OPERATOR (64) 5400

Aug 88

FIGURE 20

078

569079

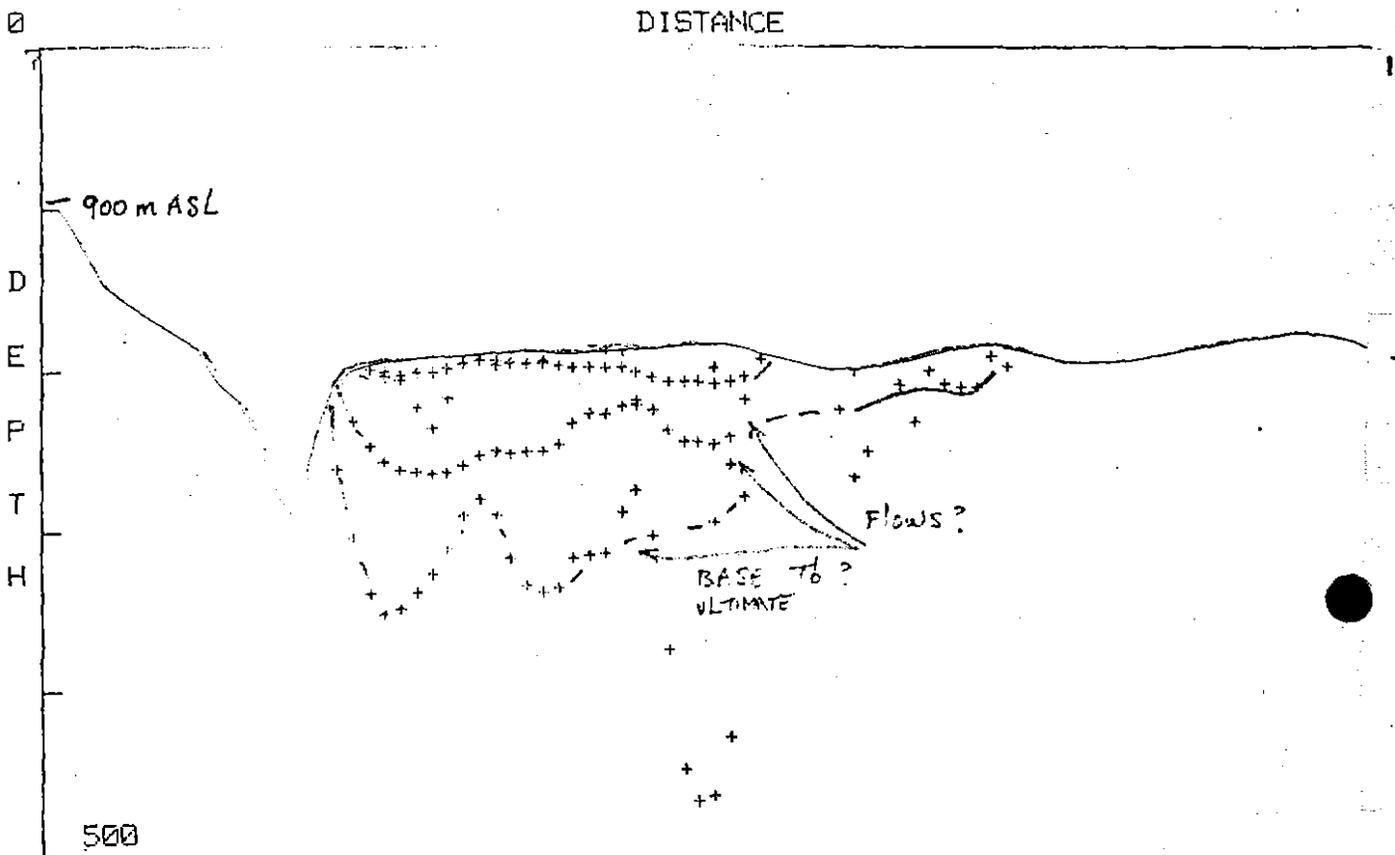
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Nominal easting: 418500 mE

5403500 5402 5400500 5399 5397500 5396



illustrates need for some control
multiple flows are, however, possible

MAGNETIC DEPTH ESTIMATE PLOT

B:D5440H64

BASALT DEPTH ESTIMATES LONG PROPERTY OPERATOR (64)

Aug 88

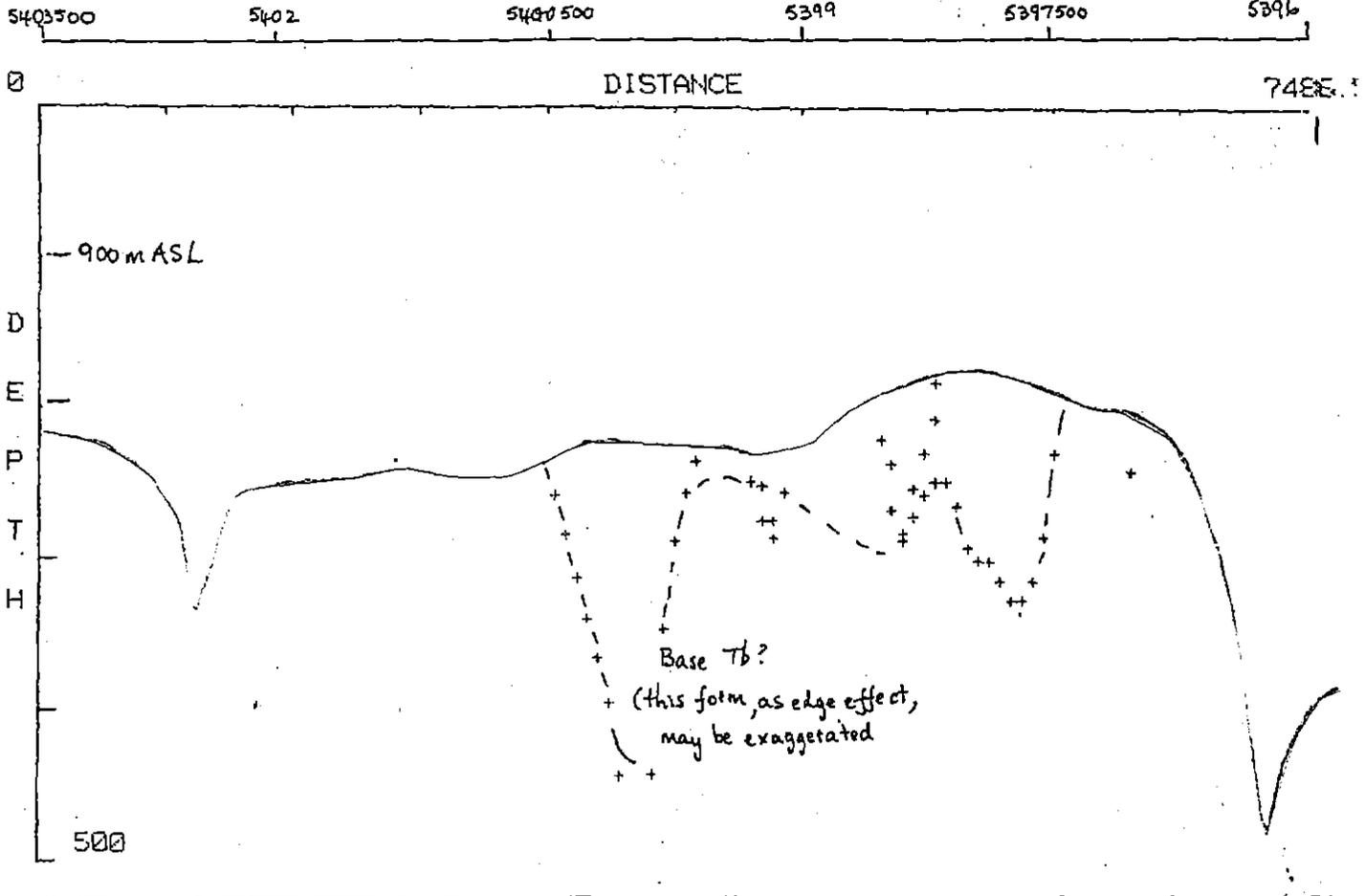
FIGURE 21

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Nominal easting: 419500 ME



MAGNETIC DEPTH ESTIMATE PLOT

B:05480H64

BASALT DEPTH ESTIMATES LONG PROPERTY OPERATOR (64) 5480

Aug 88

080

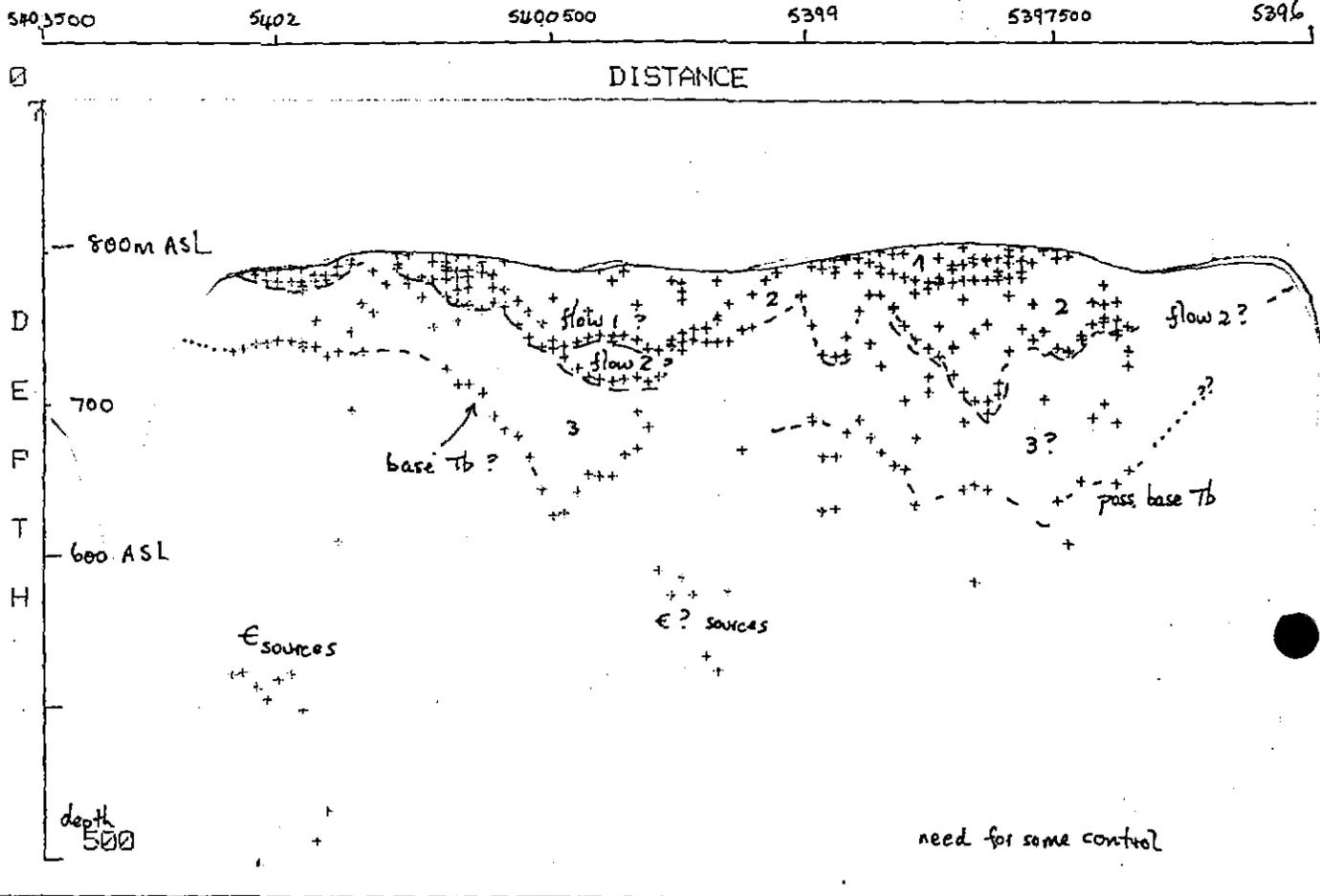
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Nominal easting: 420 500 mE



MAGNETIC DEPTH ESTIMATE PLOT

B:05520H64

BASALT DEPTH ESTIMATES LONG PROPERTY OPERATOR (64) 5520

Aug 88

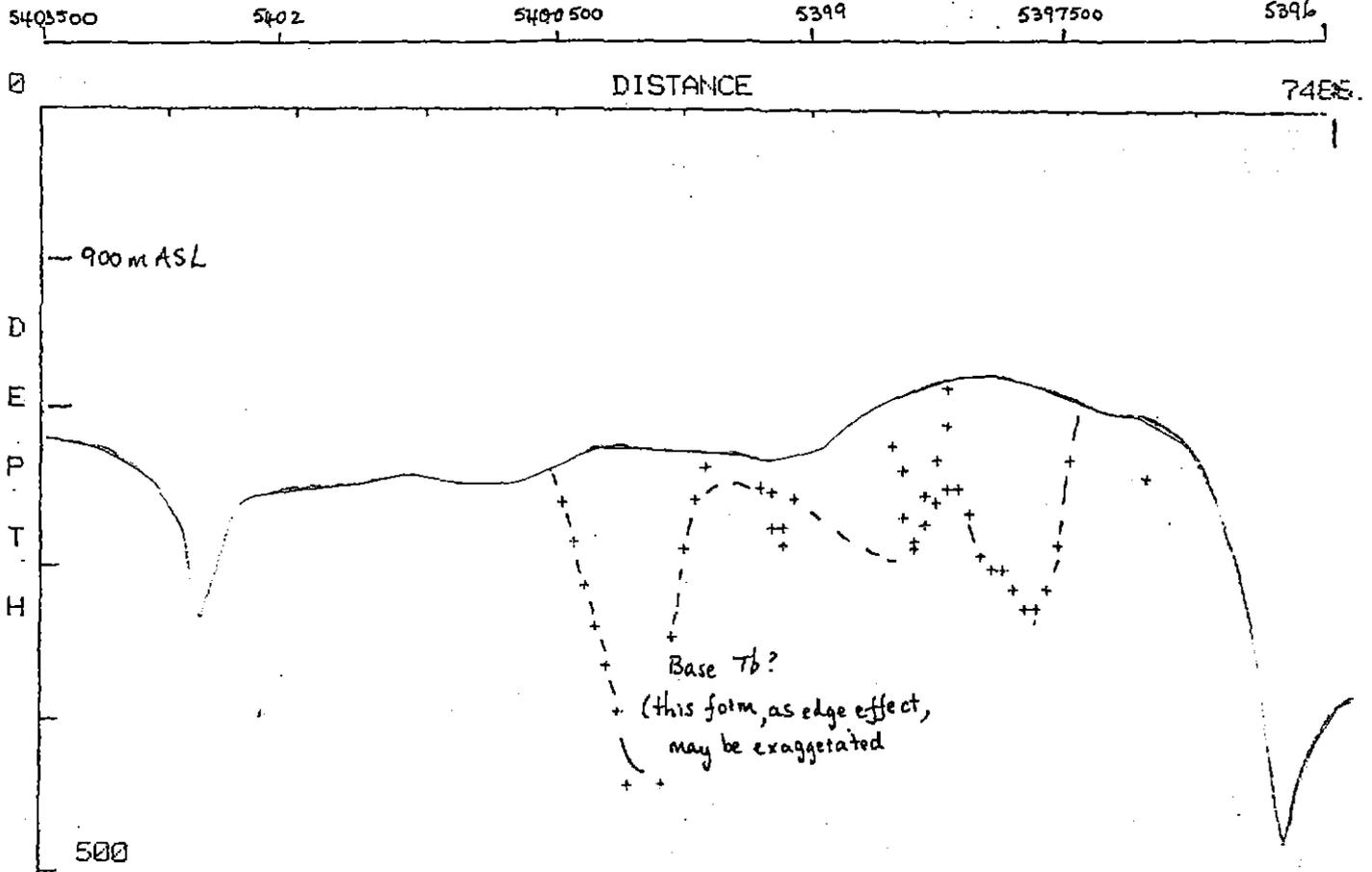
FIGURE 23

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Nominal easting: 419500 ME



MAGNETIC DEPTH ESTIMATE PLOT

B:D5480H64

BASALT DEPTH ESTIMATES LONG PROPERTY OPERATOR (64) 5480

Aug 88

082

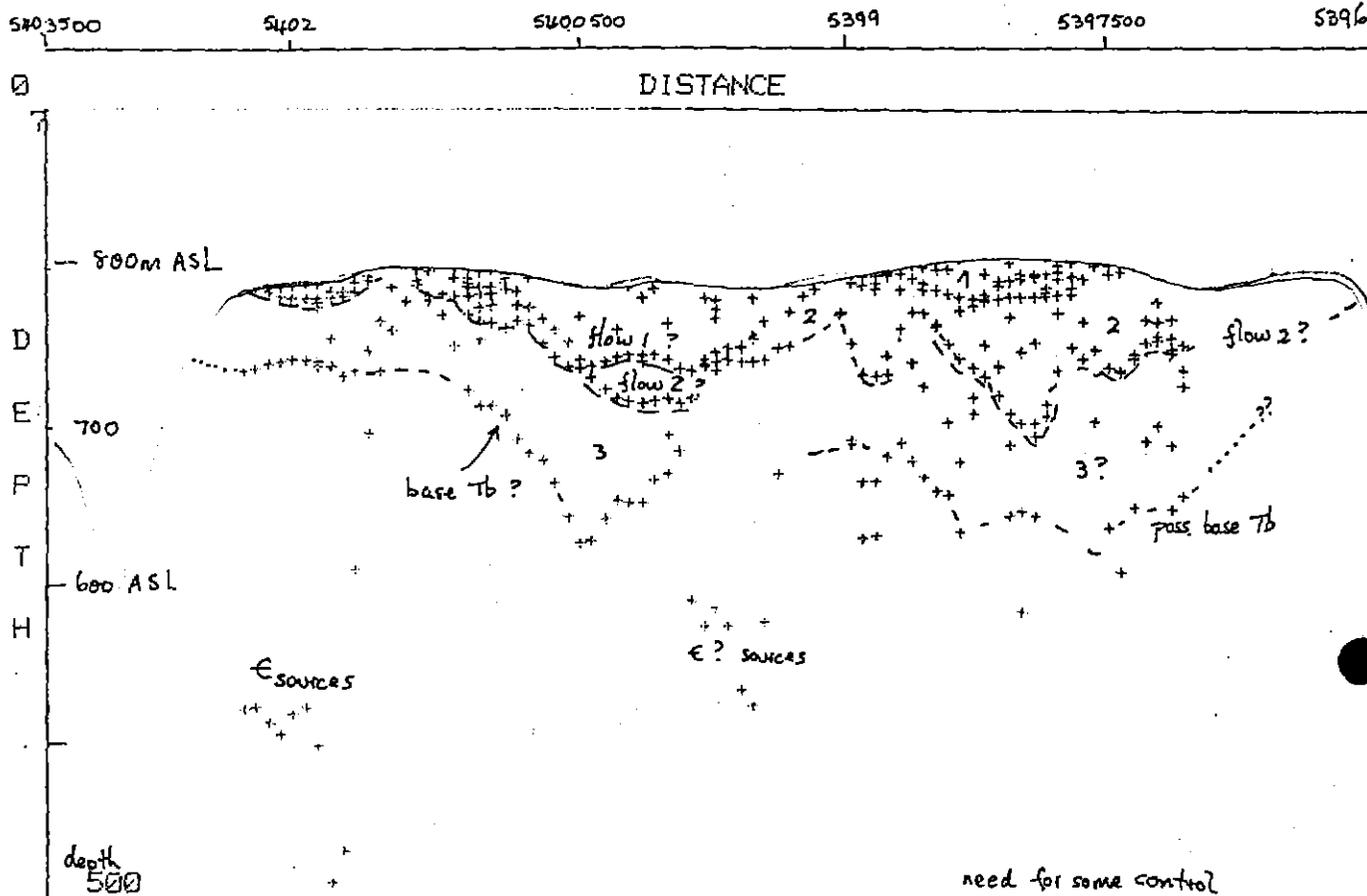
569083

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Nominal easting: 420 500 m E



MAGNETIC DEPTH ESTIMATE PLOT

B: D5520H64

BASALT DEPTH ESTIMATES LONG PROPERTY OPERATOR (64) 5520

Aug 88

FIGURE 23

083

LEAMAN GEOPHYSICS

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Wide Experience Most Methods
Specialities:- Gravity, Magnetics, Seismic Methods

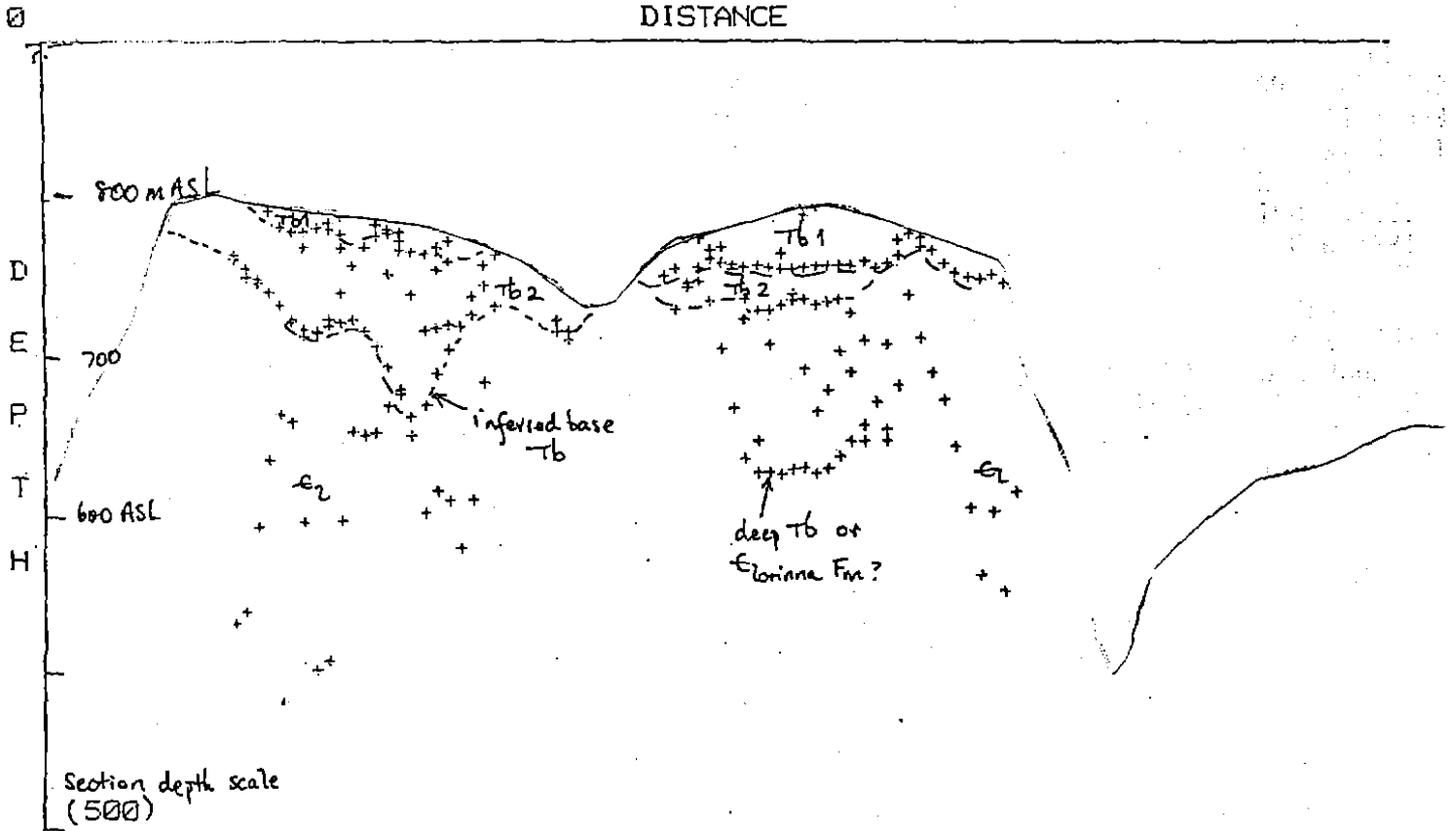
569034

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TELEPHONE: (002) 24 0319

Nominal easting: 421500 mE

5403500 5402 5400500 5399 5397500 5396

DISTANCE



MAGNETIC DEPTH ESTIMATE PLOT

B: D5560H64

BASALT DEPTH ESTIMATES LONG PROPERTY OPERATOR (64)

Aug 88

FIGURE 24

084

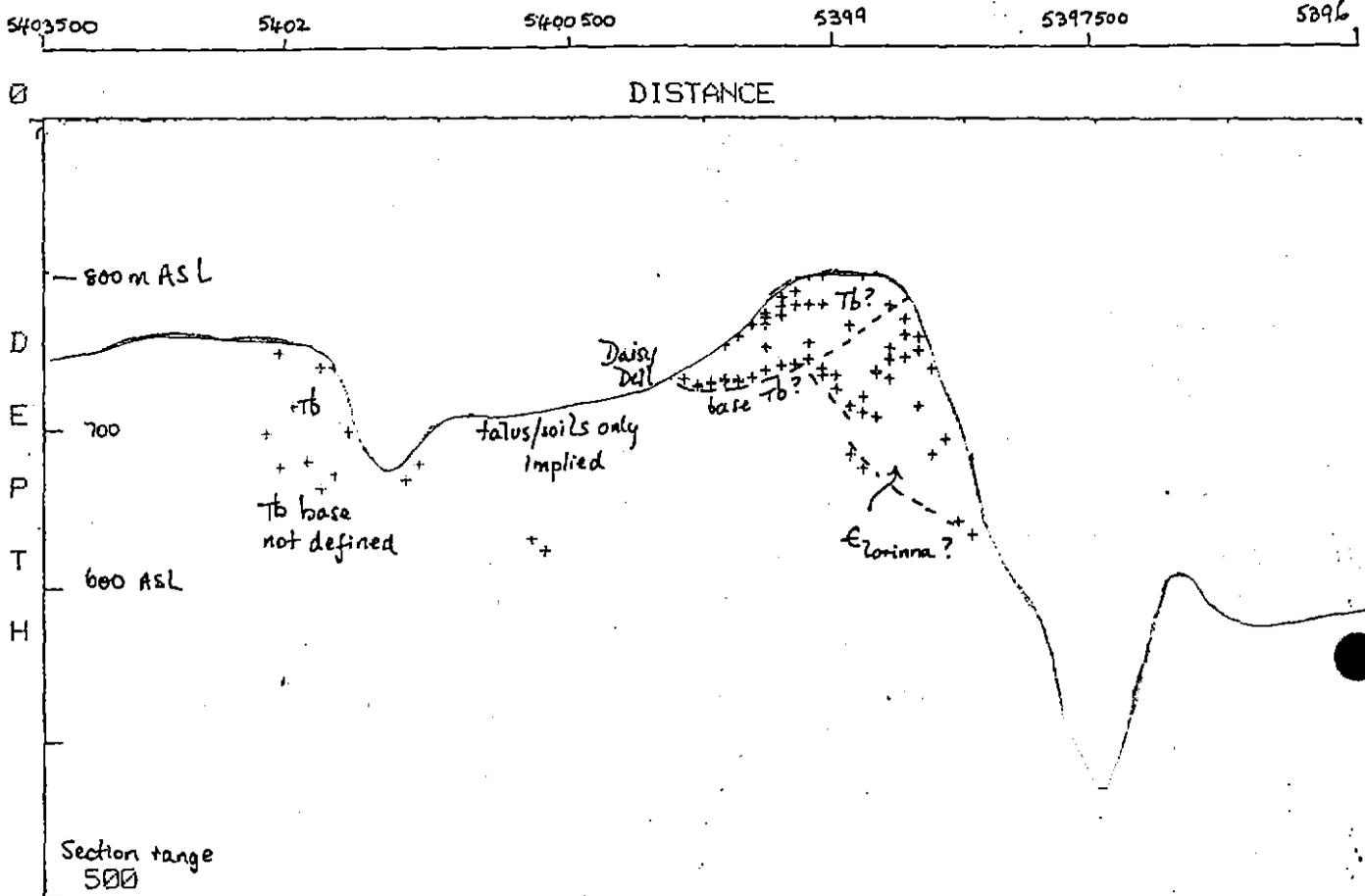
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TELEPHONE: (002) 24 0319

Nominal easting: 422500 ME



MAGNETIC DEPTH ESTIMATE PLOT

B:D5600H64

BASALT DEPTH ESTIMATES LONG PROPERTY OPERATOR (64) 5600

Aug 88

FIGURE 25

086

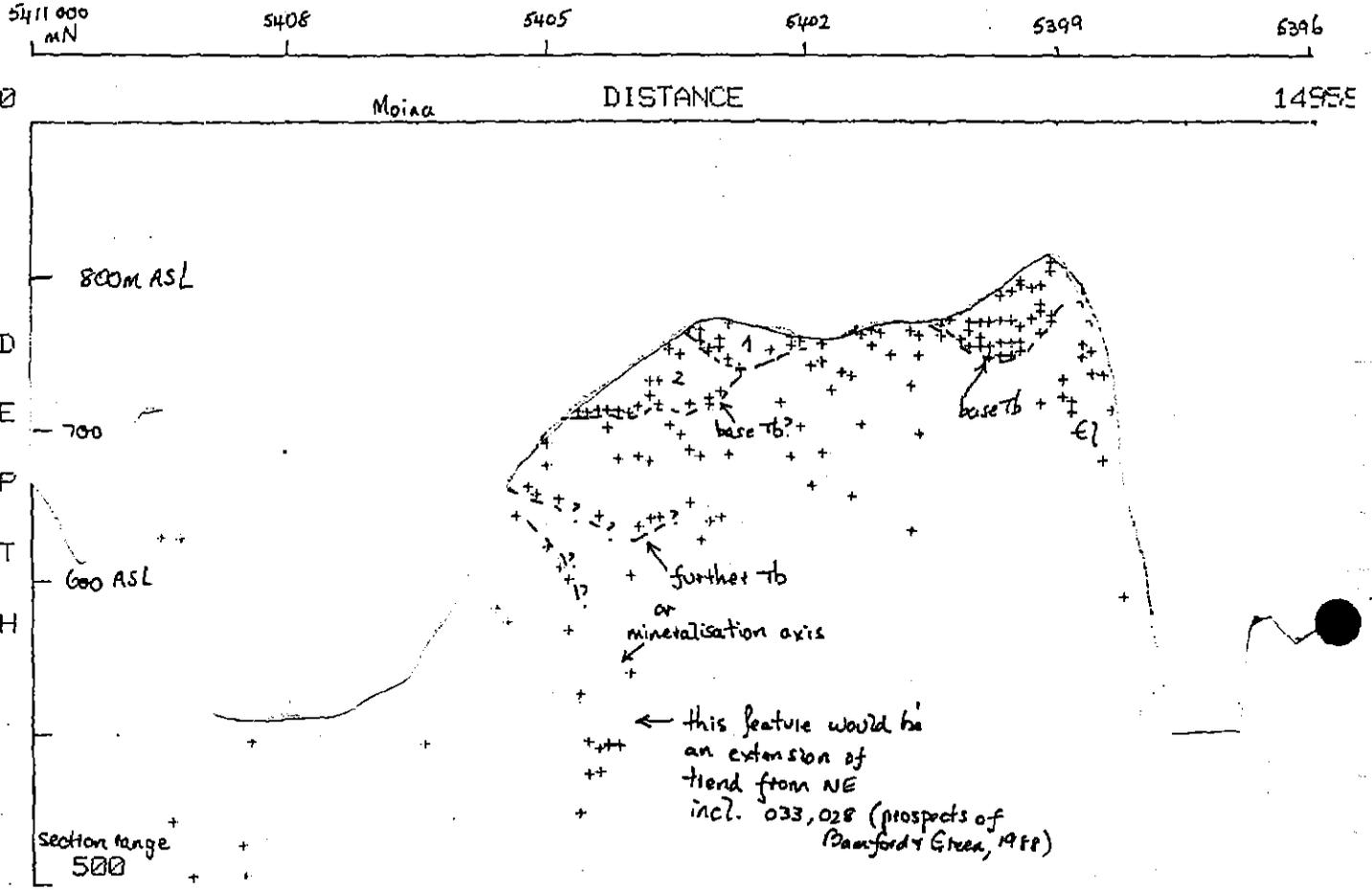
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Nominal easting: 422500 mE



MAGNETIC DEPTH ESTIMATE PLOT

B: B09L5600

BASALT DEPTH ESTIMATES 5600 LONG OPERATOR 64BY3

Aug 88

08/08/88

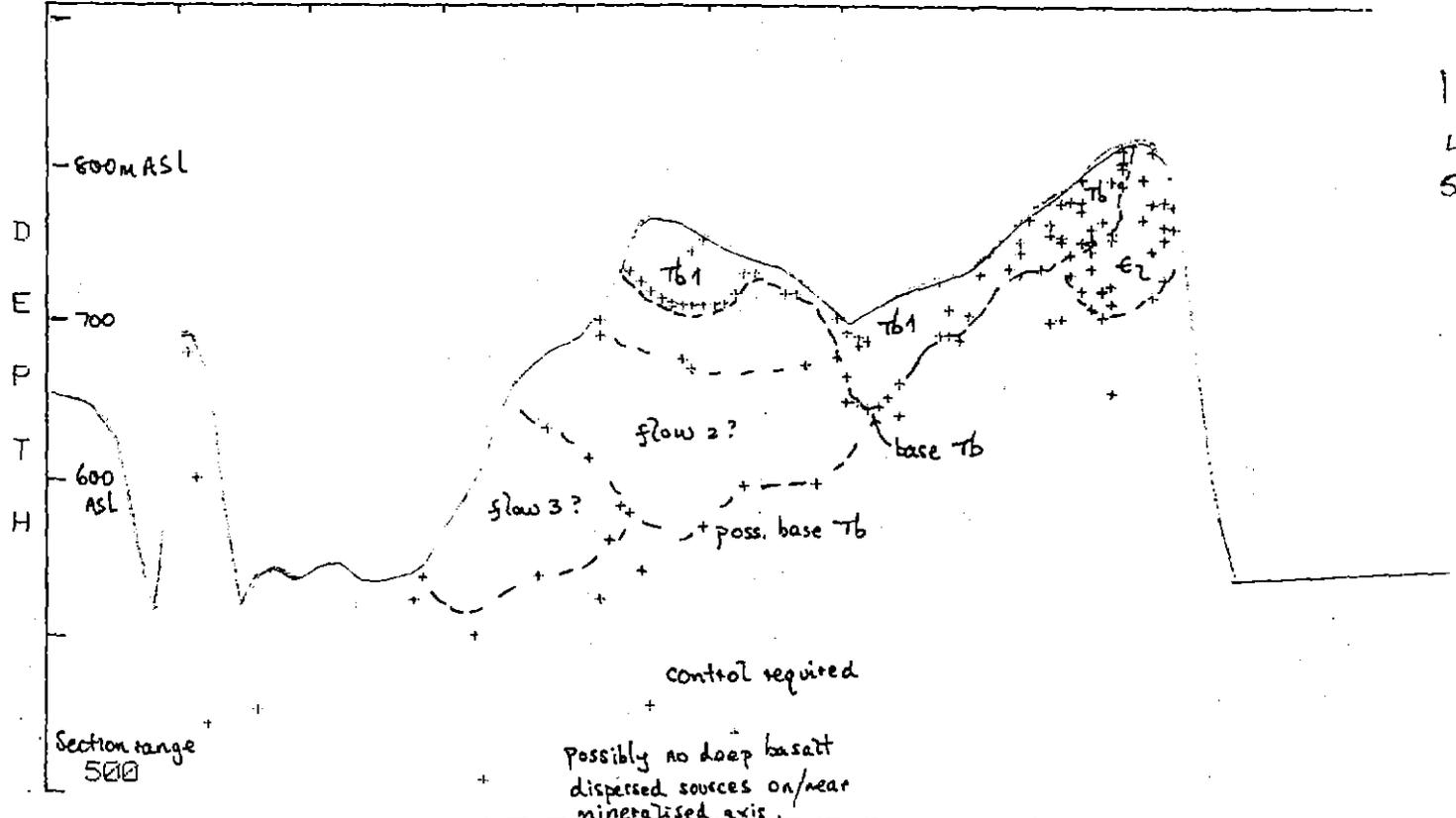
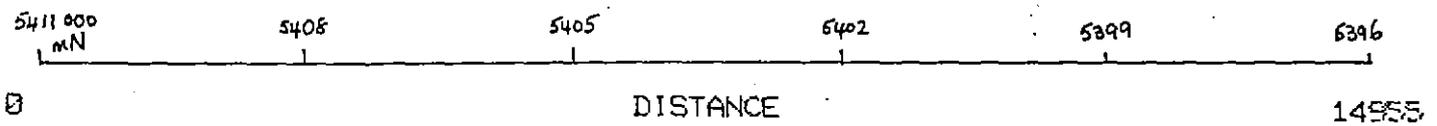
569088

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TELEPHONE: (002) 24 0319

Nominal easting: 423000 mE



Surface Tb expression minor
← →

MAGNETIC DEPTH ESTIMATE PLOT

B:BD9L5620
BASALT DEPTH ESTIMATES 5620 LONG OPERATOR 64/3

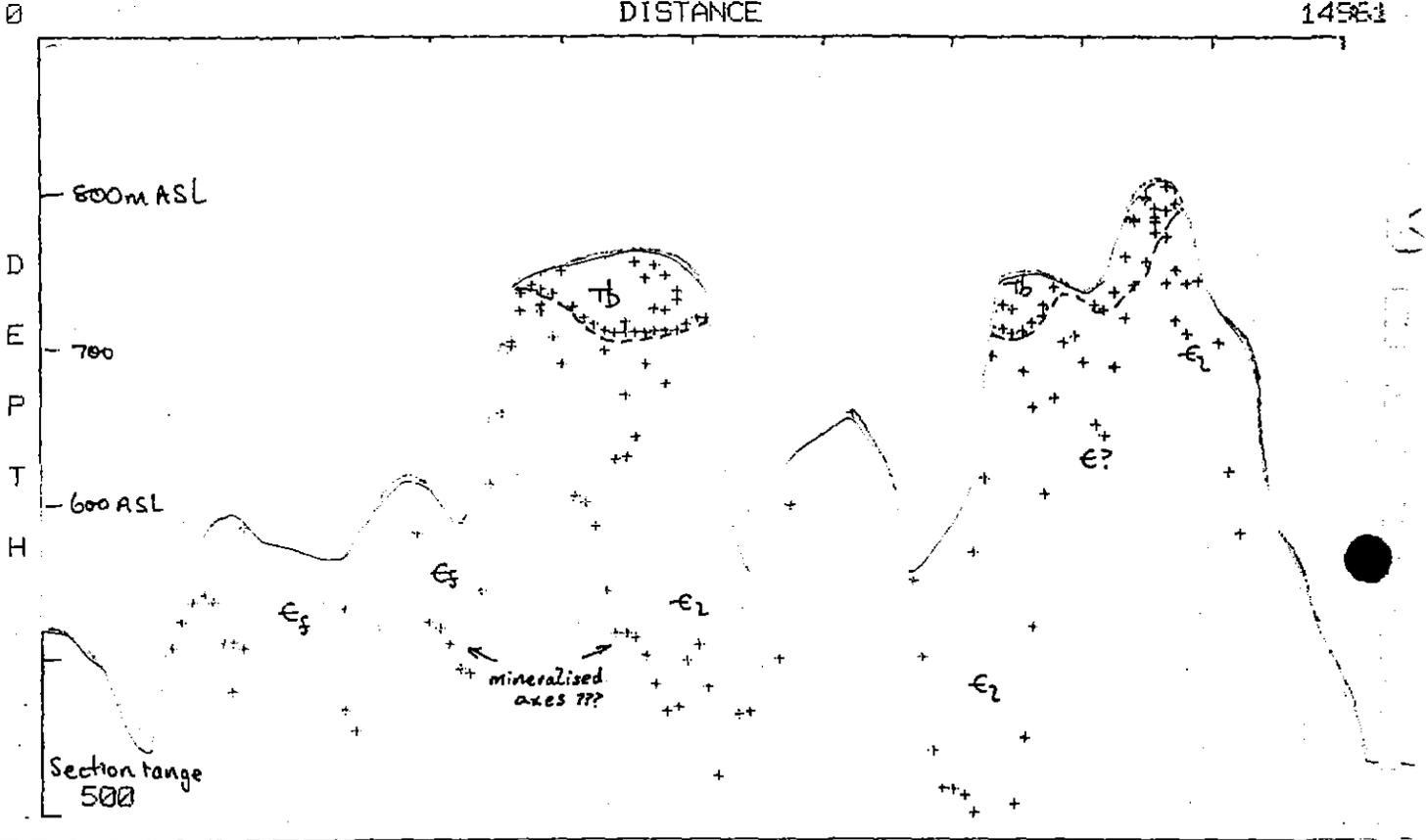
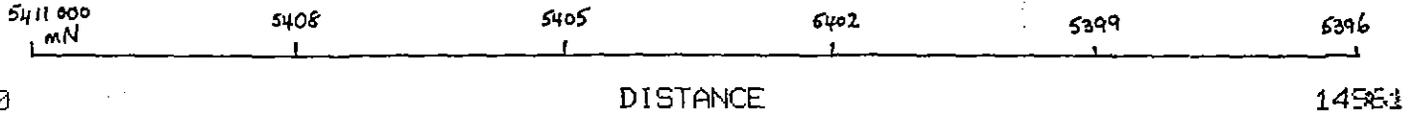
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Nominal easting: 423500 ME



MAGNETIC DEPTH ESTIMATE PLOT

B: B09L5640

BASALT DEPTH ESTIMATES 5640 LONG OPERATOR 64/3

Aug 88

FIGURE 29

053

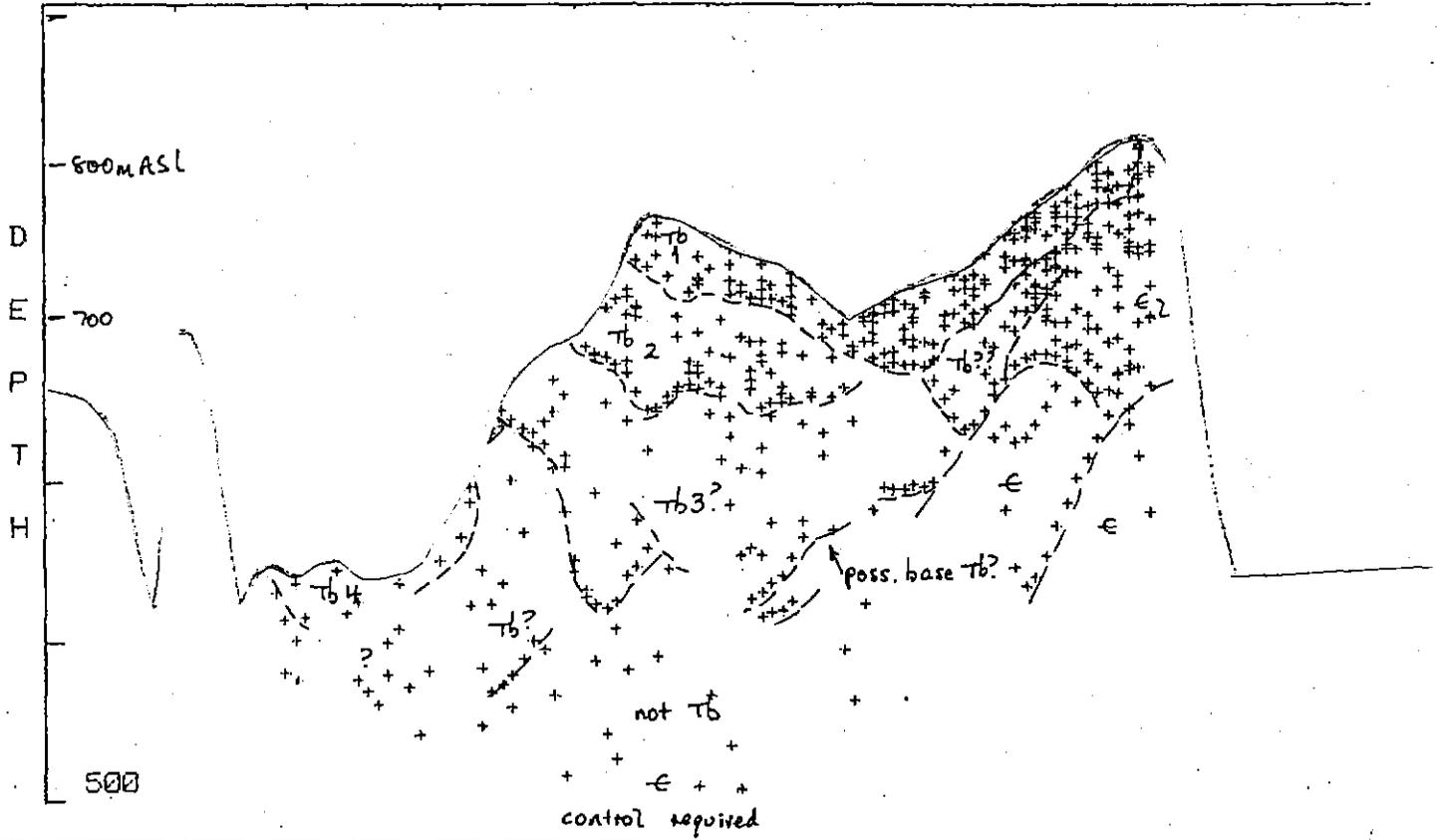
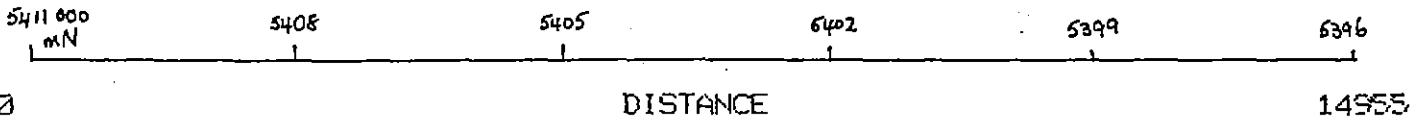
569000

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Nominal easting: 423000 mE



MAGNETIC DEPTH ESTIMATE PLOT

B:BD9L5620

BASALT DEPTH ESTIMATES 5620 VERY LONG OPERATOR 128/3

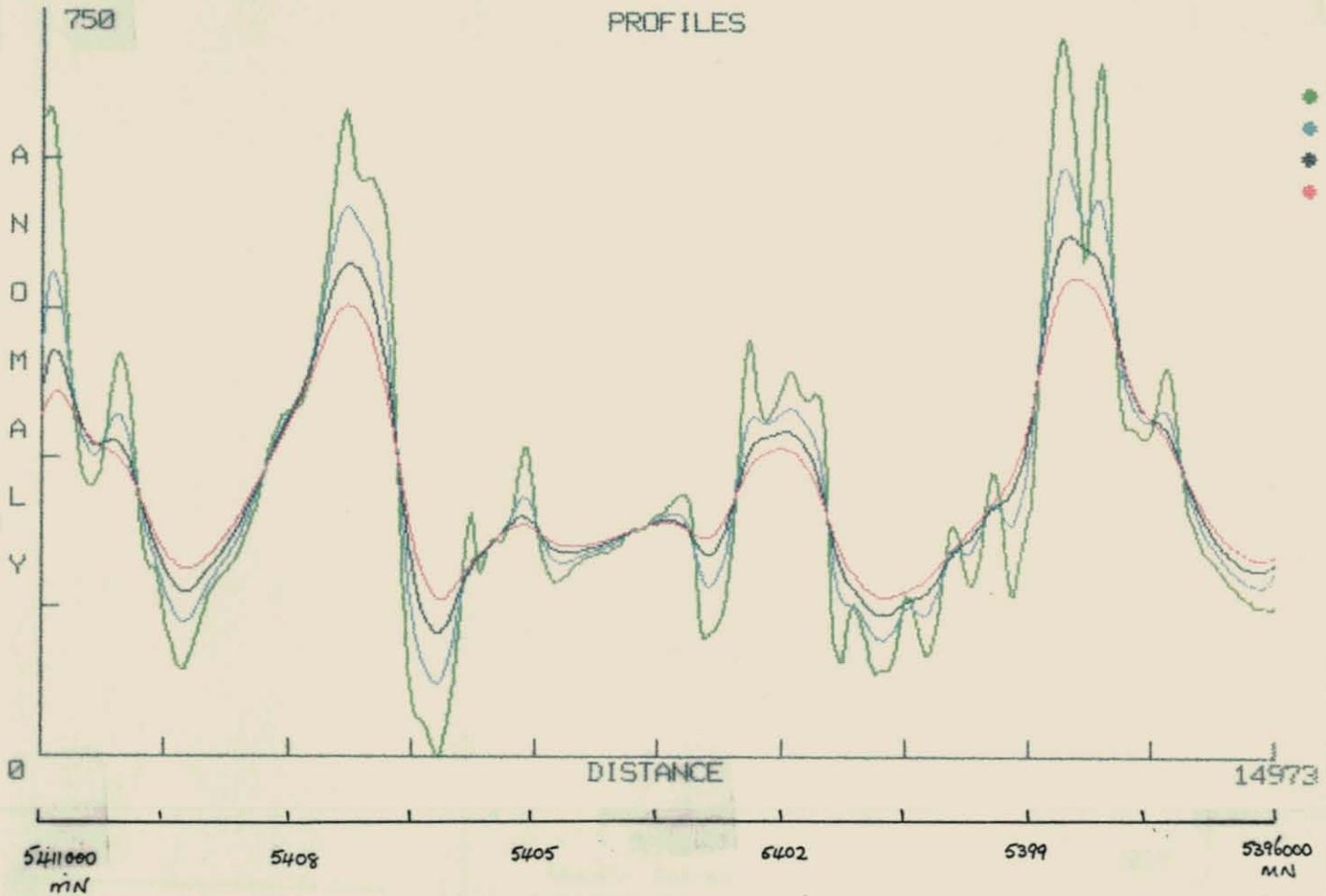
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FIGURE 30

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1	B:M5460	MOINA PROJECT LINE 5460
2	B:M5460C1	MOINA MAGNETICS 5460 CONTINUED 100 M
3	B:M5460C2	MOINA MAGNETICS 5460 CONTINUED 200 M
4	B:M5460C3	MOINA MAGNETICS 5460 CONTINUED 300 M

ZERO SHIFT : 211.3001

Aug 88

5460 : nominal easting 419000 ME

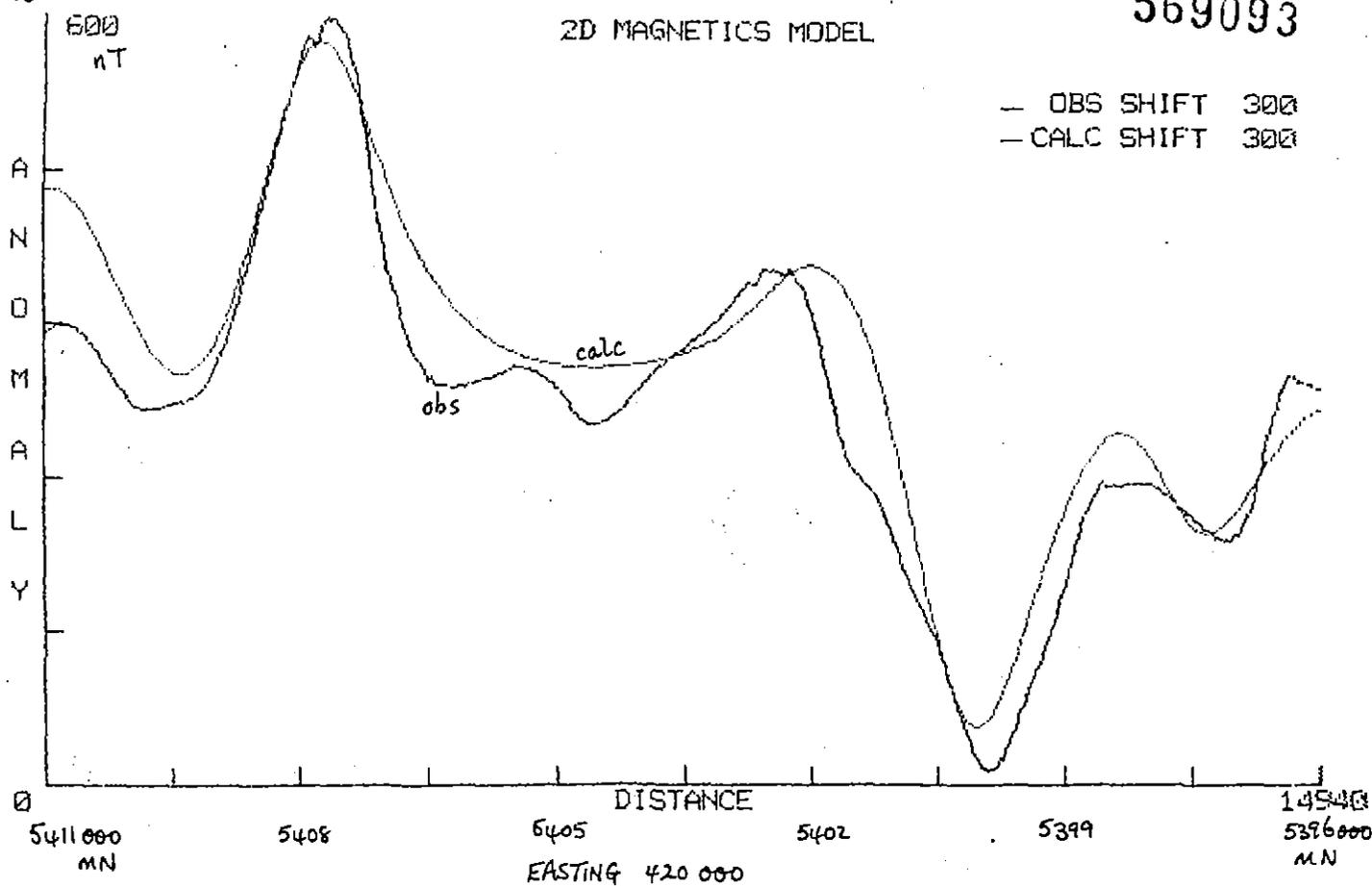
569091

AEROMAGNETIC PROFILES based on 5460 with nominal clearance 100m

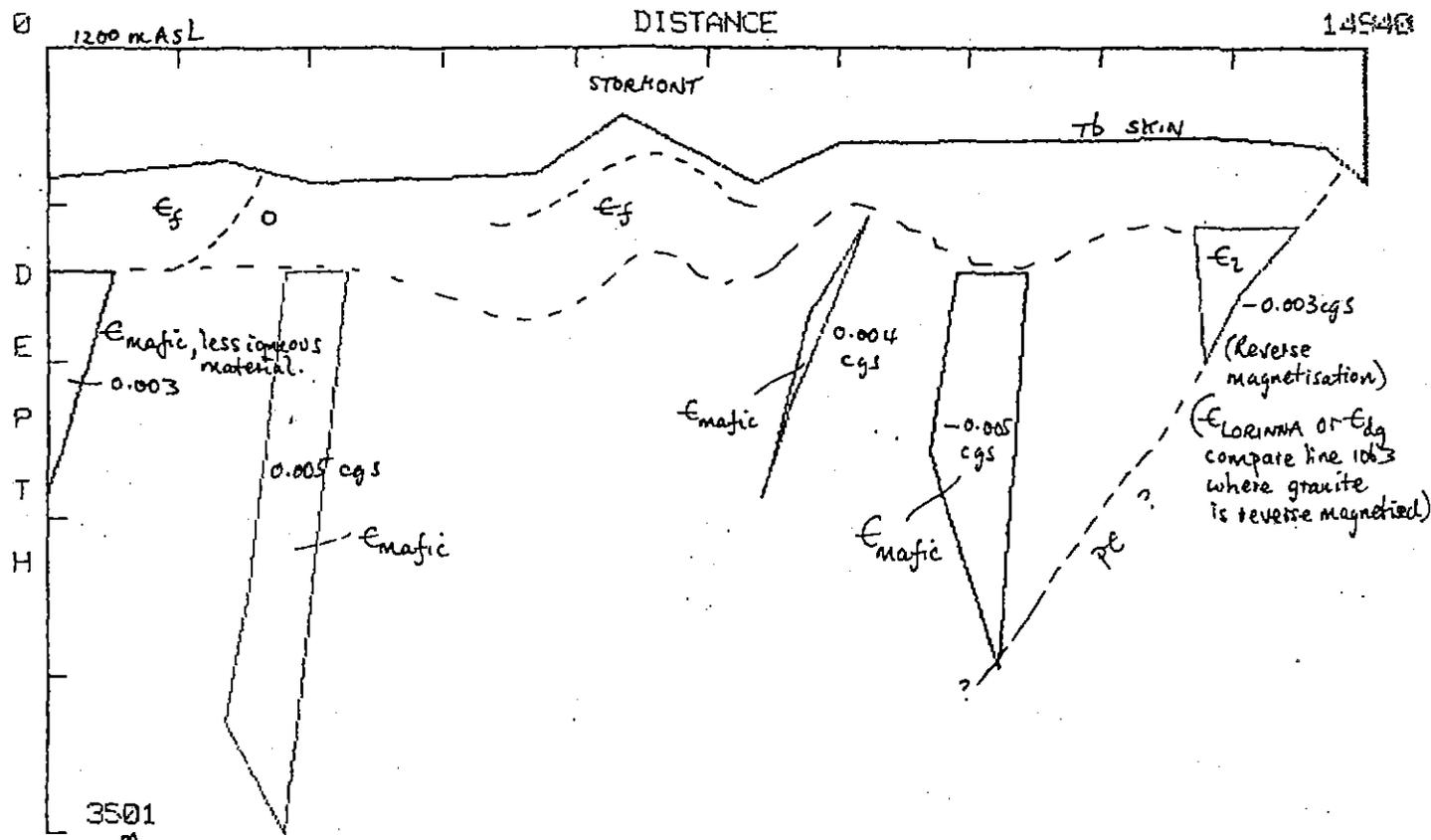
FIGURE 31

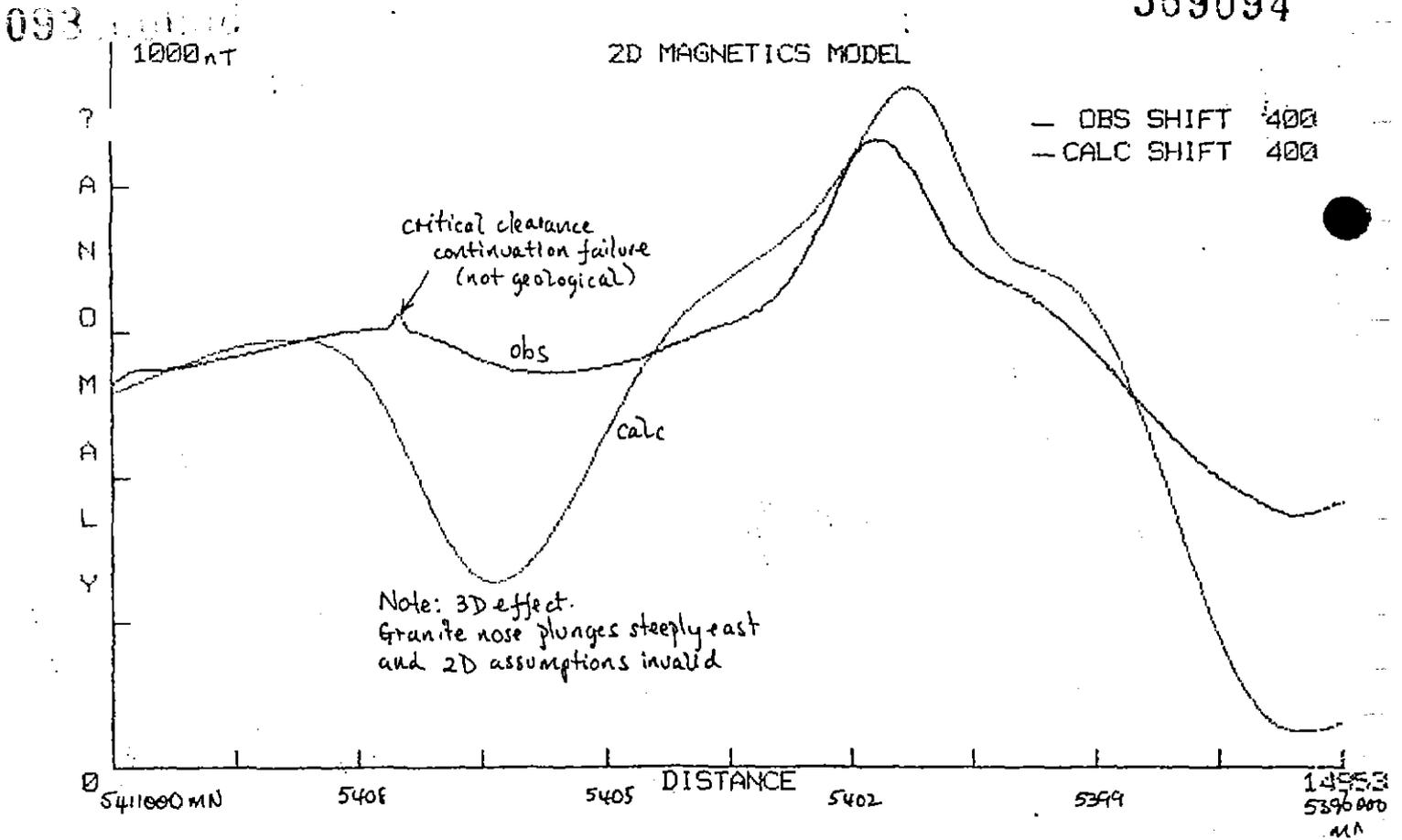
092

569093

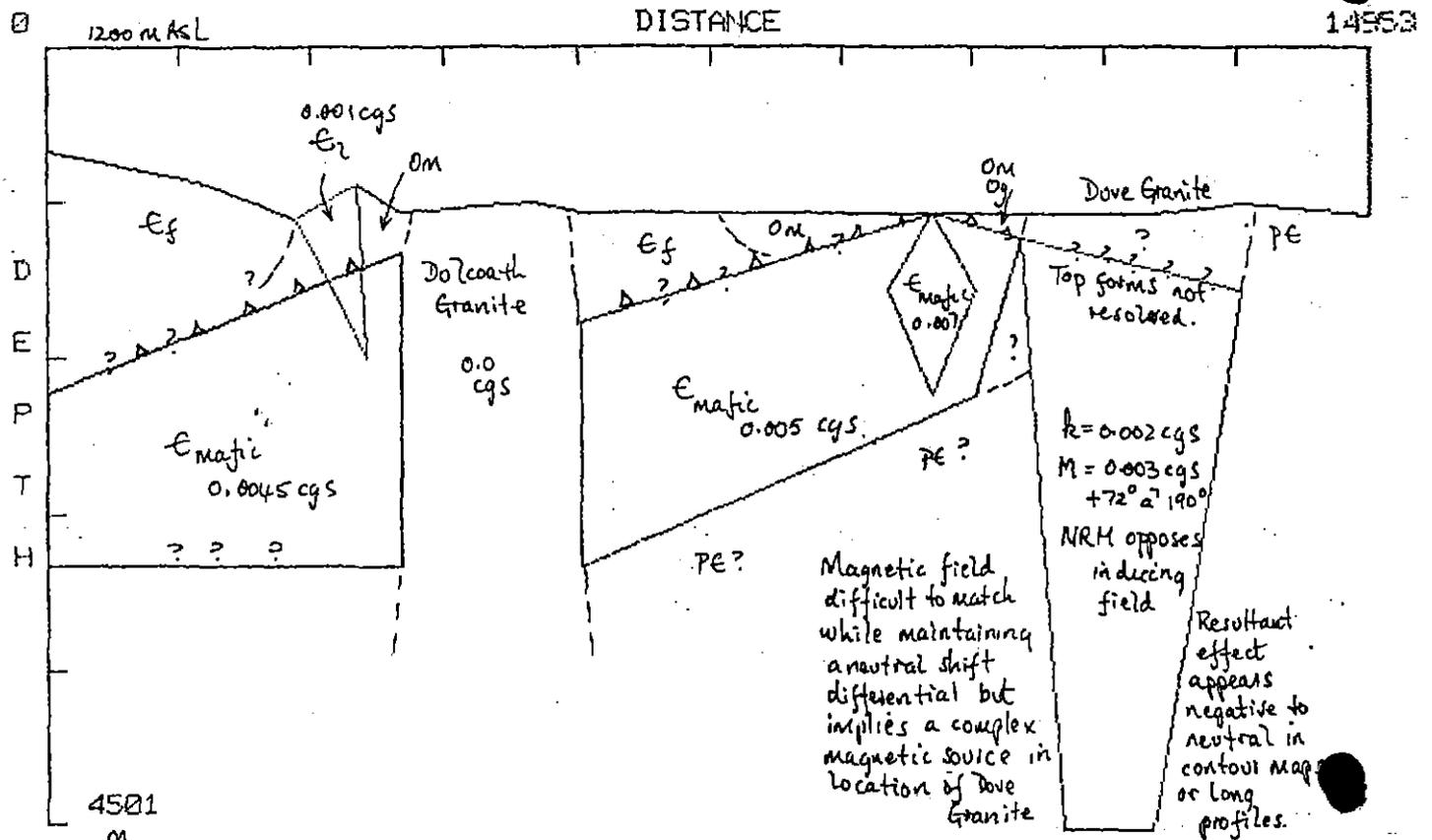


MOINA 1200 M MAGNETICS LINE 5500 420E
 ADJ K4=003 ADJ K6=-003 VAR 3 500M'S





MOINA 1200 M MAGNETICS LINE 1063 427E
NRM7=0025



Aug 85

STRUCTURAL STYLE : LAKE CETHANA

TEST MODEL :

LINE 1063

094

569035

REPORT 2 - GRAVITY DATA: INITIAL REVIEW

090 LEAMAN GEOPHYSICS

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569096

GRAVITY AND MAGNETIC EVALUATION
MOINA REGION

a. GRAVITY DATA: INITIAL REVIEW

for
RGC EXPLORATION PTY LTD

by
Dr. D.E. Leaman

October 1988

MOINA2

CONTENTS

SUMMARY

INTRODUCTION	1
DATA USED	2
METHODS	3
DISCUSSION OF OBSERVATIONS AND RESULTS						
Introduction	5
Unit character and responses	5
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Tertiary materials	8
Signatures for mineralised sites	9
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RECOMMENDATIONS	12
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FIGURES

1. Licence area, locality map and regional interpretation
2. Example of gravity field components profile 8
3. 3D interpretation: profile 1
4. profile 2
5. profile 3
6. profile 4
7. profile 5
8. profile 6
9. profile 7
10. profile 8
11. profile 9
12. profile 10
13. profile 11
14. profile 12
15. profile 13

Maps in folders at back of report

1. Bouguer anomaly
2. Residual Bouguer anomaly
3. Current model: form of Dolcoath Granite
4. Trend summary

SUMMARY

Preliminary review of the available gravity data for the Moina region of north west Tasmania shows that the gravity field is dominated by the effects of the Dolcoath Granite. All other responses or anomalies are miniscule and fragmental in comparison. As a consequence this initial study has examined the form of the granite in moderate detail in order to evaluate any possible relationships between the shape of the granite mass, its likely means of emplacement, and the known mineralisation in the area. There is no doubt that most, if not all, mineralisation in the Moina region is related to this granite and appraisal of its form, roof depth and zone of influence is of exploration value.

Three dimensional analysis, using an initial two dimensional seed model, has shown that the granite has generally steep margins and a relatively gentle to flat roof. The roof is only exposed near Lake Cethana. The form of the intrusion indicates fracture control of emplacement. The northern and eastern faces of the granite are always steep but the south-eastern aspect is shelved. The wall-roof junction appears to be abrupt and angular and several corners appear to rib or spine into the intruded rocks.

Known mineralisation can be directly related to the current and relatively crude interpreted form. It is clear that all known mineralisation lies within 1 to 1.5 km of the granite; all can be associated with angular roof-margin forms; and deposits tend to be concentrated where corner spines may be developed. The style and chemistry of the deposits is certainly related to the distance from the granite. Thus the deposits west of Lorinna are very differently mineralised to those near Moina although each group occurs in comparable situations. The Moina group lie near the wall-roof junction or above the roof while those west of Lorinna lie near a wall-shelf junction or above the shelf. The Lorinna examples, however, are up to 1 km from the granite while those at Moina are within 250 m of the granite.

Although the present work has concentrated upon the granite form the present definition has allowed recognition of Tertiary contributions to the gravity field. These are significant but relatively minor, amounting to about 2 mGal in most cases. The effect appears to be universally negative indicating a predominance of sediment over basalt or weathered, disrupted basalt. Tertiary accumulations appear to be related to the southern marginal wall of the granite.

There remains considerable scope for fine detailing the form to the Dolcoath Granite, including consideration of any effects due to abnormally low densities near the roof of the intrusion. Such extended analysis must also consider the effect of Tertiary and Lower Palaeozoic rocks.

INTRODUCTION

Gravity data from the mineralised Moina-Cethana region of NW Tasmania have been reviewed. The area examined, and relevant licence holdings, are shown in Figure 1. This diagram also indicates a provisional interpretation of the form of the Devonian Dolcoath Granite (after Leaman, 1988 a) based on gravity data held in Tasmanian Government data bases in late 1987. Refinement of this crude basic interpretation forms the bulk of the present report.

Figure 1 also displays many established mineralised sites and it appears likely that there is some fundamental relationship between the granite - or its form and structural control - and much of the mineralisation. The nature of basement or Cambrian controls are not obvious in surface mapping. Skarns and various vein style deposits occur in the region. The total value of recovered mineralisation has been substantial (see Bamford and Green, 1988).

The review of gravity data described in this report takes the form of an interpretation upgrade. The study was, however, originally intended to provide description of

- 1. relationships between gravity field and particular lithologies in order to assess normal response patterns and identify abnormalities,
- 2. unit continuity and/or distribution beneath basalt or other cover,
- 3. basalt contributions to the field and estimates of thickness and flow forms,
- 4. mineralisation responses (including associated skarns),
- 5. gross structural features; in particular the form of the Dolcoath Granite.

This initial work was not intended to be exhaustive or ultimately definitive with respect to the available data or the topics listed. The basic aims of the present study (reported here as stage 2) were provision of regional indications, method application potential and feasibility, and supply of feedstock information for an expansion and integration with magnetic and geological data.

The dominance and economic relevance of the Dolcoath Granite has meant, at the present level of study, that more subtle aspects of the Moina region have not been evaluated. This report essentially provides a moderately refined view of the granite and its relationship to known mineralised sites.

DATA USED

Prior to commencement of this project most gravity coverage was limited to the region west of 420 000 mE and north of 5415 000 mN. Such station data was held by the Department of Mines in either its TASGRAV or MTREAD data bases. The 100 sq km area containing Moina and Lorinna contained less than 30 stations.

An augmenting survey was undertaken by the Mines Department, at RGC Exploration expense, and a satisfactory coverage now exists. With the exception of the MTREAD surveys all coverage tends to be gappy but does allow reasonable first order interpretation. The current station coverage is indicated on Map 1.

All stations are located to within 25 to 100 m and have an elevation precision of the order of 2.5 m or better. Stations observed after 1970 may have precisions better than 2 m. Station values, as Bouguer anomalies reduced at density 2.67 t/cu m, are reproducible within about 0.5 mGal and have been contoured with a 1 mGal interval in Map 1. This may not be justified generally and there are suggestions in those areas with better station coverage that the noise envelope may be greater than 0.5 mGal.

The raw Bouguer anomalies (Map 1) have not been used for the analysis described in this report. Raw data extant in 1987 was used to generate the interpretation shown in Figure 1, however. Work commissioned for the 1987 phase of the Mt Read Volcanics Project of the Department of Mines has enabled crustal perspective to be extracted from the gravity data base for North West Tasmania and this has been expressed in the form of a crustal geological filter known as MANTLE88 (Leaman, 1988 b). This formulation enables generation of residual anomalies free of the risk of unstated mathematical effects even though the formulation may be further revised in future. The residual anomalies generated by MANTLE88, calculated at the exact positions of all observed stations, have been contoured and presented in Map 2. These values, compensated in the manner described in the next section, have been used throughout the interpretation.

METHODS

In order to provide basic evaluation of the data with respect to the several topics and objectives defined in the Introduction, the gravity data have been modelled using the residual form of the Bouguer anomaly.

Inspection of either Maps 1 or 2 will show that the gravity field is dominated by a huge negative contrast source which is clearly three-dimensional in shape; with elliptical length-width proportions and a dipping upper surface. Assessment of the relatively subtle imposed responses would be possible by treating the main anomaly as a regional effect and extracting a second level residual but its reliability would be uncertain since the smoothing assumptions would be untested.

Since the Dolcoath Granite was shown by Leaman (1988 a) to be a significant intrusion, not restricted to the immediate environs of its outcrop - a view wholly supported by the improved compilation offered in Maps 1 and 2, and is of economic importance it has been quantitatively examined for this initial study. Such review enables more reliable evaluation of subtle features.

Three dimensional analysis has been used throughout. Limited 2D modelling was used to generate the initial seed interpretation of Leaman (1988 a) as presented in Figure 1. Given the clear 3D shape and strike limitations evident in Maps 1 and 2 for the principal granite-related anomaly any improvement or refinement of this model required more complex treatment.

Figure 1 was used to define an initial form. Upon calculation and review this form was modified until acceptable data matches were obtained. At the time of reporting the granite model has passed through seven major iterations and several partial test variations. The aim of this preliminary study has been to obtain a view of the style of the granite and its form. The analysis thus represents general refinement of the initial concept - there being no viable geological alternative - but not ultimate description. Thus Map 3 refers to the "current model".

The 3D model has been tested by a series of randomly located profiles. These profiles are shown in Map 3. The profile pattern was designed to allow review of all faces of the granite. Note that each line samples the gravity field for the entire pluton but carries a local weighting. Details of the intrusion form closest to any given profile position are included but clearly ultimate definition depends on line samplings approaching the average station spacing. Feasible but not practicable at an early stage of modelling since it is important to obtain a sound view of the general form. Model testing has been based on profiles rather than contour plots since the latter are more complex and difficult to evaluate until the general form has been resolved.

Any model can be tested quite rigorously. At this stage the only assumptions included have been that the granite may be treated as a single mass with uniform density. The procedures used can allow variations in density within the pluton either as discrete bodies or as some systematic depth function. On this basis it is clear, however the pluton is sampled by profiles, that consistent matching parameters must be recovered for a valid solution. These should imply consistent density assumptions and an absence of unsupported geological discontinuities. These criteria are demanding.

The model itself is built up in the form of structure contours. This is an elegant approach which is readily converted in geological or section terms. The contour interval used is a judged function of computation demand and solution accuracy. The contours shown in Map 3 represent an adequate specification of the model. Limited interpolation of mid range contours may be justified. Over detailing is not justified by the data. The calculation method is based on that of Talwani and Ewing (1960).

A critical problem relates to the spatial distribution of gravity stations. The Moira region is of high relief. Stations are distributed across the irregular terrain. Although each value is fully corrected for topographic deviation from the Bouguer plate (terrain correction) it remains located on an irregular land surface. Any model should, therefore, compare values calculated at the irregular land surface. This is feasible but awkward. This initial study has taken an alternative approach. Profile values have been continued to a fixed level (800 m ASL) which removes the need for model projection to an irregular surface but at the price of some small loss in precision. This loss is less than the precision envelope for the original data values. This process allows the structure contours of the model to be fixed throughout the computation. Thus Map 3 provides two depth reference levels on the contours - with respect to 800 m ASL and sea level. The 800 m level chosen is the lowest level which avoids most high terrain in the area. Fragments of lines west of Stormont intersect higher topography and for these fragments it has been assumed that the high level excess is composed of Ordovician rocks with a density close to the Bouguer assumption. Future, detailed interpretation should be based on the actual values at the land surface. The dominance of a single major source in the present case limits any possible errors.

Figures 3 to 15 present the profile solutions for the current model (Map 3). Since these offer a viable solution the test parameters printed in the upper right corner have limited significance. Yet the shift differentials have separated all previous iterations. The differential is assessed by summing the zero shift and the calculated shift (the total calculation offset) and subtracting the observed shift required to plot as positives. It is about 9 mGal, and displayed by all lines. A valid, not necessarily correct, solution must yield a consistent differential for random lines across a single piece of geology however complex. Any marked deviation means an invalid solution.

DISCUSSION OF OBSERVATIONS AND RESULTS

The following comments are grouped in terms of the first order objectives of the evaluation. Since the present study has extracted only the fundamental implications of the gravity data, implications which may be refined by further work or varied after correlation with magnetic data or drilling, the notes must be considered interim.

The implications and observations are, however, elemental to further evaluation and many may possess exploration significance.

UNIT CHARACTER AND RESPONSES

Indications of the density patterns of rock units can be derived from the contour maps (Maps 1 and 2, esp. 2) or, more reliably from modelling studies (e.g., Figures 3 to 15). Detailed modelling has been beyond the brief for this first phase of data review.

The dominance of the granite, which generates a large negative anomaly of at least -20 mGal, does limit any evaluation of other units whether by inspection or modelling. Modelling has not yet reached the detailed level at which incidental units can be appraised. Some observations are possible.

Precambrian rocks are only partially assessed by the available data but at least one major unit south of the Dove River exceeds the Bouguer density assumption of 2.67 t/cu m.

Cambrian rocks cannot be reliably appraised and only two instances can be cited directly. North of Staverton the Cambrian sequence essentially yields a positive contrast and this presumably reflects mafic content. The felsic rocks generally produce a neutral response, although this may be misleading due to the impact of the granite response, everywhere but west of Lake Cethana adjacent to the exposure of the Dolcoath Granite. The rocks are locally positive in this area and have either been incorrectly mapped or have been altered.

Ordovician rocks also present a generally neutral response indicating that they have a bulk sequence density not greatly different from the Bouguer assumption. The small syncline north east of Tiger Plain does yield a negative response and this might suggest a lower density or a single inaccurate observation.

The Tertiary materials generally effect a negative response. There is strong correlation between Tertiary rocks and residual field and this indicates that basaltic materials are limited. Sediments or weathered rock predominate.

FORM OF DOLCOATH GRANITE

The inferred general form of the Dolcoath Granite has been summarised in Map 3. This is a current status model and is subject to refinement and revision. It was derived using the methods described above. Its detail and reliability is determined by the distribution and extent of the test profiles. As will be shown there is scope for detailing. Map 3 presents a solution, for which no gross alternatives exist, and for which the evaluation criteria have been satisfied. While almost certainly inaccurate in detail it is basically sound and satisfactorily defines the general form of the granite mass.

The implications of the solution, in terms of the granite itself, mineralisation and contributions from other structures or lithologies, can be assessed in profile form (Figures 3 to 15). Each is discussed below.

Figure 2 represents a portion of the methodology not described above. Assessment of the Dolcoath Granite has required that other granites in the region also be considered. It will be apparent in Maps 1 and 2 that the sphere of influence of the target granite (Dolcoath) is large but it is not obvious how large. Leaman (1988 a) has suggested that there are even larger plutons in the region. These must inevitably affect the gravity field around Moina. The regional field formulation (Leaman, 1988 b) is not affected by this element and any effects remain in the residual field. The effect of the Tor, Husetop, Meredith and Beulah intrusions has been evaluated in a gross manner and the solution offered by Leaman (1988 a) for these plutons has been used to provide a regional perspective to the Dolcoath Granite. The Figure shows profile 8 which includes the least effect due to the other granites. Line 1 gives an indication of the minimum effect due to the Tor Granite while line 2 provides the response due to the Husetop-Meredith-Beulah and Dolcoath Granites at half contrast. Line 3 provides the response of the Meredith and Dolcoath Granites only at half contrast. This breakdown is necessary since the Husetop and Beulah Granites are denser than the others. Addition of lines 2 and 3 results in estimation of the full effect of the Meredith and Dolcoath Granites as well as the full effect of the denser granites. Other schemes could be devised but this is the simplest which enables all the granites to be treated, or included, in a few comprehensive model parts for NW Tasmania. The deviation between lines 2 and 3 reflects the influence of the Husetop and Meredith Granites on the calculation. Line 1 represents less than half of the effect of the Tor Granite on other profiles.

If the effects due to other granites were ignored then the interpretation would be highly suspect overall and locally very inaccurate. Note that the definition and description of distant granites does not need to be detailed.

Profile 1: The solution is accurate for the north face but the deviation across the south face can be largely ascribed to Tertiary materials. These oversteepen the gravity response in an way not possible by the lower contrast granite. It is likely that there is less granite south of 5400 000 mN since the shoulder in the observed profile at 5397 000 mN probably represents the limit of Tertiary effect and return to the normal granite curve. The model thus contains too much granite in this region and the southern margin is probably steeper.

The negative observed excursion at 5405 N may reflect low density Cambrian rocks or a spine from the roof of the granite. The positive response related to the syncline with Ordovician core at 5403 500 mN is anomalous and may imply thermal alteration. The positive deviation between observed and calculated profiles at the line ends indicates that the Precambrian rocks to the south, and Cambrian rocks to the north, are denser than 2.67 t/cu m (2.77 average is estimated). The estimated densities are consistent with relatively metamorphosed or mafic sequences respectively.

Profile 2: Similar patterns may be observed. The south face of the granite is adequately defined but the north face must project a little further north. Both are steeply dipping. Deviation at the centre of the profile can be associated with Tertiary materials.

Profile 3: The profile shows that the Dove Granite and other rocks south of the granite are of little consequence. The granite model is, however, deficient, and there is much more granite in this region. Widening of the shelf effect may be implied. Note that this profile does not sample the denser Cambrian sequence to the north.

Profile 4: Very similar to profile 3. Note the relatively positive response near the roof of the granite where supposed felsic rocks have been intruded.

Profile 5: Offers a test oblique to the roof of the granite. This shows that the essential details of the pluton have been accounted. Deviations can be directly correlated with Tertiary or fold patterns.

Profile 6: Compare profile 1. Note that the southern shoulder effect has been accurately modelled on this profile. The central positive effect above the roof, within felsic? rocks, is emphatic.

Profile 7: This satisfactory solution confirms the steep-sided nature of the pluton, the presence of a southern shelf and illustrates the impact of the thin Tertiary cover.

Profile 8: Provides a view across the roof of the body. The roof is seen to undulate about the depth inferred with some correlation of response between Tertiary and fold patterns.

Profile 9: This profile demonstrates the high density of the Precambrian rocks and the smoothly dominant effect of the deeper granite roof.

Profile 10: This profile is unsatisfactory in many respects. It shows that the granite roof is generally shallower between 415 and 420 000 mE and may be a little shallower east of 425 000 mE. There is also a suggestion that the material near the roof of the granite may be of lower density than the mass as a whole although this profile is confused by the presence of Tertiary materials. The large deviation at the east end of the profile may be directly related to Tertiary materials.

Profile 11: This profile is comparable with #2. The north face must be placed a little further north, but the south face is overlain by Tertiary materials and these produce the oversteepening of the granite response. The anomalous positive Cambrian response is again evident. The source is very shallow.

Profile 12: This profile may be compared with #2 and it is possible that the roof is slightly shallower.

Profile 13: There is a generally acceptable match for the granite response. Deviations can be assigned to Tertiary or Ordovician materials.

Map 3, which offers the current model integration, also shows adjustments which should be tested in the next iteration or sculpture of the model. These are based on the implications of the above profiles. There is every reason to believe that they represent a more accurate view.

TERTIARY MATERIALS

Reference has been made throughout the previous discussion that the basalt covered parts of the region induce a relatively negative response in the residual gravity field. Since the density of massive basalt may range from 2.85 to 3.1 t/cu m such observations are inconsistent with a wholly igneous Tertiary regime. Unless the material is extensively altered or weathered. Tertiary sediments possess a density range of 1.9 to 2.2 t/cu m and consequently any 50:50 proportion may yield a generally negative response even if the igneous rocks are in good condition. This effect will be observed regardless of the total thickness of the sequence, but the scale of the effect will mirror the total thickness. It is therefore possible to assign or estimate zones of greatest thickness. These are evident on several profiles (e.g. 1, 2, 6, 8, 11). Map 3 suggests a possible lead system on this basis. The total thickness may not exceed 50 to 100 m and the effect could be explained by a residual Tertiary pile which now caps the topography rather than a lead depression fill capped with basalt.

SIGNATURES FOR MINERALISED SITES

The current interpretation and coverage of gravity data is inadequate for any specific description or discussion of individual prospects. Unless a dense coverage has been acquired in favourable situations gravity surveys are generally unable to assess the mineralisation of a site. The present data coverage is based on a nominal station spacing of 1 km and this is too coarse to resolve individual sites, or associated alteration haloes, whether negative or positive.

The interpretation does, however, suggest definite deposit - granite associations. Map 3 presents the mineralised sites as located by Bamford and Green (1988). When these sites are compared with the interpreted form of the granite it becomes clear that, crude though the model may be, mineralisation is related to angular discontinuities in the form of the intrusion.

The shape of the granite, as viewed in Map 3 and sections (Figures 3 to 15), suggests fracture control of the intrusion. All deposits within the 2500 m contour (depth) are associated with steep edges, offsets of steep edges or the change from steep margin to roof or shelf. This indicates that the stress field generated tension gapes at these sites. The vein orientations marked by Bamford and Green (1988) are wholly consistent with the general trend of the shapes presently interpreted. The present iteration in the region of the Shepherd and Murphy Mine appears to diverge from this relationship until it is realised that the model is unsatisfactory near profile 2 and that the granite is locally bulged to the north. The extent of this bulging has not yet been calculated but there is no doubt that it occurs.

If one relationship between deposits and granite form can be accepted subject to refinement then a second is also evident between type of mineralisation and distance from the granite. Sites within about 500 m of the granite carry much tin and tungsten; tungsten predominant within 250 m of the granite. Sites of the order of 700 to 1000 m distant are predominantly of lead-zinc-silver mineralisation. Although some gold occurs across a range of depths most occurrences are some 1000 to 1500 m removed from the granite. The only deposits which do not cleanly fit this pattern occur near the Dove River at about 423 000 mE and north of Mt Claude. The former may be related to the Dove Granite while the latter may be Cambrian volcanogenic in origin. It may be noted that the gravity coverage in each of these locations is very poor and the conclusion may be wrong as a result.

It should also be noted that the depth estimates must be reviewed carefully. These represent distance of the granite from the surface of projection and may not offer minimum distance to the granite margin.

STRUCTURAL NOTES

Structural features determined at the present level of analysis have been summarised in Maps 3 and 4.

The trend summary map (4) represents a subjective view of the gravity field (Maps 1 and 2). The station spacing and the possible variation in reliability of some parts of the coverage may distort trend inferences. Even so there are some clear patterns. Three general sets of trends are evident, NE-SW, NW-SE and approximately E-W (EENE). Other features of limited persistence are also present.

The form of the granite is suggestive of fracture control of emplacement. If this is indeed the case and the trends suggested represent long term persistent fracture systems then there should be a first order relationship between the form of the granite and the trend identified. Comparison of Maps 3 and 4 shows that most elements of the interpreted form of the granite are displayed within 5 to 10 degrees and in the same locations. This is partly a circular argument since the granite dominates the gravity field and would be expected to influence gradient locations used for trend analysis. (The next stage report comparing gravity and magnetic implications will show that these relationships are real).

The margins of the granite dip steeply. The roof is generally sub horizontal and the recognised shelves also have negligible dip. Small cupolas may occur on these low angle surfaces although they are more likely to be associated with ribbing near vertical corners - of which the only exposure is an example.

Although Tertiary deposits have not yet been appraised there is a relationship between the inferred position of the greatest residual thickness of these rocks and the structures around, or controlling, the southern face of the granite. This might suggest that additional fracturing was induced in this region or that the original fracture system was still active in Lower Tertiary time.

CONCLUSIONS

As this is a stage or progress report, and further work is in train, the conclusions offered are general and interim but do summarise present achievements.

1. Gravity data offer much structural information relevant to understanding of the area and its history. This topic to be studied in association with magnetic data.
2. Gravity data have enabled general definition of the form of the Dolcoath Granite. It is shown to be a relatively small, isolated pluton with steep sides.
3. The north face of the granite dips steeply but parts of the south face are shelved at moderate depth. The roof and such shelves are nearly horizontal. Irregularities in the shape of the intrusion can be related to fracture control of emplacement.
4. Mineralised sites can be related to corners or any abrupt vertical or horizontal changes in form of the intrusion. This relationship must reflect tensional stress release points and the granite has therefore directly controlled placement and orientation of mineralisation.
5. The type of mineralisation appears to be directly related to the distance from the granite. Tin and tungsten closest, lead-zinc at moderate distances and gold further removed although gold may occur at all ranges.
6. Felsic rocks intruded by the granite are either not as mapped or have been partly altered as indicated by an increase in density.
7. The present interpretation is very suggestive of exploration emphases. Comparable granite forms (corners and edges) are concealed by Tertiary rocks at shallow depth. There remains much scope for refinement of the interpretation.
8. Tertiary deposition may be related to primary fracture systems. Although surface basalts appear to be dominant the overall negative contrast of the section would suggest that a high proportion of sediment is included or the basalts are deeply weathered.

RECOMMENDATIONS

1. Although the current interpretation is informative and tantalising no wholesale refinement is suggested at this stage since this is likely to be time intensive, costly and not aims specific. Particular facets of the intrusion could be examined. These would have the affect of segmentally improving the entire picture while emphasizing those elements of the intrusion which may have exploration interest.
Such site specific studies must consider Tertiary and other local sources. Sites worthy of study include the region around Daisy Dell, Lorinna and south west of Moina.
2. The gravity data must be correlated with magnetic data in order to assess the impact of the granite form on limits of magnetic units and changes in magnetic properties. Such comparisons may well reveal skarns or alteration effects.
3. Some drilling control on the thickness of basalt is required in order to finally remove this variable. Magnetic analysis can provide the regional stripping once this is done. Gravity interpretation of roof forms will then become feasible.
4. Some density determinations are recommended for all units but special attention should be directed at roof extremities of the Dolcoath Granite, Lorinna Greywacke contents and the felsic rocks since there are suggestions that these contain a range of lithologies. It is possible that roof irregularities may contain siliceous, low density phases.

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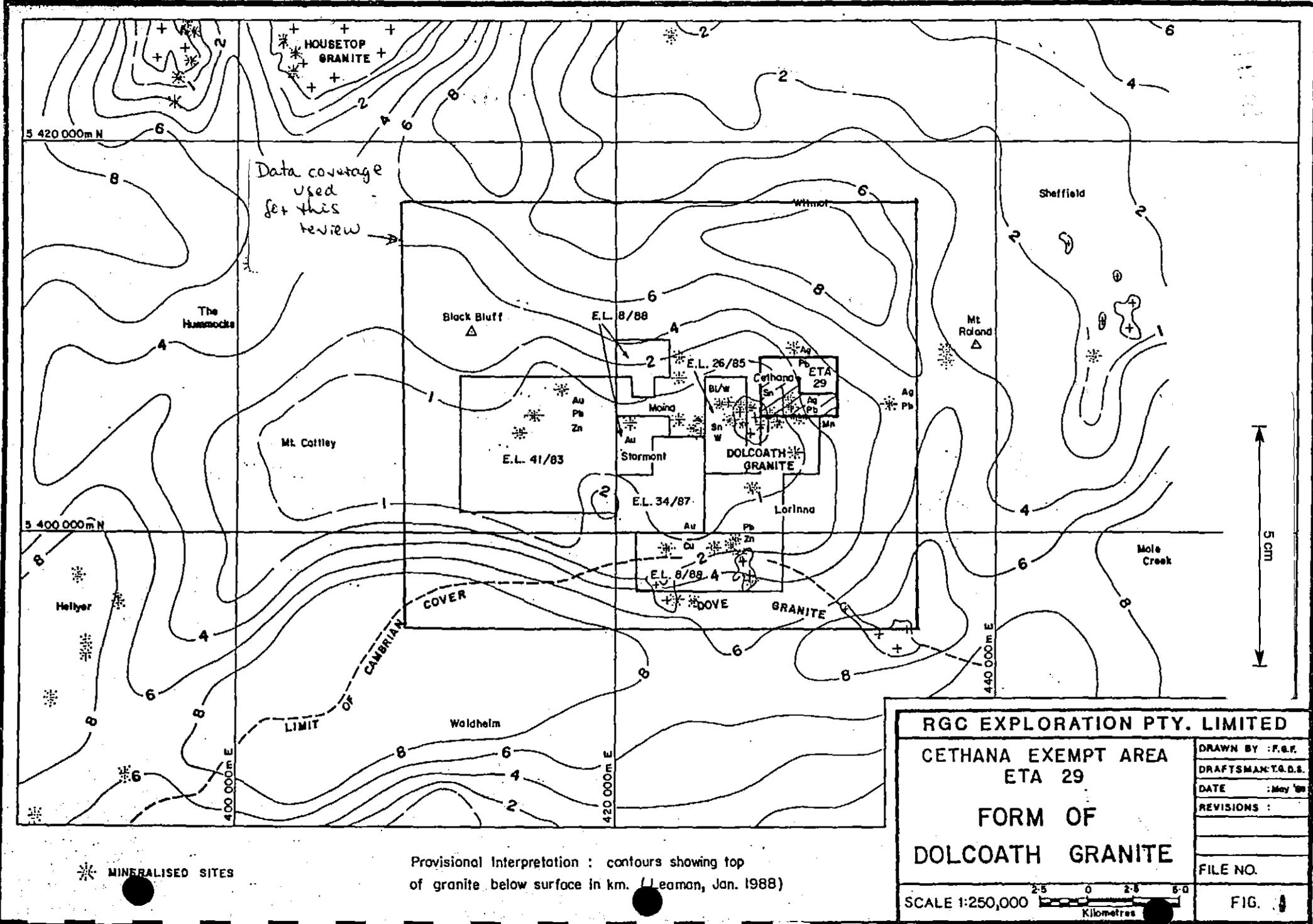
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Report submitted on behalf of
Leaman Geophysics
by

D. Leaman

Dr. D.E. Leaman, B.Sc., Ph.D
M.Aus.I.M.M., M.M.I.C.A

31/10/88



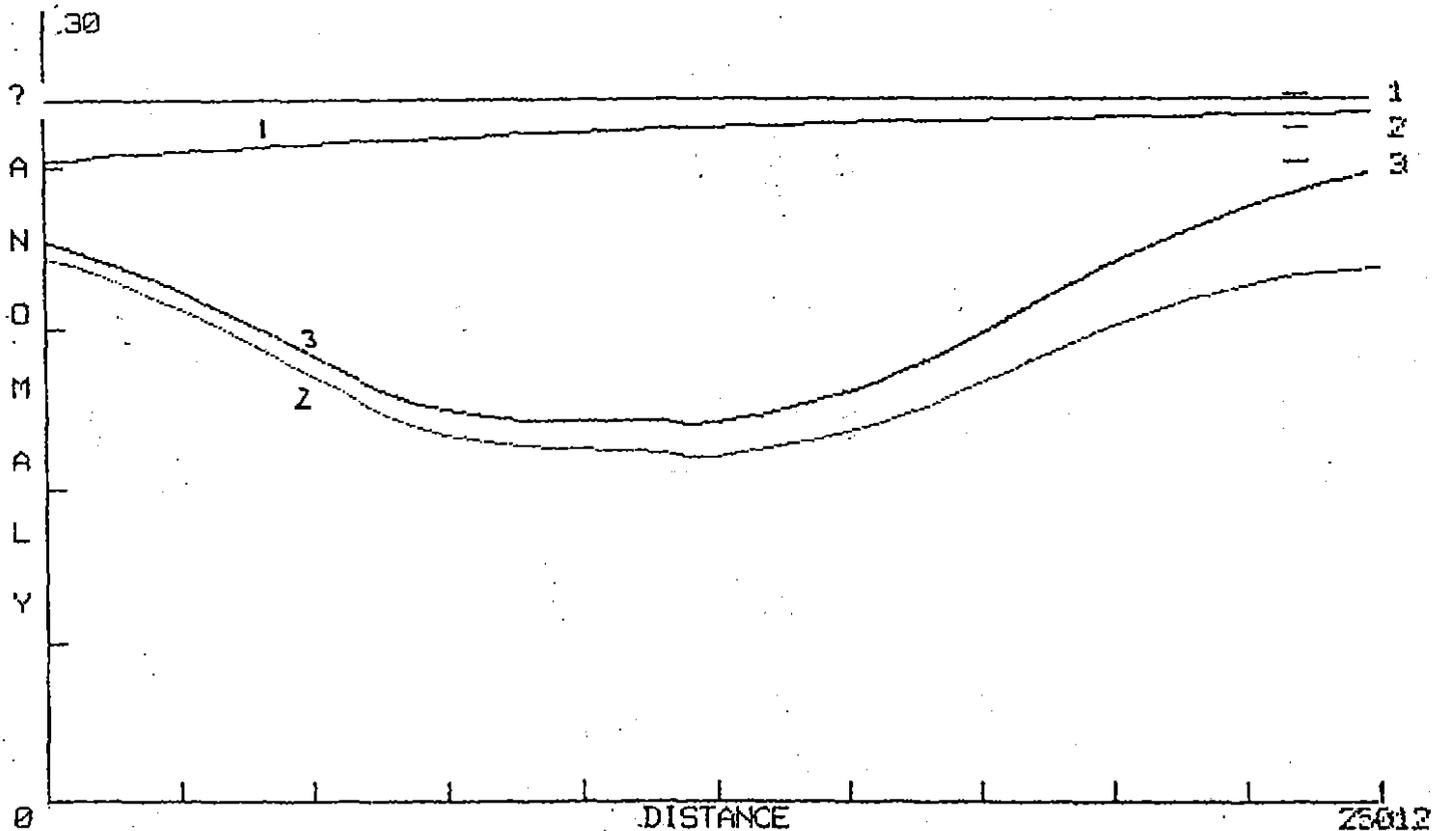
RGC EXPLORATION PTY. LIMITED	
CETHANA EXEMPT AREA ETA 29	
FORM OF DOLCOATH GRANITE	
DRAWN BY : F.E.F.	DATE : May '88
DRAFTSMAN : G.D.S.	REVISIONS :
FILE NO.	FIG. 1
SCALE 1:250,000 2.5 0 2.5 5.0 Kilometres	

Provisional Interpretation : contours showing top of granite below surface in km. (Leaman, Jan. 1988)

569114

0	1.00	B:MOINA8G8
1	1.00	B:GRN1AM8
2	1.20	B:GRN6BM8
3	1.20	B:GRN6CM8

-13.5	-14.1	-14.6	-15.2	-16.0	-16.9	-17.7
-18.6	-19.5	-20.5	-21.5	-22.4	-23.5	-24.4
-25.1	-25.5	-25.8	-26.0	-26.2	-26.2	-26.2
-26.2	-26.2	-26.3	-26.6	-26.5	-26.2	-25.7
-25.3	-24.8	-24.3	-23.6	-22.9	-22.1	-21.2
-20.2	-19.2	-18.2	-17.2	-16.3	-15.4	-14.6
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-9.9	-9.5					



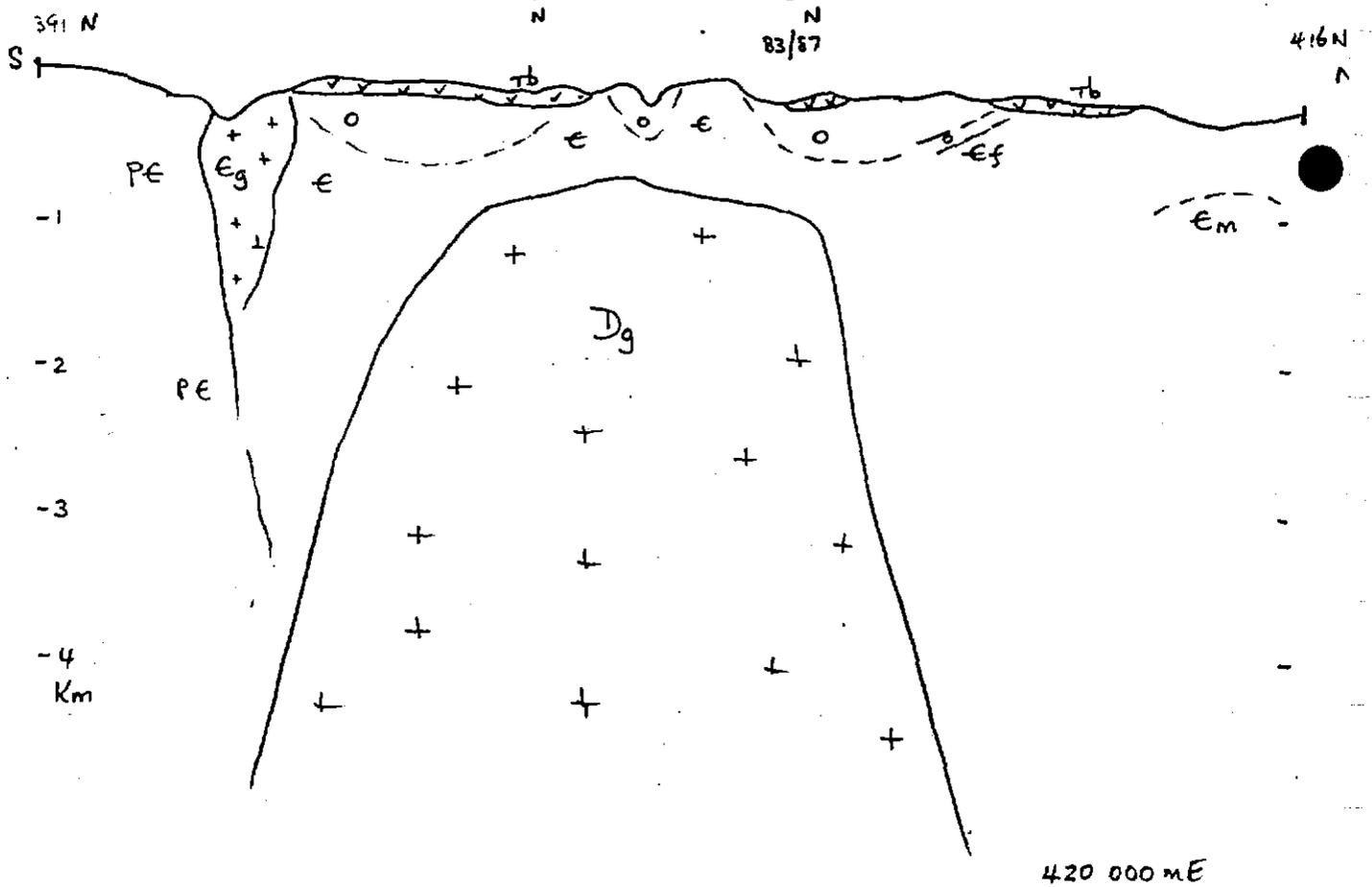
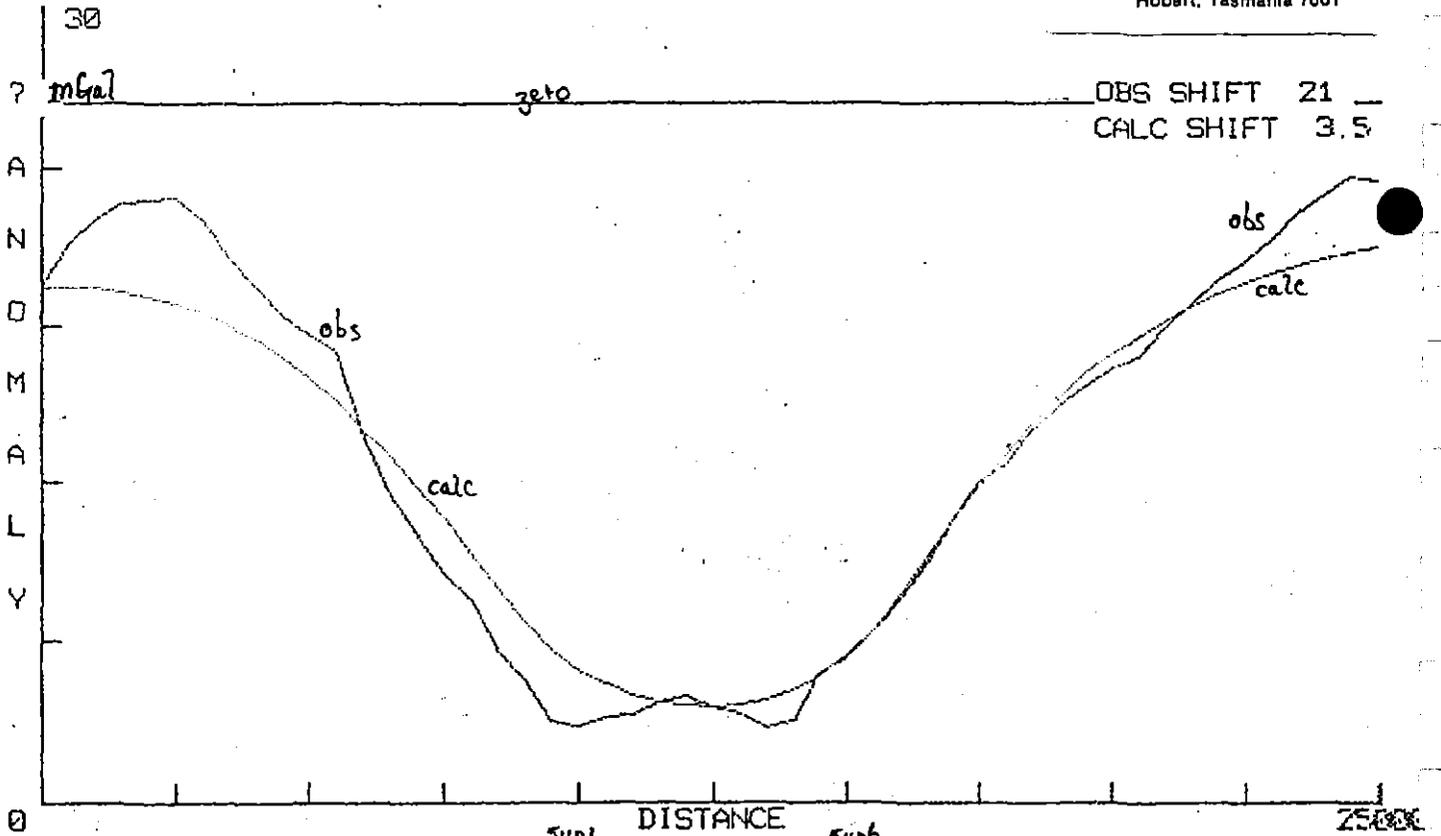
EXAMPLE OF GRAVITY FIELD COMPONENTS

PROFILE 8

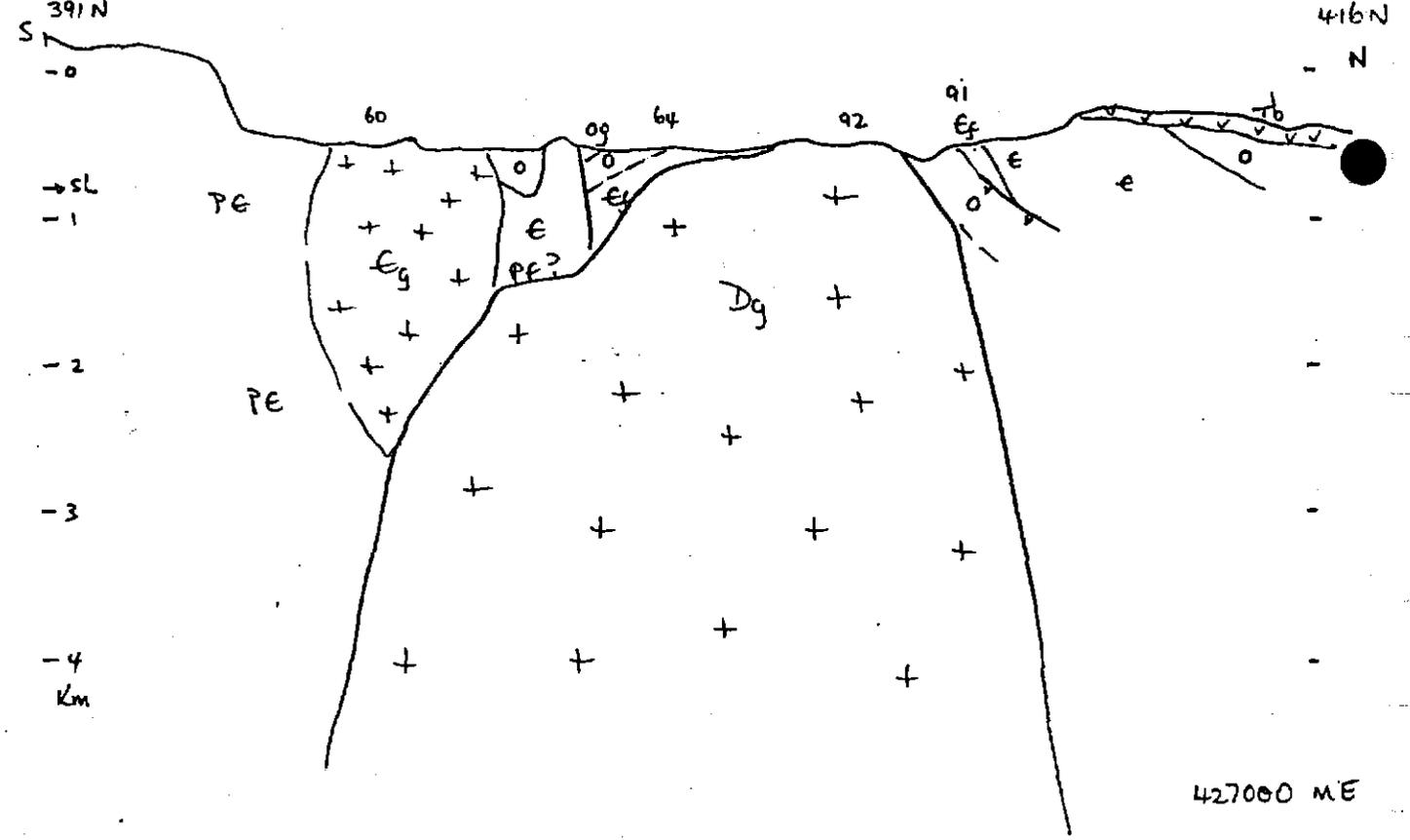
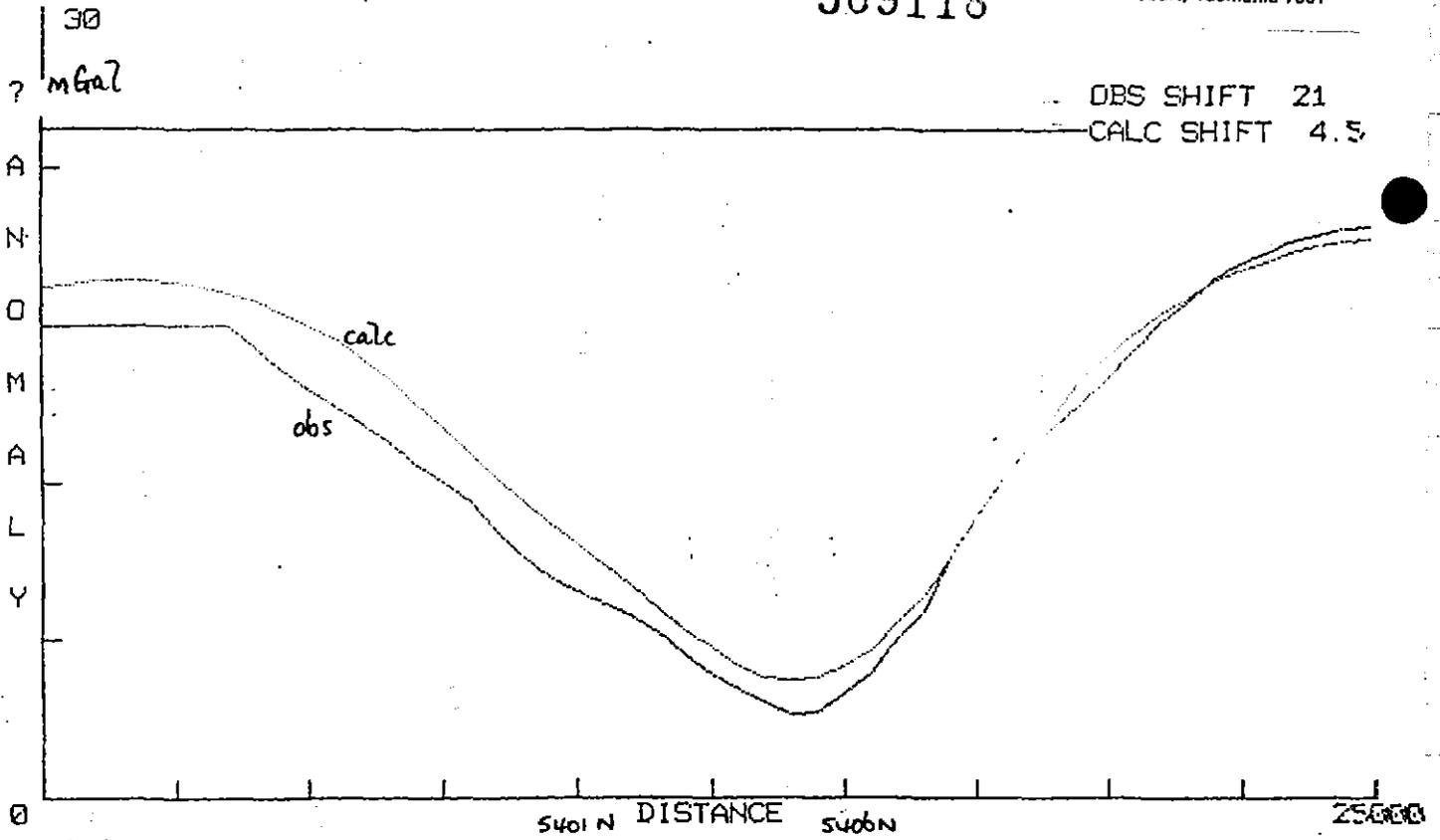
- 1 Tor Granite : contrast -0.1 t/cu m
- 2 Meredith-Housetop-Beulah-Dolcoath Granites -0.05t/cu m
- 3 Meredith-Dolcoath Granites -0.05 t/cu m

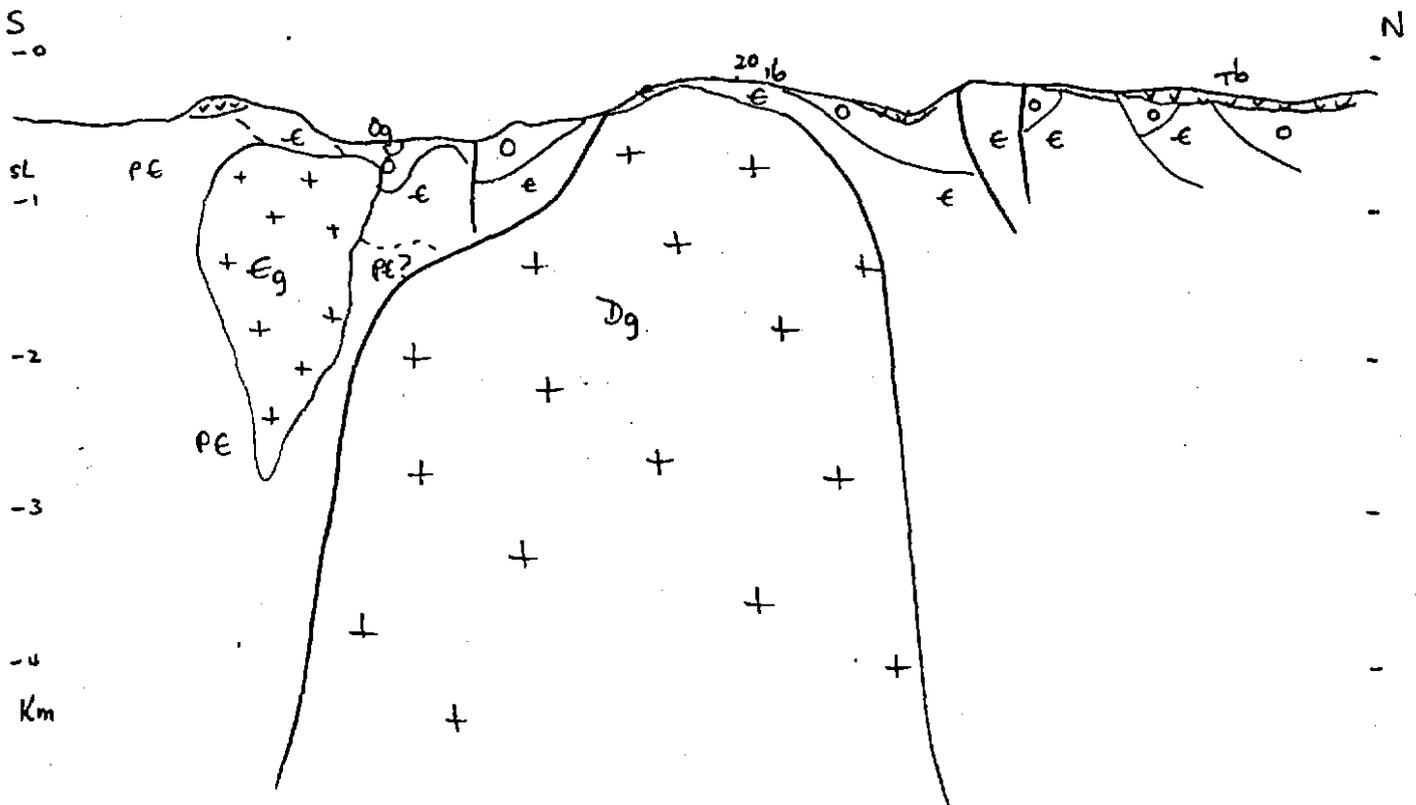
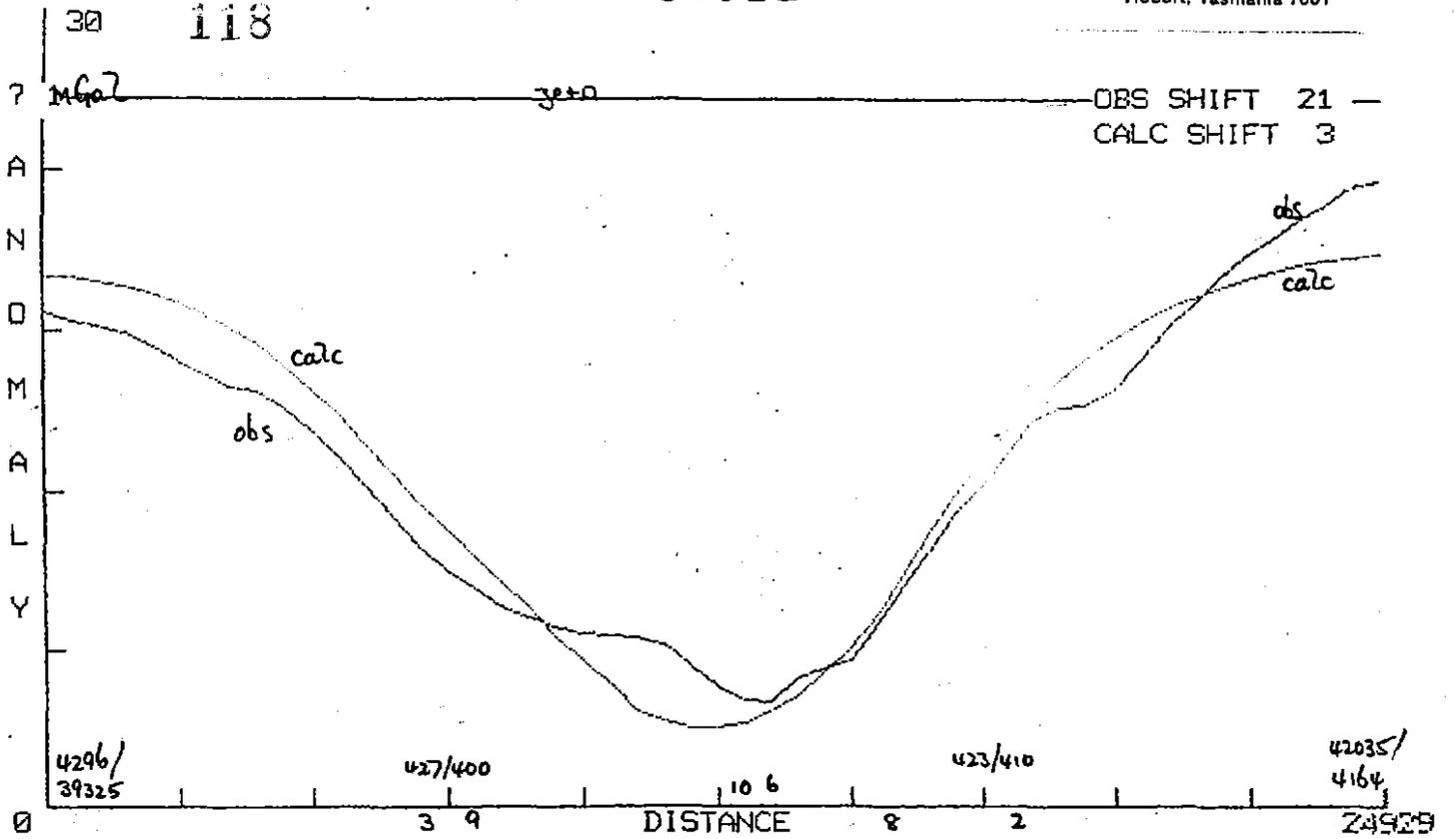
Bulk granite densities assumed in modelling:
 Tor 2.64 t/cu m; Housetop-Beulah 2.69 t/cu m; Meredith-Dolcoath 2.62 t/cu m.

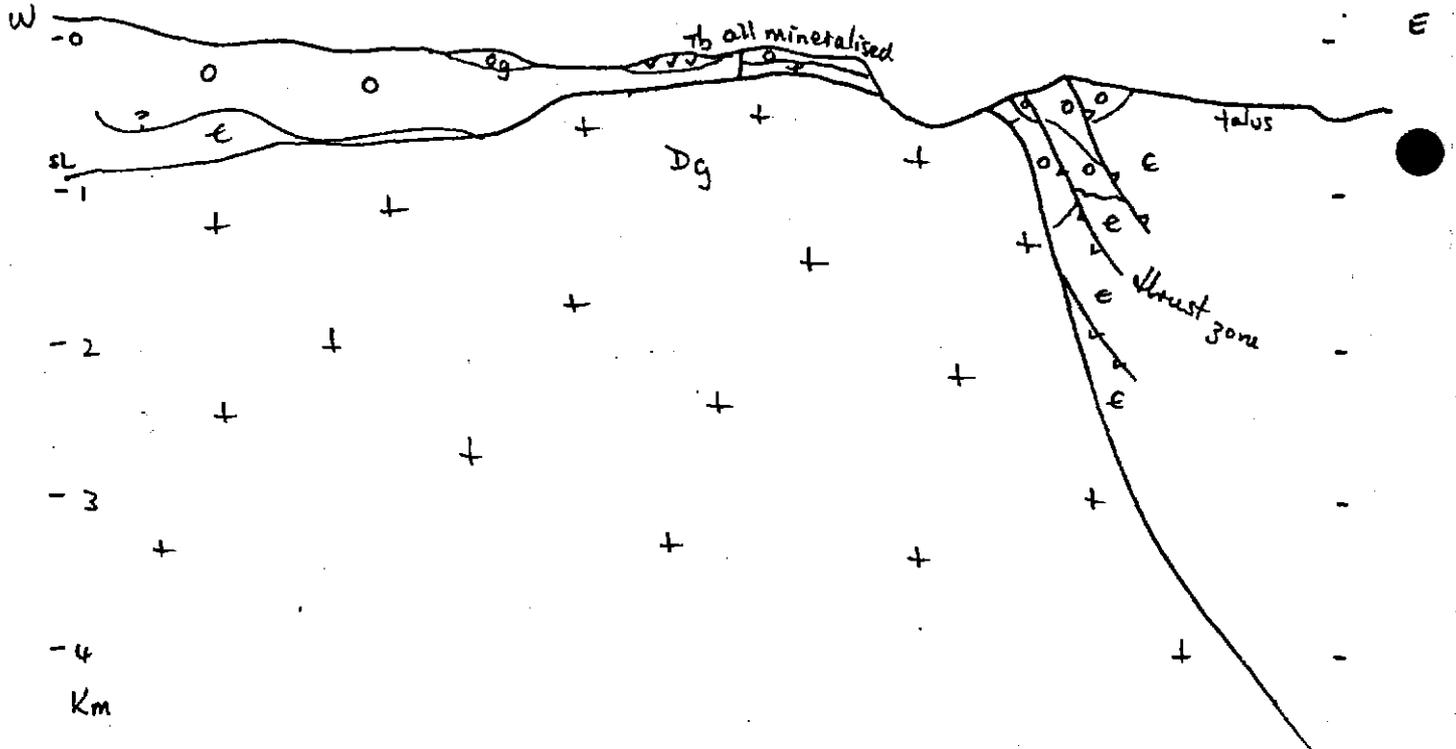
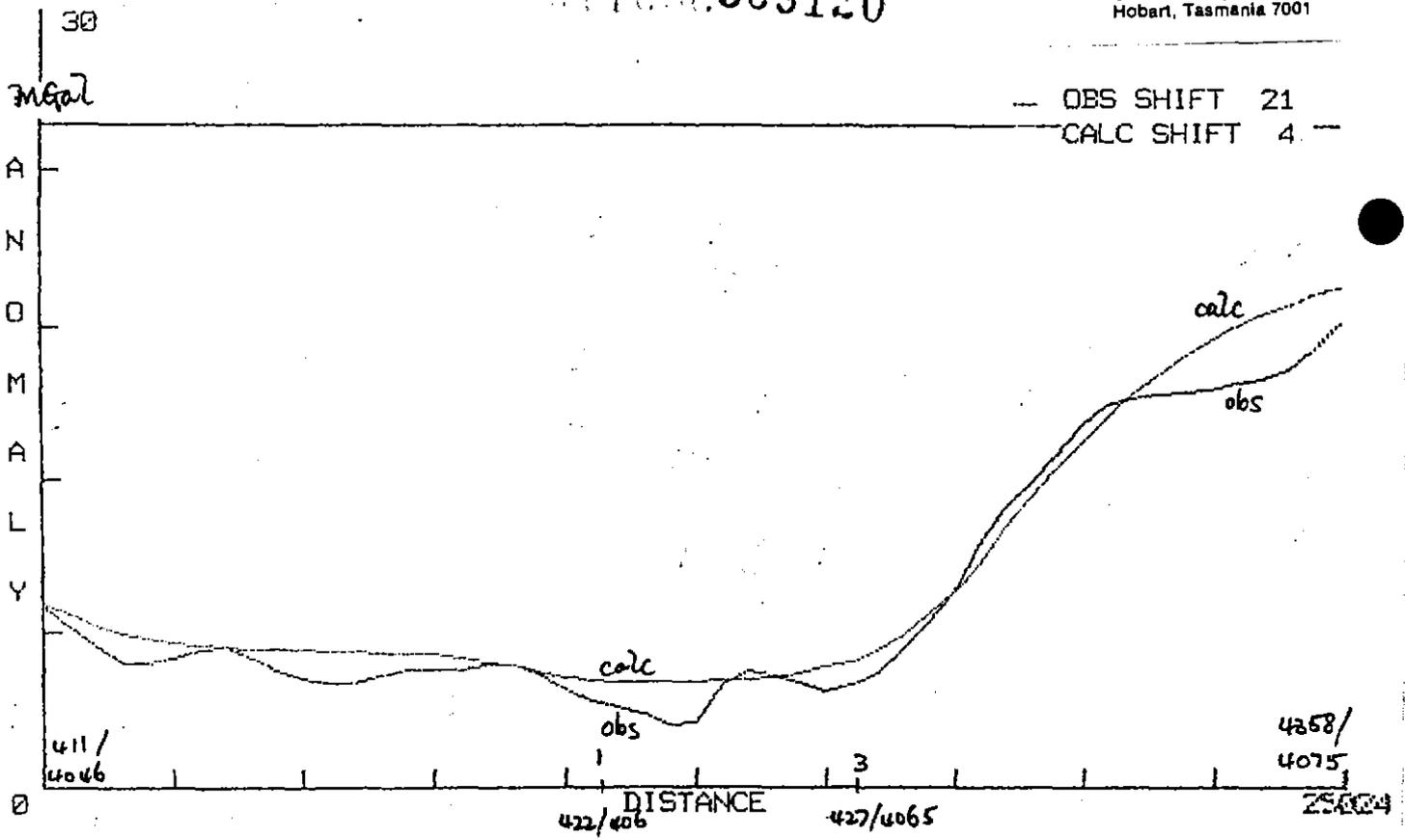
FIGURE 2

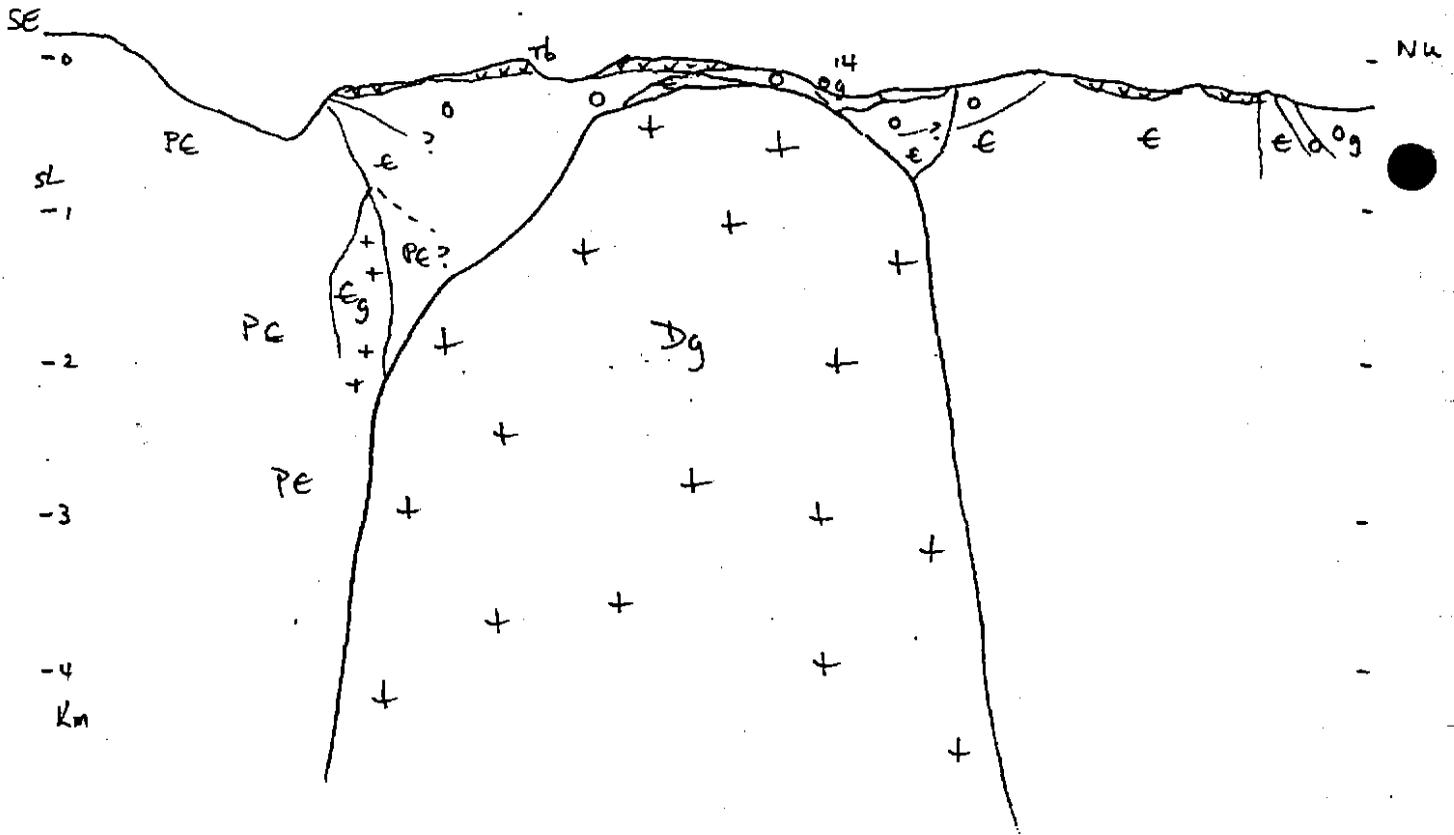
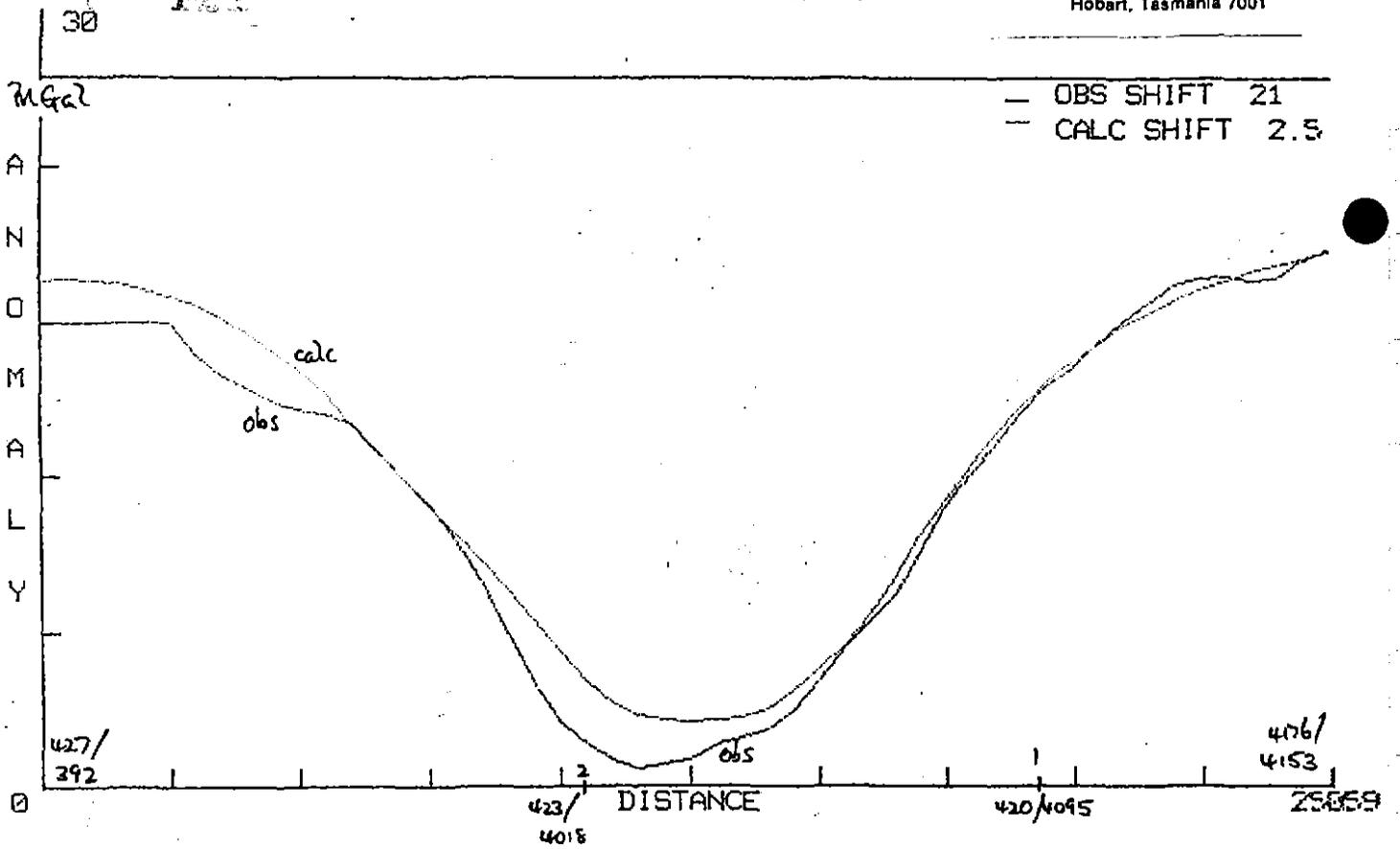


3D INTERPRETATION PROFILE 1 MOINA REGION FIGURE 3







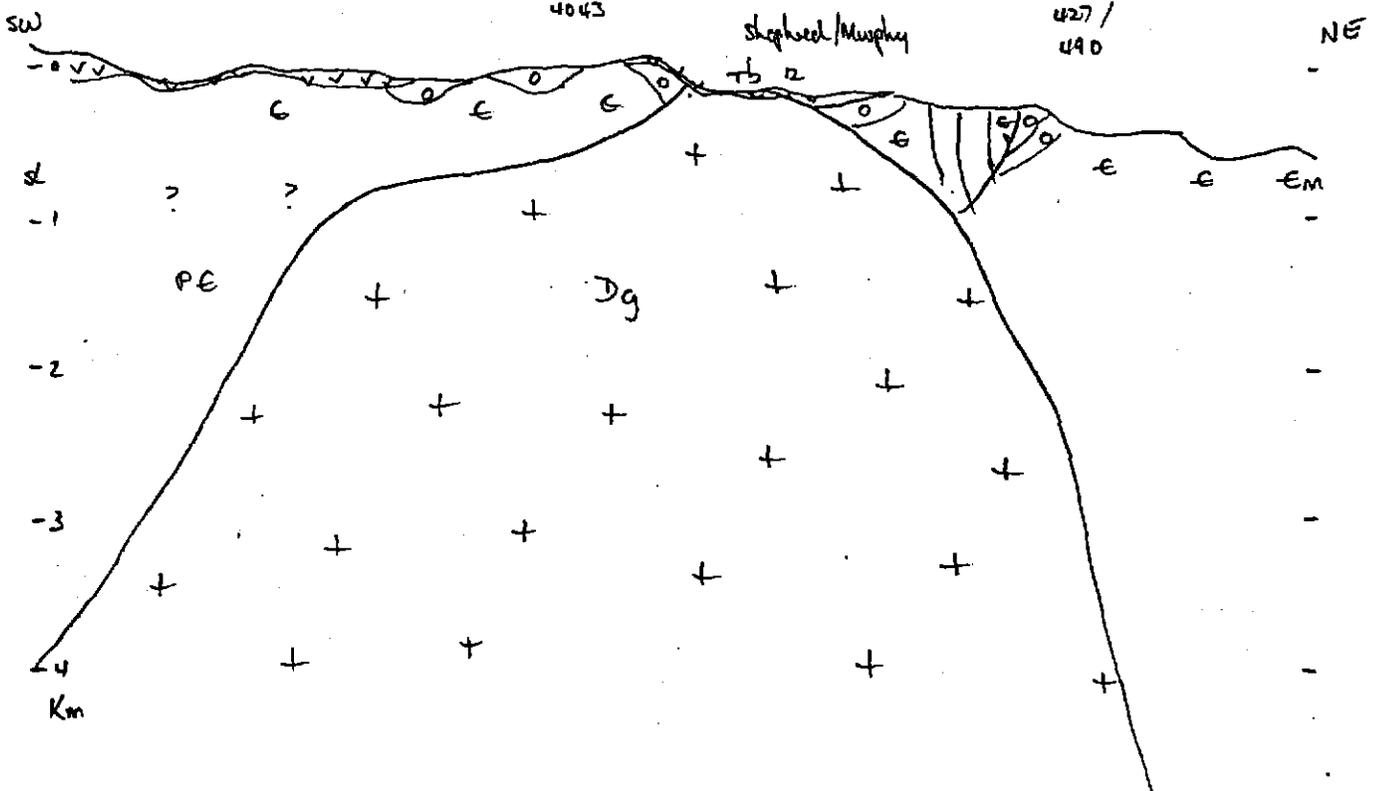
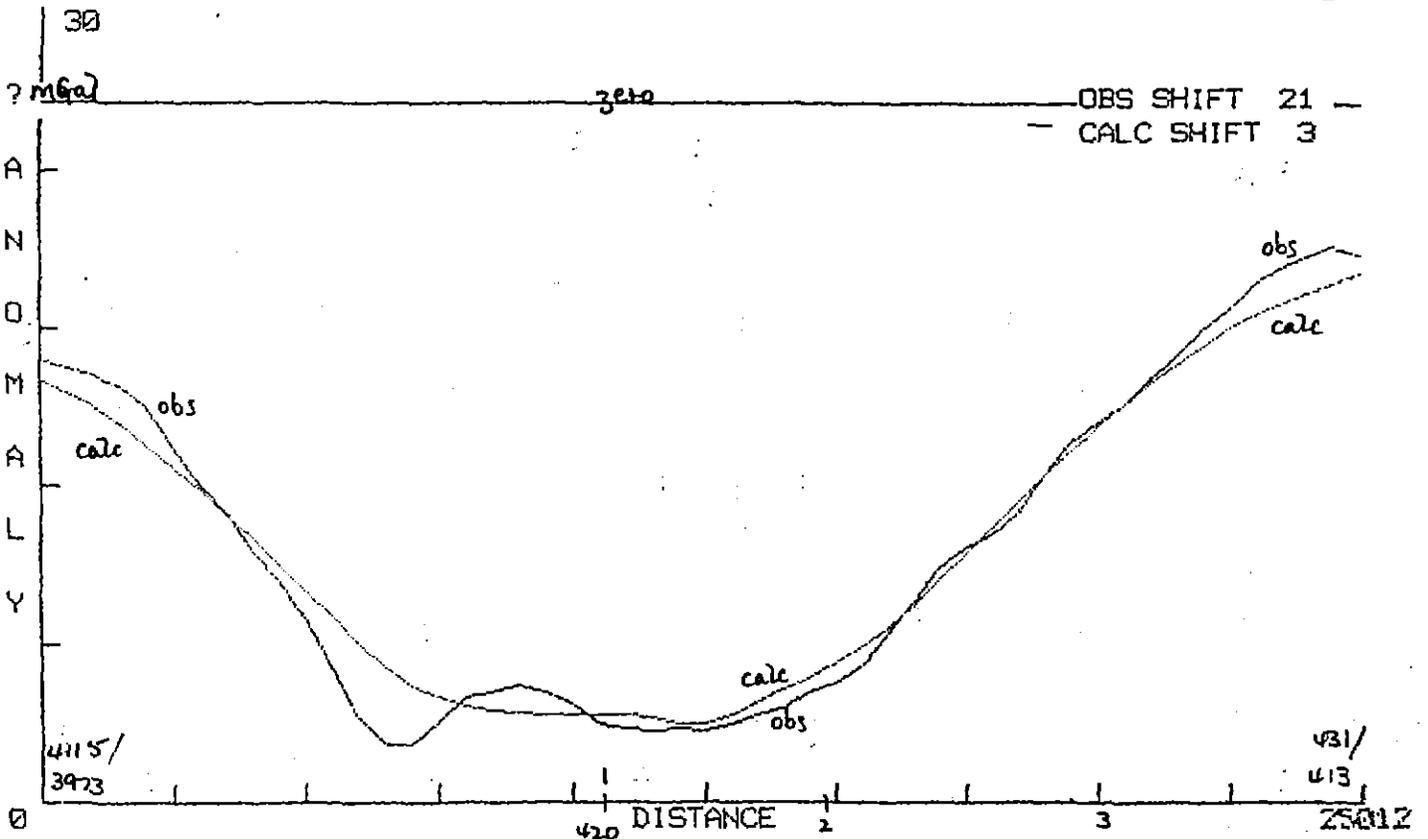


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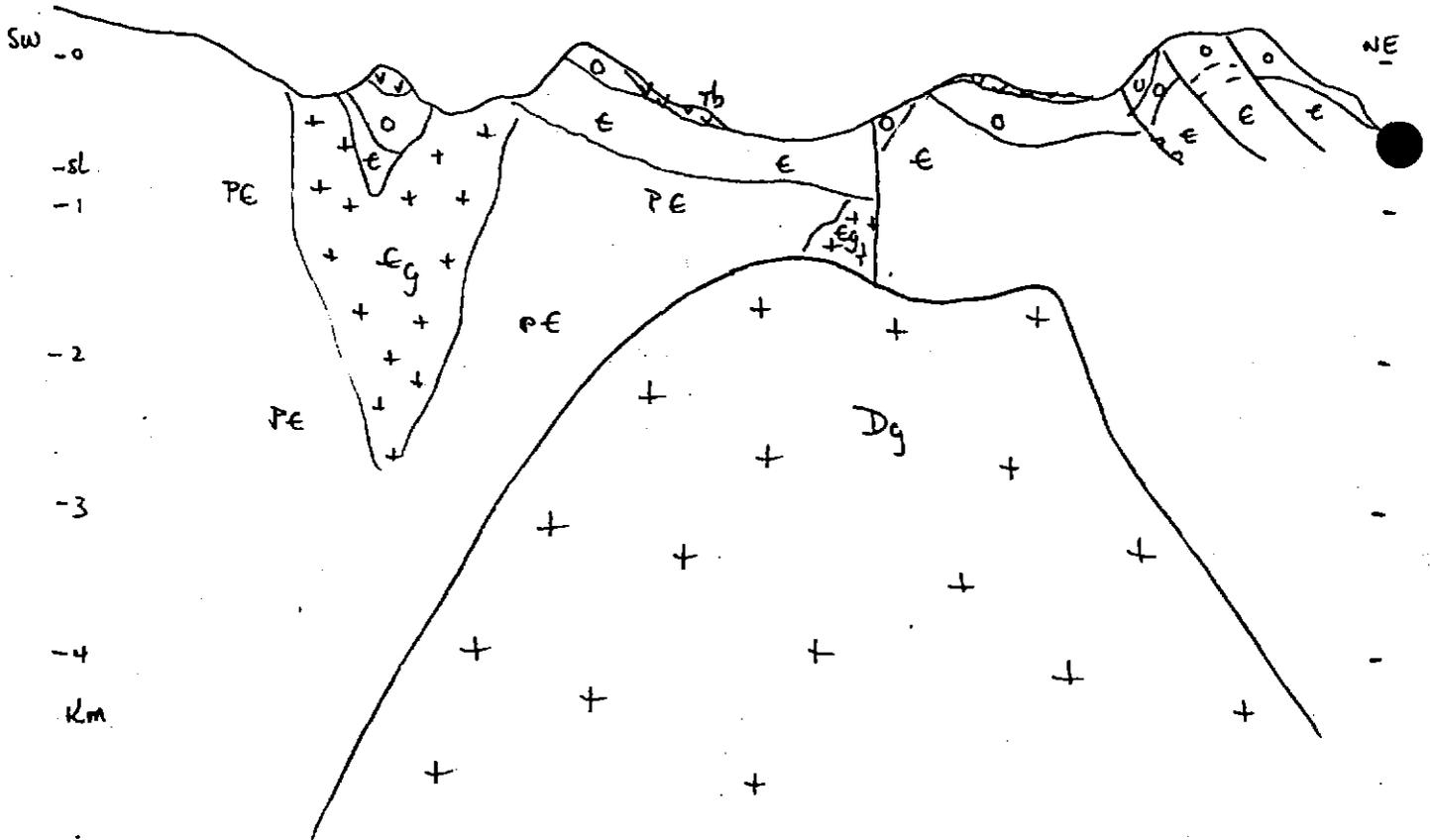
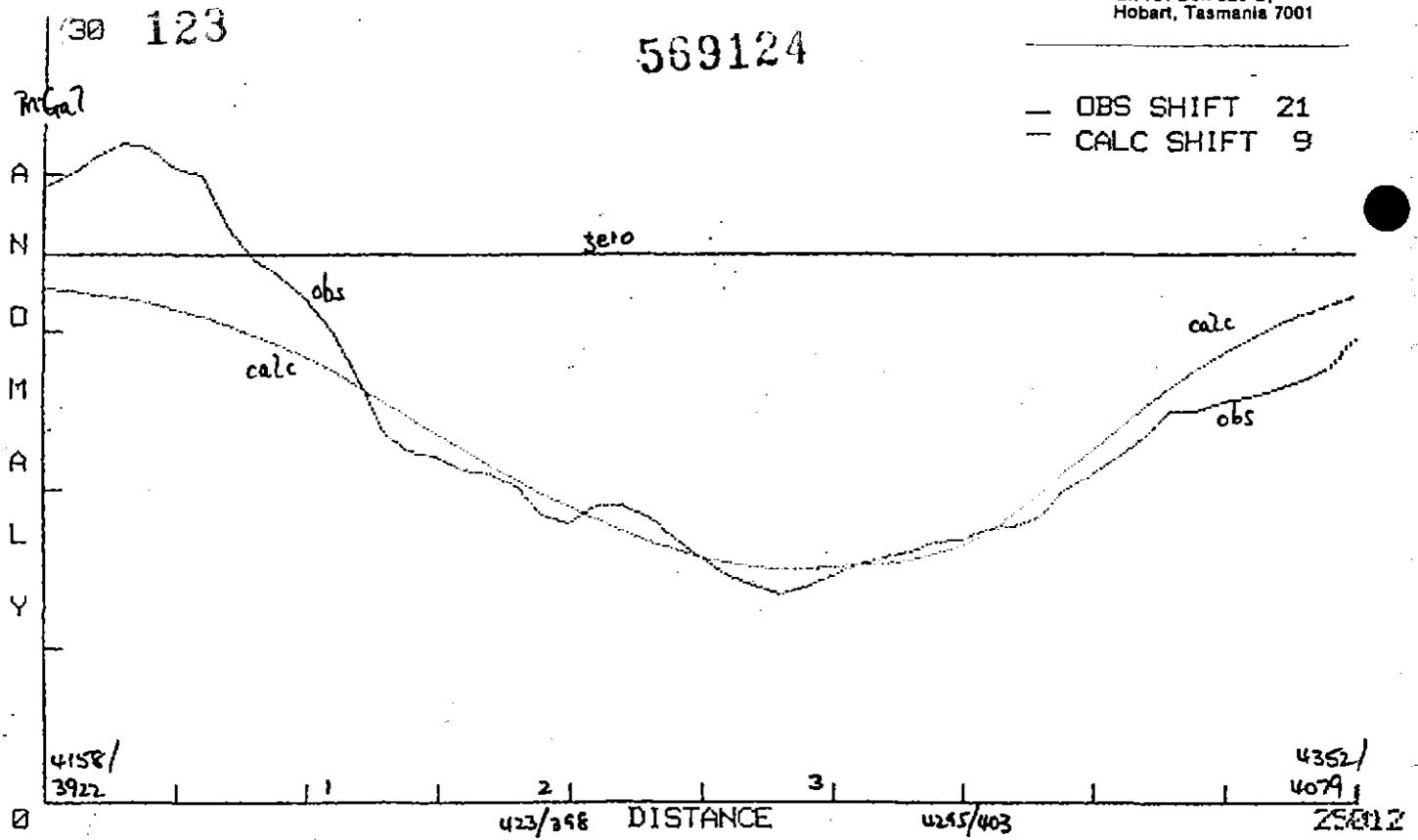
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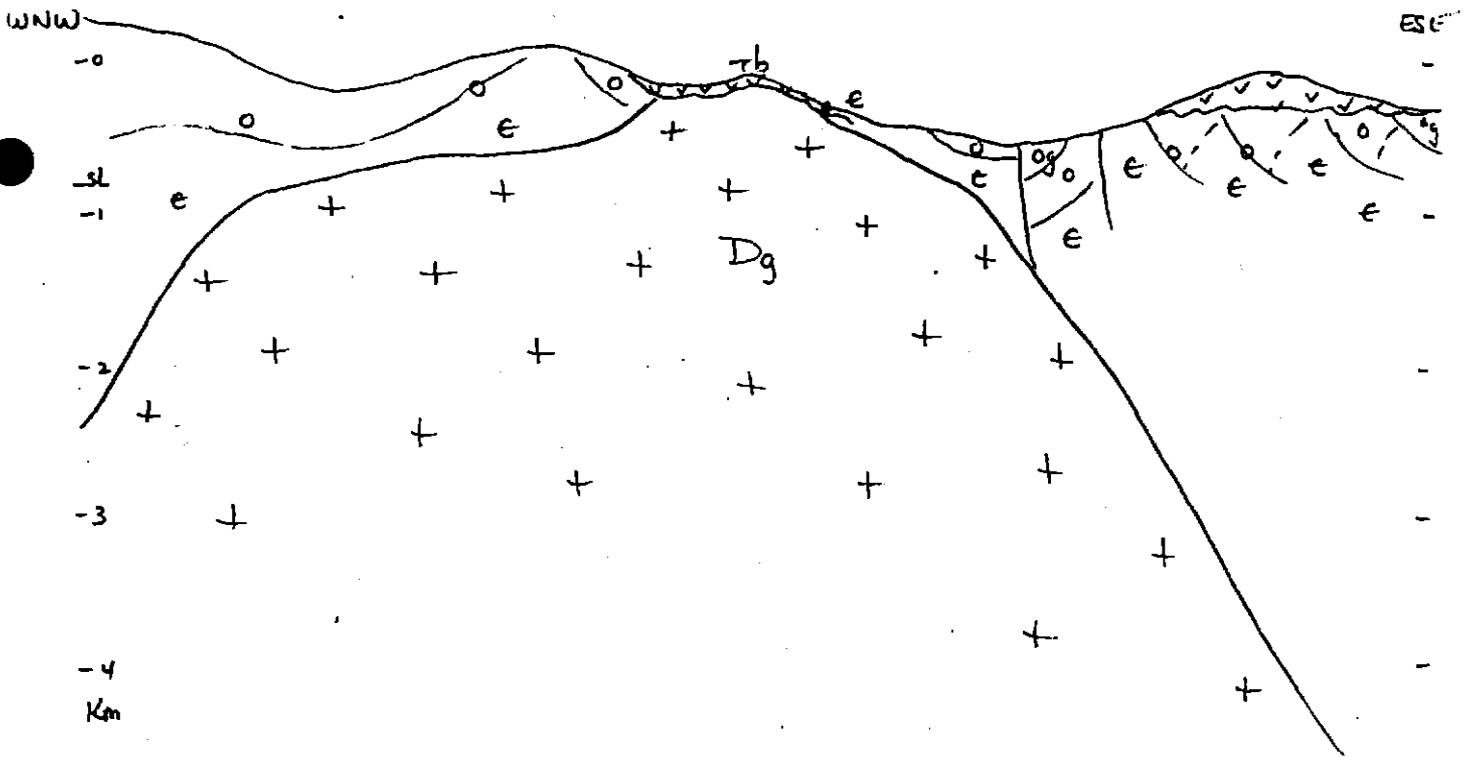
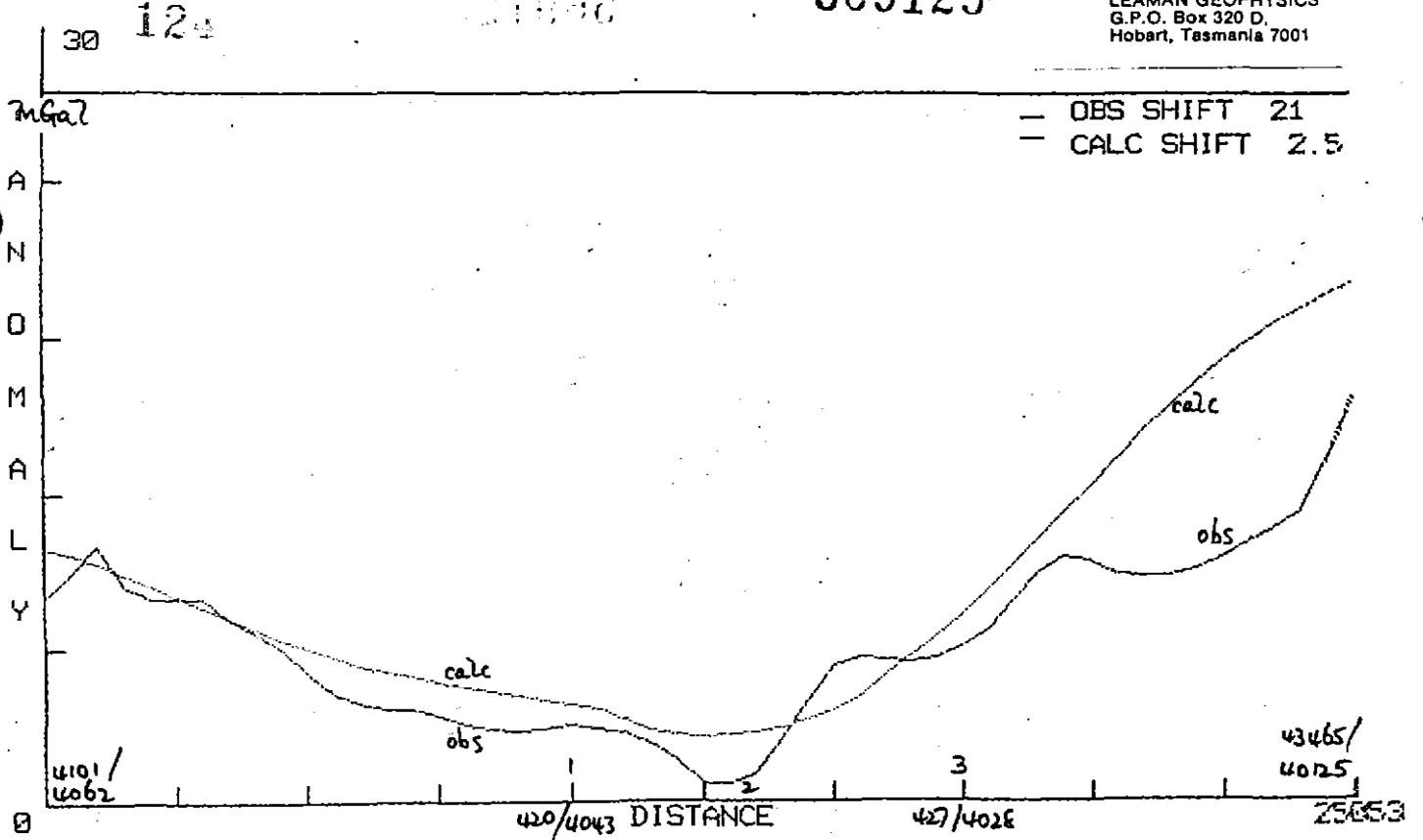
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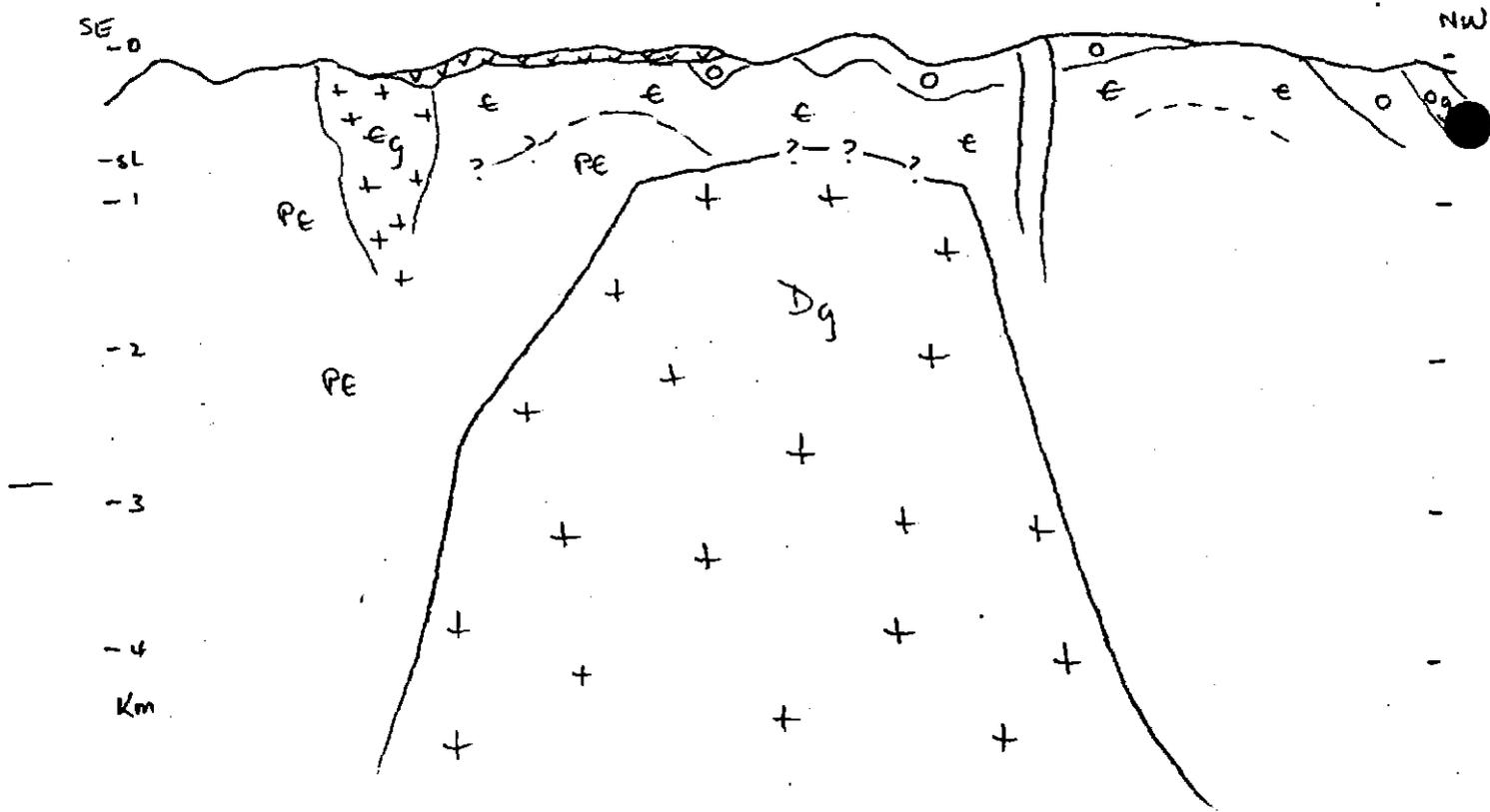
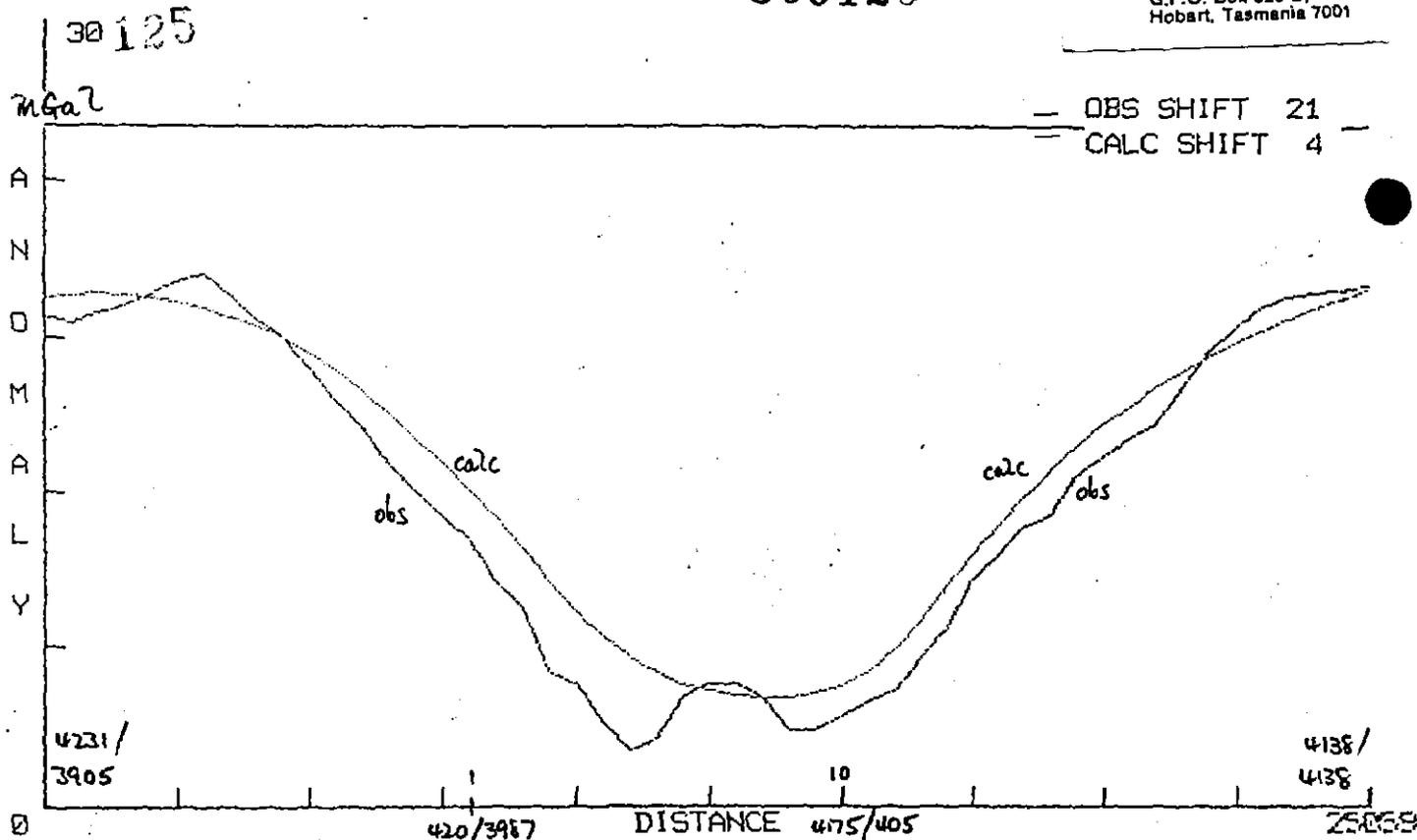
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3D INTERPRETATION PROFILE 8 MOINA REGION FIGURE 10



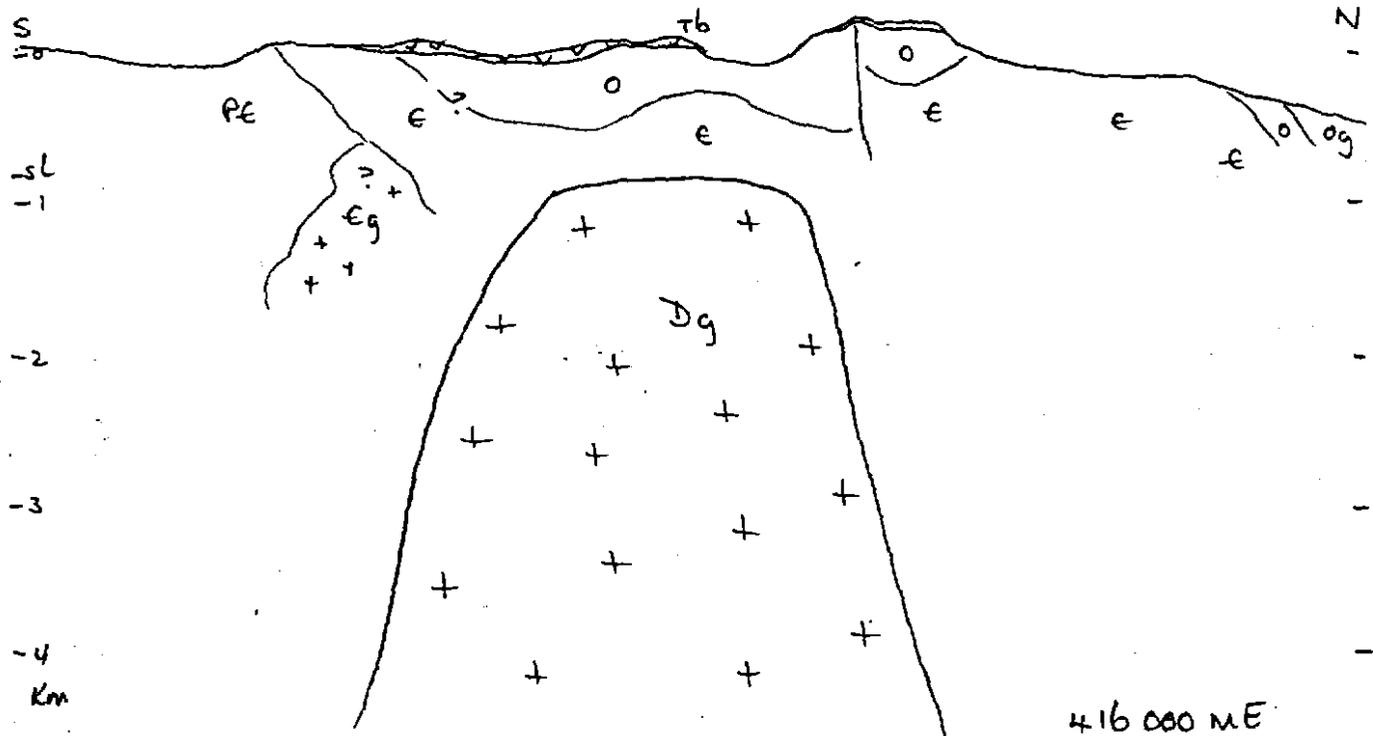
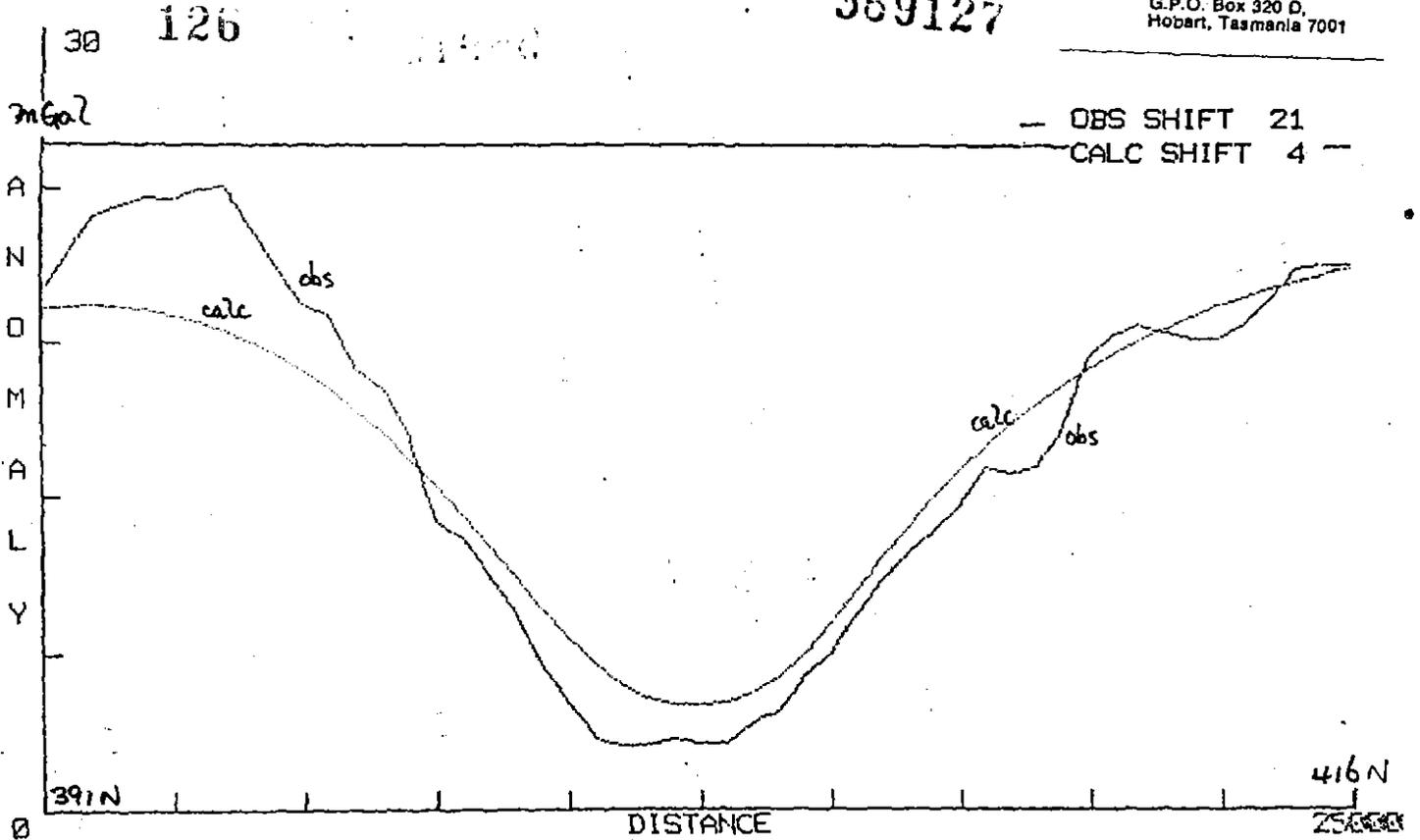




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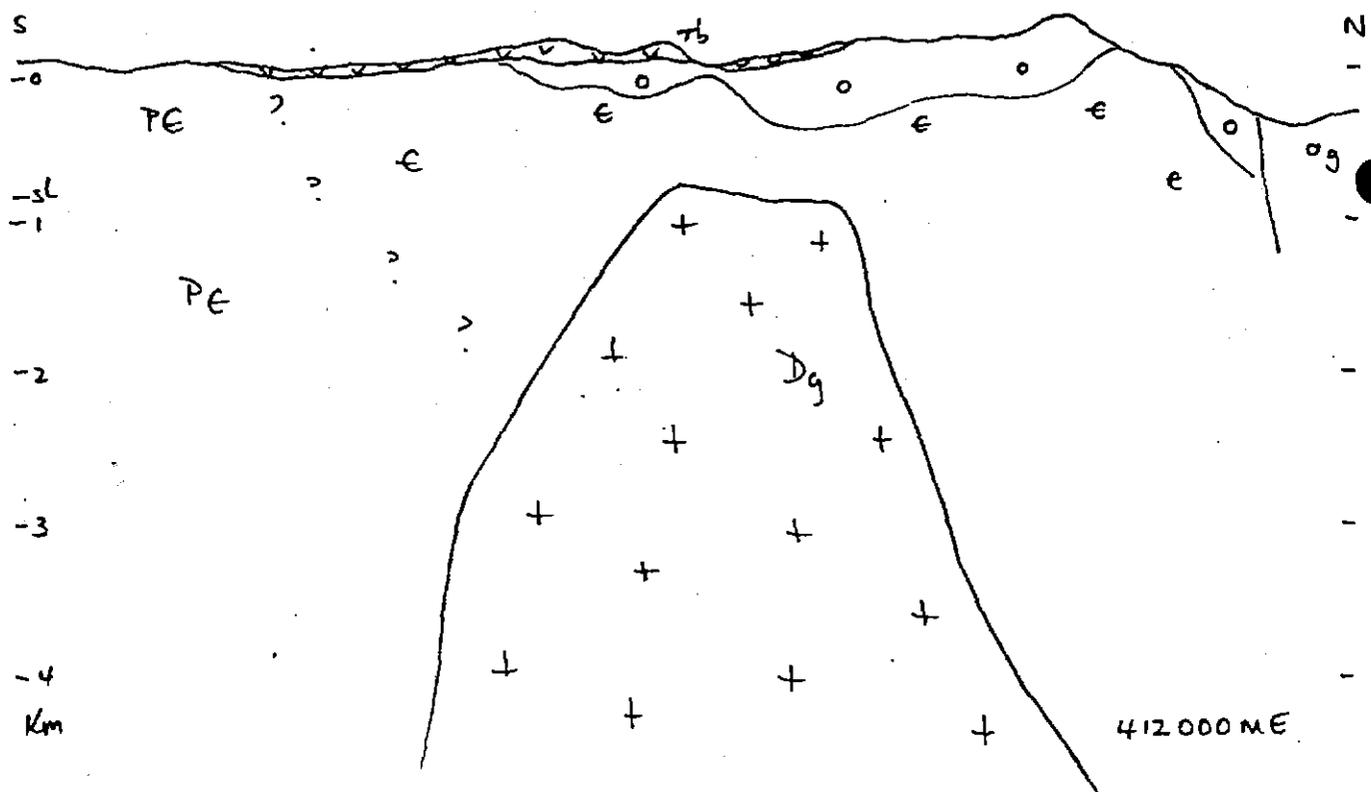
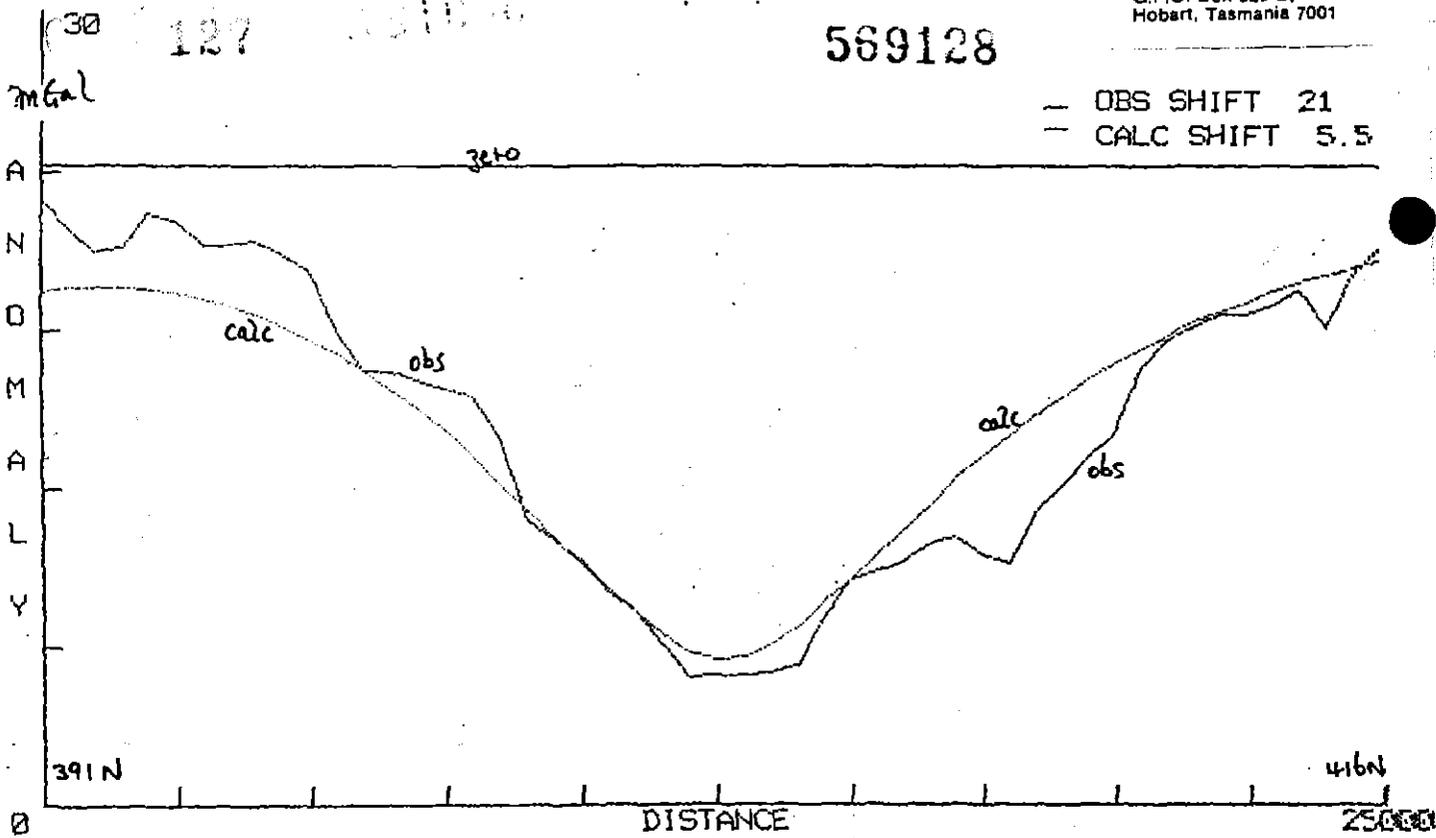
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REPORT 3 - INTEGRATION OF INITIAL REVIEWS

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GRAVITY AND MAGNETIC EVALUATION MOINA REGION

3. INTEGRATION OF INITIAL REVIEWS

for
RGC EXPLORATION PTY LTD

by
Dr. D.E. Leaman

November 1988

MOINA3

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Maps in folders at back of report

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SUMMARY

Although initial reviews of gravity and magnetic data have stressed the implications of each data set independently of the other the present integration shows that a high degree of congruence has been achieved and that coupling of many, apparently, disparate elements can yield a united explanatory view of the geology around Moira.

Both gravity and magnetic fields are dominated by the effect and influence of the Dolcoath Granite although this dominance is more obvious in the gravity data. The magnetic field appears relatively random until the trends implied at near surface or higher levels are superimposed on the gravity field and its primary solution. The magnetic field is then seen to reflect first order aspects of the intrusion and related structures as strongly as the gravity field and the additional information provided by the magnetic data can now be used to assist refinement of the granite model interpretation.

Gravity data are less useful than magnetic data in terms of description of the roof rocks and their thermal alteration. Even so, some bulk changes in Cambrian lithologies are indicated. The magnetic data, however, show that most units are affected for about 700 m (av) from the granite contact. This conclusion depends on information derived from gravity data about the form of the intrusion which, when inserted in magnetic analysis, enables resolution of the complex magnetic field. Most anomalies in the immediate environs of the granite are generated within the metamorphic halo.

The two streams of interpretation are thus complementary. Further analysis to refine current interpretations must now proceed using both methods concurrently.

There is considerable scope for further exploration as noted in the twin reports describing the initial reviews. Both data sets can be used to sharpen the view of the form of the granite roof and its metamorphism. Secondary problems, such as resolution of Tertiary materials, also require use of both methods; magnetics to indicate form of deposits and gravity to check the estimates. It is likely, however, that any specific targetting will depend either on the detailed definition of the granite roof form from combined analysis or subtle magnetic signatures.

INTRODUCTION

Initial reviews of gravity and magnetic data in the Moina region of NW Tasmania have been completed and reported separately.

Report #1 : magnetics

Report #2 : gravity

Each review was completed independently of the other in order to allow each data set to generate a range of options. This approach avoids an early channelling of interpretations styles and solutions due to intra method bias or implications. The potential of each data set is more fully appraised.

There comes a point, however, where the two growing streams of information must be blended and thereafter developed concurrently. This report presents a basic integration of the two review interpretations with some implied revisions and discussion. It is not intended as a complete interpretation but rather as an assessment of conclusions and an indication of future directions.

DISCUSSION

The individual reviews reflect the nature and response of the gravity and magnetic fields to the local geology and its peculiarities.

The magnetic field is noisy and erratic and full of character (eg. Figure 6) while the gravity field is dominated by the presence of the Dolcoath Granite. This distinction has affected the results of the initial work. The magnetic field reflects relatively shallow contrasting sources and yields no direct indication of the granite stock beneath. The gravity field reflects the granite and the minor perturbations evident in the field represent responses to the variations in the thin roof rocks.

The initial studies thus offer true halves of a single picture even though the apparent overlap is minimal. Detail of the overlap, especially in the form of the economically significant roof rocks, will emerge from extended analysis.

Figure 1 indicates the areas studied and licence commitments. It also provides the original concept for the form of the Dolcoath Granite achieved before the present programme.

Figures 2 and 3 provide printed versions of overlays (in pocket) to be used in conjunction with Figure 6 (the magnetic field as would be observed at 1200 m ASL). Comparison of the current model for the granite and this version of the magnetic field reveals some distinct relationships. (Figures 3 and 6). The zone of elevated field around the SE face of the granite is clearly truncated by it. It may also be significant that patches of elevated magnetic field NW of the granite lie in a comparable situation. Some N-S features evident in the magnetic data and which may have some processing-acquisition bias are consistent with granite offsets or terminations.

The persistence of moderate magnetic character above the shallow roof of the granite indicates that the thin roof rocks are variably and strongly magnetic. Two trends may prove of interest; NW-SE and N-S. A regional E-W feature cuts off the north face of the granite. Some lithological variation is certainly indicated but variations in thickness may also be implied; higher values - greater thickness. This data may be able to resolve roof details. The roof west of 420 000 mE is clearly two level and deeper, as implied by gravity interpretation (refer map 3 and notes on map in report #2).

Figure 7 presents a portion of the magnetic field as observed at a nominal clearance of 150 m with the gravity model overprinted. Some of the above-noted relationships are evident but many features bear little obvious correlation and would be consistent with responses from metamorphosed or altered roof and wall rocks. The differences reflect the responsiveness and emphasis

of the respective methods and observed fields. Note that while it is possible to find some clear associations between granite and known mineralised sites no equivalent systematic is visible in the magnetic field. Contrast Figures 5 and 7.

That portion of the model used in Figures 5 and 7 is reproduced in Figure 4 for clarity and ease of checking.

Map 1 presents a synthesis of all observed trends including mapped folds, thrusts and faults.

Although the coverage of the two initial reviews differs there is much unambiguous agreement and many other features lie within 5 or 10 degrees. This is inside the envelope of definition for the relevant data. An extract from Map 1, covering the same area as Figures 5 and 7 is shown in Figure 8 with the current granite model. This diagram shows, in a rather confused way, that the two methods are indeed seeing the same geology and that the model is consistent. Where the model diverges from a strong trend pattern further iteration is advised. The proposed iteration near the Shepherd and Murphy Mine is an example of an inference likely to prove valid upon revision.

Similarly the shape and location of the western scarp of the roof near 421 000 mE may trend either N-S or possess a distinct NW trend. The current model tends to compound these trends into a suggestion of a concave bend. Extraction of the actual form or the most likely indication of it is relevant to exploration near Daisy Dell. Other edges and corners of the granite are related to mineralisation and the Daisy Dell corner should be no exception. It is concealed by Tertiary materials but the precise location of the change in intrusion form is clearly of exploration significance. The form has only been approximated in current analysis and the conflicts in the trend sets must be evaluated in order to establish the most likely solution.

The regional view of the data sets and their interpretation - in terms of gross structure, trends and granite form - is consistent and clearly relevant to exploration. Figure 8, alone, summarises the basic relationships between granite, its shape and depth and trend data (gravity and magnetic sourced) in such a manner as to explain the known mineralisation in first order terms. This information justifies the initial study. Figure 8 also presents tantalising hints for the location of other possibly mineralised sites - most of which lie beneath Tertiary cover - and suggestions for those parts of the initial model worthy of refinement. The contribution of the magnetic field data to this view must not be under-rated since it offers a wholly independent assay based on quite different elements of the geology.

Figure 8 and the sections presented in gravity review (report #2) also suggest a possible relationship between the thrusting mapped north of Moira and Lake Cethana and the form and perhaps emplacement of the granite. Do these structures reflect forcible intrusion?

Several other issues can only be appraised by combining profile analyses in each initial review.

Report #1 provided two simple interpretations for profiles at 420 and 427 000 mE. These profiles were also included in report #2 (profiles 1 and 3).

The initial magnetic models were interesting but generally unsatisfactory (refer to Figures 33, 34, #1).

Revision was begun in each case by inserting the current model for granite shape and limiting all magnetic sources to the volume outside it. This produces a striking result as Figures 9 and 10 show.

At 420 000 mE (Figure 9) all parts of the profile form are reproduced precisely; only the exact amplitude of part of the section is inadequate. This deficiency reflects the time allocation for the revision; the nature of the sources - contrast and geometry, and the high level field integration. But there is no doubt of the general validity of the solution. It is unlikely that this would be generated independently of the gravity-based granite concept.

At 427 000 mE (Figure 10) problems with modelling assumptions influence any simple solution. The gravity model indicates that the exposed granite forms part of the eastern nose of the granite stock. Near surface magnetic data reflect the low magnetic contrast of the exposed material but the field at 1200 m (some 900 m higher) integrates all sources about the end of the granite. 2D modelling cannot resolve effects and responses generated at this range about a three dimensional shape.

This deficiency accounts for the large negative excursion associated with the exposed granite. The observed profile reflects strongly magnetised material further east with an approximate strike parallel to the section. The remainder of the profile can be explained in the same way as that at 420 000 mE (above).

The magnetic source at the north end of the line is not well defined since it forms part of the source which wraps around the granite to the east. The curve match to the south of the granite is much better than the original version (Figure 34 of report #1). And the fit is achieved without any special pleading with respect to magnetic properties other than that they are intense but consistent with thermally metamorphosed rocks. The various nuances of the observed profile can be matched by making small adjustments to the dip and width of the three bodies shown. Each gradient change was explained individually but no solution has yet been found which accounts for all three in one section. This problem is almost certainly an artifact of 2D modelling.

Report #2 discussed the possibility that the upper part of the granite mass possessed a lower density than the intrusion as a whole. This has been tested. Figure 11 presents the results for profile 6 and may be compared with Figure 8 in report #2. In the test shown only the upper 500 m of the granite was varied, by

40%, but the change is negligible. Such variations would have to involve up to 1500 m of granite cap or that depth range in greisen style zones to generated the extra negativity required in these figures. It is much more likely that the deficiency in these models is due to Tertiary materials.

This possibility has been reviewed and tested as shown in Figure 12. The "observed" profile in this case was derived by subtracting the granite function for profile 6 (constant density version) from the actual observed profile to obtain a residual which should be dominated by shallow source effects emanating from above the roof of the intrusion. Modelling of this profile shows that the largest deficiency is readily explained in terms of Tertiary rocks using the implications of the depth estimate models of report #1 for the area near profile 6. The positive anomaly which correlates with the mapped Cambrian felsic rocks reflects a relatively thick wedge of roof rocks or a most extreme density. This detailed examination would suggest that the roof of the granite is very irregular in detail. The lesser negative effect near the exposed granite is best explained in terms of deep weathering changes since no moderate hard rock density change compatible with granite could generate the response.

RECOMMENDATIONS

The basic recommendations of the initial reviews can be sustained after integration of the two preliminary studies.

All future work must apply the two data sets to each target or structural refinement; either to generate a solution or to test it. It is clear that the work already completed does have exploration relevance and that the two data sets can not only explain what is known of the distribution of mineralisation in the Moina area but also suggest zones which might contain concealed targets.

Other targets may be generated by integration of magnetic analysis of the Tertiary basalts, assessment of the Tertiary section gravimetrically and the whole integrated into a more detailed appraisal of the granite form, especially where angularities are already indicated.

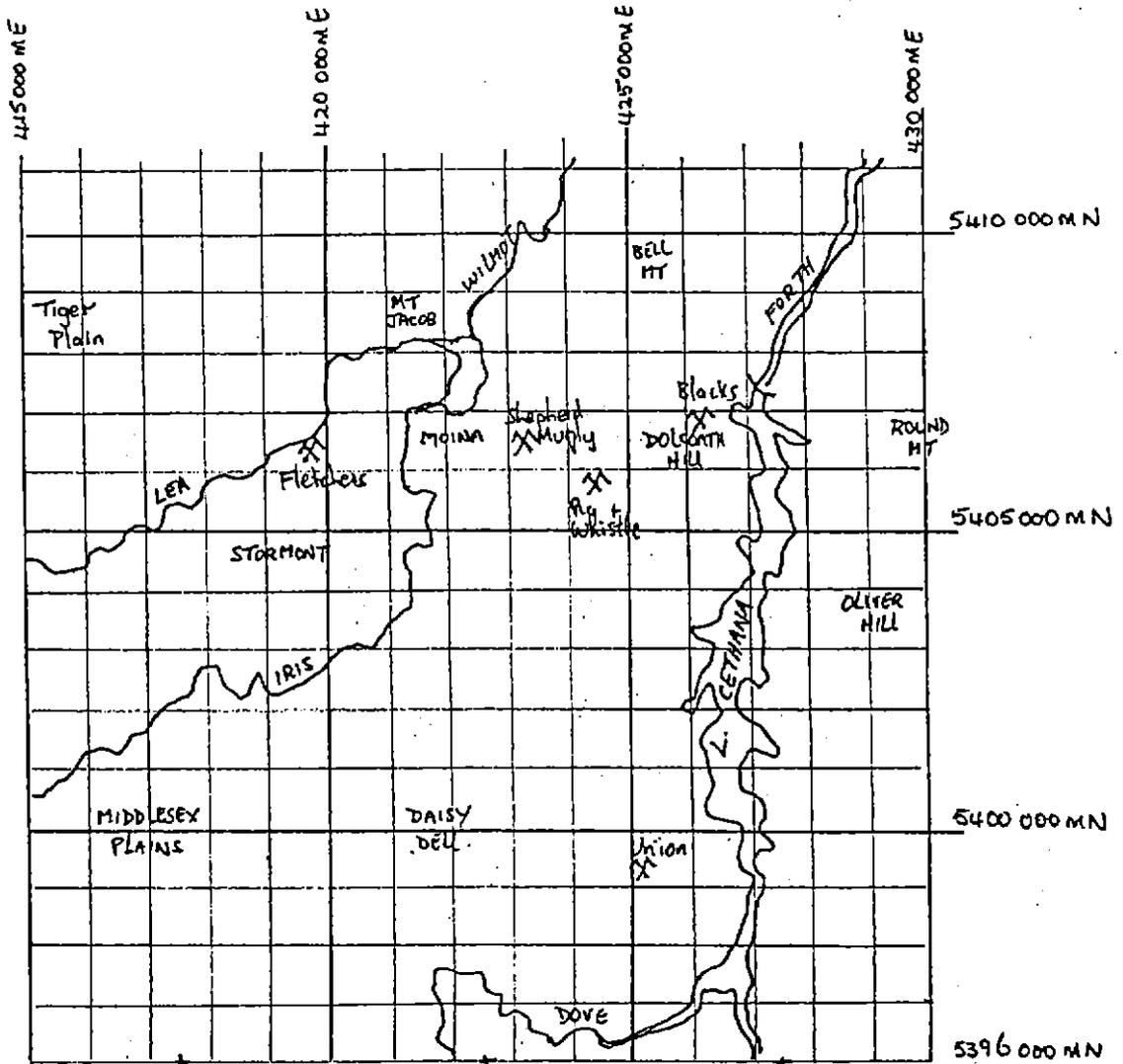
It is also possible that this effort can be usefully supported by magnetic modelling of the roof rocks although such study is more likely to define the extent of property change or alteration. Only when this is done can discrete responses related to mineralisation be properly assessed and identified.

Report submitted on behalf of
Leaman Geophysics
by

D. Leaman

Dr. D.E. Leaman, B.Sc., Ph.D
M.Aus.I.M.M., M.M.I.C.A

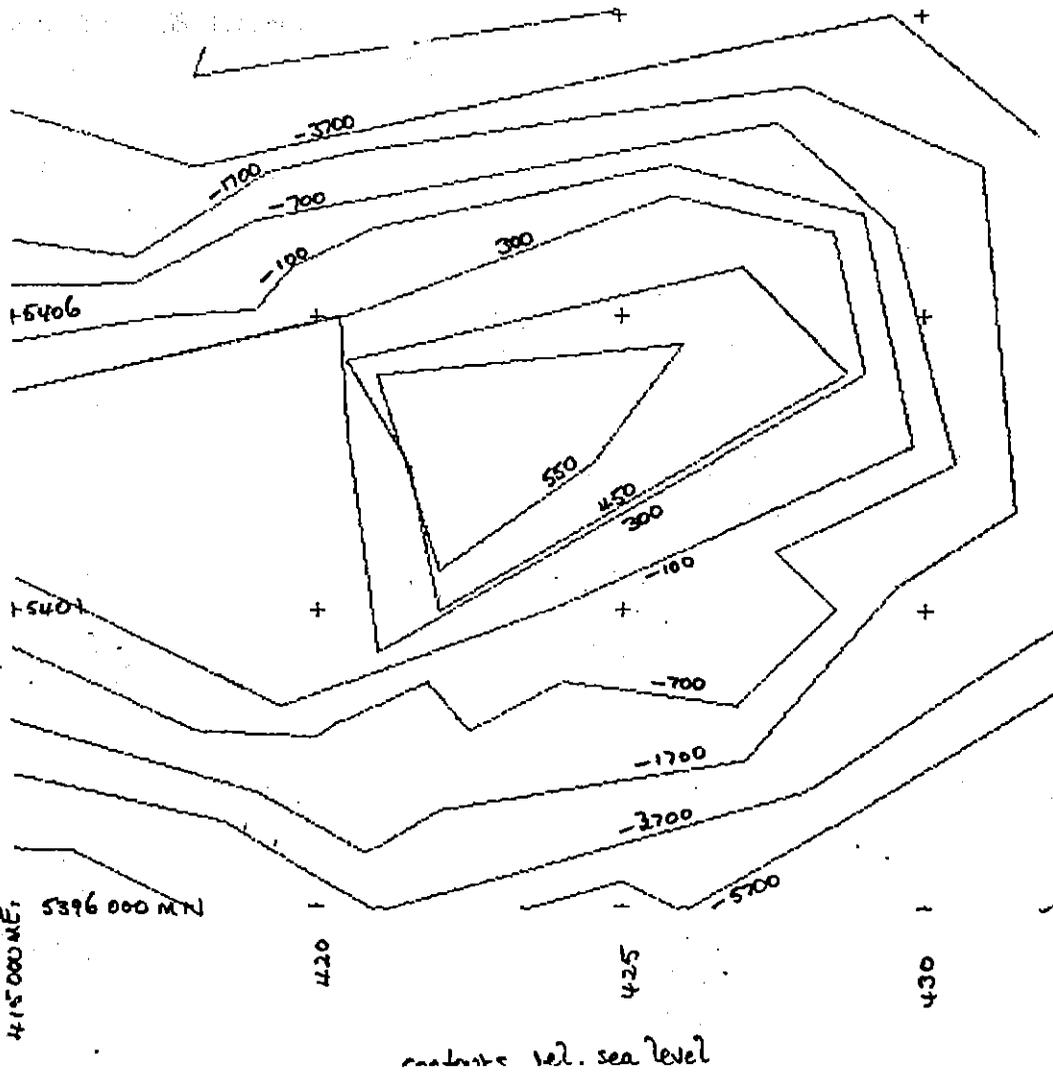
6/11/88



OVERLAY

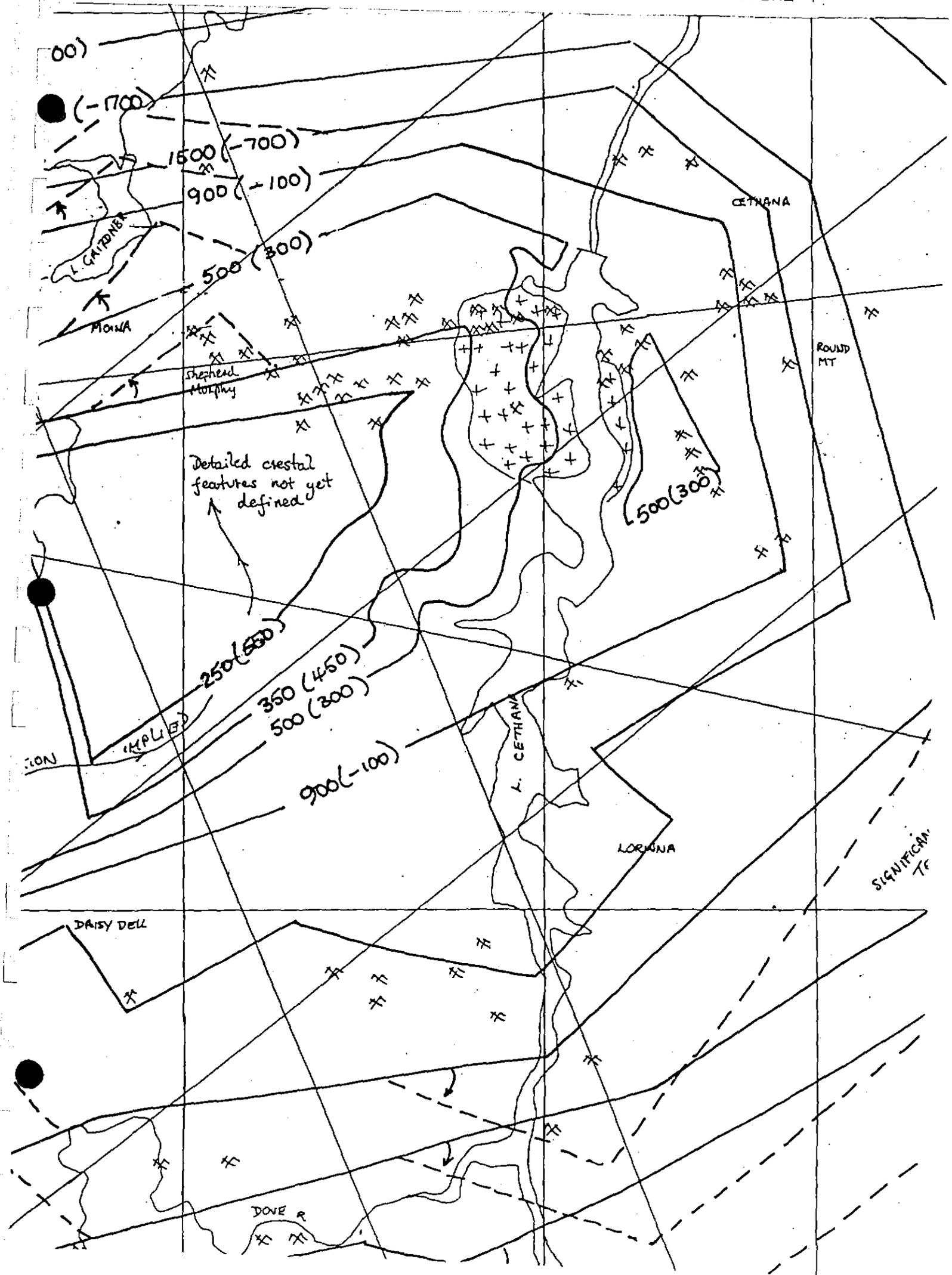
For diagrams :

SCALE 125000
 GRID 5000
 ORIGIN 415000 396000
 GRANITE MODEL 6 DOLCORTH GRANITE



CURRENT GRANITE MODEL OVERLAY FOR FIGURE 6

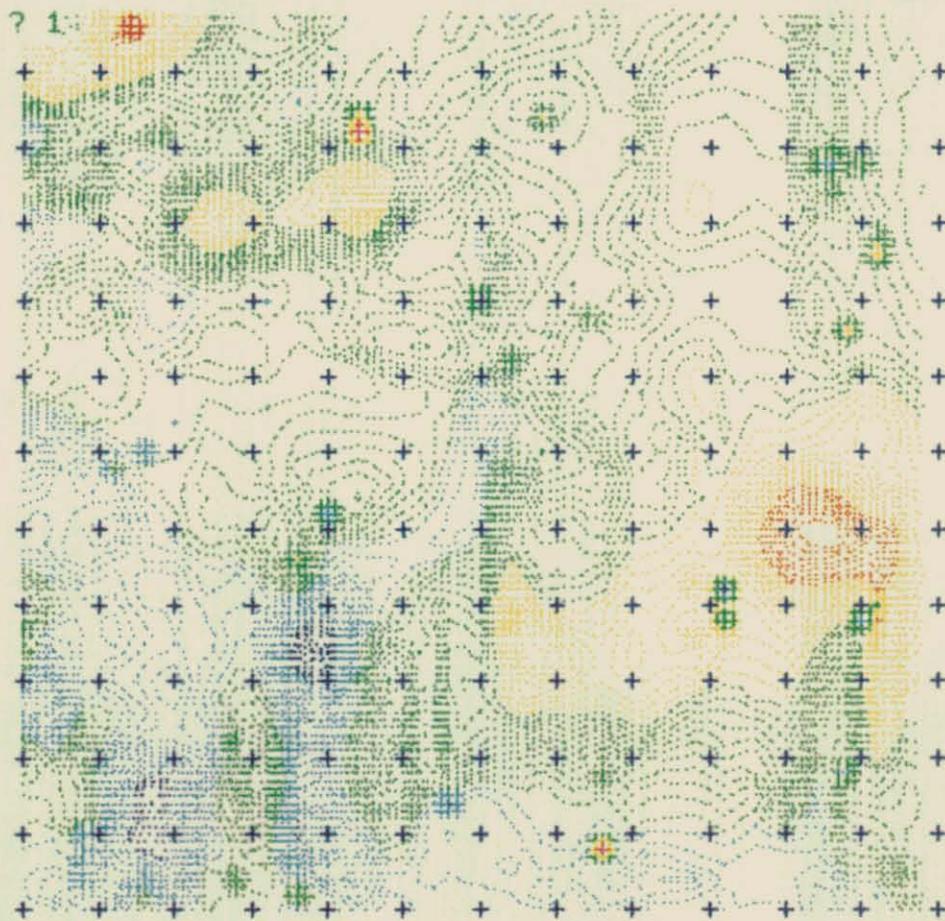
FIGURE 3



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5396 000mN

415000 ME

MOINA MAGNETICS 1200 M
 MOINA MAGNETICS COMPENSATED DATA LEVEL 1200 M
 SCALE 125000
 SAMPLE SPACING 250

(FILTERED VERSION)

Aug 88

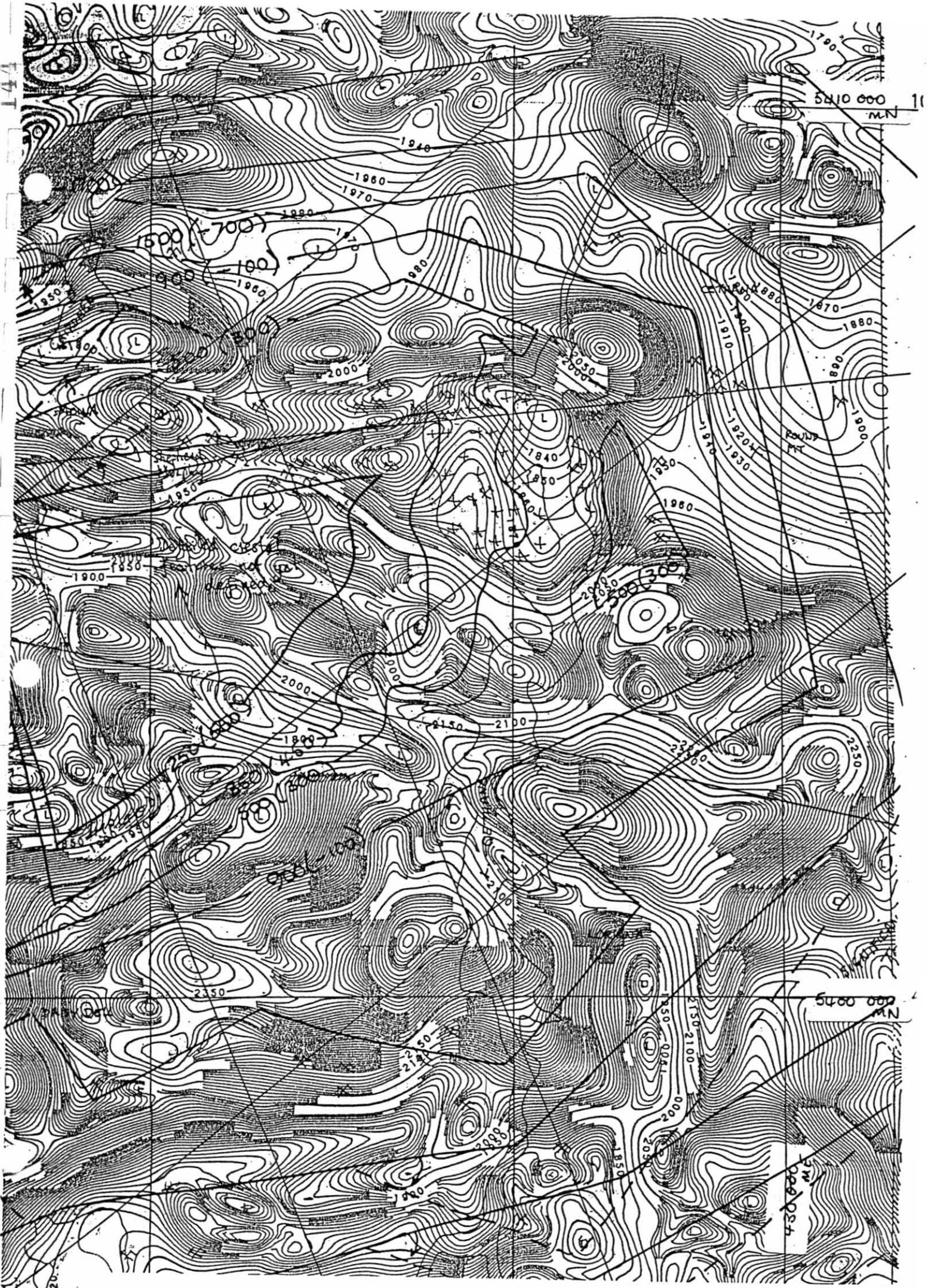
Use geographic overlay (Fig 18 - in pocket)

Colour code : - 440 to - 240 purple
 to - 20 blue 20nT interval
 to 200 green
 to 420 yellow
 to 640 red
 to 820 pink

569144

FIGURE 6

144



OBSERVED MAGNETIC FIELD AND GRANITE MODEL CETHANA AREA
569145 FIGURE 7

145

4500 (-3700)

2500 (-700)

1500 (-700)

900 (-100)

500 (300)

1500 (300)

Shepherd
Murphy
detailed areal
features not yet
defined

250 (550)

350 (450)

500 (300)

900 (-100)

SECTION

APPLIED

Daisy Dell

LOANNA
HYDRALISATION

HOLCOMB
GRANITE

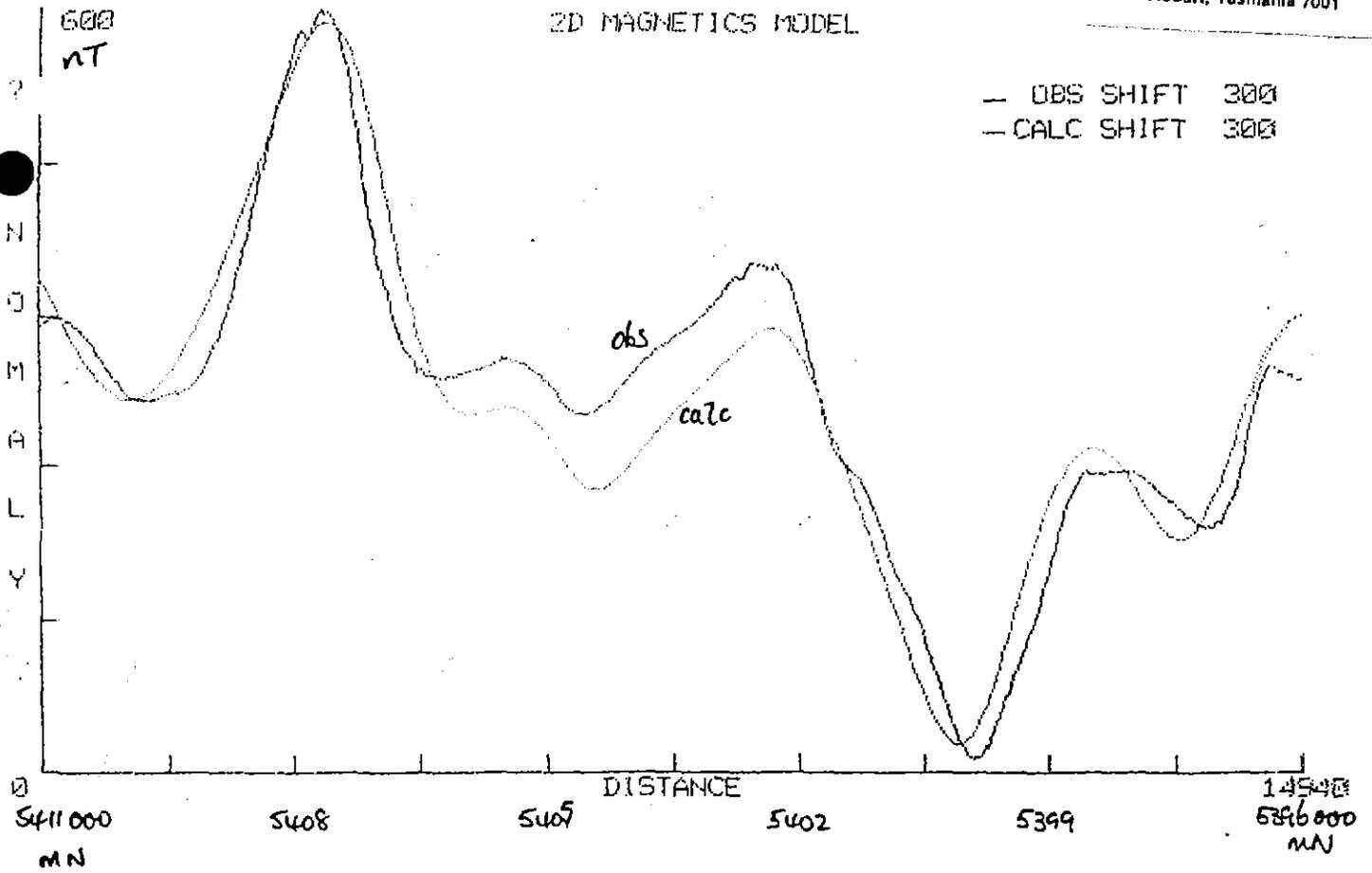
A. CETHANA

LOANNA

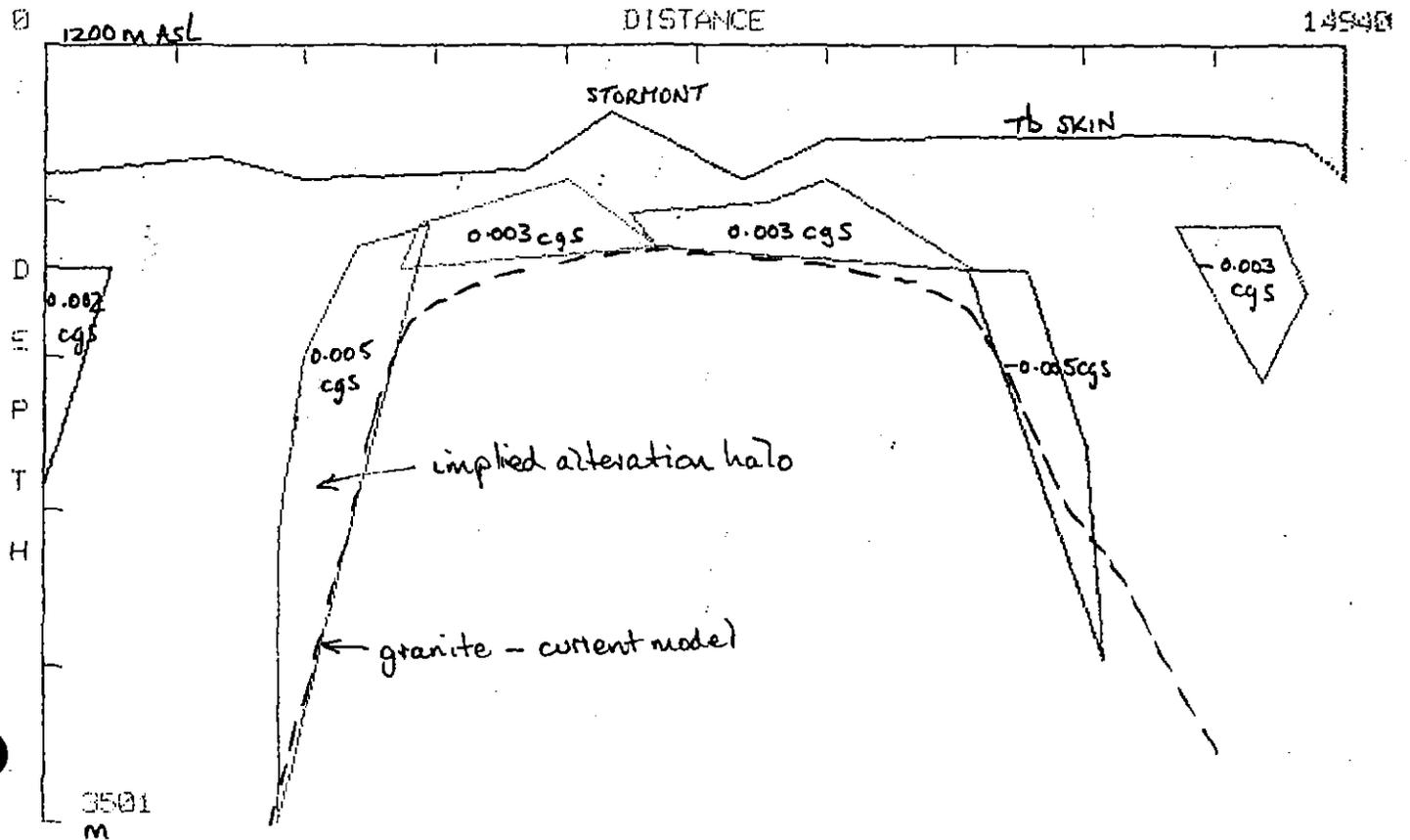
148

2D MAGNETICS MODEL

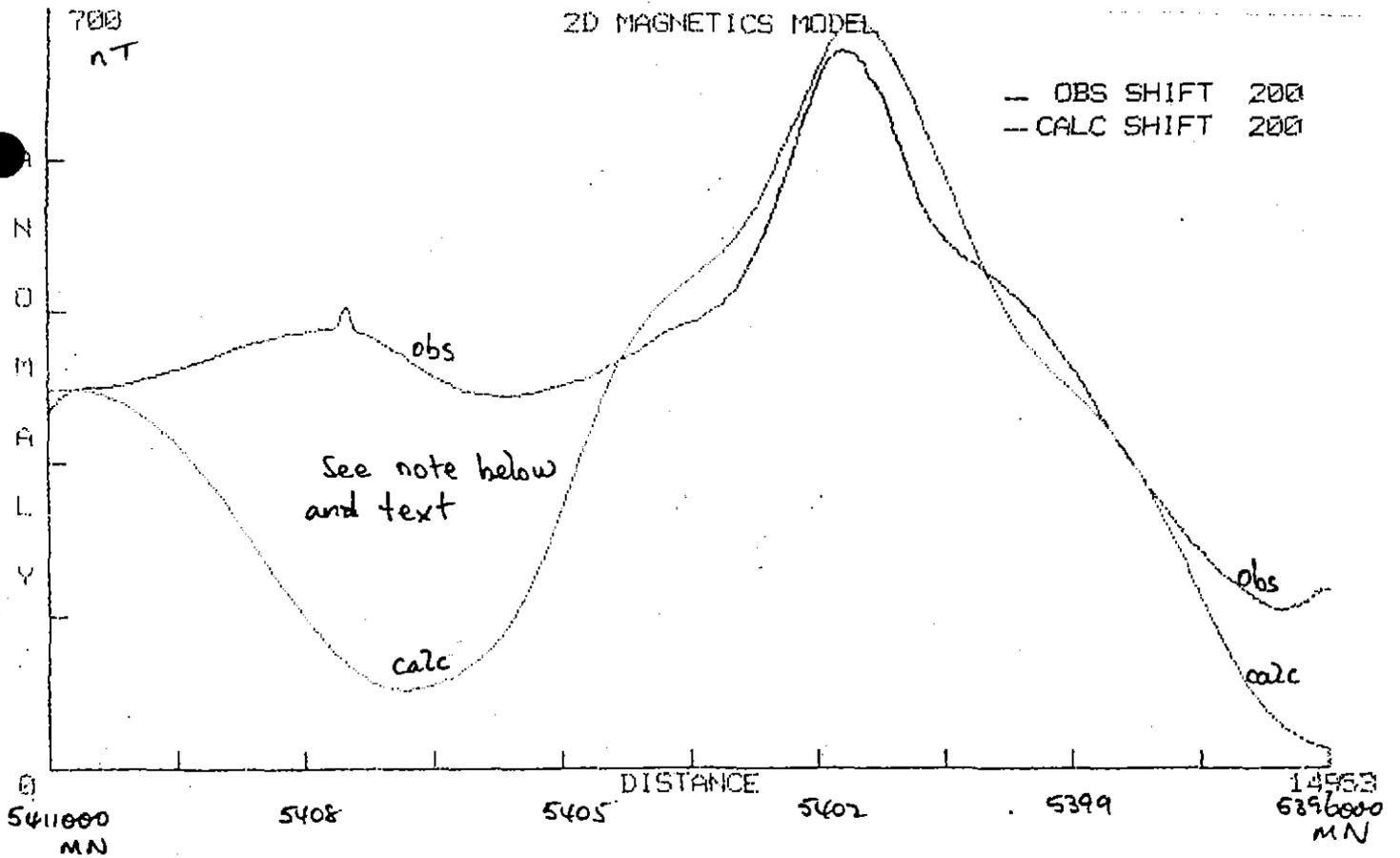
- OBS SHIFT 300
- CALC SHIFT 300



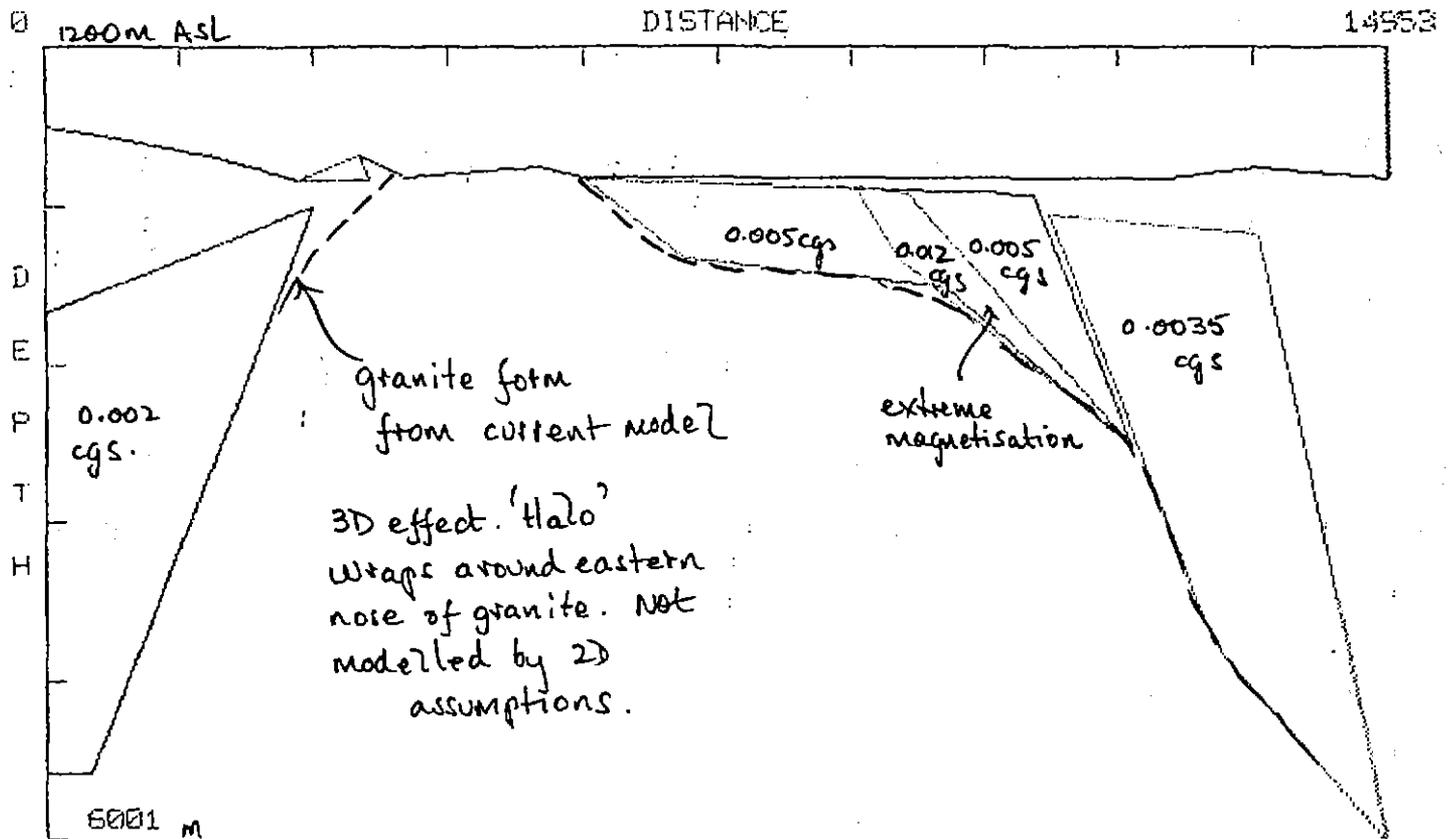
MOINA 1200M MAGNETICS LINE 5500 420E



147



MOINA 1200 M MAGNETICS LINE 1063 427E



UPDATED MAGNETIC MODEL

LINE 1063

427 000 ME FIGURE 10

569148

ZERO SHIFT 26.9875

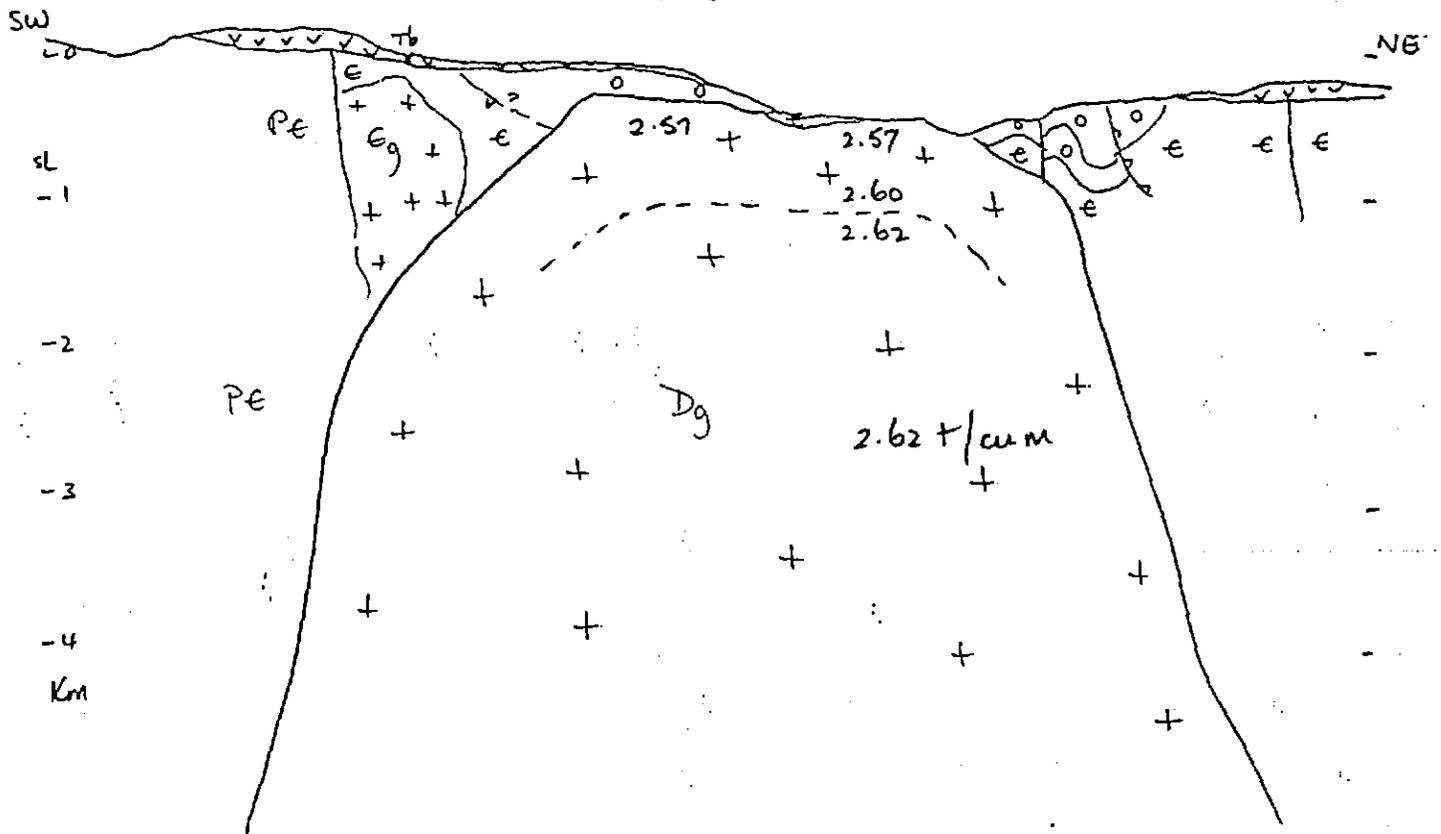
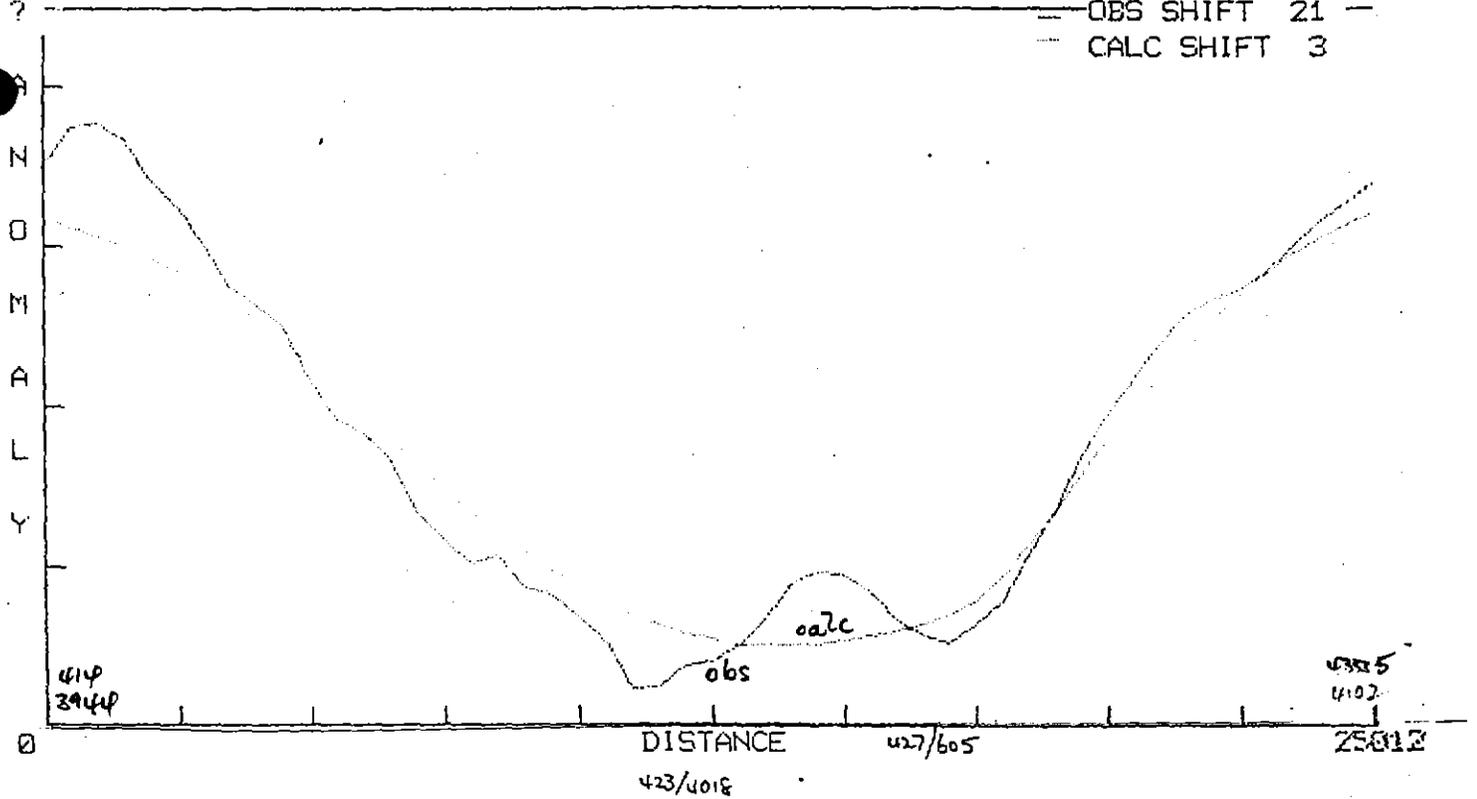
148

589149

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30
mbal

OBS SHIFT 21
CALC SHIFT 3



3D MODEL FOR GRADED GRANITE DENSITY NEAR ROOF

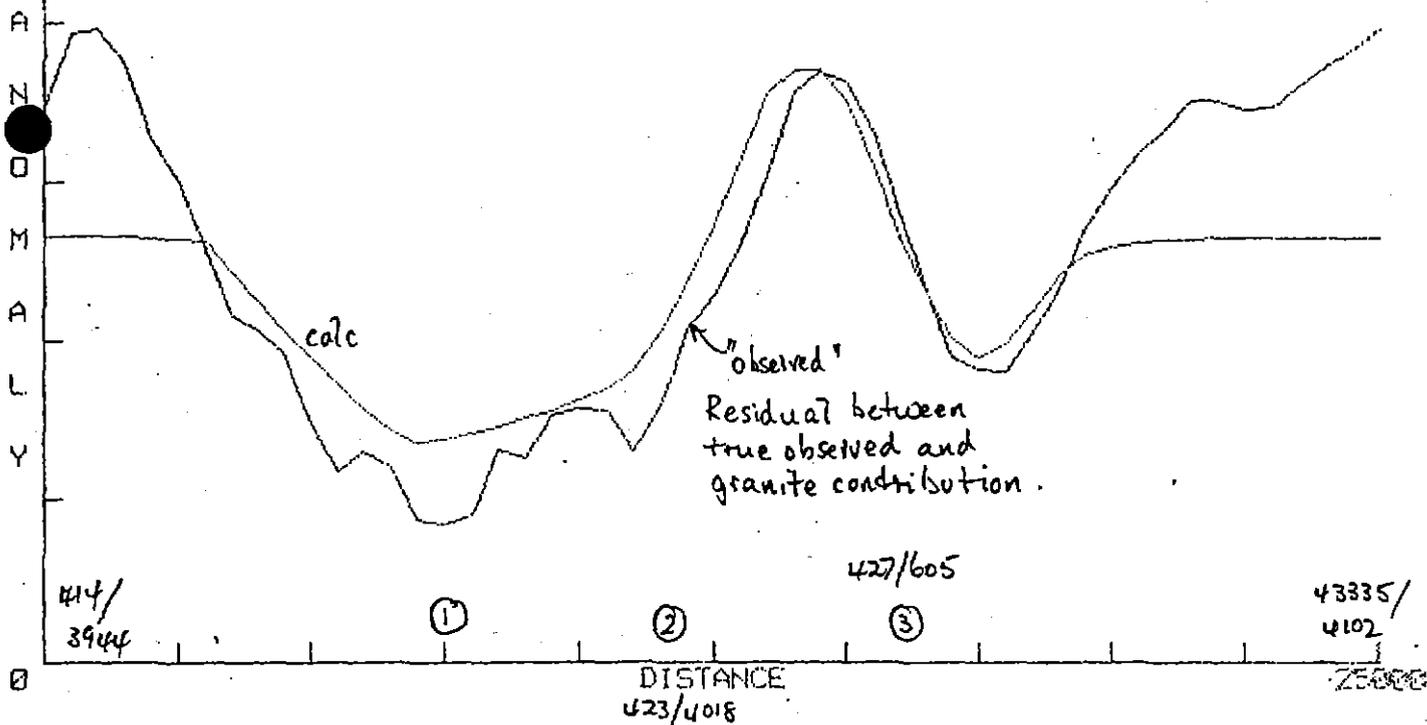
FIGURE 11

15 149
mGal

2D GRAVITY MODEL

569150

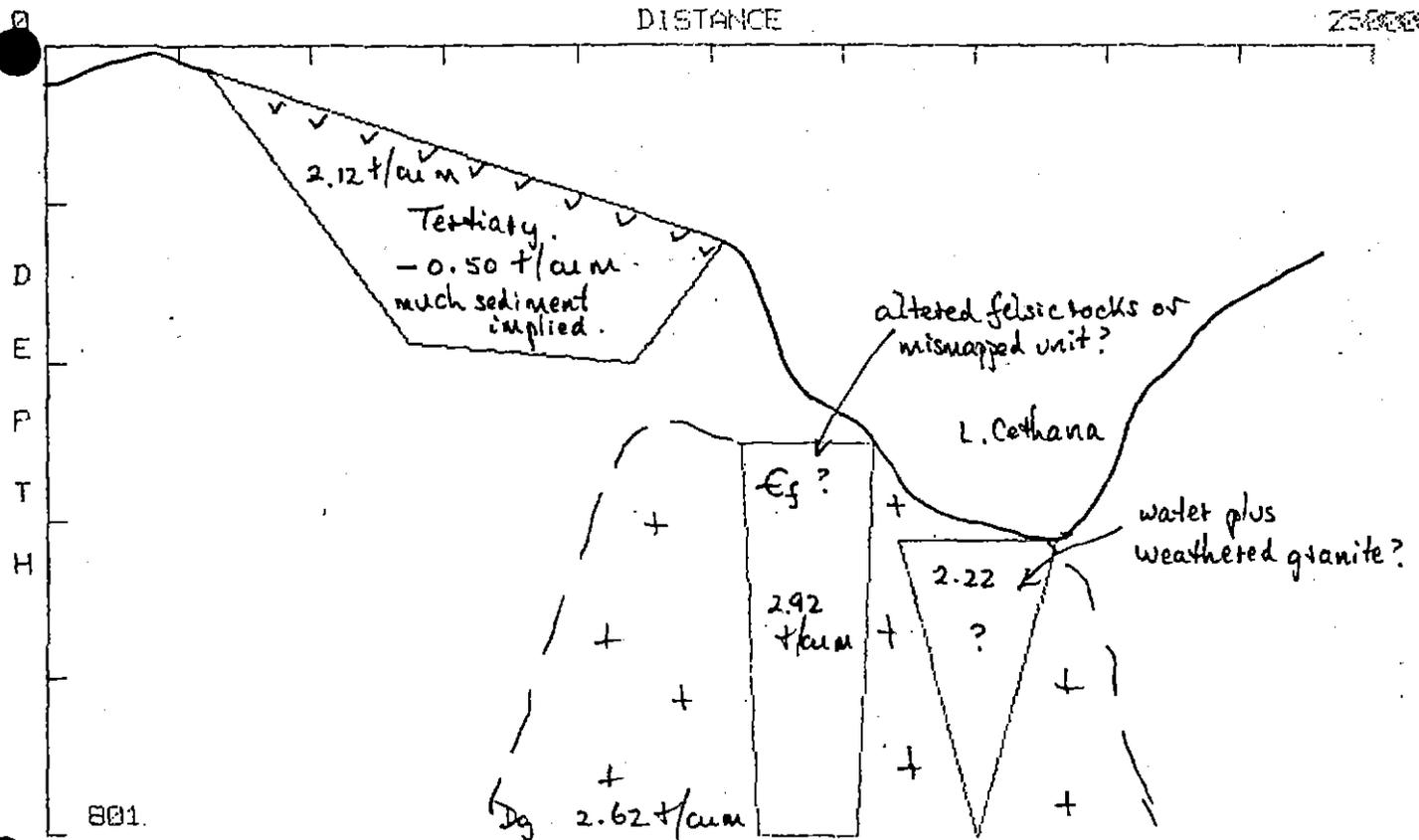
- OBS SHIFT 0
- CALC SHIFT 8



NON GRANITE COMPONENTS OF PROFILE 6

DISTANCE

25000



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569151

REPORT 4 - MAGNETIC DATA: ANALYSIS 418-424000mE

151 LEAMAN GEOPHYSICS

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589152

GRAVITY AND MAGNETIC EVALUATION MDINA REGION

4. MAGNETIC DATA: ANALYSIS
418 - 424 000 ME

for
RGC EXPLORATION PTY LTD

by
Dr. D.E. Leaman

December 1988

MDINA4

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SUMMARY

Preliminary review of the available magnetic data for the Moina region of north west Tasmania indicated that many mineralised sites may possess a recognisable response. That response may be clear cut or subtle depending on the style or mineralisation or, more importantly, on the changes induced in the host rocks. Unfortunately many judgments may be subjective and the assessment may be affected by imperfections or observational aberrations in the data set. Part of the data base for the Moina area has, therefore, been examined in some detail in order to appraise the contribution of such effects, whether they are removable and whether they are reproducible on all lines for all sites. (The initial review considered only alternate flight lines). Analysis has shown the data set to be usable as observed and that no reliable drupe compensations can be made where the survey specifications were exceeded. Evaluations must utilise the observed data.

Initial review also indicated that information on Tertiary formations could be obtained from the magnetic data. This has been confirmed using a more refined analysis of the infill lines. Complete interpretation of the results is not possible until some control drilling is available in basalt-covered areas. The emergent picture, however, is consistent with current gravity interpretations in respect of granite position and form and inferred Tertiary channels; and with magnetic interpretations which suggest that altered and metamorphosed rocks fringe the granite.

The expanded and detailed assessment of the Moina - Daisy Dell area using all the available magnetic data and applying limitations from gravity interpretation shows that altered materials with properties comparable to those near the Shepherd and Murphy Mine do occur elsewhere in association with abrupt changes in granite form. Most such occurrences are concealed by Tertiary materials. Continuation tests on the Shepherd and Murphy anomaly show that the response can easily be concealed or disguised in standard magnetic profile and contour presentations. Its source - depth pattern, however, is not as readily lost. Such sites should be reviewed and some drilled.

It is clear that the techniques outlined in this study can be employed across the entire licence area but this is not recommended until appropriate control or test drilling has been undertaken.

INTRODUCTION

Aeromagnetic data from western part of the mineralised Moina-Cethana region of NW Tasmania has been examined in detail. The area examined is shown in the geological and magnetic compilations of Figures 1 and 2.

The present examination has considered two particular aspects of the magnetic data set;

- a) the effect of terrain clearance on the observations and judged signatures or responses,
- b) refinement and extension of basalt/Tertiary channel interpretation.

Each aspect was recommended for further work after the general introductory review (Leaman, 1988 a). The entire data set for the selected area was to be used, rather than alternate lines. The principal aim of the examination was recovery or identification of anomalous responses after assessment and exclusion of aberrant or irrelevant effects.

The data band selected for this more detailed study, 418 000 to 424 000 mE and essentially 5400 000 to 5410 000 mN, includes much basalt cover and several mineralised sites - including the Shepherd and Murphy group. It also overlies wholly concealed angular granite roof forms and may be highly prospective as a result if correlations elsewhere are valid (see Leaman, 1988 b, c). Such an area is representative of the Moina region in terms of lithologies present and terrain and any technical refinements can be applied more extensively. At the same time the area selected has never been explored and any target indications will be worthy of test. It is recognised that the findings of any detailed analysis must be tested, revised or controlled prior to further application.

For these reasons, the assessment was not intended to be exhaustive but was designed to evaluate sources of error and their scale, of impact as well as revise and upgrade existing material. As such this report, number 4 in a staged series, represents the first specific region-anomaly analysis.

DATA USED

Two aeromagnetic surveys exist. Both are available in digital forms. Each was flown as a nominal drape with essentially N-S lines.

The first survey, by Shell (refer to Mines Department open file records 82/1728), is of higher quality but offers less complete coverage of the Moina region. Coverage across the selected Moina - Daisy Dell band is complete. The nominal line spacing was 250 m with a specified clearance of 100 m. The actual clearance varies within a general envelope of 80 to 160 m with important exceptions. The effective sample interval was about 40 m.

The second survey, by the Mines Department in 1985, was flown with a line spacing of 500 m and a specified clearance of 150 m. It covers the entire area of interest with a comparable sample spacing but the clearance condition was not rigorously maintained in the Moina region and the data is less useful for exploration purposes. A contour presentation from this data set is given in Figure 2.

The more resolving Shell survey has been used for all analysis reported here in order to avoid loss of spectral information. Profiles for all lines in the study band have been presented in Figures 3 to 8 by groups of five. Each group represents one kilometre of area width and one line is repeated in each plot pair in order to allow correlation. Each plot uses the maximum scaling for the group and this varies between line groups.

Terrain data have been extracted from Lands Department 1: 50000 topographic maps with a contour interval of 20 metres.

The gravity model, termed "current granite model" on some diagrams and in the text, refers to the interpretation reported by Leaman (1988 b, c). It has been used for purposes of comparison and limitation.

METHODS

In order to provide evaluation of the data with respect to the several topics and objectives defined in the Introduction, the aeromagnetic data has been considered in both raw and various processed forms.

The raw data (Figures 3 to 8) are potentially deceptive due to an array of terrain effects but generally appear to be of high resolution and close to clearance specification for a high percentage of line length. The relatively coarse sample spacing does limit ultimate resolution.

In order to assess the data set, evaluate the effect of and potential for correction of terrain or clearance problems, and refine signature or target character two forms of processing has been undertaken; drupe compensation and fixed level spectral analysis.

Terrain compensation and continuation was undertaken by first matching the level of surface topography at the located sampling positions with the recorded height difference to obtain the spatial location of the magnetometer. An observed file relating position, magnetic field (IGRF residual value) and absolute elevation was constructed. This file can be used to calculate the magnetic field on any surface - terrain parallel/drape or fixed level. Due to the quantity of data involved and the amount of coordinate matching required this is a time consuming process.

Some problems were encountered in this process which reflect survey location errors. Fiducial markers used for position control are erratically distributed and it was evident that the aircraft position, as defined by the stated coordinates and clearance information, could not always have been recovered correctly. The flight path was often too irregular or too elevated and not consistent with a flight trajectory. In such cases a smooth function based on reliable segments and trends in the flight path was used instead but it would be possible to fully and accurately recover the actual flight path from the indicated flight trajectory and height difference (radar altimeter) records. Where errors appeared to exceed 150 m in position, or where the trajectory was affected, corrections were made. The final result, in terms of clearance or absolute position of the aircraft, is judged to be within 50 m horizontally and 20 m vertically. These deviations are not significant and may be compared with errors of 200 and 120 m respectively.

Although drapage compensation may be derived from the absolute position file this is a more complex procedure than use of the observed profiles and the quoted clearances. Some obvious errors in the files were corrected and a true drapage of 100 m calculated.

Any such procedure risks fallability due to the inherent instability of any downward continuation operator involved - especially if the continuation must be applied across a large clearance gap as occurs where the aircraft crosses a ravine or ramps over an abrupt feature. The lower the magnetometer (closer to magnetic sources), coupled with the actual wavelength characteristics of both the field and the terrain feature, the more likely the risk of instability.

Similar problems may occur in processing to a reference level where segments of the data require downward continuation. In the present analysis a general reference level of 900 m was attempted in order to maximise resolution. This generally results in a moderate upward continuation (stable) of the bulk of the data set. However, in the region of Stormont local problems persist and at least one line was carried to 1000 m in order to minimise problems while maintaining resolution elsewhere on the profile. These problems arise because the reference level selected is often up to 100 m lower than the observing aircraft.

Data at the reference level selected (usually 900 m) has then been inspected and processed for source content. This requires consideration of sample spacing, anomaly characteristics and the expected nature of the dominant sources. Judgments on these topics are used to form processing parameters used in spectral analysis and the results auto-correlated for all source implications. My procedure produces an array plot image of all sources and may suggest relationships. Such processing in the absence of some real control on sources (either properties or depth) may lead to depth errors but the general form of the solution will be valid. Once some control is available the data operators may be revised to properly scale any results.

All presentations of the field magnetic have been reduced by 1750 nT from the stated IGRF plus constant generated by the contractors.

DISCUSSION OF OBSERVATIONS AND RESULTS

The following comments are grouped in terms of the objectives of the evaluation and represent a substantial improvement on the initial reviews (Leaman, 1988 a, b); not least because all the data in the Moina - Daisy Dell area has been considered.

The implications and observations are, however, relevant to other parts of the Moina exploration programme. The presentations given in this report differ from many in Leaman (1988 a) by being only 10 km long. This improves clarity and permits more accurate location of particular features.

EFFECT OF DRAPE COMPENSATION

Each of the 25 data lines included in the nominated area (Figure 1) was corrected to a true 100 m drape (the nominal specification of the survey) and the results compared with the observed profiles. The observed profiles are shown in Figures 3 to 8. Some examples of the processing and comparison results are shown in Figures 9 to 13.

It will be noted that in each case the difference between the observed profile (designated by M coding) and the draped profile at 100 m clearance (D coding) is small. There are exceptions but most of these are in areas of greater terrain relief near the Dove River and are generally excluded from this presentation. The profiles present actual results of calculation including any instability induced in the correction. The oscillating responses in Figures 9 and 12 especially, reflect regions in which the aircraft and magnetometer clearance exceeded the limits for stable downward continuation to 100 m. This means that a 100 m drape cannot be recovered. Note that Figure 12 presents a 150 m drape and that this offers an improvement but not necessarily reliability or resolution. Any attempt to smooth these profiles by filtering will remove the oscillations but the final result cannot be compared with the observed profile with assurance since subtle changes may occur in other profile features. This comment generally reflects the subtle and small differences between observed and draped profiles in the Moina - Daisy Dell area. The evaluation also demonstrates that in those cases where the survey generally met its clearance specification for a large part of each profile such processing can make no practical improvement. Where the clearance is generally excessive, usually due to deep valleys, then some improvement might be effected but this is also limited by the stability of the downward continuation operator acting with respect to terrain, values and spacing.

The Shell survey, although acquired with a large spacing (37 to 45 m), is of high resolution with respect to clearance and there is no practical value in the draped values calculated - either in areas where only 50 m of clearance correction was required (to little effect) or not recoverable where 500 m was required (Dove, Lake Cathana).

The following table outlines the extent, nature and quality of corrections and results and thus indirectly indicates the quality of the survey and the validity of the corrections. These inferences and conclusions are expected to be relevant to the remainder of this survey but not necessarily to other surveys.

LINE	COMMENT
5420	Figure 9. Negligible effect (80%), local oscillation
5430	" " (85%) " "
5440	Figure 9 " " (60%) " "
5450	" " (95%) very minor oscillation
5460	Figure 10 Negligible effect entire line. Change at peak values minor with minimal deviation.
5470	Figure 11 " " " "
5480	Figure 12 Extreme instability with 100 m drape but minor to moderate oscillation at 150 m
5490	Figure 11 Negligible effect, very local minor oscillation
5500	Extreme instability at 100 m, much minor oscillation at 150m.
5510	Generally minor oscillation
5520	General, often major oscillation
5530	Variable, minor-moderate oscillation
5540	General, often extreme oscillation
5550	Variable, minor-moderate oscillation
5560	General, often extreme oscillation
5570	Negligible effect, local minor oscillation
5580	Negligible effect (90%), but some minor-extreme instability.
5590	Figure 13 Negligible effect.
5600	Figure 13 Negligible effect with minor aberrations
5610	Generally negligible, minor deviations
5620	Generally negligible effect, minor-low peak oscillation
5630	Overall negligible effect
5640	Generally negligible effect (80%), some extreme oscillation
5650	" " " " " "
5660	Generally negligible effect.

These results indicate that most data is not affected by deviations in the survey. Where changes have been induced by correction most are deleterious due to extreme local terrain - observation relationships. Oscillations could be removed by filtering but since most deviations between observed and drape profiles are less than 1 nT it is arguable whether filtering, while producing a smooth result, would yield a more reliable result. Conclusion: Drape processing to 100 m is not justified and processing at higher levels results in loss of resolution.

SIGNATURES FOR MINERALISED SITES

The following discussion offers an updated commentary for material included in report #1 (Leaman, 1988 a).

It was shown in the preceding section that no reliable general drupe correction can be obtained that is in any way significantly different to the observed data at about, rather than precisely at, 100 m clearance.

This means that patterns inferred in the initial study, relating mineralised sites and anomalies, are probably viable. Certainly no improvement can be derived from data processing. This was suspected to be the case (refer Leaman, 1988 a, p.9) but evaluation was necessary.

Refinement of correlations, or judgments based on the observed responses, may however be affected by use of the entire data set - rather than alternate lines - and consideration of the effect source depth may have upon the observed responses. These elements have been stressed in this revision.

The effect of source - magnetometer distance was indicated in Figure 31 of Leaman (1988 a) but the implications have been reinforced by Figure 14 in this report. Obviously, if a terrain deviation and anomaly correlate - as might happen near a deep, narrow ravine, the effect would be serious. Review and comparison of many lines may resolve such problems but the topography must also be checked. Such effects occur about Stormont.

Consider Figure 14. The anomaly near the Shepherd and Murphy is unambiguous. Note however that burial of the source by no more than 200 m can produce responses comparable to others noted on the same line. The character, form and location of the response and any geological exclusions which can be made are all relevant to its assessment.

The profiles have been matched against existing geology - mineralisation compilations and the following table updates previous comments. Prospect/site numbers refer to Bamford and Green (1988) and Figures 1 and 2.

Line	Prospect number	comment	amplitude
5450	009	local spike	50 - 100 nT with Au
5460	009		
5480	076	no response	
5480	010	no clear response (local basalt effect?)	
5490	087	residual effect disguised	poss 40
5500	083	no clear response, poss basalt	40
5510	083		
5540	014	bulge on gradient, subtle	3-50 residual
	078	uncertain response, unclear due to unit effect	

Line	Prospect number	comment	amplitude
5550	077	as per 078	
5620	011, 012	clear large spike diminishing effect to west evident on all lines of Figure 7	600 nT
5630	003	no clear response, unit effect	
5630	011, 013	major spike evident to E and W	1300 nT
5640	011, 013		
5650	098	moderate spike	300 nT
5660	086	moderate spike	150 nT

These notes indicate that identifiable responses exist in relation to the skarns near Moina but that most other occurrences are far subtler. Magnetic responses tend to be disguised by lithological or structural effects where responses may be less than 50 nT. Gradient deformations can often be cited but the present data or inspection are unable to establish precise origins of response. The effect could be enhanced and displayed by gradient analysis but this would not resolve any issue about origins. Until some subtle site responses have been subject to surface verification there is little point stressing them; burial by 100 m would erase the response in the present data set. More significant responses have therefore been emphasised at this stage of exploration. The Shepherd and Murphy "effect" is major and certainly not restricted to the immediate vicinity of the known mineralisation (see also Figure 29).

An attempt has been made, based on the implied nature of the responses listed above, to infer other possibly mineralised sites. Some extraneous sources, such as minor basalt contacts, may be confused but all are considered abnormal in some way.

Sites of possible exploration interest

Line	Easting	Northing	comment
		nominal	
5450/60	418800	5402500	in Cambrian felsics?
5460		5405200	adj/extension 076?
5460	419000	5407500	spike cap, topo effect?
5470	419250	5402600	in felsics?
5520/40	420750	5406500	basalt??under Tb?
5510	420250	5402500	Tb edge?
5550/70	421500	5406500	in Tb?under Tb?
5550/60	421400	5404000	altered lower Ord?
5560	421500	5407000	altered limestone?
5560/70	421600	5402500!	Tb edge?
5580	422000	5403000	Tb edge?
5580		5403700	Tb effect?
5580		5404800	altered segment Lower Ord?
5580/90	422200	5405200	
5580/90		54046/800	

Line	Easting	Northing nominal	Comment
5580	422000	540300	
5580		5403700	
5590	422300	5402500	
5590		5401800	
5620	423000	5401000	
5640/50	423600	5401800	
5640/50		5402200	
5650	423700	5405000	
5660	424000	5402200	

The discussion above has presumed a consistent relationship between the profile data and the surface and sources in the first instance although many suggestions are based on comparative inferences using the continuation-burial forms of Figure 14.

Emphasis has been given to those features which might represent Shepherd and Murphy responses, albeit at greater depth. To this end the symmetry and scale of the feature has been considered. All sites are indicated in Figure 28.

TERTIARY BASALT AND OTHER SOURCES

Profiles adjusted to the lowest fixed levels consistent with stable processing have been analysed to assess source forms and distribution. Line 5430 was treated at 1000 m reference level since processing to lower levels was extremely unstable. Noise bands in Figure 19 (line 5490) reflect a similar problem.

The treatment for each line is presented in Figures 16 to 27. The diagrams infill the set included in report #1 (Leaman, 1988 a) but all analysis has been conditioned and processed using the long operator with minimal scan offsets first tested in Figure 30 of Leaman, (1988 a).

It must be noted that the property conditioner and the spectral correlator function remain uncontrolled and there are suggestions that the depth scale may have expanded by up to 20% as a result. This is particularly evident on line 5430 where a higher level was required. Note that the source skin which parallels the topography from 5404 - 5409 000 mN is offset some distance from it.

Figures 16 to 27 carry large vertical exaggerations and it is often difficult to correlate patterns. Clearer forms may be rescaled upon control but the shapes should be reproduced. The large operator used requires full use of the data set but finer presentations could be produced using larger plotters or by interpolation of sample points.

Although the analysis was undertaken to review Tertiary sources, other sources and patterns have emerged. Each Figure has, therefore, been commented. The diagrams complement those given by Leaman (1988 a) for even-numbered lines.

Line 5430 (Figure 16). Possible topography skin effect. Depths may be overstated. The basalt base is unclear but the complex source pattern on Stormont may be due to surface oxidation or a core of Cambrian rocks.

Line 5450 (Figure 17). Sub horizontal banding north of Stormont also noted on 5430. Stormont noise repeated. Tertiary section possibly thick but check gravity analysis required. Up to 300 m feasible. Stormont "character" also noted near granite/mineralisation (see lines below)

Line 5470 (Figure 18). Two Tertiary sections evident, localised deep pockets to north and south of Stormont. Compare Figure 22 of Leaman (1988 a).

Line 5490 (Figure 19). Tertiary sections as above, locally thick. Stormont section is clean but anticlinal. Noise due to calculation instability.

Line 5510 (Figure 20). As above. Northern Tertiary section not as clear. Vertical exaggeration has confused nature of correlations near 5406 000 mN.

Line 5530 (Figure 21). Note presence of sub horizontal intra Ord or Cambrian horizons. Basalt part of Tertiary section may only be the upper 50 to 60 m. Current gravity model included. There is a relationship between topography and fold core within the Stormont axis. Mineralised sites 3, 10, 14, 76 less than 500 to 700 m removed from granite. (also Figure 15).

Line 5550 (Figure 22). As for 5530. Magnetic horizon truncations clearly relate to granite. Sources in granite may be of interest.

Line 5570 (Figure 23). Section dominated by Tertiary (probably) units. Granite pattern consistent. Source group at 450 m level north of granite of possible interest.

Line 5590 (Figure 24). Compare 5550-70. More sources in granite.

Line 5610 (Figure 25). Need to assess what is Tertiary, Cambrian or granite skin although truncations consistent with granite form are evident. The granite is spottily magnetic? Care may be needed in assessing some intra granite effects due to the 3D shape of the granite and the 2D nature of this analysis.

Line 5630 (Figure 26). Compare 5610. Note the presence of intense source groups north and south of the granite. The established mineralisation lies within the northern group. Note that this character was previously noted only on Stormont or in certain basalts. Strong sources or contrasts are implied. Granite forms are consistent with source truncations.

Line 5650 (Figure 27). See 5630.

ANOMALY RESPONSES AND RELATION TO GRANITE

Some clearly anomalous sources have been identified by the present analysis. Each site has been indicated in Figure 28.

Some explanation must be found for the sources or character of high Stormont and locally beneath Tertiary basalt where these are adjacent to granite. Occassionally parts of the granite roof appear to be magnetic.

Comparison of Figures 15 and 28 suggests that the selected responses - a subjective and probably not exhaustive collection - are consistent with the current view of the granite form. Most sites lie east of the NNW-SSE edge of the Dolcoath granite crest north of Daisy Dell and many are concentrated directly above it. Such anomalies may reflect either simple hornfels or more economically interesting hornfels.

The Stormont peculiarity may also be granite-related. The current gravity modelling is not definitive around Stormont and an additional local spine has already been suggested (Leaman, 1999 c). Its crest would lie in the same general area as the anomalous magnetic responses.

CONCLUSIONS

1. Further drupe correction and processing of Shell data is neither warranted nor advised. More problems are induced by attempting to maintain resolving power than exist in the data set untouched.
2. Spectral processing has confirmed the general view of the Tertiary section offered in previous simpler magnetic and gravity treatments. The interpretation remains uncontrolled, however.
3. Source distributions are consistent with granite forms as interpreted but hornfelsed and mineralised rocks may contain many sources and present a unique response pattern.
4. Consideration of observed profile responses, with allowance for depth and form, indicates a number of sub-Tertiary sources. Many sites selected in this manner are also reflected by more objective source-depth analysis. Most, if not all, can be directly related to the shape of the granite roof and indicate alteration if not mineralisation.
5. A number of targets are available and must be tested. The results should be recycled to control modelling and analysis or account for anomalous character.

RECOMMENDATIONS

1. Drilling of some sites is imperative. The nature of the indicated sources must be evaluated and while it is inevitable that specific sites may prove economically disappointing the control such holes provide for review and assessment of assumptions will be critical to decisions on further analysis or drilling. Virtually all current work on the project has been uncontrolled. Extant drilling in the Moina area may not have tested any of the implied targets including any extension to the west of the Shepherd and Murphy zone.
2. The gravity data and the granite model for this study area should be reviewed and sharpened, preferably prior to drilling in order to select optimal sites and perhaps hole orientations.
3. No further treatment of the magnetic data should be undertaken in this or other areas until several holes have been drilled and some rock properties determined. At that stage inferences, features and methods can be reviewed, revised, discarded or extended to other parts of the licence area.

REFERENCES

- Bamford, A.L., and Green, G.R., 1988. Cethana. Metallic mineral deposits map 8114(IV)-8115(III). Mines Department Tasmania.
- Leaman, D.E., 1988 a. Gravity and magnetic evaluation, Moina Region. 1. Magnetic data, initial review. Report, RGC Exploration, August.
- Leaman, D.E., 1988 b. Gravity and magnetic evaluation, Moina Region. 2. Gravity data, initial review. Report, RGC Exploration, October.
- Leaman, D.E., 1988 c. Gravity and magnetic evaluation, Moina Region. 3. Integration of initial reviews. Report, RGC Exploration, November.

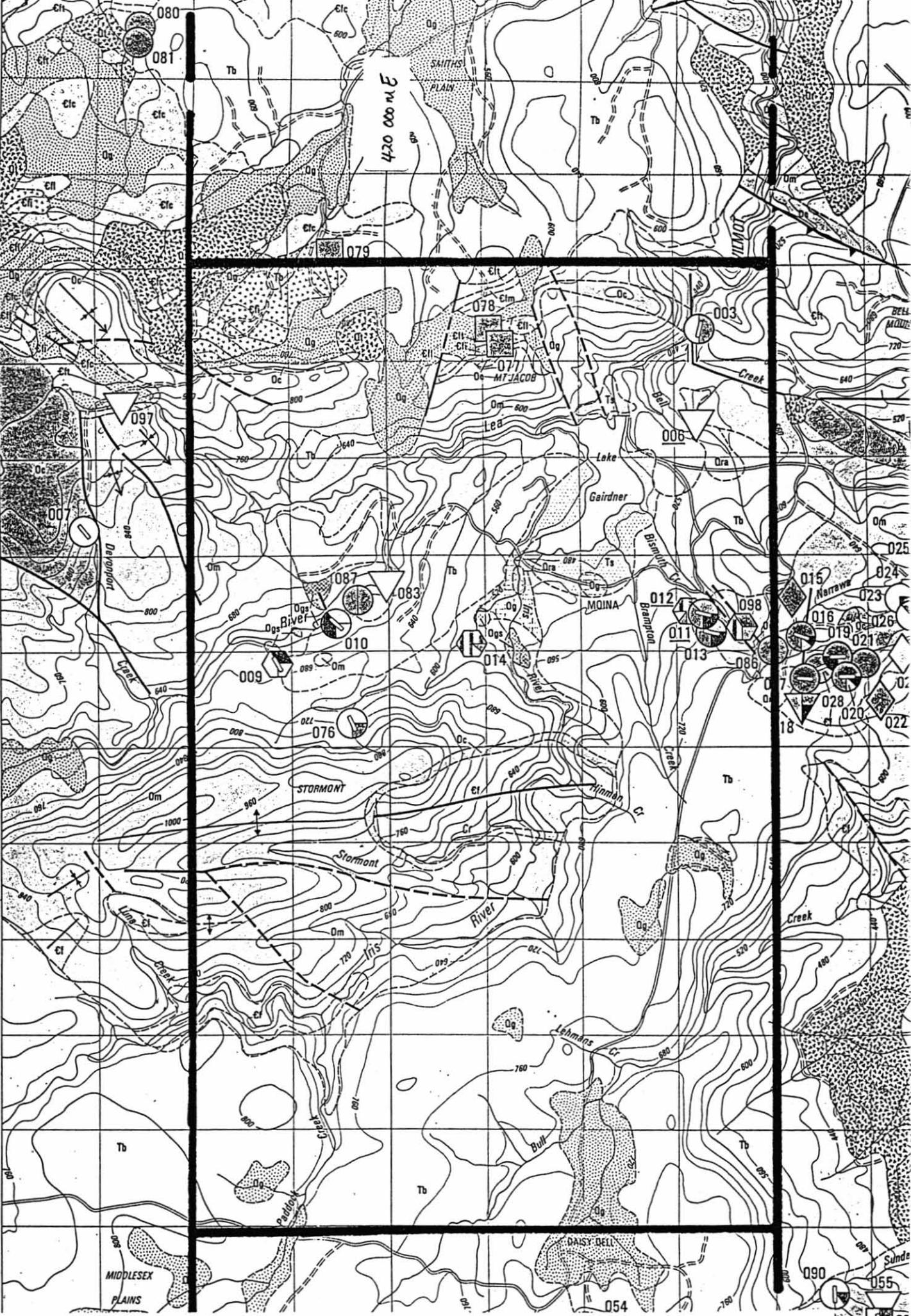
569168

Report submitted on behalf of
Leaman Geophysics
by

D. Leaman

Dr. D.E. Leaman, B.Sc., Ph.D
M.Aus.I.M.M., M.M.I.C.A

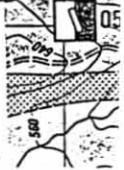
1/12/88



GEOLOGY AND MINERALISED SITES (BAMFORD AND GREEN, 1988)

569169

FIGURE 1



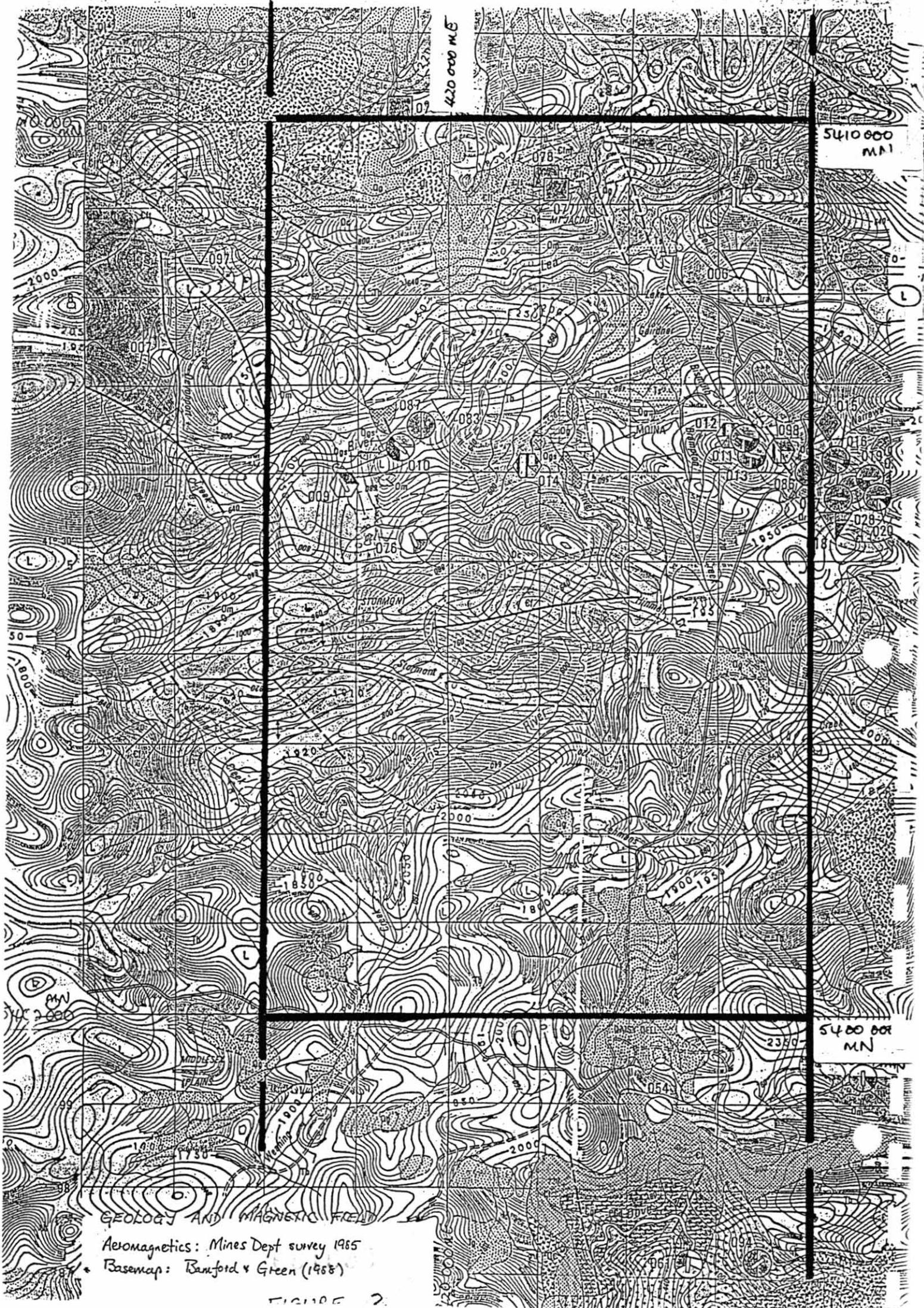
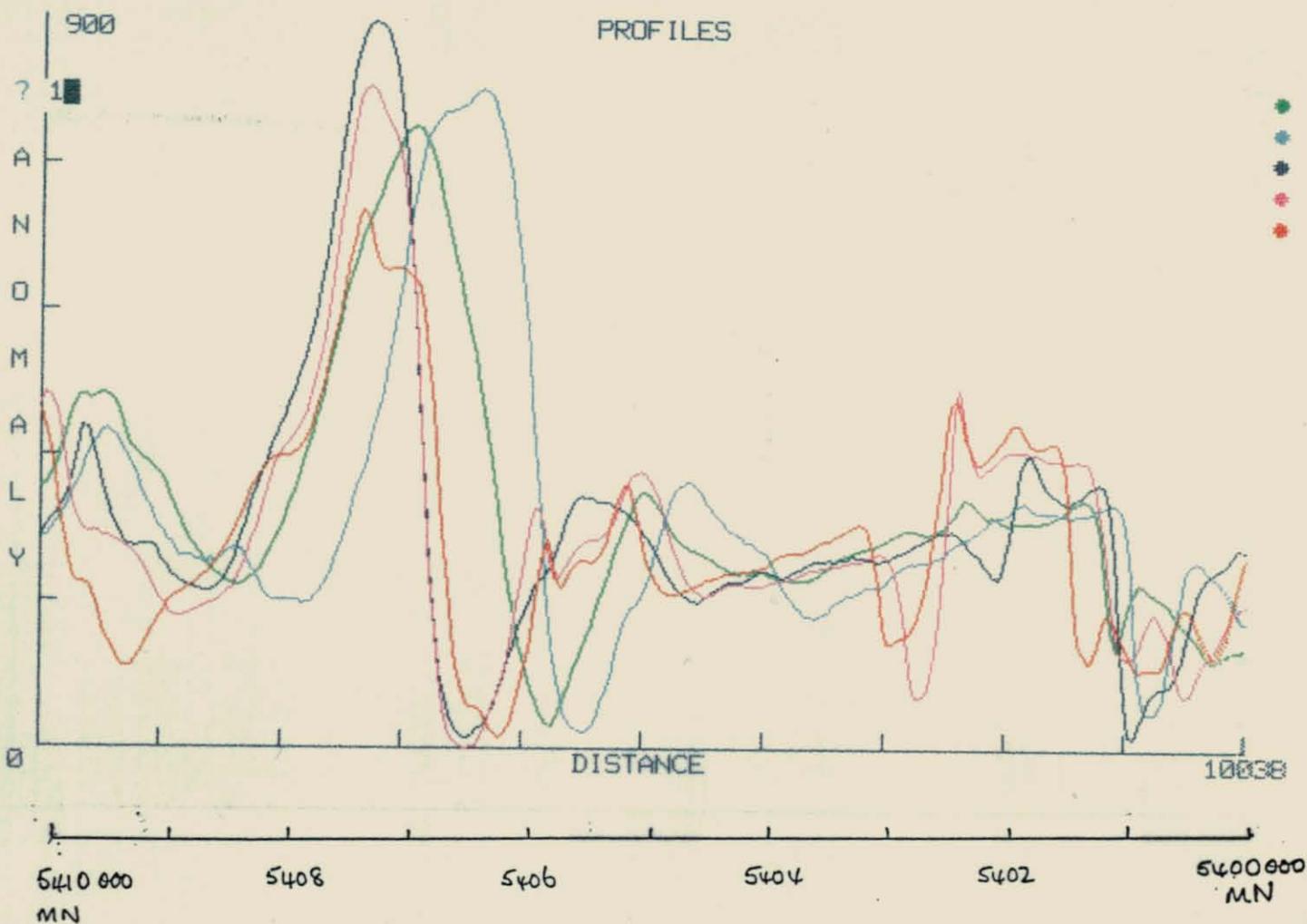


FIGURE 2

LEAMAN GEOPHYSICS

Survey Review, Specification, Reduction, Interpretation
Wide Experience Most Methods
Specialties: Gravity, Magnetics, Seismic Methods

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All Correspondence to:
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TELEPHONE: (002) 24 0319



			nominal easting
1	B: M5420	MOINA PROJECT LINE 5420	418 000
2	B: M5430	MOINA PROJECT LINE 5430	
3	B: M5440	MOINA PROJECT LINE 5440	418 500
4	B: M5450	MOINA PROJECT LINE 5450	
5	B: M5460	MOINA PROJECT LINE 5460	419 000
ZERO SHIFT : 223.8001			

559170

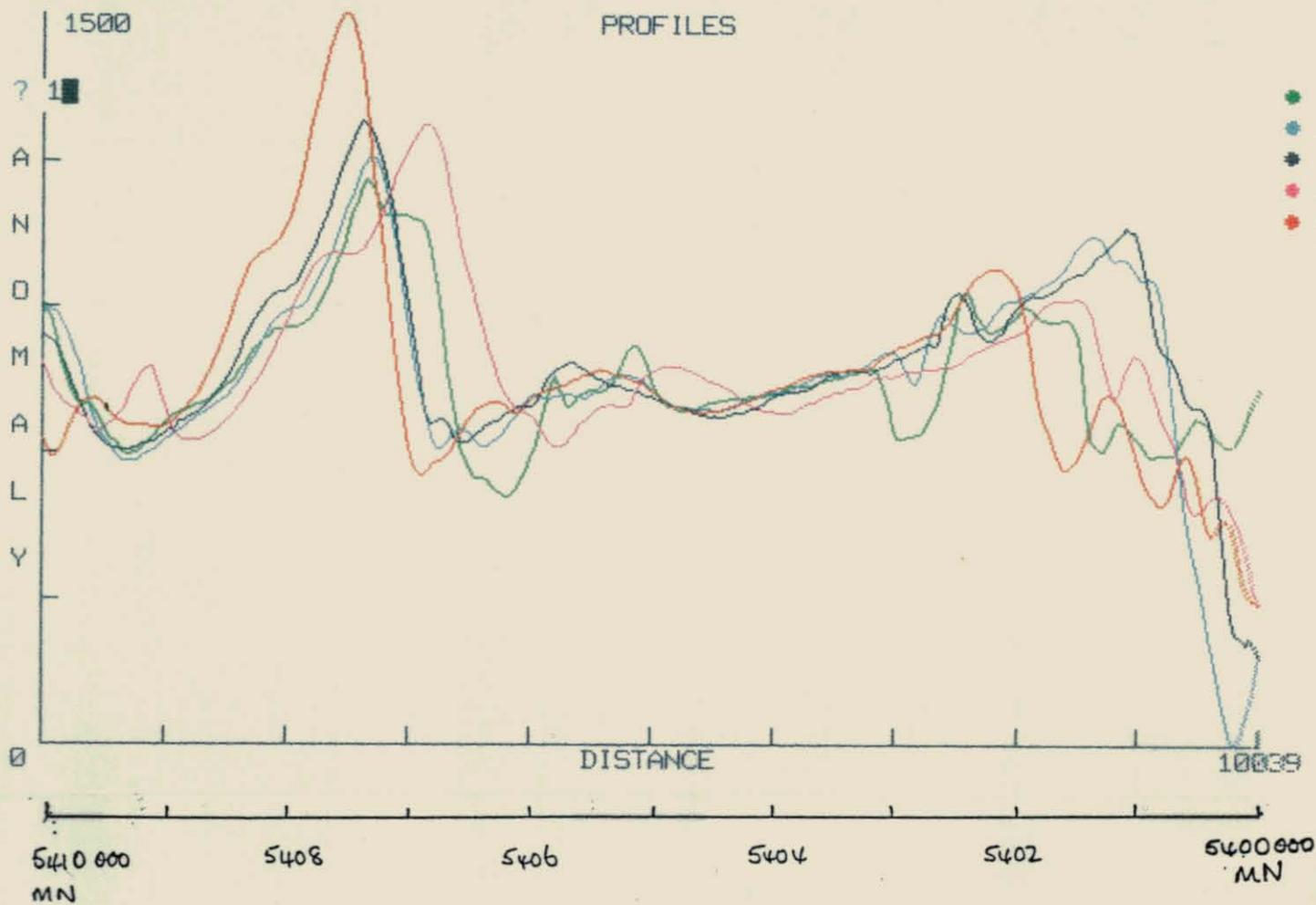
MOINA REGION
AEROMAGNETIC PROFILES
(shell survey)
nominal clearance : 100 m

FIGURE 3

LEAMAN GEOPHYSICS

Survey Review, Specification, Reduction, Interpretation
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			nominal easting
1	B:M5460	MOINA PROJECT LINE 5460	419000 ME
2	B:M5470	MOINA PROJECT LINE 5470	
3	B:M5480	MOINA PROJECT LINE 5480	419500
4	B:M5490	MOINA PROJECT LINE 5490	
5	B:M5500	MOINA PROJECT LINE 5500	420000

ZERO SHIFT : 720.4

MOINA REGION
 AEROMAGNETIC PROFILES
 (shell survey)
 nominal clearance : 100 m

569171

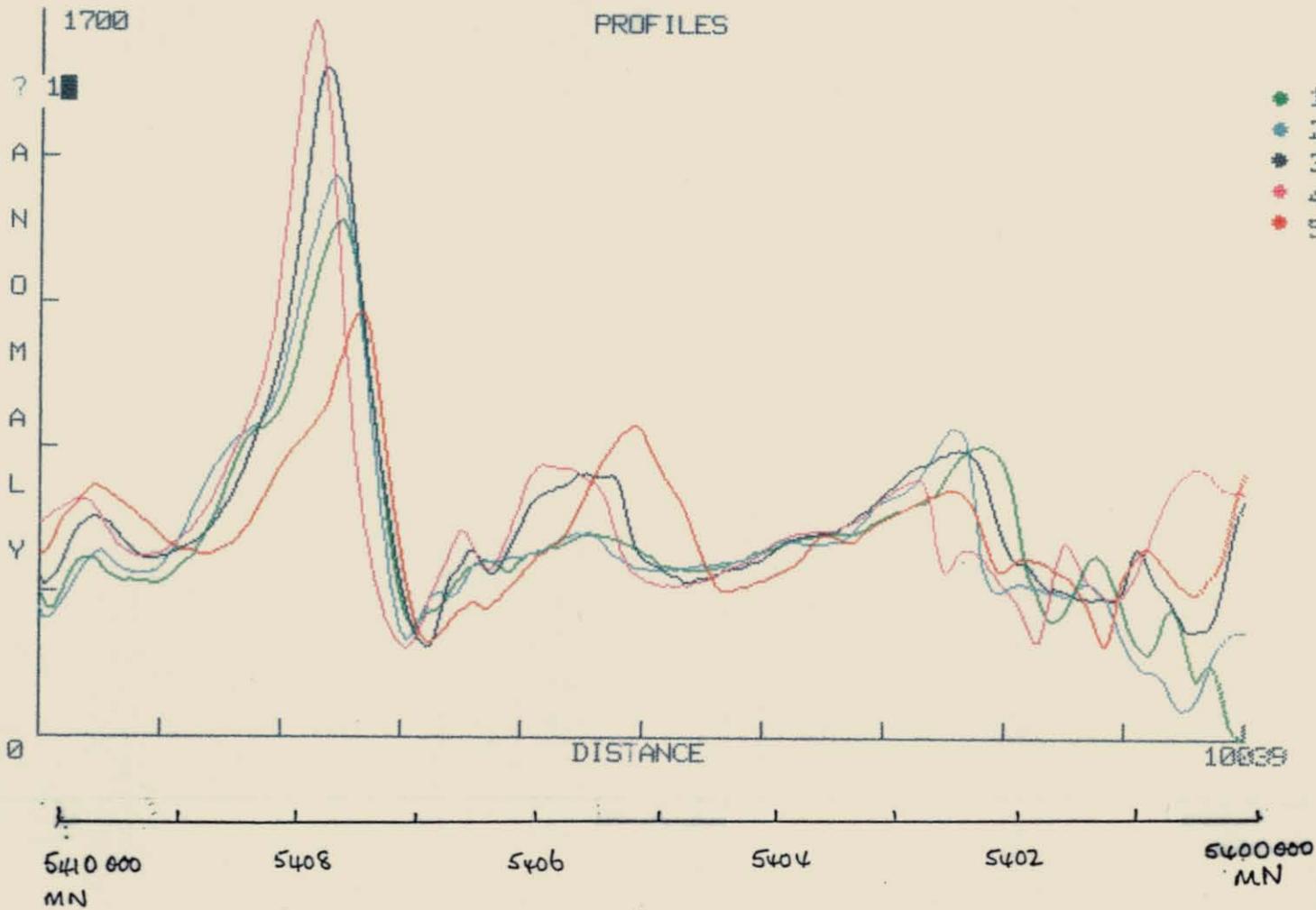
FIGURE 4

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- | | |
|---|---------|
| 1 | B:M5500 |
| 2 | B:M5510 |
| 3 | B:M5520 |
| 4 | B:M5530 |
| 5 | B:M5540 |
- ZERO SHIFT : 430

- | |
|-------------------------|
| MOINA PROJECT LINE 5500 |
| MOINA PROJECT LINE 5510 |
| MOINA PROJECT LINE 5520 |
| MOINA PROJECT LINE 5530 |
| MOINA PROJECT LINE 5540 |

- | |
|-----------------|
| nominal easting |
| 420 000 ME |
| 420 500 |
| 421 000 |

MOINA REGION
 AEROMAGNETIC PROFILES
 (shell survey)
 nominal clearance : 100 m

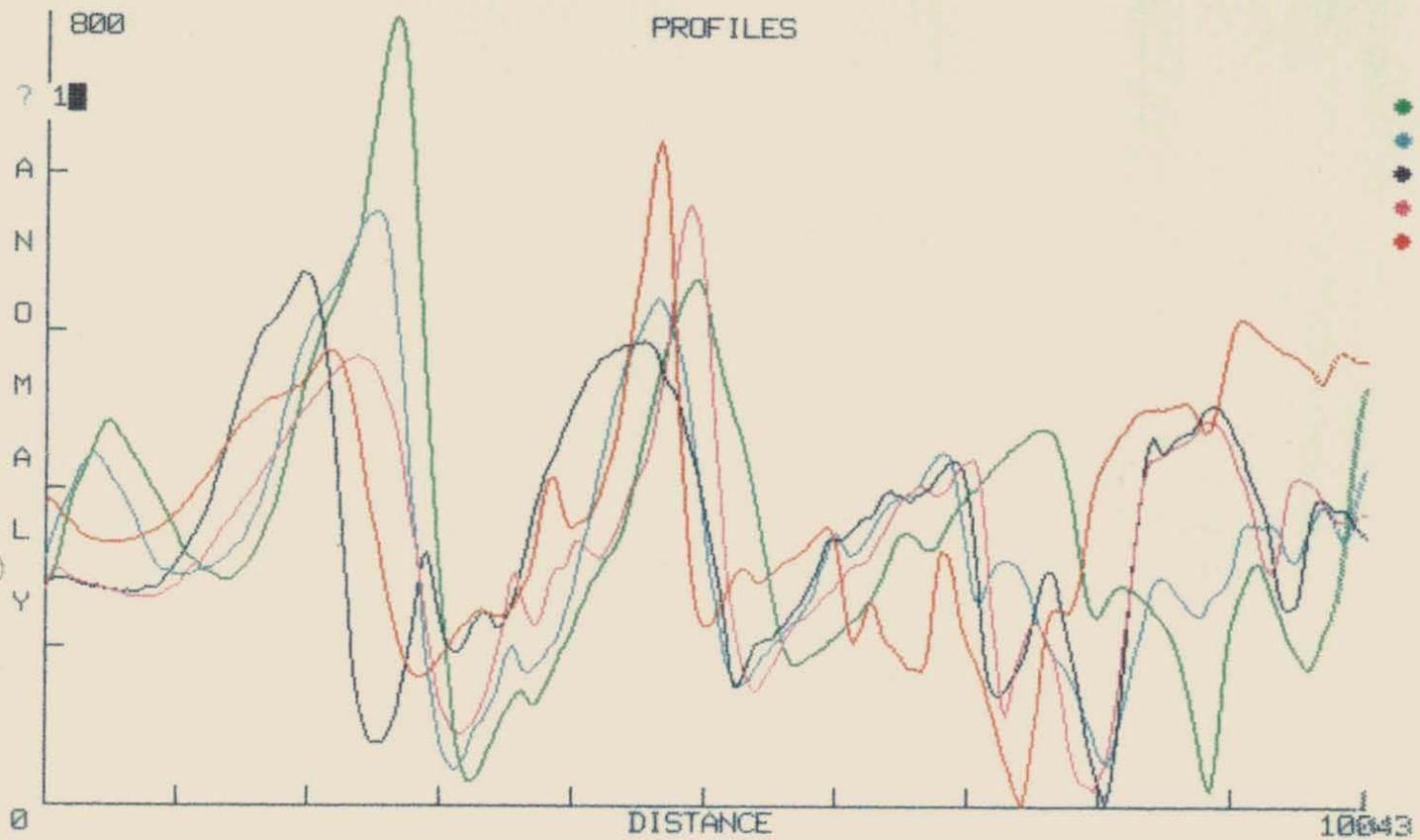
569172

FIGURE 5

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5410 000
MN

5408

5406

5404

5402

5400 000
MN

- 1 B:M5540
 - 2 B:M5550
 - 3 B:M5560
 - 4 B:M5570
 - 5 B:M5580
- ZERO SHIFT : 229.8001

MOINA PROJECT LINE 5540
 MOINA PROJECT LINE 5550
 MOINA PROJECT LINE 5560
 MOINA PROJECT LINE 5570
 MOINA PROJECT LINE 5580

Nominal easting
 421 000 ME
 421 500
 422 000

MOINA REGION
 AEROMAGNETIC PROFILES
 (shell survey)
 nominal clearance : 100 m

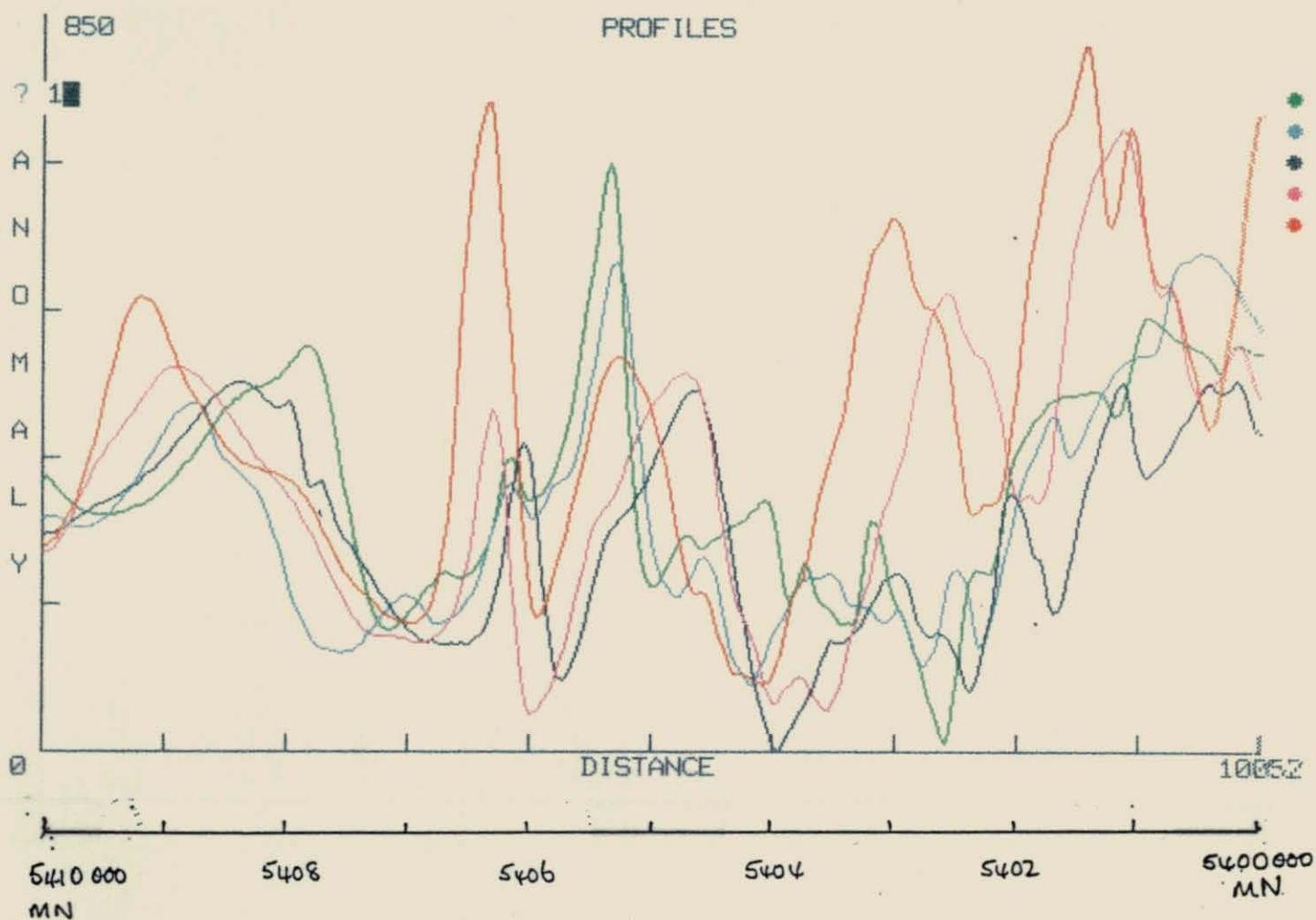
559173

FIGURE 6

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1	B: M5580	MOINA PROJECT LINE 5580	Nominal Easting 422000 ME
2	B: M5590	MOINA PROJECT LINE 5590	
3	B: M5600	MOINA PROJECT LINE 5600	422500
4	B: M5610	MOINA PROJECT LINE 5610	
5	B: M5620	MOINA PROJECT LINE 5620	423000
ZERO SHIFT : 239.3001			

MOINA REGION
AEROMAGNETIC PROFILES
(shell survey)
nominal clearance : 100 m

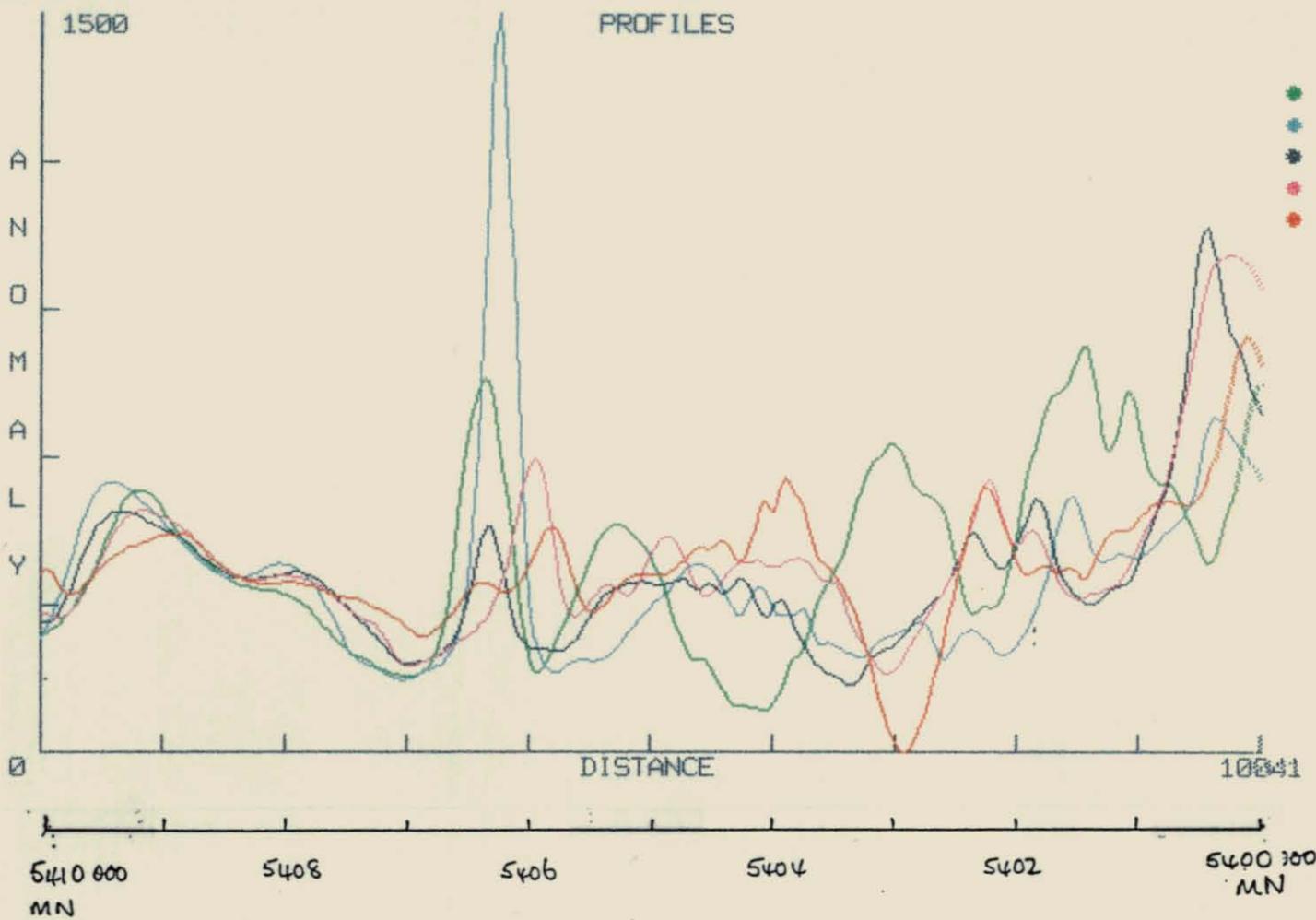
569174

FIGURE 7

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			Nominal Easting
1	B: M5620	MOINA PROJECT LINE 5620	423 000 mE
2	B: M5630	MOINA PROJECT LINE 5630	
3	B: M5640	MOINA PROJECT LINE 5640	423 500
4	B: M5650	MOINA PROJECT LINE 5650	
5	B: M5660	MOINA PROJECT LINE 5660	424 000 mE

ZERO SHIFT : 246.2

MOINA REGION
 AEROMAGNETIC PROFILES
 (shell survey)
 nominal clearance : 100 m

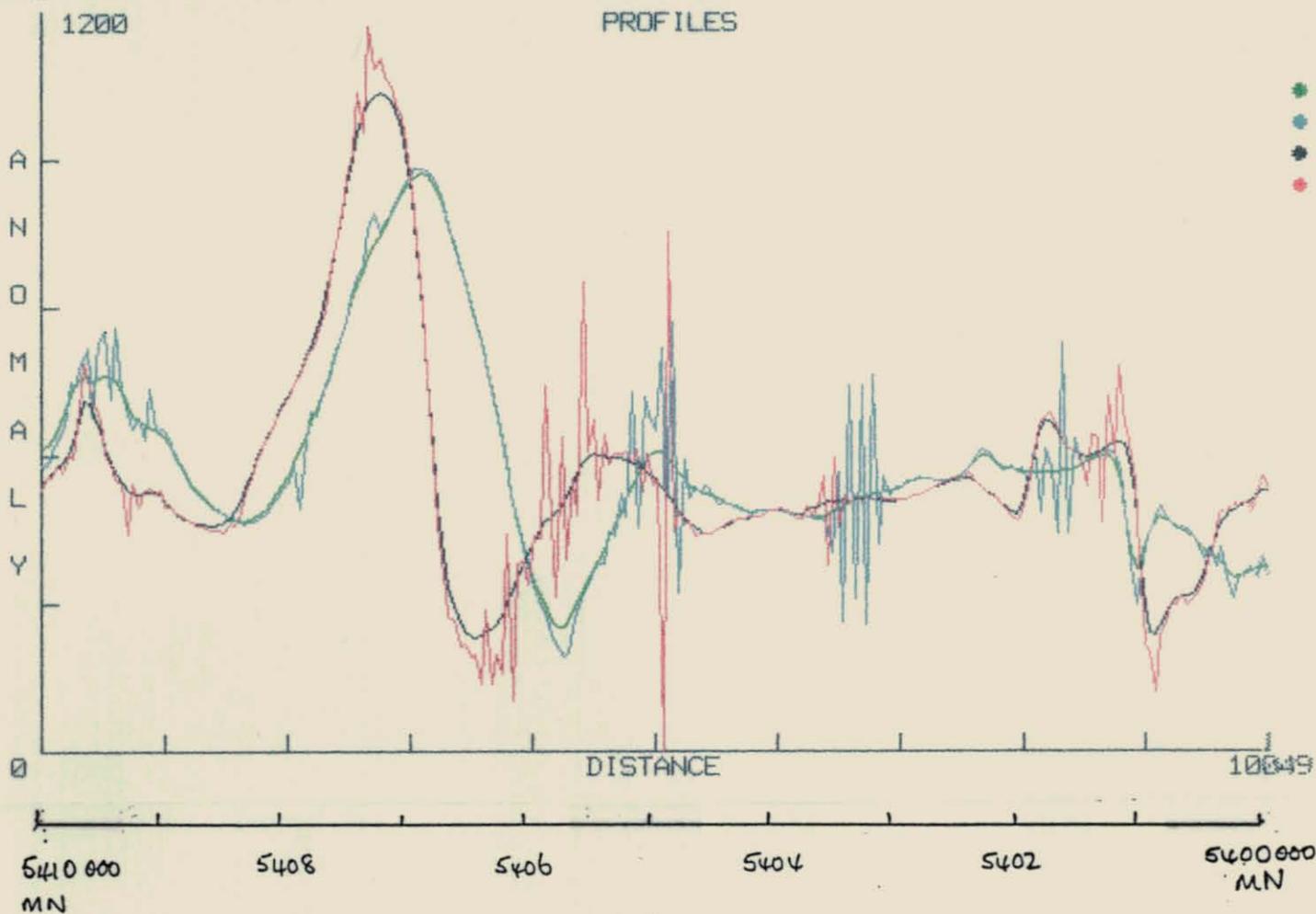
569175

FIGURE 8

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1	B:M5420	MOINA PROJECT LINE 5420
2	B:D5420	100 M DRAPE LINE 5420 MOINA
3	B:M5440	MOINA PROJECT LINE 5440
4	B:D5440	100 M DRAPE LINE 5440 MOINA

ZERO SHIFT : 396.6249

569176

MOINA REGION
 DRAPE CORRECTED and OBSERVED AEROMAGNETIC
 PROFILES
 FOR COMPARISON

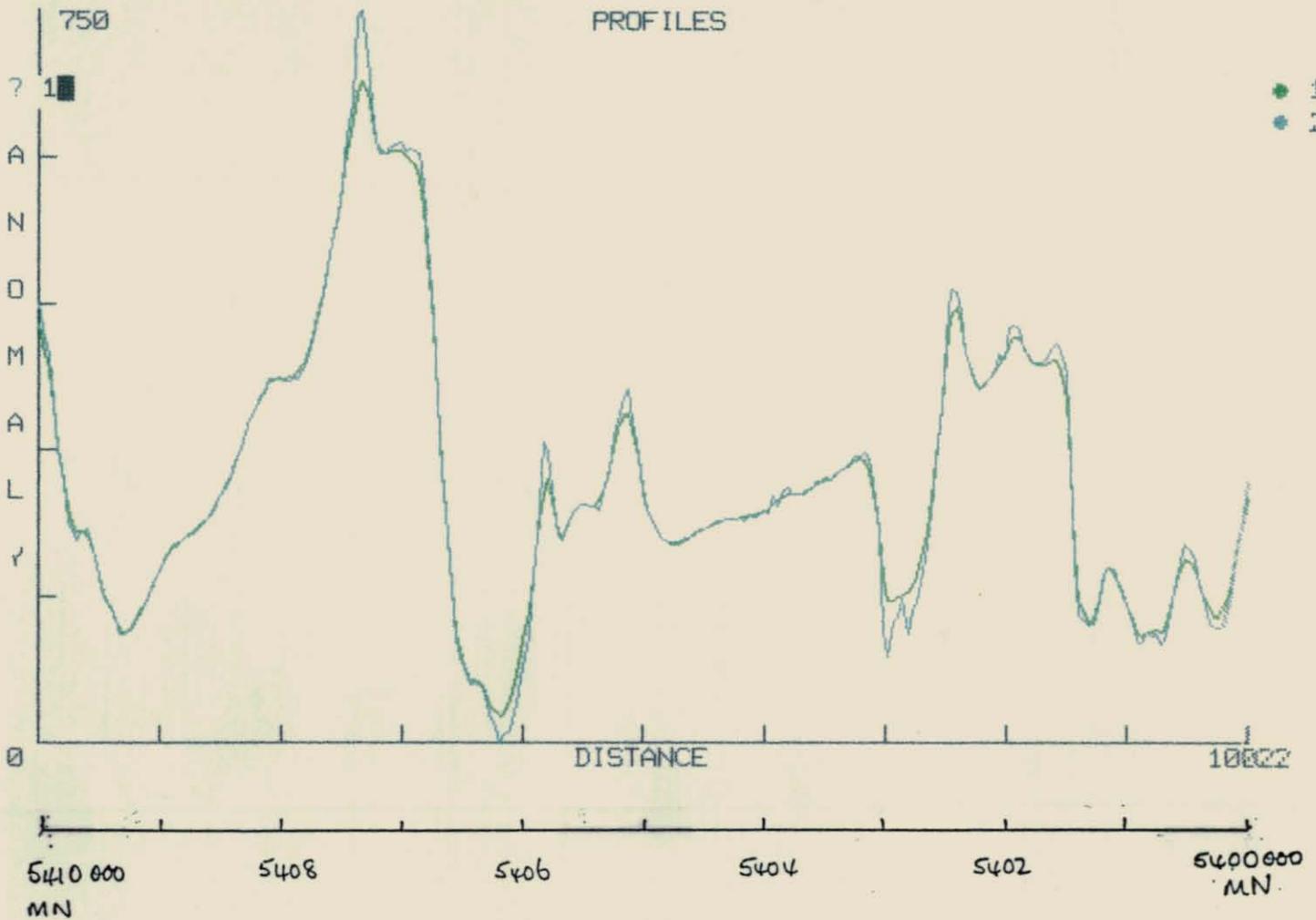
Drape: as at 100m clearance
 Observed: nominal 100m clearance

FIGURE 9

179
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1 B:M5460 MOINA PROJECT LINE 5460
2 B:D5460 100 M DRAPE LINE 5460 MOINA
ZERO SHIFT : 237.3959

569177

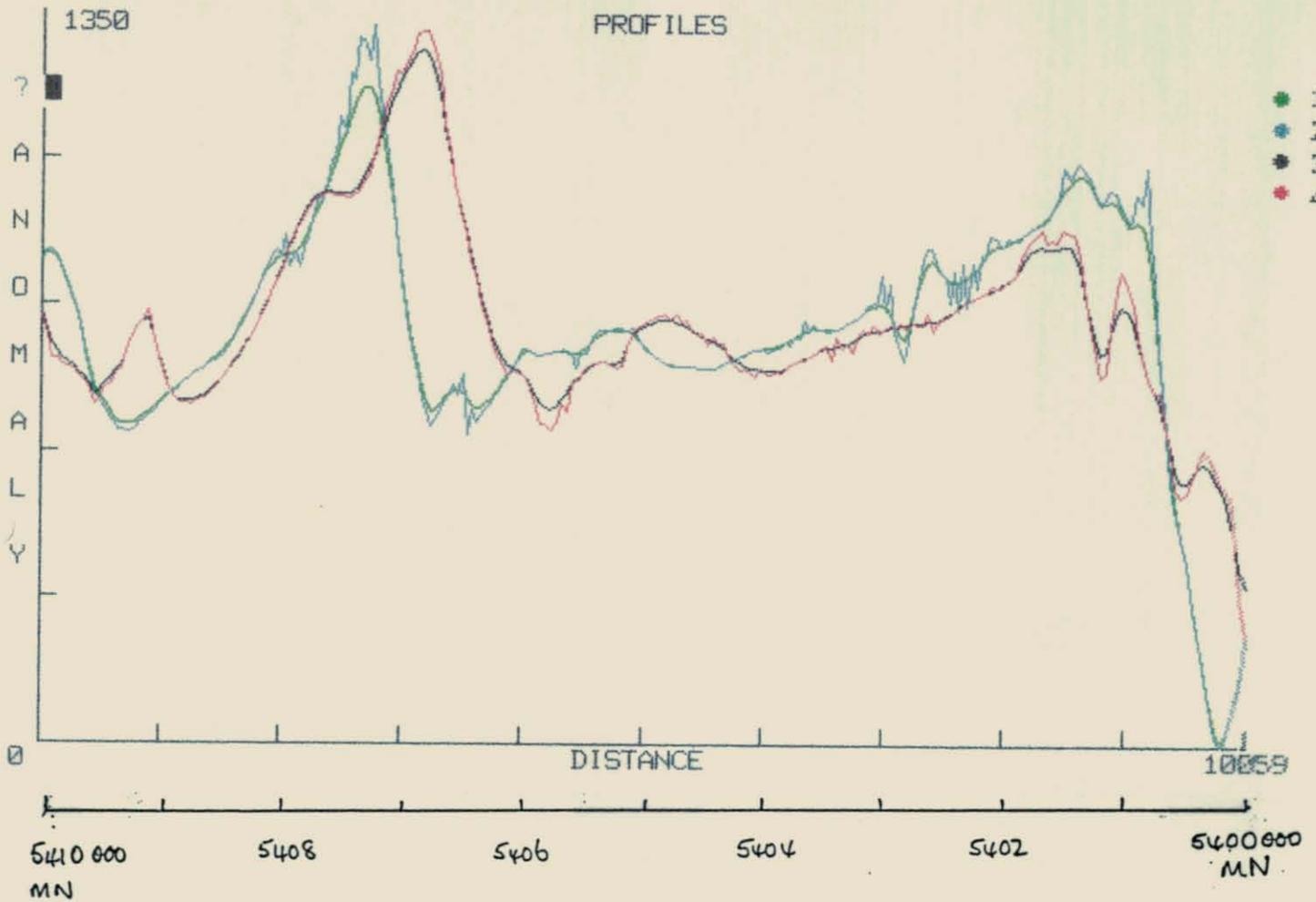
MOINA REGION
DRAPE CORRECTED and OBSERVED AEROMAGNETIC
PROFILES
FOR COMPARISON

Drape: as at 100m clearance
Observed: nominal 100m clearance **FIGURE 10**

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1	B:M5470	MOINA PROJECT LINE 5470
2	B:D5470	100 M DRAPE LINE 5470 MOINA
3	B:M5490	MOINA PROJECT LINE 5490
4	B:D5490	100 M DRAPE LINE 5490 MOINA

ZERO SHIFT : 727.6133

569178

MOINA REGION
 DRAPE CORRECTED and OBSERVED AEROMAGNETIC
 PROFILES
 FOR COMPARISON

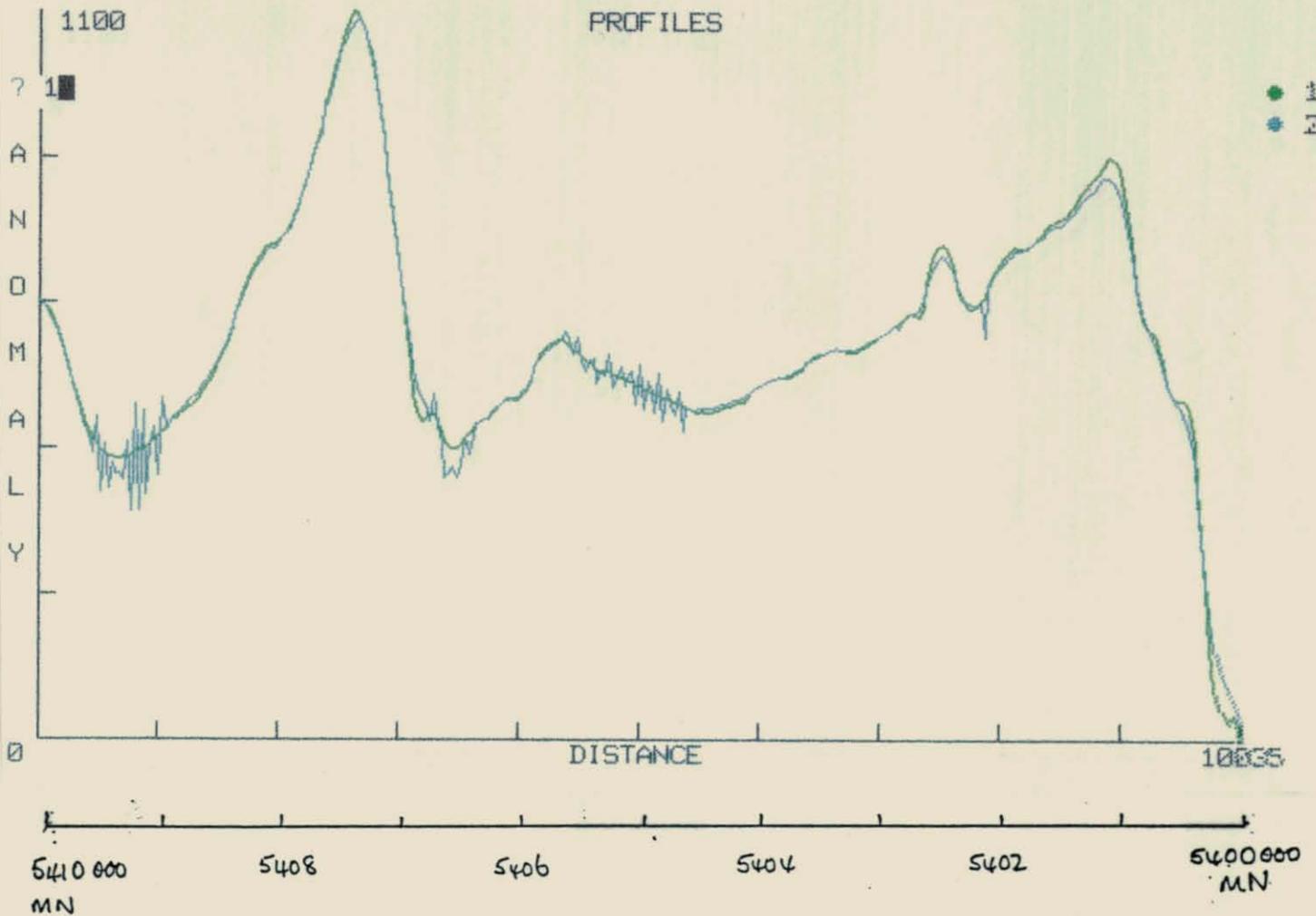
Drape: as at 100m clearance
 Observed: nominal 100m clearance

FIGURE 11

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1 B:M5480 MOINA PROJECT LINE 5480
 2 B:DA5480 150 M DRAPE LINE 5480 MOINA
 ZERO SHIFT : 540.1

569179

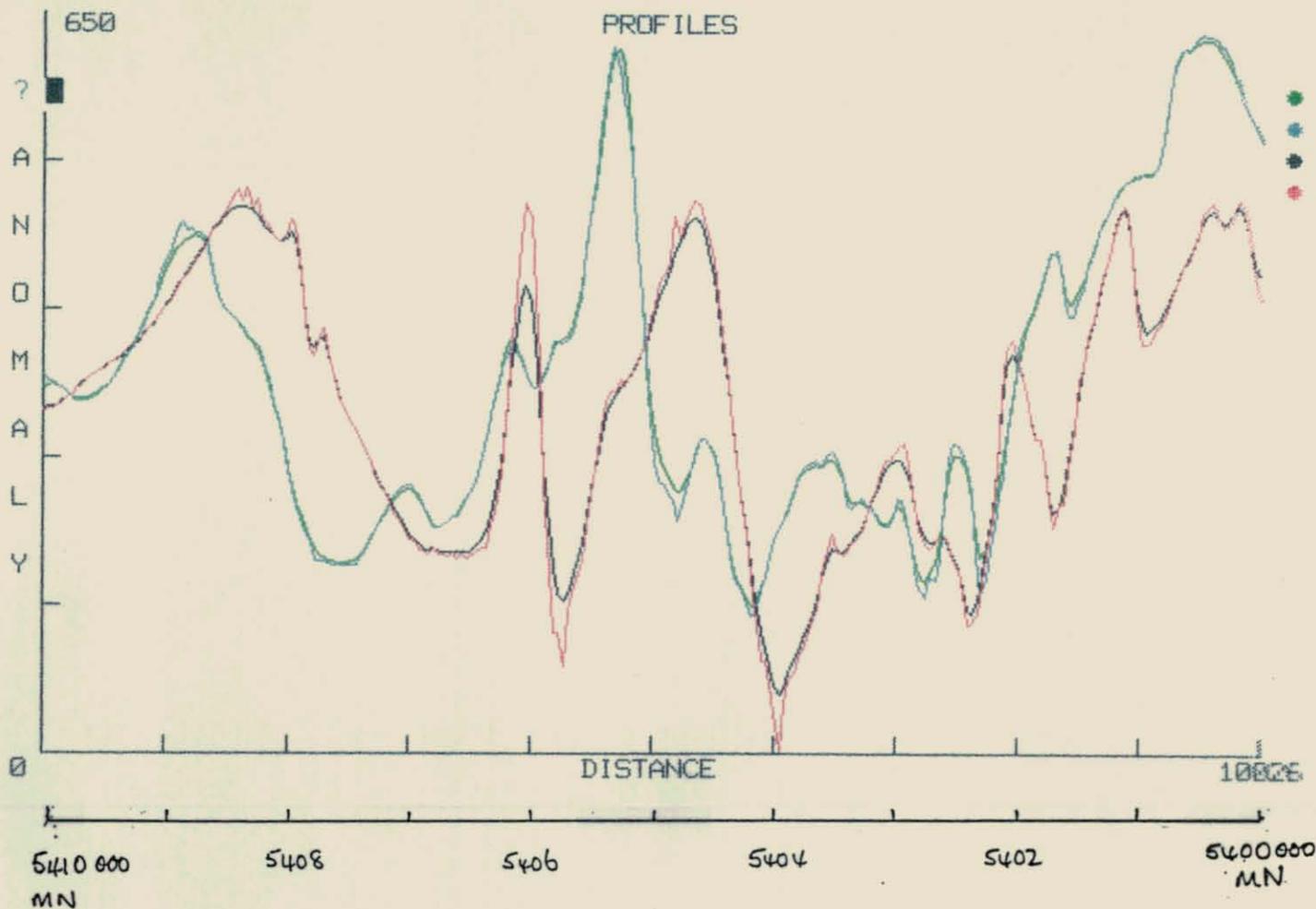
MOINA REGION
 DRAPE CORRECTED and OBSERVED AEROMAGNETIC
 PROFILES
 FOR COMPARISON

Drape: as at #150 (100m) clearance
 Observed: nominal 100m clearance FIGURE 12

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- | | | |
|---|---------|-----------------------------|
| 1 | B:M5590 | MOINA PROJECT LINE 5590 |
| 2 | B:D5590 | 100 M DRAPE LINE 5590 MOINA |
| 3 | B:M5600 | MOINA PROJECT LINE 5600 |
| 4 | B:D5600 | 100 M DRAPE LINE 5600 MOINA |
- ZERO SHIFT : 290.8906

569130

MOINA REGION
 DRAPE CORRECTED and OBSERVED AEROMAGNETIC
 PROFILES
 FOR COMPARISON

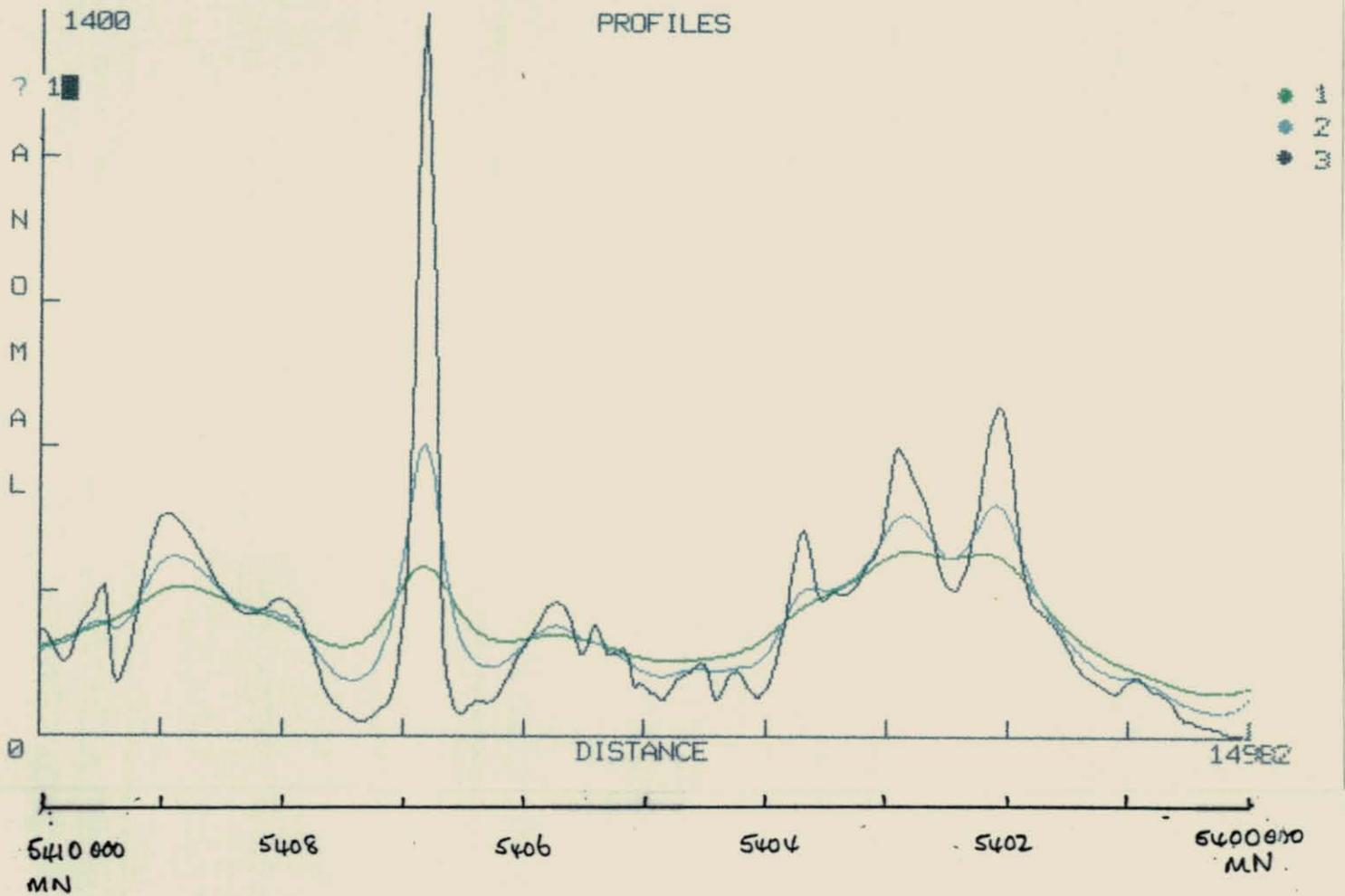
Drape: as at 100m clearance
 Observed: nominal 100m clearance

FIGURE 13

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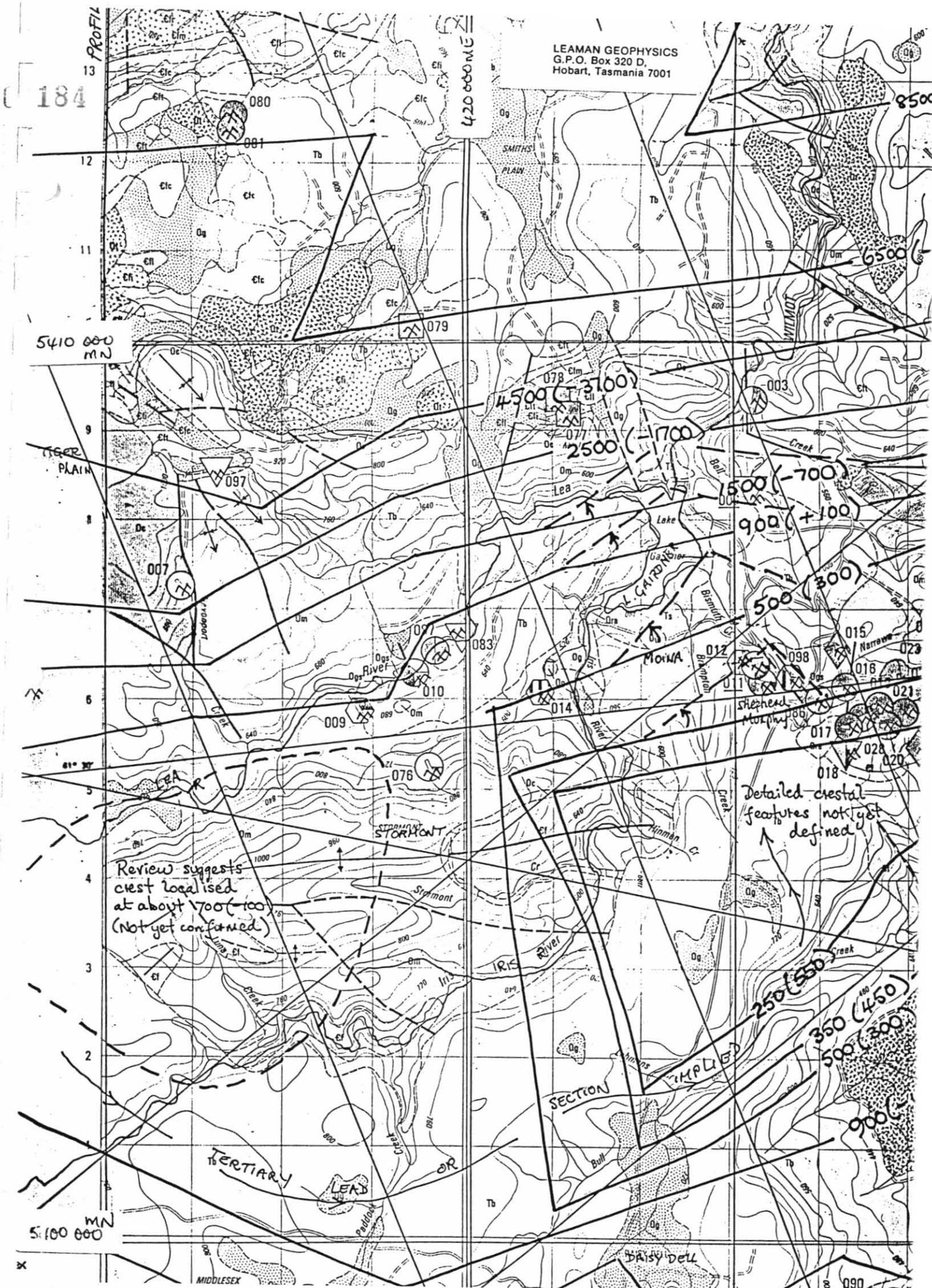
1	B:CN5T5630	CONTINUATION 500 M LINE 5630 MOINA
2	B:CN2T5630	CONTINUATION 200 M LINE 5630 MOINA
3	B:M5630.BAK	MOINA PROJECT LINE 5630

ZERO SHIFT : 126.1

SHEPHERD & MURPHY ANOMALY
 CONTINUATION TESTS
 LINE 5630

569131

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Hobart, Tasmania 7001



Review suggests
crest localised
at about 1700 (-100)
(Not yet confirmed.)

Detailed crestal
features not yet
defined

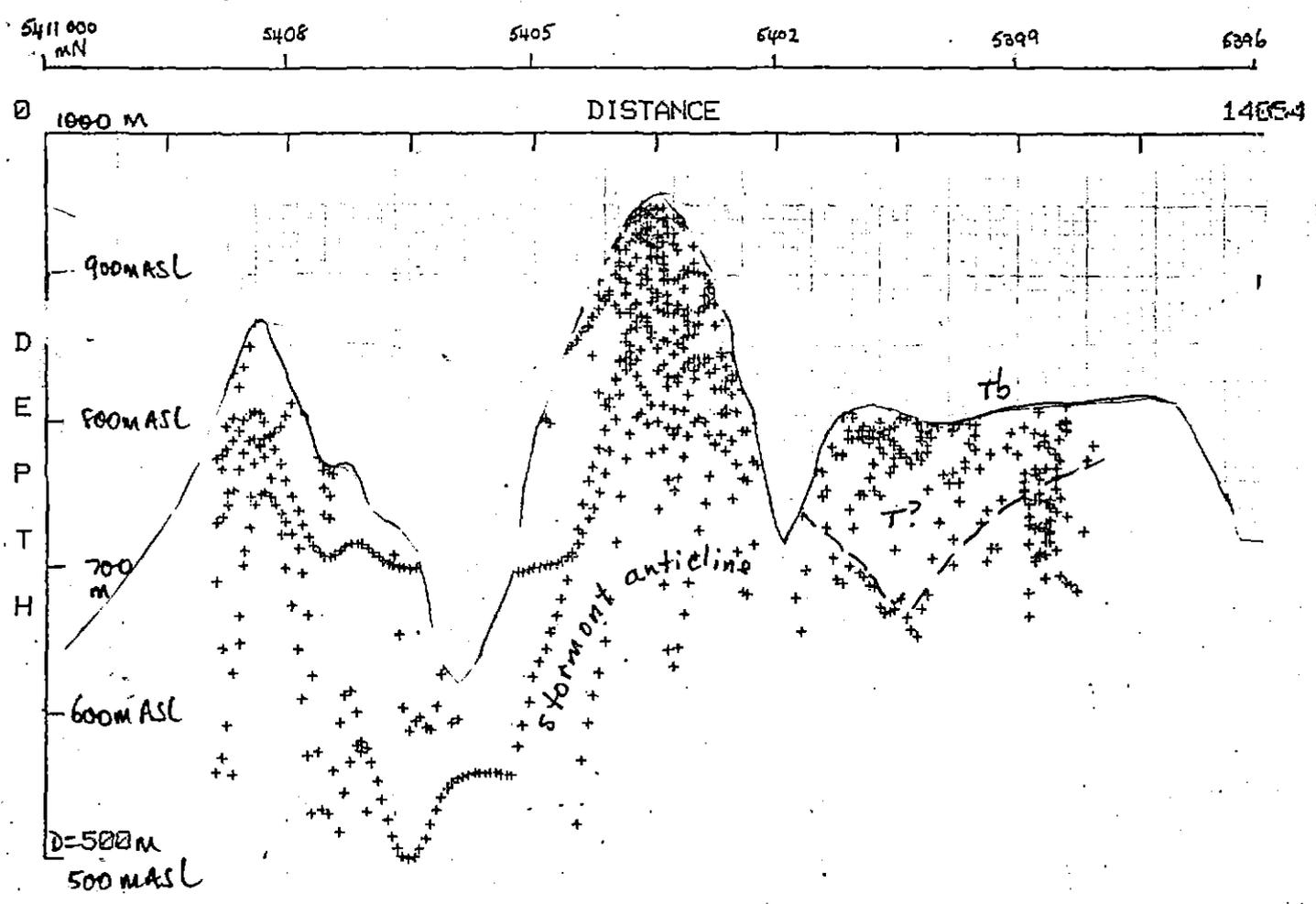
CURRENT GRAVITY-GRANITE MODEL MOINA AREA

FIGURE 15

569182

569183

Nominal easting: 418 250 mE



MAGNETIC DEPTH ESTIMATE PLOT

B:D9L5430

MAGNETIC SOURCE DEPTHS REL 1000 M LINE 5430 MOINA

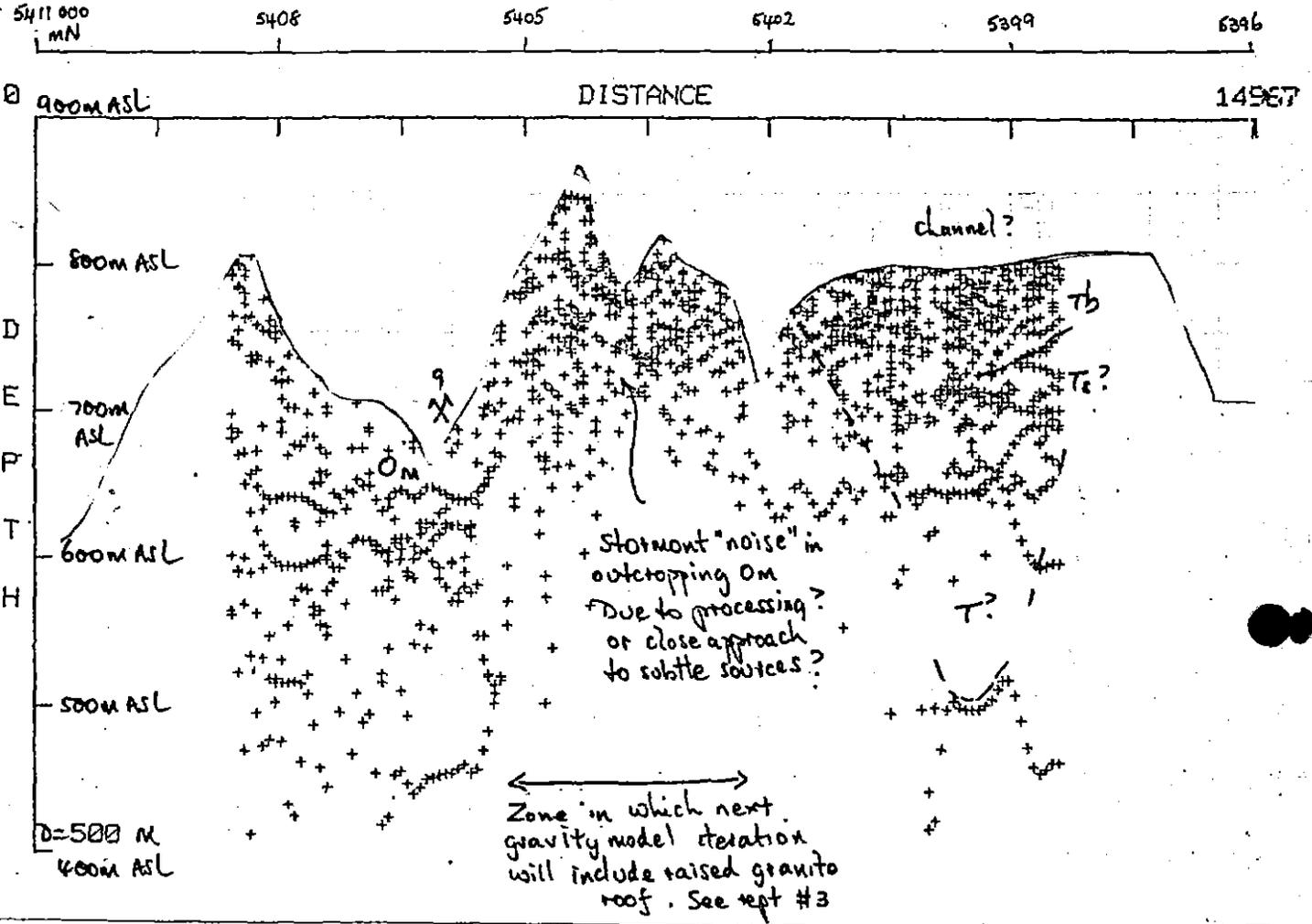
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569184

Nominal easting: 418750 ME



MAGNETIC DEPTH ESTIMATE PLOT

B:D9L5450

MAGNETIC SOURCE DEPTHS REL 900 M LINE 5450 MOINA

Nov 88

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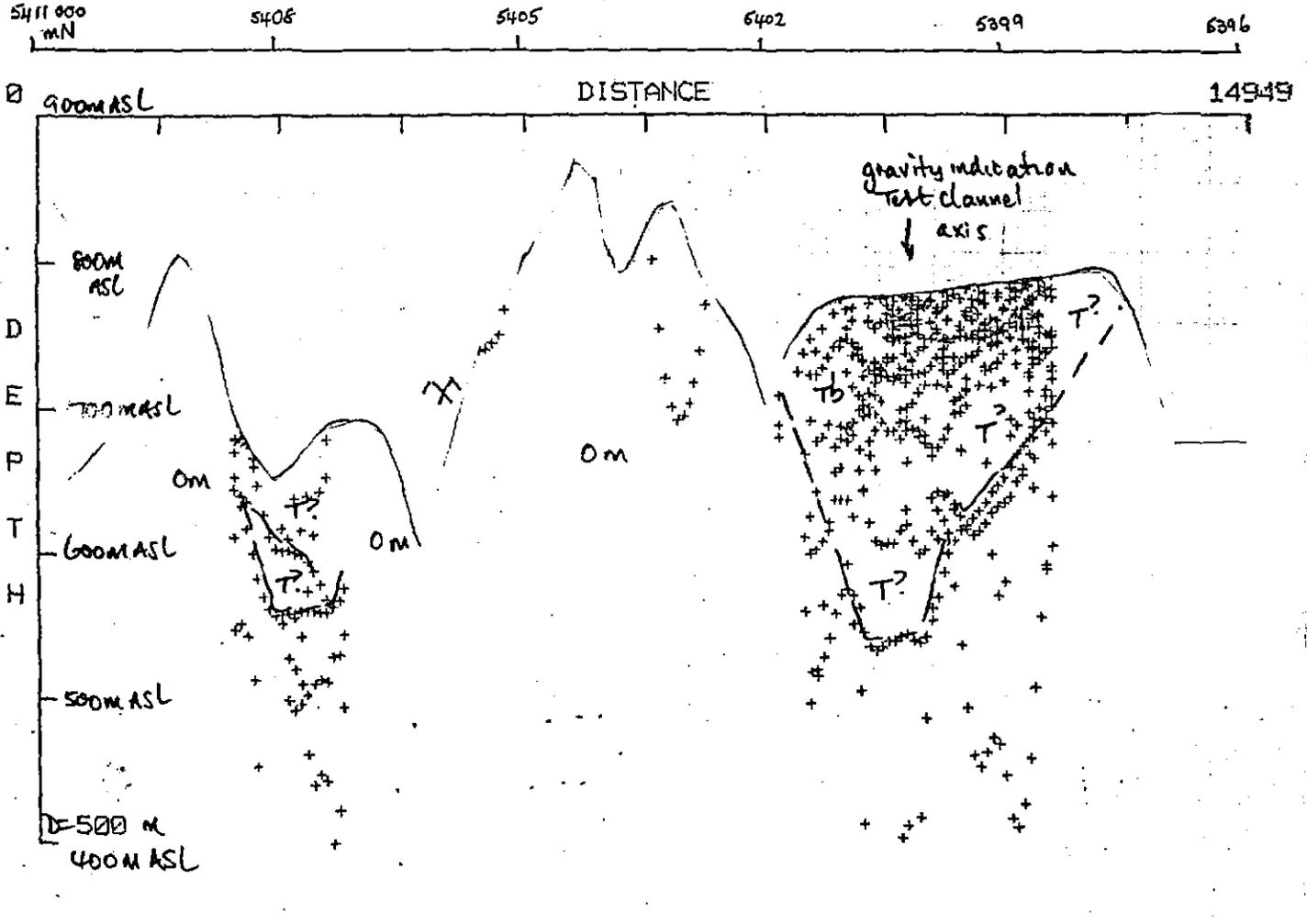
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TELEPHONE: (002) 24 0319

569185

Nominal easting: 419 250 mE



MAGNETIC DEPTH ESTIMATE PLOT

B:D9L5470

MAGNETIC SOURCE DEPTHS REL 900 M LINE 5470 MOINA

Nov 88

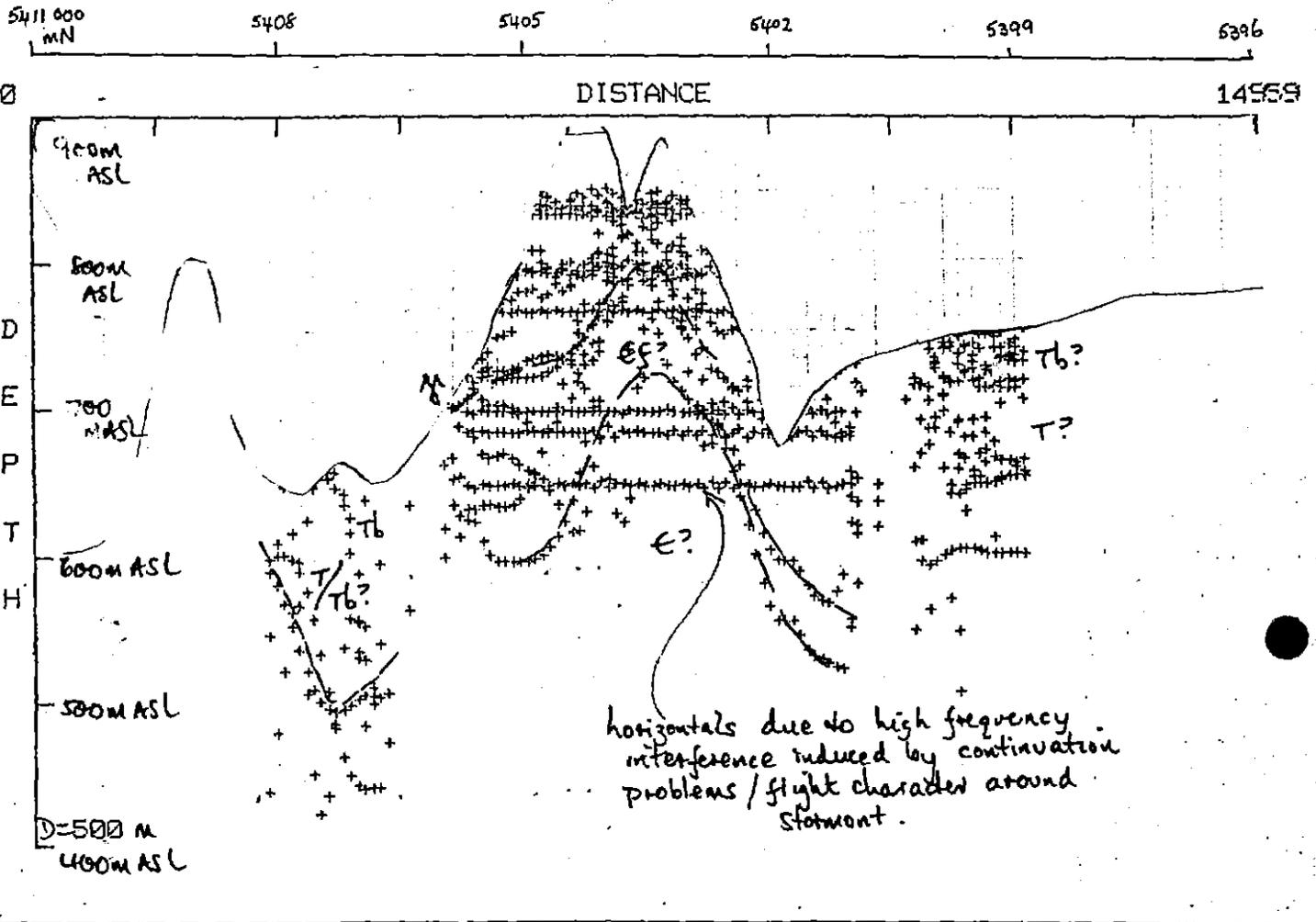
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TELEPHONE: (002) 24 0319

569186

Nominal easting: 419 750 mE



MAGNETIC DEPTH ESTIMATE PLOT

B:D9L5498

MAGNETIC SOURCE DEPTHS REL 900 M LINE 5490 MOINA

Nov 88

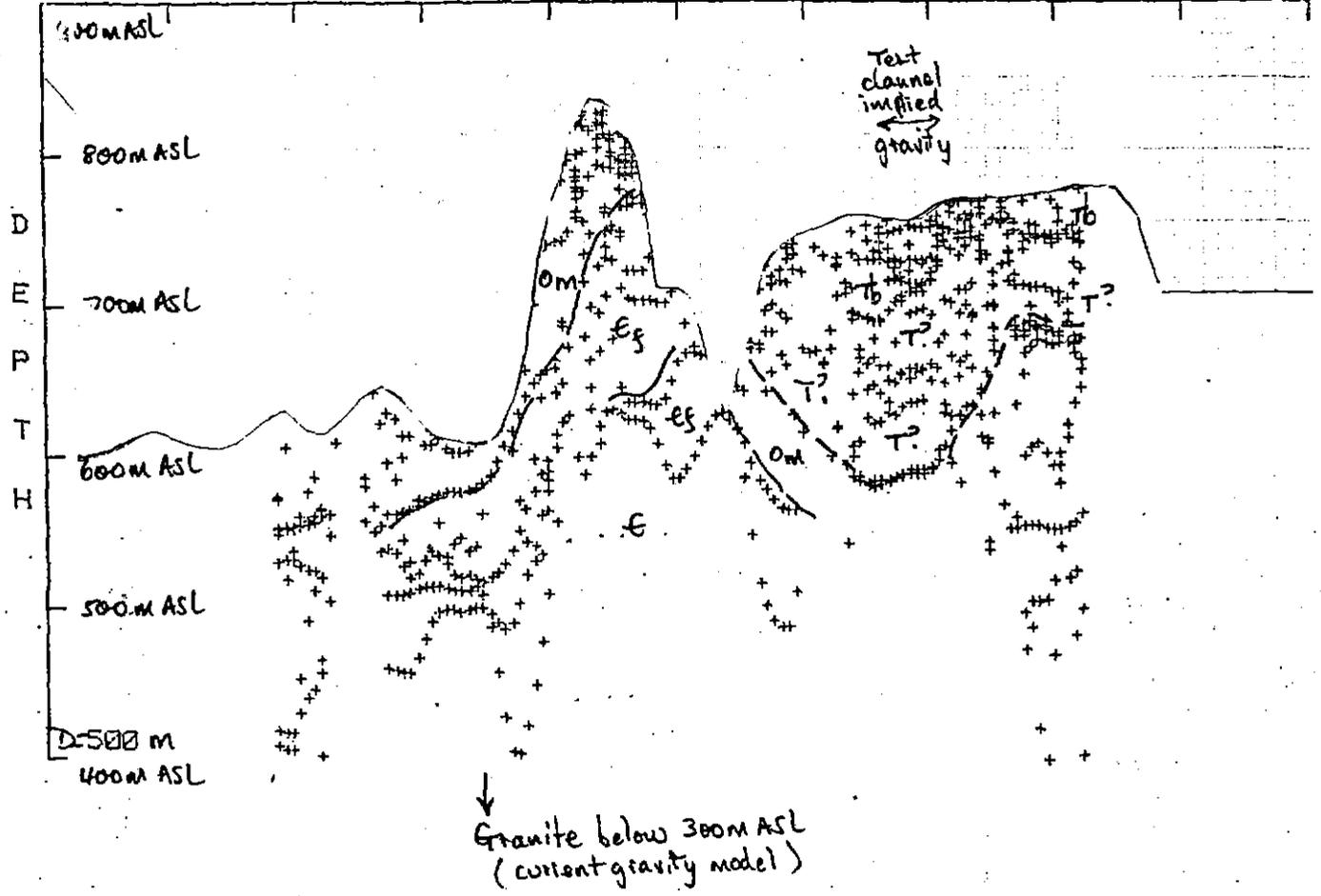
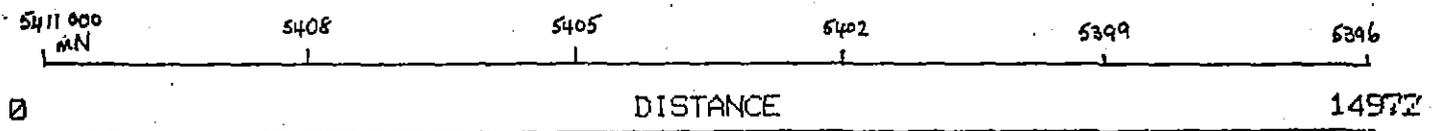
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TELEPHONE: (002) 24 0319

569187

Nominal easting: 420250 mE



MAGNETIC DEPTH ESTIMATE PLOT
B:D9L5510
MAGNETIC SOURCE DEPTHS REL 900M LINE 5510 MOINA

Nov 68

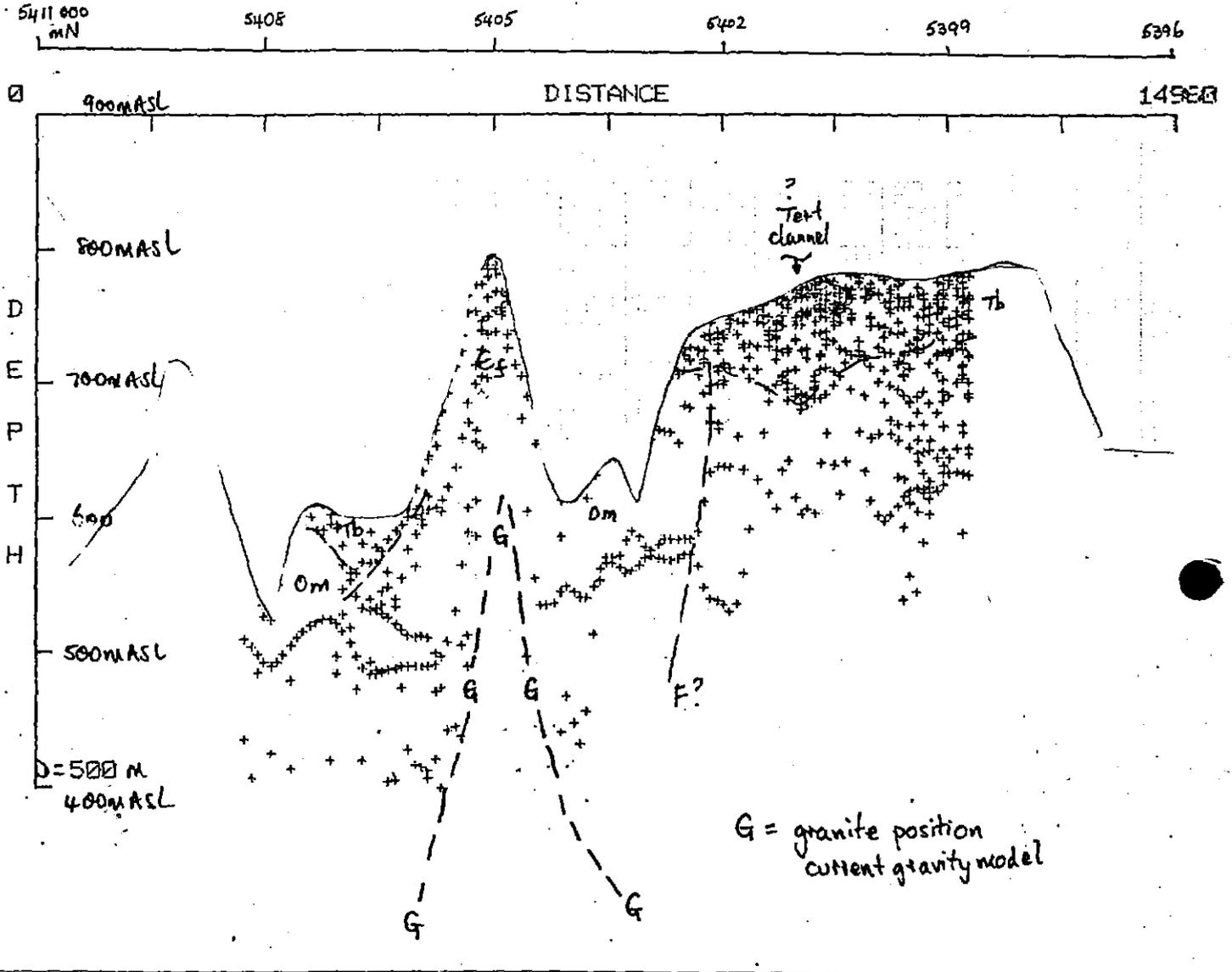
130 LEAMAN GEOPHYSICS

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569188

Nominal easting: 420 750 mE



MAGNETIC DEPTH ESTIMATE PLOT

B: D9L5530

MAGNETIC SOURCE DEPTHS REL 900 M LINE 5530 MOIRA

Nov 88

FIGURE 21

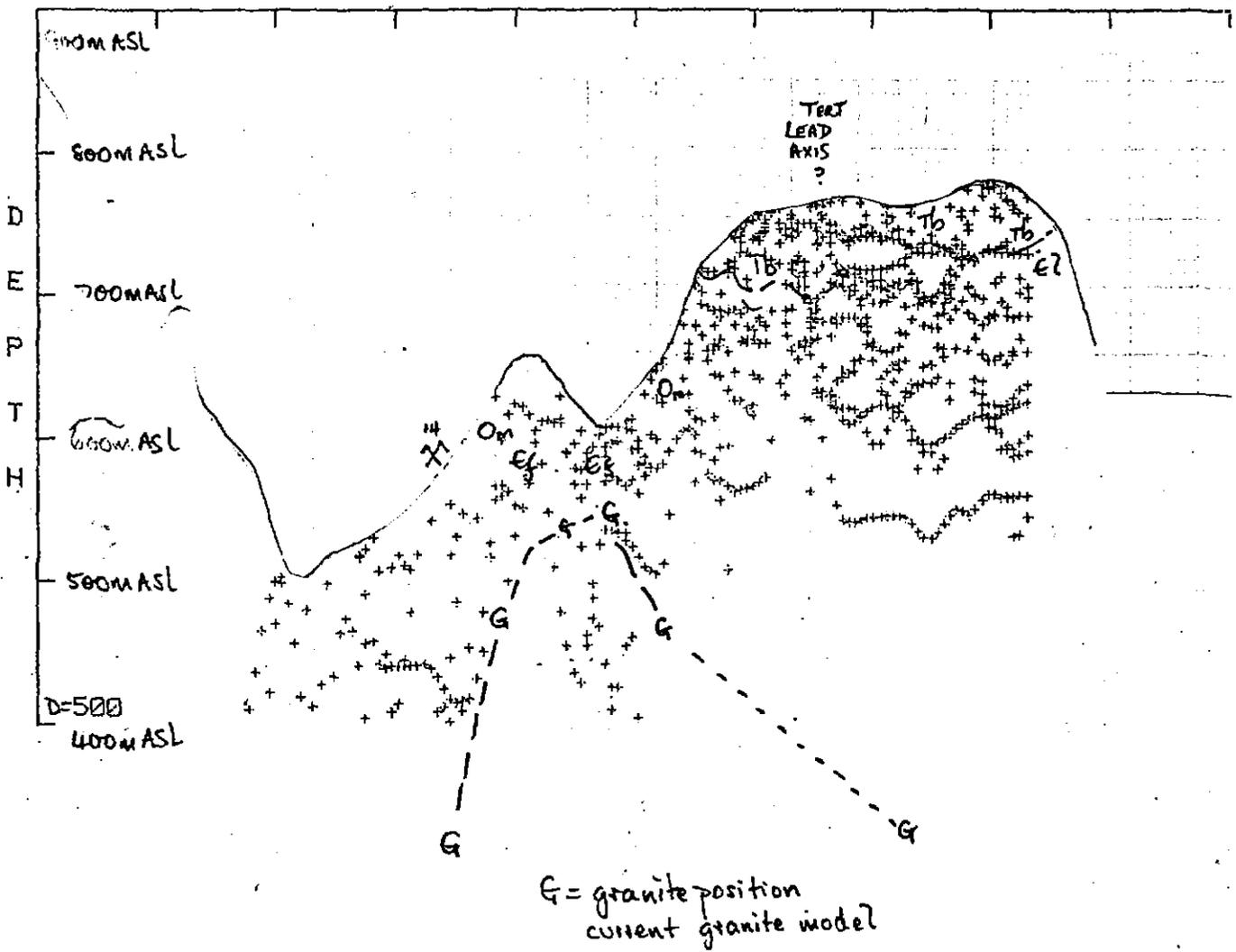
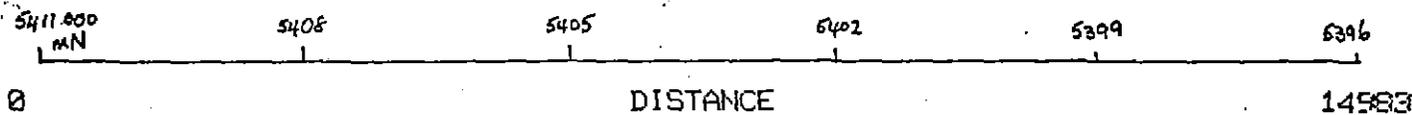
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 TELEPHONE: (002) 24 0319

569139

Nominal easting: 421250 ME



G = granite position
 current granite model

MAGNETIC DEPTH ESTIMATE PLOT

B: D9L5550
 MAGNETIC SOURCE DEPTHS REL 900M LINE 5550 MOINA

NW SE

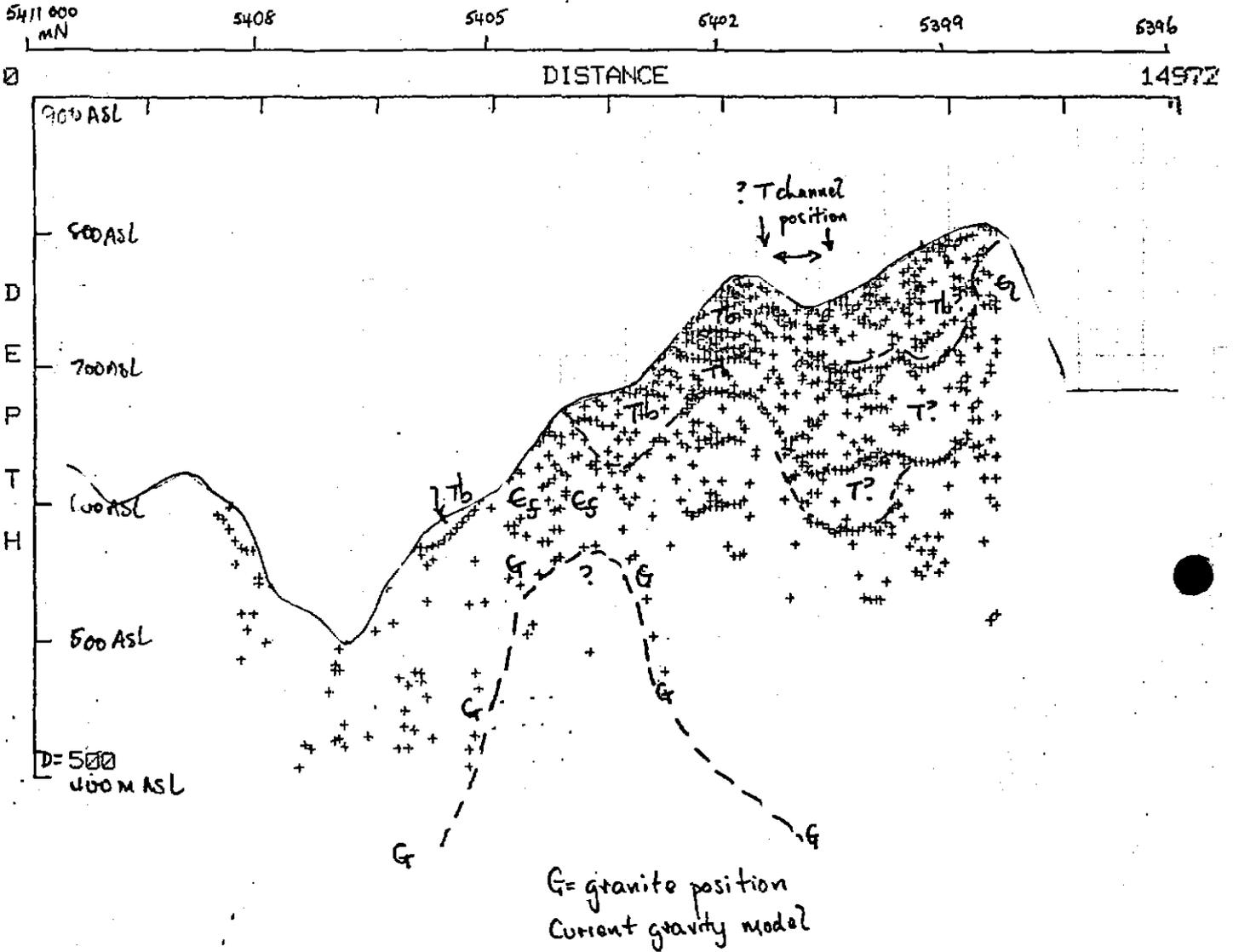
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569190

Nominal easting: 421 750 ME



MAGNETIC DEPTH ESTIMATE PLOT

B: D9L5570
 MAGNETIC SOURCE DEPTHS REL 900 M LINE 5570 MOINA

Nov 88

LEAMAN GEOPHYSICS

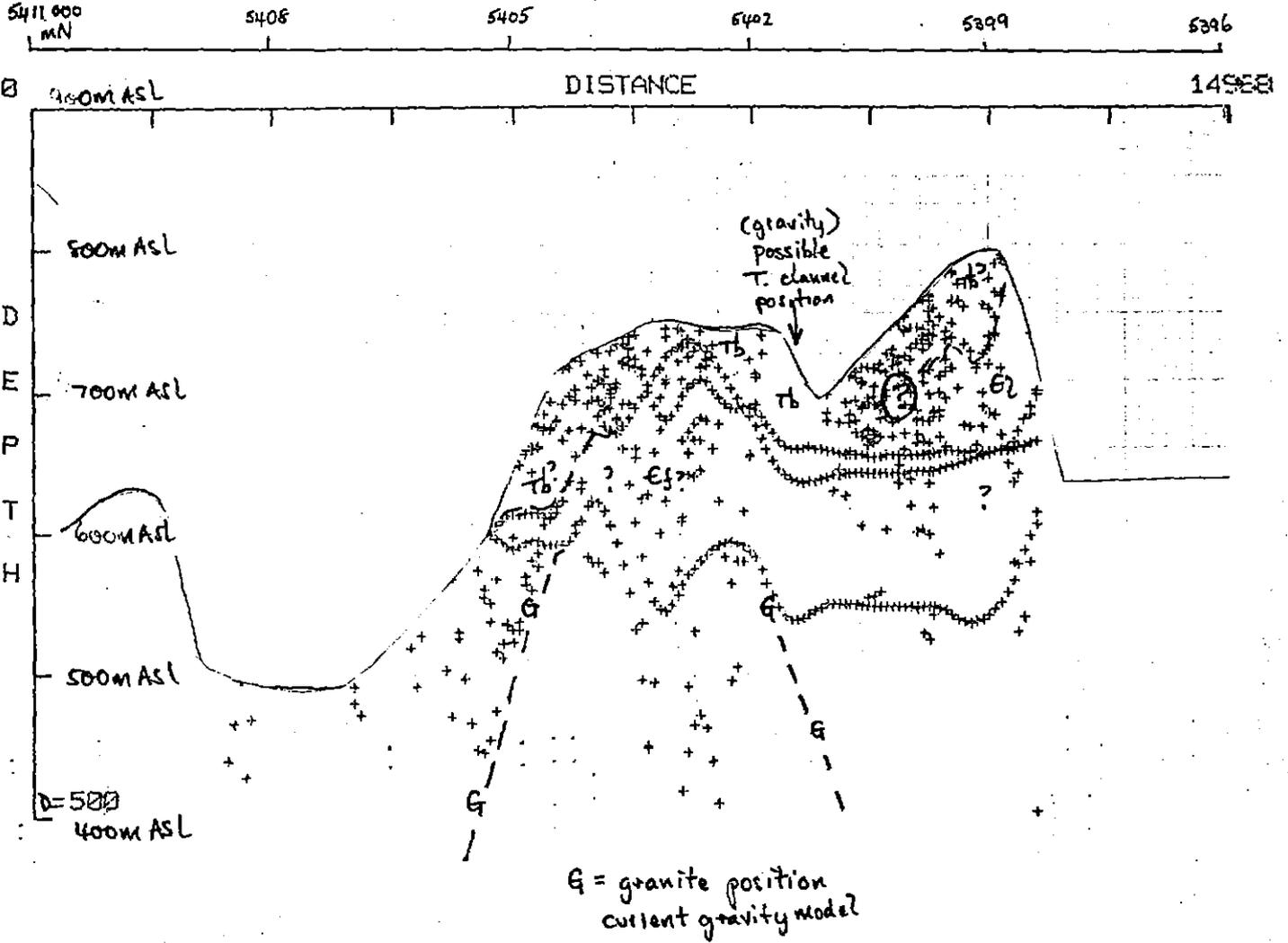
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195

569191

Nominal easting: 422 250 mE



MAGNETIC DEPTH ESTIMATE PLOT

B: D9L5590

MAGNETIC SOURCE DEPTHS REL 900M LINE 5590 MOINA

Nov 88

FIGURE 24

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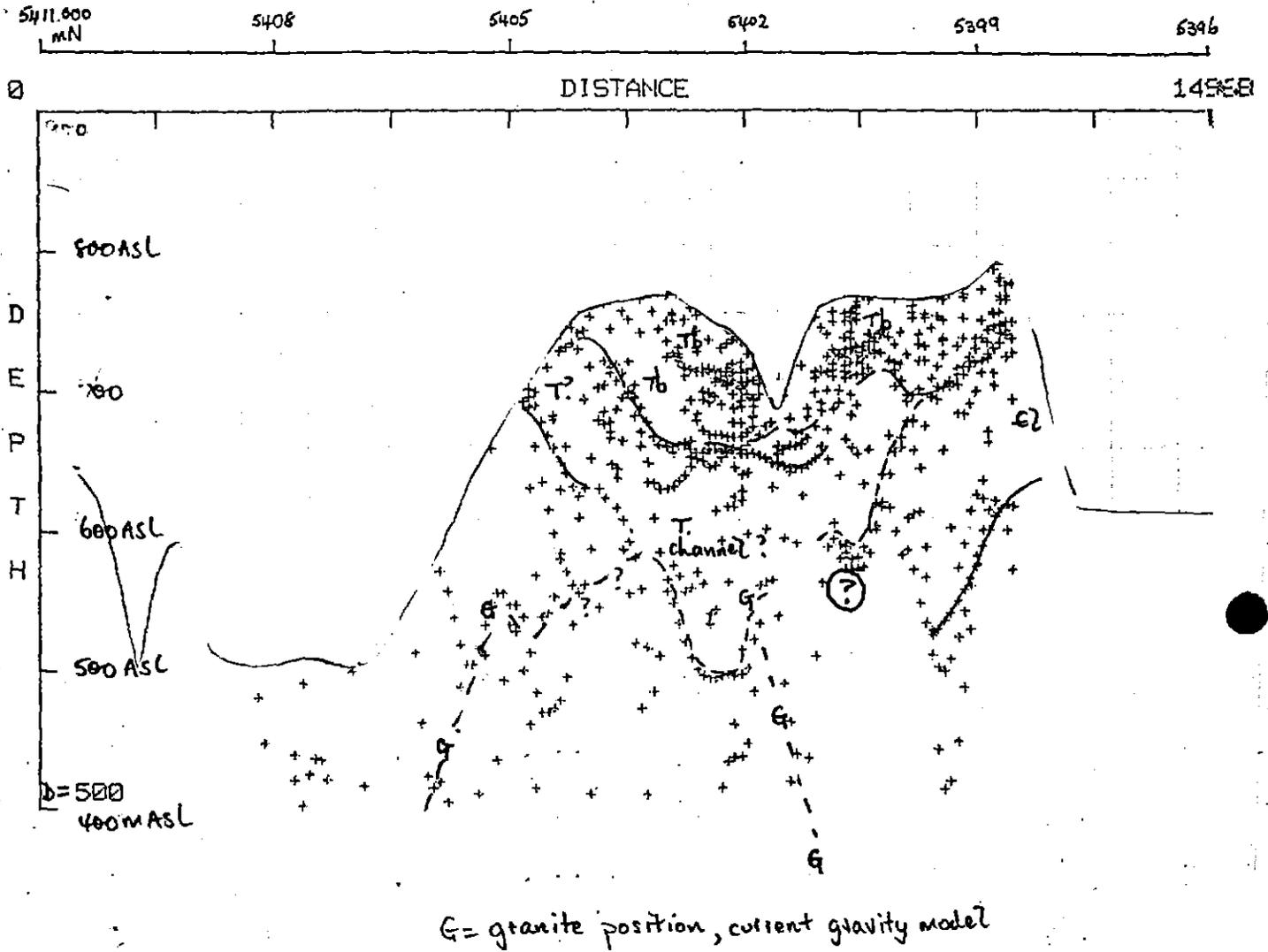
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TELEPHONE: (002) 24 0319

194

569192

Nominal easting: 422750 ME



MAGNETIC DEPTH ESTIMATE PLOT

B:D9L5610

MAGNETIC SOURCE DEPTHS REL 900M LINE 5610 MOINA

Nov 88

FIGURE 25

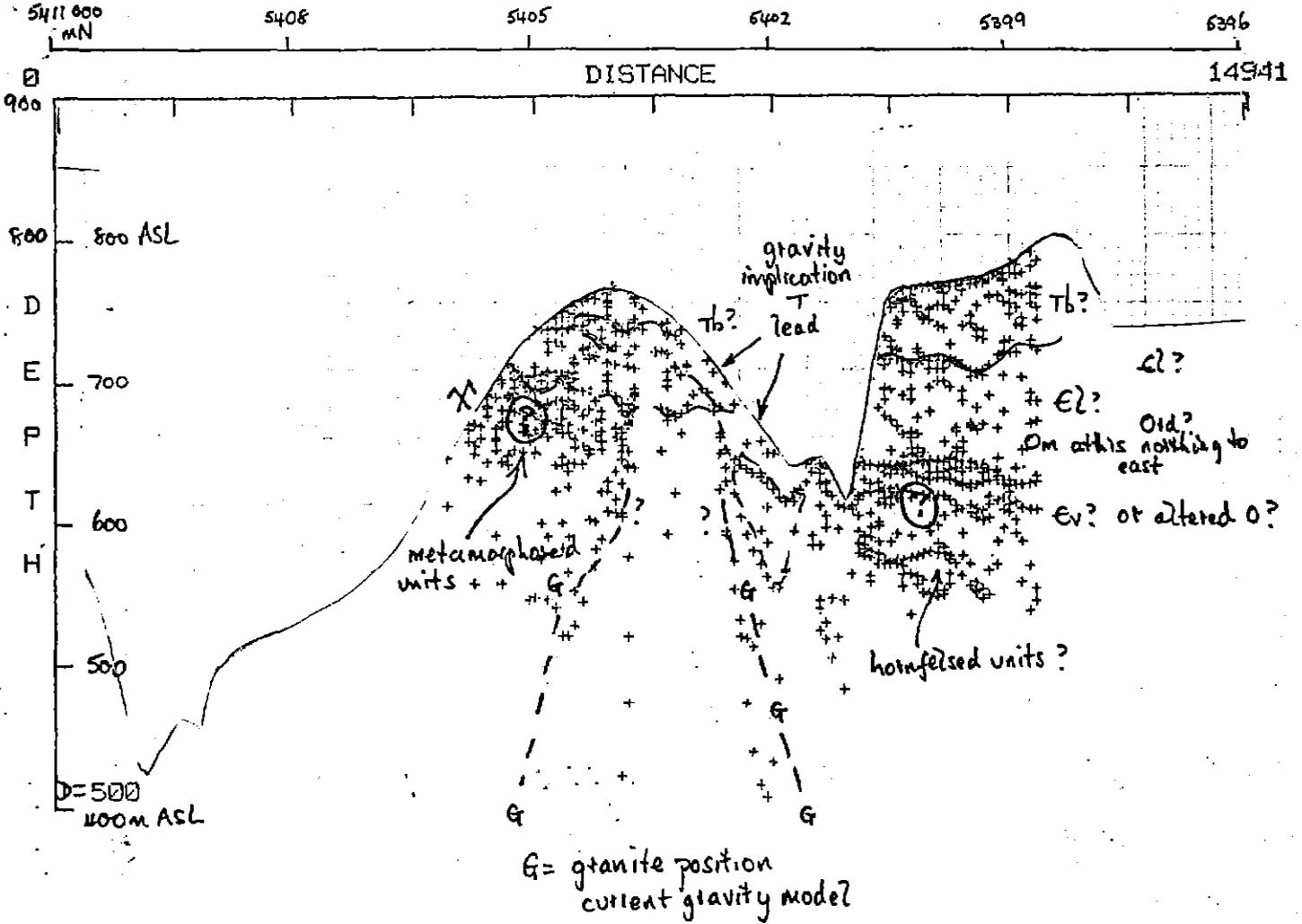
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569193

Nominal easting: 423250 mE



MAGNETIC DEPTH ESTIMATE PLOT

B:D9L5630

MAGNETIC SOURCE DEPTHS REL 980 M LINE 5630 MOINA

Nov 88

FIGURE 26

196

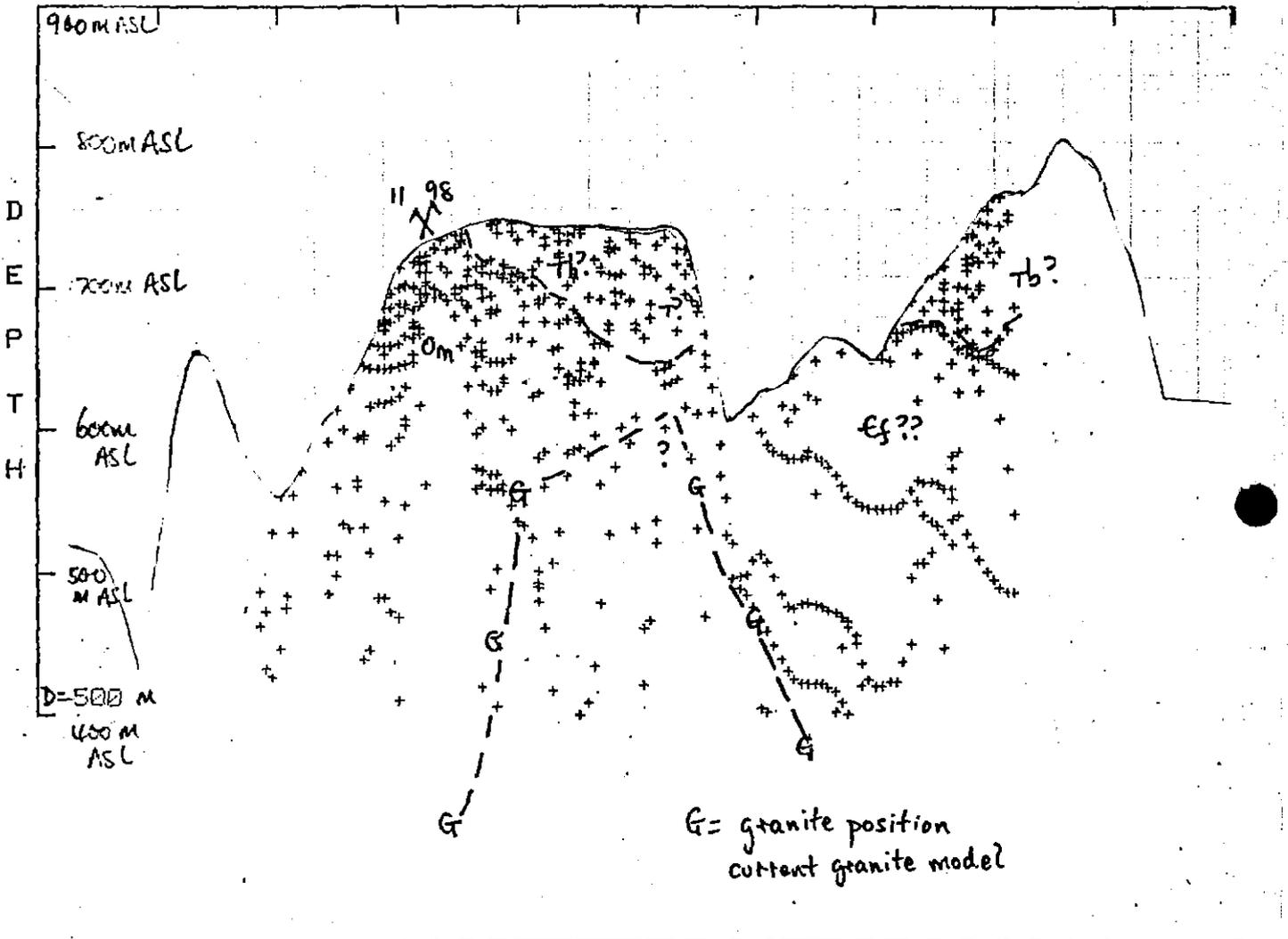
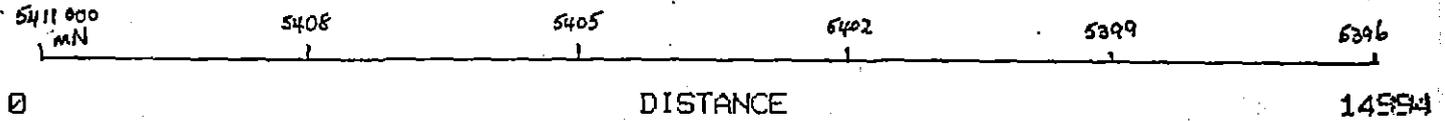
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Specialties: Gravity, Magnetics, Seismic Methods

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All Correspondence to:
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TELEPHONE: (002) 24 0319

569194

Nominal casting: 423 750 mE



G = granite position
current granite model

MAGNETIC DEPTH ESTIMATE PLOT

B: D9L5650

MAGNETIC SOURCE DEPTHS REL 900 M LINE 5650 MOINA

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Hobart, Tasmania 7001

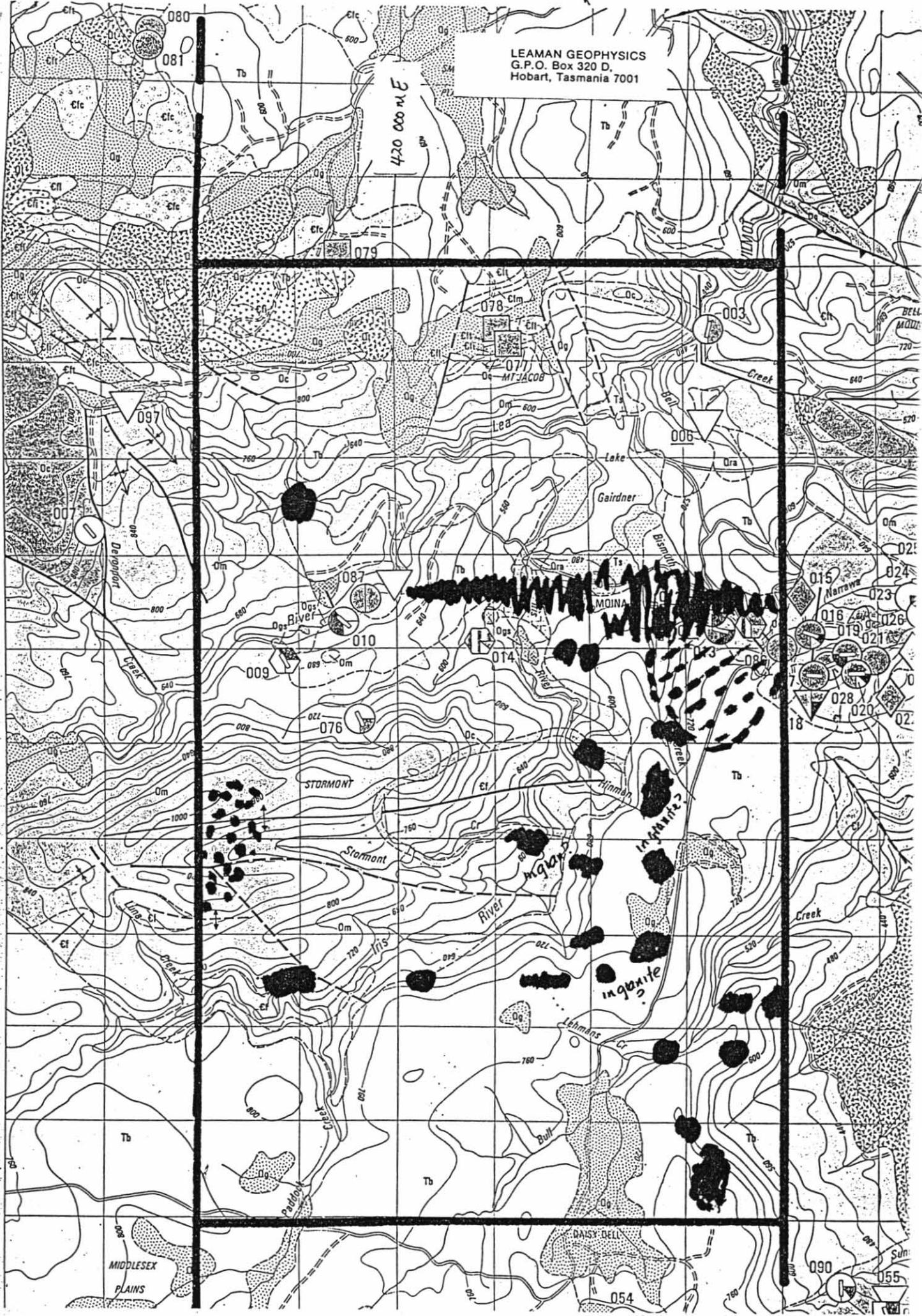
420 000 M E

410000mN

41° 30'

100000mN

99



SUMMARY OF POTENTIAL TARGETS AND ANOMALOUS AREAS
MOINA-DAISY DELL AREA

FIGURE 28

569195

198

569196

REPORT 5 - GRAVITY DATA: ANALYSIS 418-42400mE

135

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569197

GRAVITY AND MAGNETIC EVALUATION MOINA REGION

5. GRAVITY DATA: ANALYSIS
418 - 424 000 ME

for
RGC EXPLORATION PTY LTD

by
Dr. D.E. Leaman

December 1988

MOINA5

SUMMARY

Interpretation of the region between Stormont and exposure of the Dolcoath Granite near Cethana (including Moina and Daisy Dell) has been refined. This represents the most recent stage of an evolutionary process based on preliminary magnetic-gravity interpretation and more detailed magnetic analysis.

Irregular spine rib forms along the granite margin suggested by basic work have been confirmed. Much of the mineralisation near Moina is related to such marginal irregularities. A roof spine suggested by magnetic analysis has also been confirmed and Tertiary rocks between Moina and Daisy Dell may locally overlie granite bedrock.

Although uncontrolled magnetic interpretation has been unable to uniquely define the form of basalt cover or the scale of the Tertiary section in general the firmest suggestions have been compiled into two complex limiting models and tested gravimetrically. These have shown that the depth scale, for the entire section in general and leads/channels in particular, indicated by magnetic work is of the right order of magnitude and that only one significant lead is present. The Tertiary rocks generally form only a resistant, remnant hill capping and are quite thin. The defined lead extends east-west across the Daisy Dell area and previously emptied into the Forth River near the heart of the present Lake Cethana. There is no north-south lead or tributary connection between the materials at Moina and Daisy Dell.

Densities implied for the Tertiary section as a whole (2.3 t/cu m) suggest predominance of sediments or decomposed basalt. The lead system is up to 300 m deep, depending on the surface topography, but is relatively narrow. Most Tertiary cover is much less than 100 m thick.

Mineralised sites are clearly related to angularities in granite form although the present work has approached the limits of resolution of the method on the present data set for this area. There is now a need for provision of controlling information - in terms of Tertiary materials, proportions and scale; granite depth; country rock densities and test of anomalous zones - before any extension of analysis or infill of coverage. The implications and indications of the present work should be reviewed following a drilling programme of this essentially Tertiary-covered region.

INTRODUCTION

Previous staged work using gravity and magnetic methods in the Moina region of NW Tasmania has been completed and reported separately.

Report #1: initial magnetics study

Report #2: initial gravity study

Report #3: integration of initial studies

Report #4: detailed magnetic analysis of the Moina-Daisy Dell area.

Throughout this report such previous work has been referenced by a report number (e.g., #3) and the complete description of the source appears in the references under Leaman (1988 a, b, c or d).

The analysis described in this report was built upon the foundation provided by previous studies and does not stand alone. It represents refinement rather than generation and completes a review of the area between Moina, Stormont and Daisy Dell by testing the various suggestions and implications of previous reports. The area considered is shown in Figures 1 and 2.

In particular, the following issues have been examined.

- a) the existence of granite margin ribs east of Moina and south east of Daisy Dell (suggested in reports #2, #3).
- b) the presence of a shallow granite cap immediately west of the Cethana exposure but beneath Tertiary cover (#4).
- c) the existence of a possible granite roof rise beneath the east ridge of Stormont (#4).
- d) the presence, location and scale of any Tertiary deep lead systems.
- e) whether any Tertiary materials were deposited upon exposed granite indicating prior removal of roof or host rocks

The analysis reported represents tests and review of these issues within the limits of resolution of the gravity method using the current data base and an uncontrolled view of complex geology.

ISSUES FOR CURRENT MODELS

Primary conclusions relating to granite form and mineralisation from previous work were summarised on Map 3 (report £2) and Figure 28 (£4 - reproduced here as Figure 2). Figure 2 indicates the location of magnetic features which cannot be simply or directly explained. Most sites lie within a region in which the granite roof is very shallow or in which the margin plunges steeply and irregularly. Sites disguised by Tertiary cover lie near a nearly north-south axis or margin in the roof. The Moina mineralised axis lies along the projection of the steep east-west trending northern face of the granite.

These relationships can be recognised in Figure 3 (compare Figures 2 and 3) which presents the new granite model (number 7); a revision based largely on implications discussed in reports £2 and £3.

Report £4 suggested that the roof of the granite might be extremely irregular and very shallow and may locally form basement for Tertiary cover. The revised model makes some provision for such a pinnacle (Figure 3).

The essential bases for model 7 were defined in report £2 where the scope of the "next" iteration was outlined on Map 3. Variations were principally indicated near Moina and south of Daisy Dell and imply presence of marked ribs on the granite margin. Subsequent collation of existing drilling information which is largely restricted to the Moina area, and especially holes ML1 and ML2, for granite encounters indicate extreme variability between Bismuth Creek and the Cradle Mountain Road near 423200 mE, 5406000 mN. While the precise values were not included in the revision the structure is represented. (The placement of test profiles and resolution of current data are not sensitive to such fine detail in a very small part of the area and the model simply generalises the information).

The possibility of a subsidiary cupola beneath Stormont, but some 400 m deeper, has also been incorporated in the manner suggested by analysis reported in £2 and £4.

That portion of the new model relevant to the present discussion is shown in Figure 3.

The revised model was tested using all relevant original profiles as reported in £2 with the addition of four new profiles specifically selected for review of the structural issues within the Moina-Daisy Dell area (profiles 14 to 17). The location of all profiles is shown in Figures 3 and 4.

Model 7 is a relatively minor variant of the previous granite model which was shown to be generally consistent with other structural information and magnetic skin effects (see £3). It has been demonstrated that most magnetic anomalies are caused by

thermal metamorphic effects within about 700 to 1000 m of the granite contact.

Magnetic analysis (especially reports £1 and £4) has also indicated possible forms and depths for sources within Tertiary deposits. These suggest that the Tertiary cover (basalt with or without sediment) is generally quite thin (<50 m) but may locally be very thick (e.g., up to 300 m, Figure 12, £3).

Two Tertiary models were prepared and tested. The first considered the possible worst case implied by the magnetic source studies. No specific details of model 1 have been reproduced since these were shown to generally overstate the responses observed at any reasonable density contrast. Figure 12, however, does include a comparative profile. Model 2, shown in most figures, represents a major revision which tested the possibility of more constricted leads and channelling while maintaining the same overall relief and thickness. This may be termed the conservative option implied by source depth analysis.

In the absence of ANY control on Tertiary sequences; at least four holes would be required for confident re-interpretation and re-evaluation of material presented in reports £1 and £4, no judgments can be made magnetically about these concepts.

The viability, however, of a primary gravity assessment was provided in Figure 12 of report £3.

The Tertiary models are complex. This reflects the fact that, unlike the "simple" convex form of the granite, the material is exposed, is exposed very close to the modelling reference level, and has a closed form with irregular upper and lower surfaces. The upper surface is defined by topography and exposure limits. The lower surface has been inferred from the magnetic source studies. An example of model complexity is indicated in Figure 4. Half of this model is identical to model 1 (the shallow portion). The inset shows, with some of the model construction lines, most of the model which the map presents the critical portion of the lower surface free of confusing upper surface structure contours.

Model 1 differed primarily in its spread of the 600 and 650 m contours and the inclusion of a wider channel west of Middlesex Plains, a deeper channel south of Paddock Creek and a further, shallower tributary channel north of Daisy Dell toward Brampton Creek. A vestige of this latter tributary remains in the 650 m contour at 423 000 E.

The models thus provide a test of the scale of Tertiary erosion and deposition and enable basic definition of any drainage patterns. The important corollary to such examination lies in provision of information about those areas in which the granite remains roofed by Palaeozoic rocks beneath the Tertiary cover.

DISCUSSION

Each of the relevant or selected profiles is discussed below. The criteria used for evaluation of, or acceptance of, any solution remain as described in report #2. The required shift parameters for this data set and these structures is of the order of 29.5 to 30 mGal. This 0.5 mGal range is equivalent to the probable precision of the data set and the regional separation. Any solution in this range, based on consistent assumptions and geological concept or control, is acceptable - provided it matches the observed data.

Profile 1 (Figures 5 and 6).

Figure 5 may be compared with Figure 3 (#2) to show there is negligible change in granite contribution along this profile from change of model. Figure 6 shows that the Tertiary materials do control large parts of the profile but the model may overstate the width of the channel.

A major problem with analysis of the Tertiary model relates to the proportion of basalt and sediment and the value of the contrast value to be applied.

Consideration of both models 1 and 2 indicates that a contrast of -0.4 t/cu m against Palaeozoic country rocks is reasonable and probable. This would imply that the proportion of basalt may amount to no more than half the section and may be as low as one third - or that much of the basalt is very deeply weathered. Control drilling will resolve this issue.

In some case more basalt and less sediment could bias the result. In the case of profile 1 the amount of Tertiary is overstated on the northern side of the channel and this could either mean more basalt, less material overall or a narrower channel. Even so these comments apply only to the region north of 5401 000 mN; the remainder of the model is satisfactory.

Profile 2 (Figure 7)

Comparison of Figure 7 with Figure 4 (#2) shows that the deficiency north of 5406 000 N has not been adequately refined and the steep granite margin may be some 300 m south of the present inferred position. The Tertiary response, however, is adequate but slightly overstated.

Profile 5 (Figure 8)

Granite model 7, incorporating a partial component due to more granite within Stormont, is a marginal improvement upon previous models. The current Tertiary models do not impinge on this profile but a small Tertiary effect is evident for the rocks at Moina.

Profile 6 (Figures 9 and 10)

An indication of the various components of the gravity field considered (regional granites and Tertiary) is shown in Figure 9.

Profile 6 has been the subject of previous extended review (e.g., Figure 8 of report £2, Figures 11, 12 of £3) but granite model 7 does provide an improved view south west of profile 2. As suggested in Figure 12 of £3, the addition of a Tertiary component is required to fit the curves. Figure 10 shows that the general depth scale and contrast employed is reasonable and any conflict at profile 2 relates to excessive channel width.

Profile 7 (Figure 11)

Comparison with Figure 9 (£2) shows that the interaction of the granite and Tertiary volumes generates problems. The general model fit (without Tertiary) is not as good as the previous model and the south east face of the granite must plunge more steeply. Coupled with this effect the introduction of any Tertiary component disturbs any fit. Other profiles show that the Tertiary section is present and thick; thus either basalts locally predominate or the northern side of the channel is up to 500 m further south.

Profile 8 (Figure 12)

Granite model 7 has induced no significant change on the raw profile match (compare Figure 10, £2) and thus it may be concluded, in the absence of useful and widespread random control, that the overall limit of granite resolution by gravity modelling using the present data and profile set has been reached. Note that profile 8 makes general provision for the the Shepherd and Murphy spine-rib indicated in present drilling around Moina.

The comparison of Tertiary models, however, shows that model 1 with its wider western channel extension was a better representation than model 2 in the far west of the area. Model 2 presents the narrowest and shallowest possible channel west of 418 000 mE.

Profile 10 (Figure 13)

Gravity model 7 is an overall improvement but even so does imply that more granite is required within the bulk of Stormont presuming that the Ordovician rocks are contrast neutral (i.e., fall close to the Bouguer density). This assumption must be checked. If true, it might imply an additional 300 m of local relief on a cupola within the Stormont region and this would certainly be consistent with the noisy magnetic source character of eastern Stormont and may well explain Stormont mineralisation. The model is capable of revision in this region if the presumption is supported.

The Tertiary part of the model is satisfactory.

Profile 11 (Figure 14)

Granite model 7, incorporating the Stormont cupola, has improved this profile fit but the addition of Tertiary rocks resolves most other deficiencies. Model 2 is clearly viable in the region of this profile.

The additional infill profiles (14 to 17, Figures 15 to 18) prepared for the present analysis verify the general validity of granite model 7. This is apparent in the Figures.

Comparison of profiles 14 and 15 (Figures 15 and 16) which intersect in the same part of the lead system show that lateral changes in contrast must occur. Profile 14 resolves the required amplitude but profile 15 overstates it. The profile shift parameters are within 0.4 mGal of each other - the precision of the data - and this factor is not involved in the difference.

Profile 16, which presents a glancing aspect to the channel west of Daisy Dell indicates - as noted for profile 1 - that model 2 presents too wide a channel at Paddock Creek. The fit is excellent otherwise and demonstrates that no significant tributary extends northward from Daisy Dell.

Similar comments apply to profile 17 as made for profile 8.

CONCLUSIONS

1. Ribs can be resolved on the steep contacts of the Dolcoath Granite but the present model appears to offer the finest resolution of these pending a substantial augment in the data base and an increase in profile/interpretation density. The presence of irregularity in the region of the Shepherd and Murphy could be inferred without any knowledge provided by the history of the site or past drilling - and was.

Other ribs can be inferred near 421 000 E, 5405 000 N
422 000 , 5403 000
North Daisy Dell

Anomalous magnetic responses have been identified to the immediate east in every case.

2. The magnetic implication of a very shallow pinnacle to the granite west of its outcrop is supported gravimetrically but there is unlikely to be more than 70 to 100 m of roof cover and perhaps half of this could be Tertiary in age.
3. The magnetic implication of thermal alteration within the Stormont massif is also supported. While scope remains for revision of the present model within Stormont the crest of the implied cupola is up to 300 m deeper than the high pinnacle west of Dolcoath Hill. Even so its presence accounts for local mineralisation and other mineralisation may occur at moderate depth.
4. The general form of the magnetic source estimates for Tertiary rocks has also been verified. For much of their outcrop area the Tertiary rocks are a veneer and form a simple hill capping.
There is one major channel or lead and this extends E-W at about 5401 000 mN. Depending on surface elevation this may amount to 300 m of material. The lead defined was a tributary of the Forth River and indicates that basalts exposed on the slopes around Moira are part of a different flow and erosion regime.
5. Juxtaposition of the Tertiary and granite models shows that granite will form bedrock for the lead system north of Daisy Dell. Four anomalous magnetic features near the lead outlet to the present surface at 423500, 5402000 may not represent viable targets for mineralisation. All other anomalous sites remain worthy of investigation.
6. No exploration can be recommended along the lead axis except at the outfall near Bull Creek. Sampling in this region may show if Tertiary erosion has encountered any mineralised rocks.

RECOMMENDATIONS

1. No further analysis is recommended until some of the targets and structures reviewed and defined to date have been assessed by drilling.
While drilling should be directed a potential target zones a range of lithologies and structural aspects should be tested and the properties and thicknesses of the sequences encountered compiled. Nature of Tertiary sections and depth to granite are prime factors.
2. Density and susceptibility measurements should be collected for all materials encountered in drilling. No local values, with perhaps the exception of the granite, have been available for use in interpretations to date.
3. Mapping and sampling of the area around the lead outfall above Lake Cethana is advised. If basal Tertiary materials can be located these might indicate the presence of mineralised source rocks along the old valley system.
4. The Stormont area may repay some mapping and geochemistry even though the current models imply granite at moderate depth. Gold mineralisation often appears to be displaced several hundred metres from the granite margin and these circumstances may apply within Stormont.
5. The current interpretations, magnetic and gravity, should be reviewed upon completion of a primary drilling programme. A range of environments should be drilled and holes should not be grouped in one locality if satisfactory control is to be provided. Targets and concepts may limit distribution.

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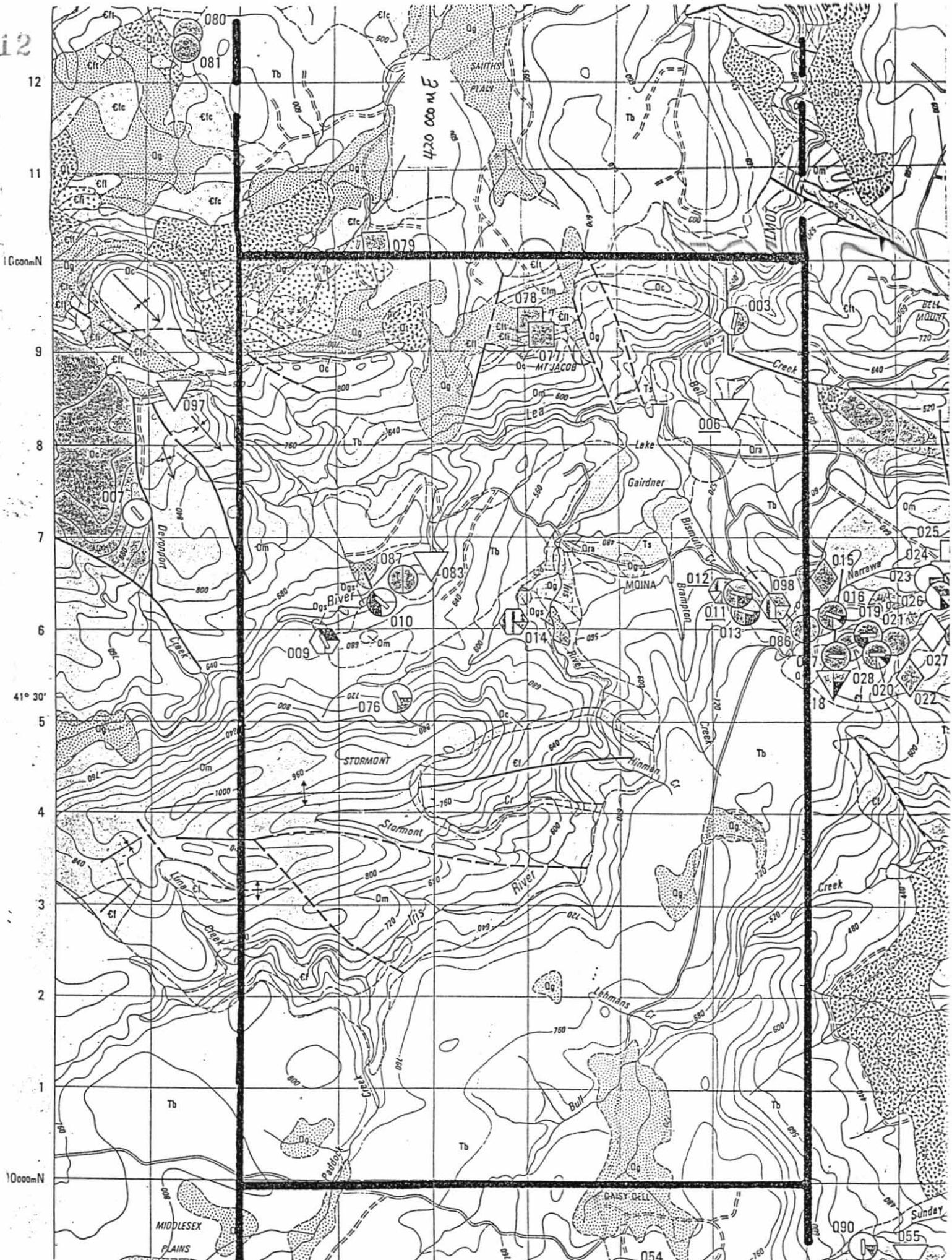
Leaman, D.E., 1988 d. Gravity and magnetic evaluation, Moina Region. 4. Magnetic data: analysis. 418-424 000 mE. Report, RGC Exploration, December.

Report submitted on behalf of
Leaman Geophysics
by

D. Leaman

Dr. D.E. Leaman, B.Sc., Ph.D.
M.Aus.I.M.M., M.M.I.C.A.

Dec 14, 1988

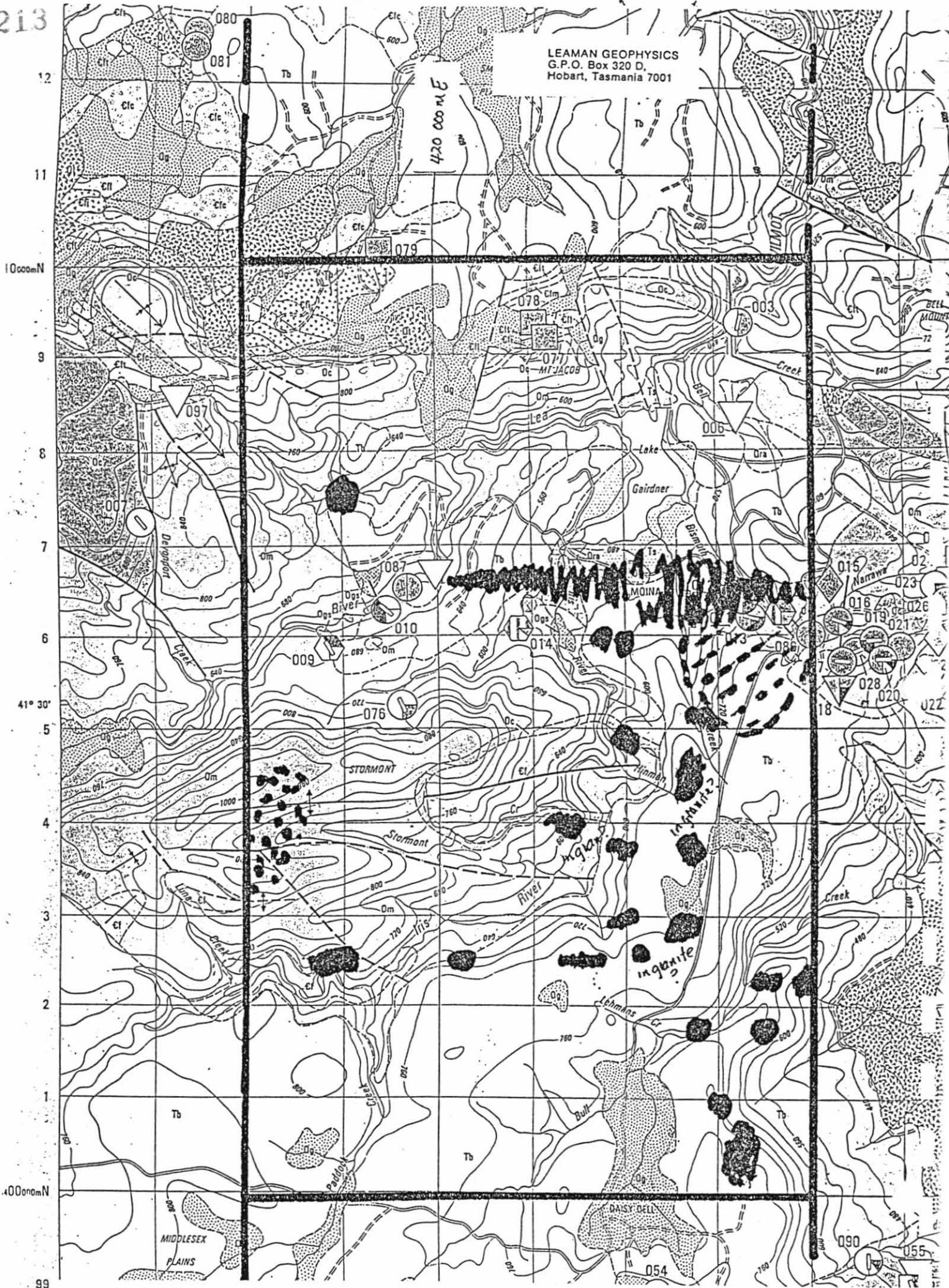


GEOLOGY AND MINERALISED SITES
(BAMFORD AND GREEN, 1988)

569210

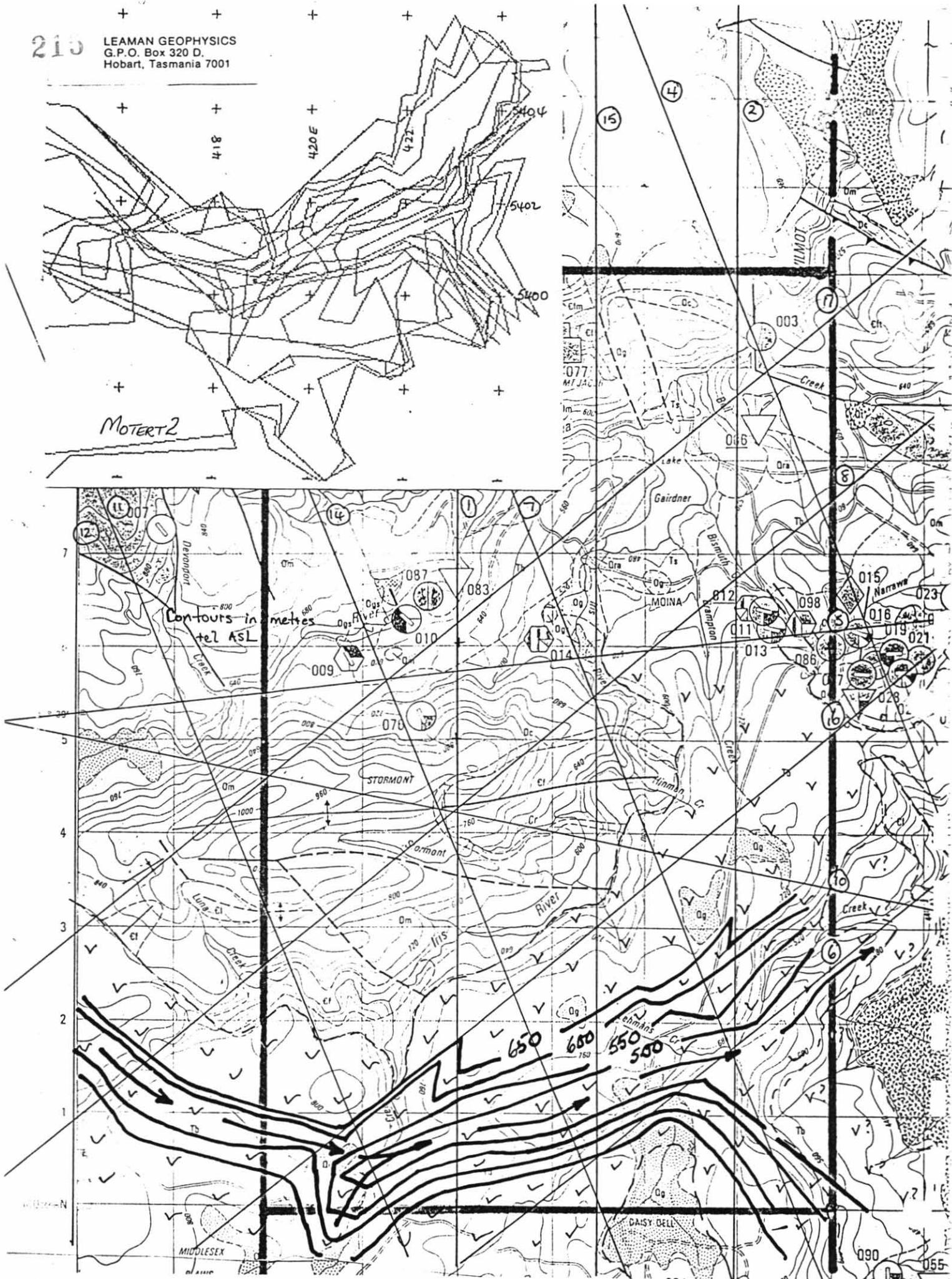
FIGURE 1

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SUMMARY OF POTENTIAL TARGETS AND ANOMALOUS AREAS
MOINA-DAISY DELL AREA

569211
FIGURE 2



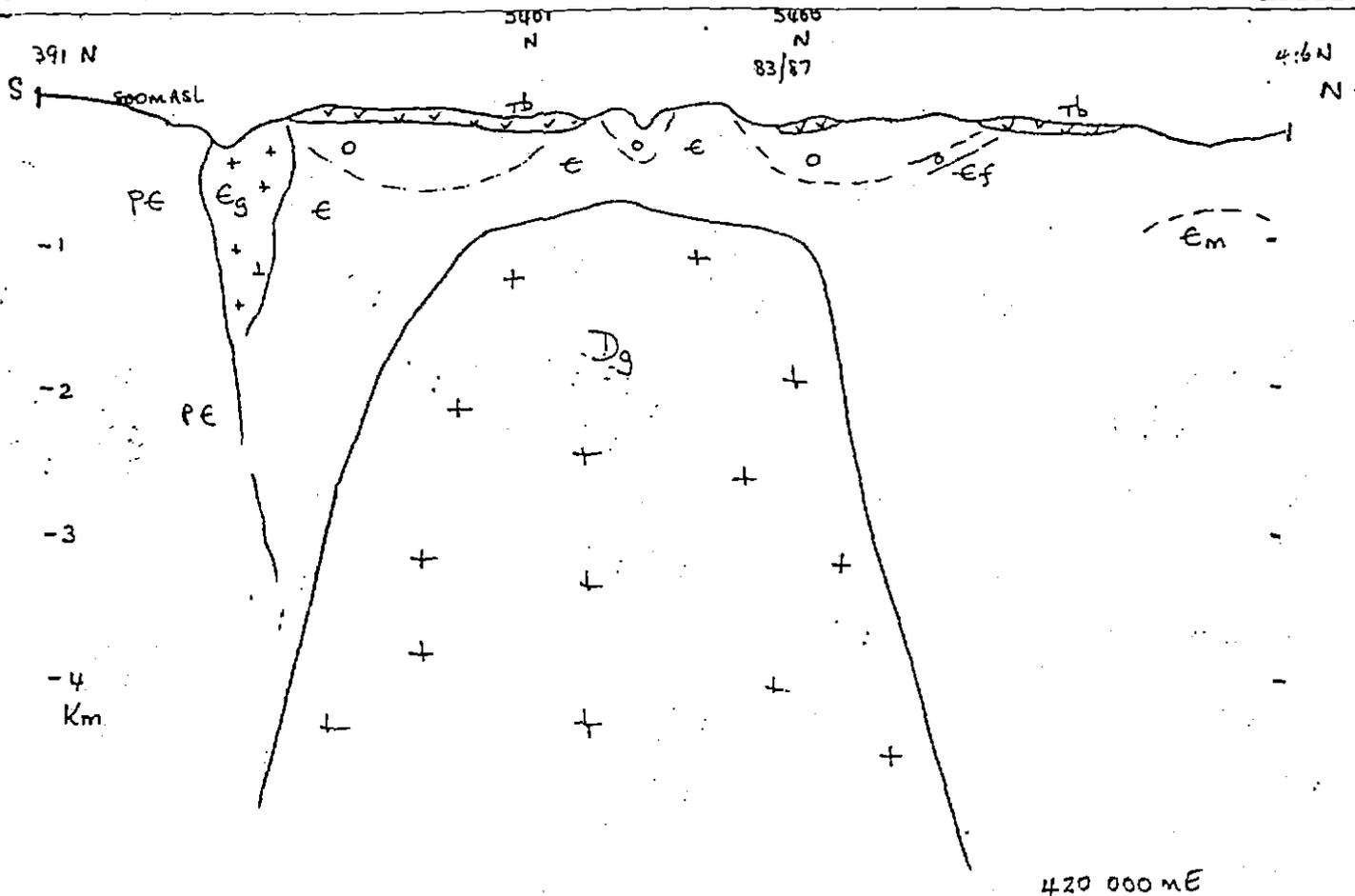
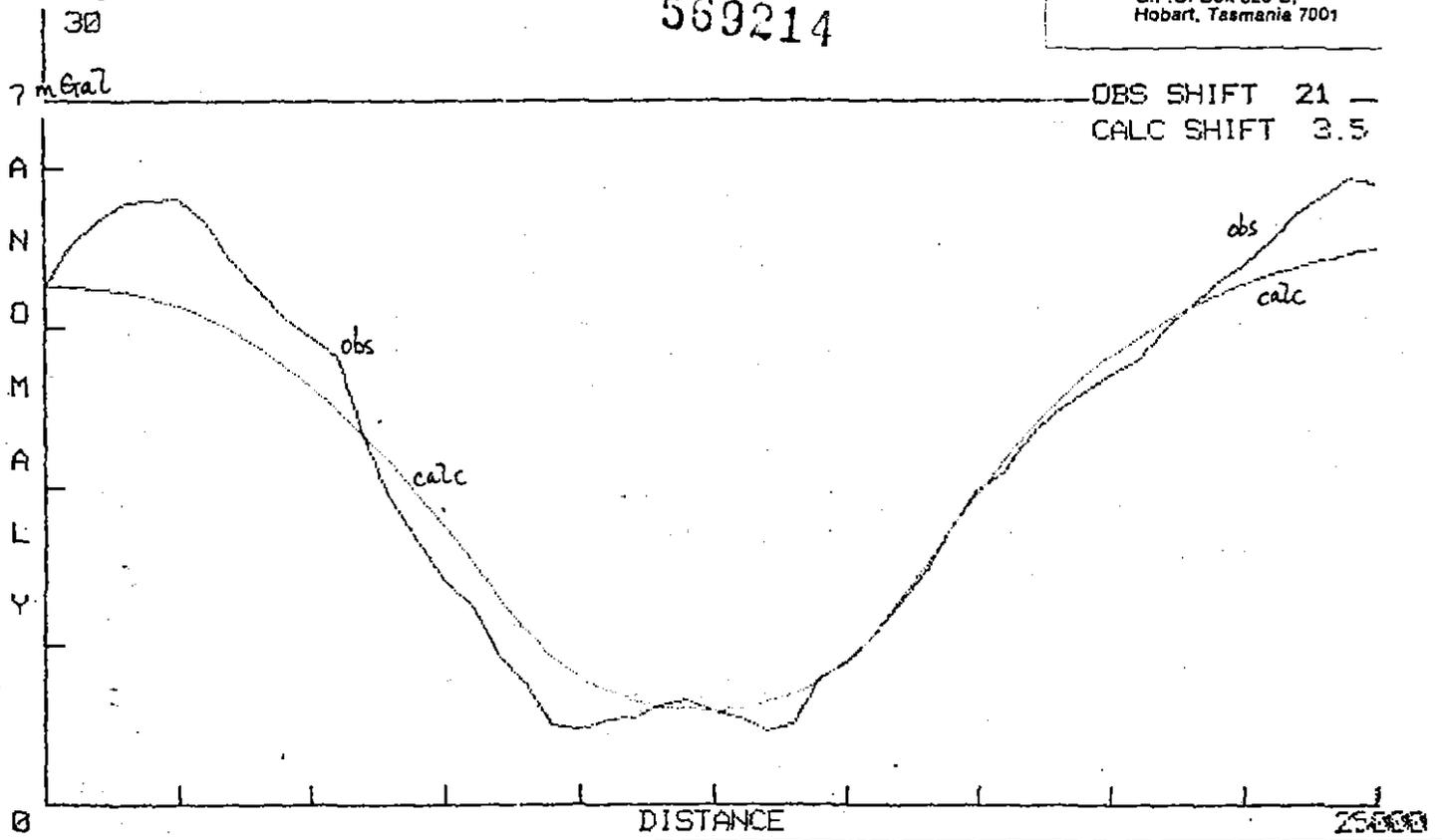
TERTIARY MODEL 2 - BASAL STRUCTURE CONTOURS
Full model inset

215

ZERO SHIFT 26.53055

569214

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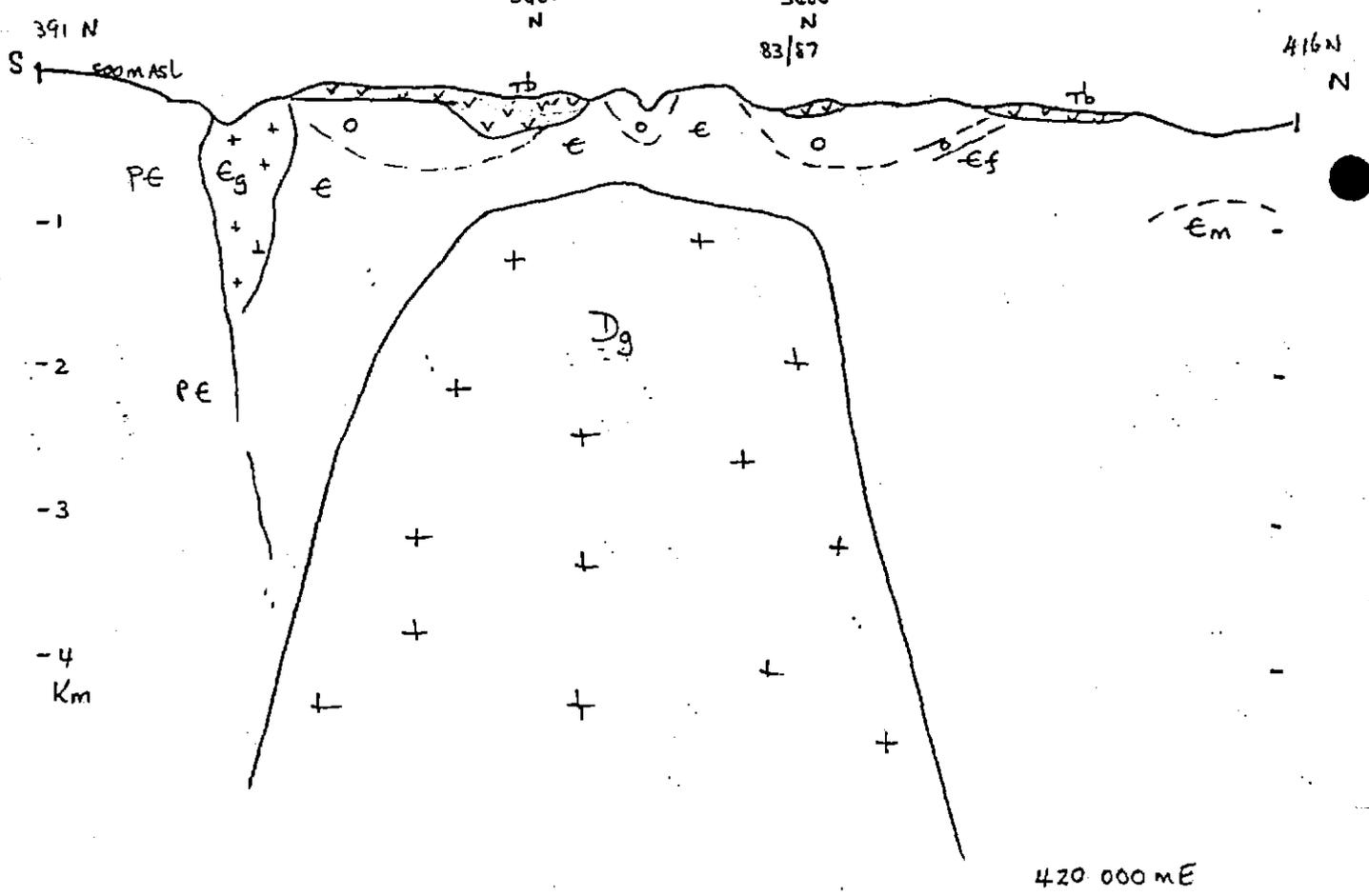
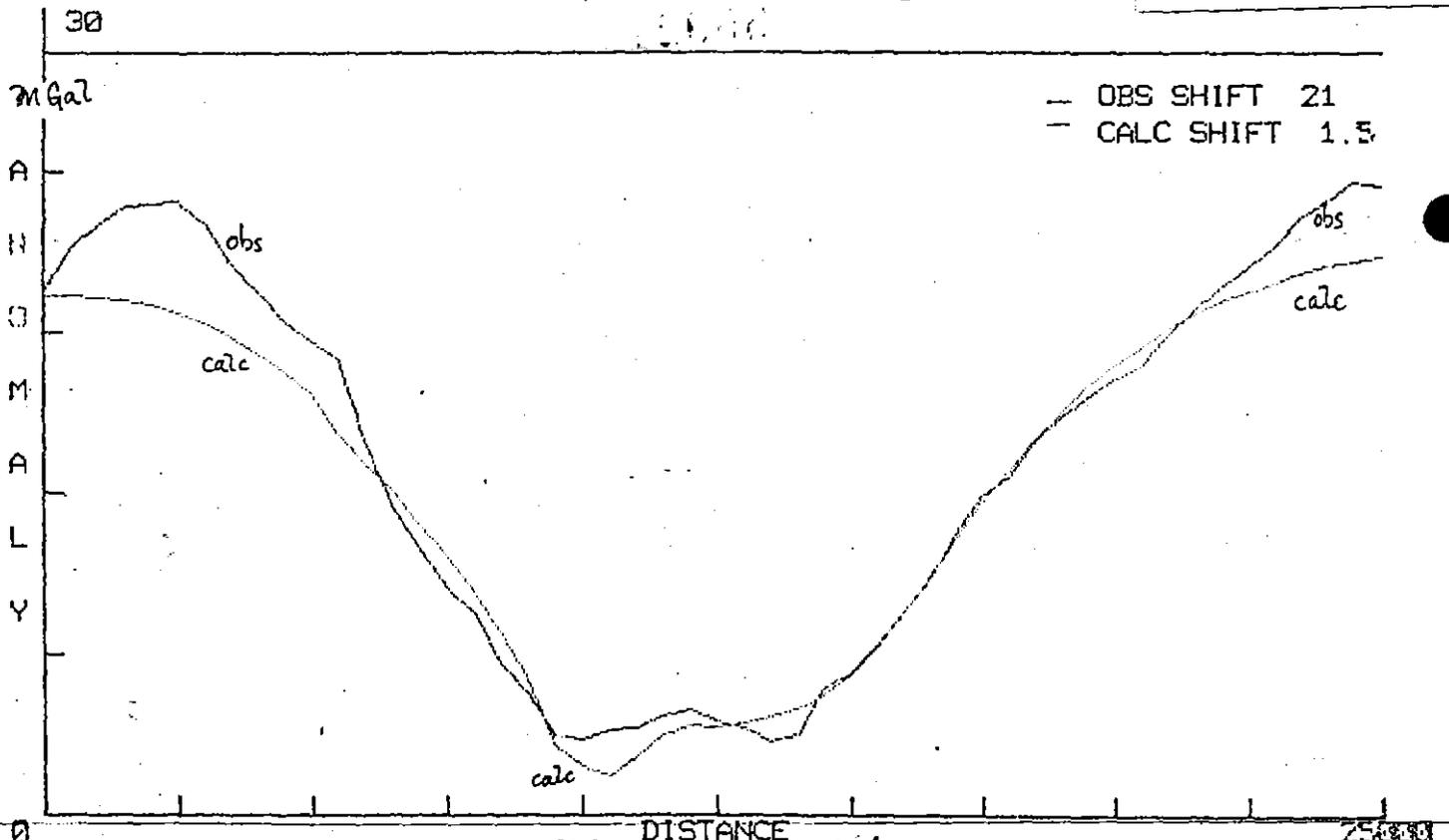


Version #5
Dec 1988

3D INTERPRETATION PROFILE 1 MOINA REGION

FIGURE 5

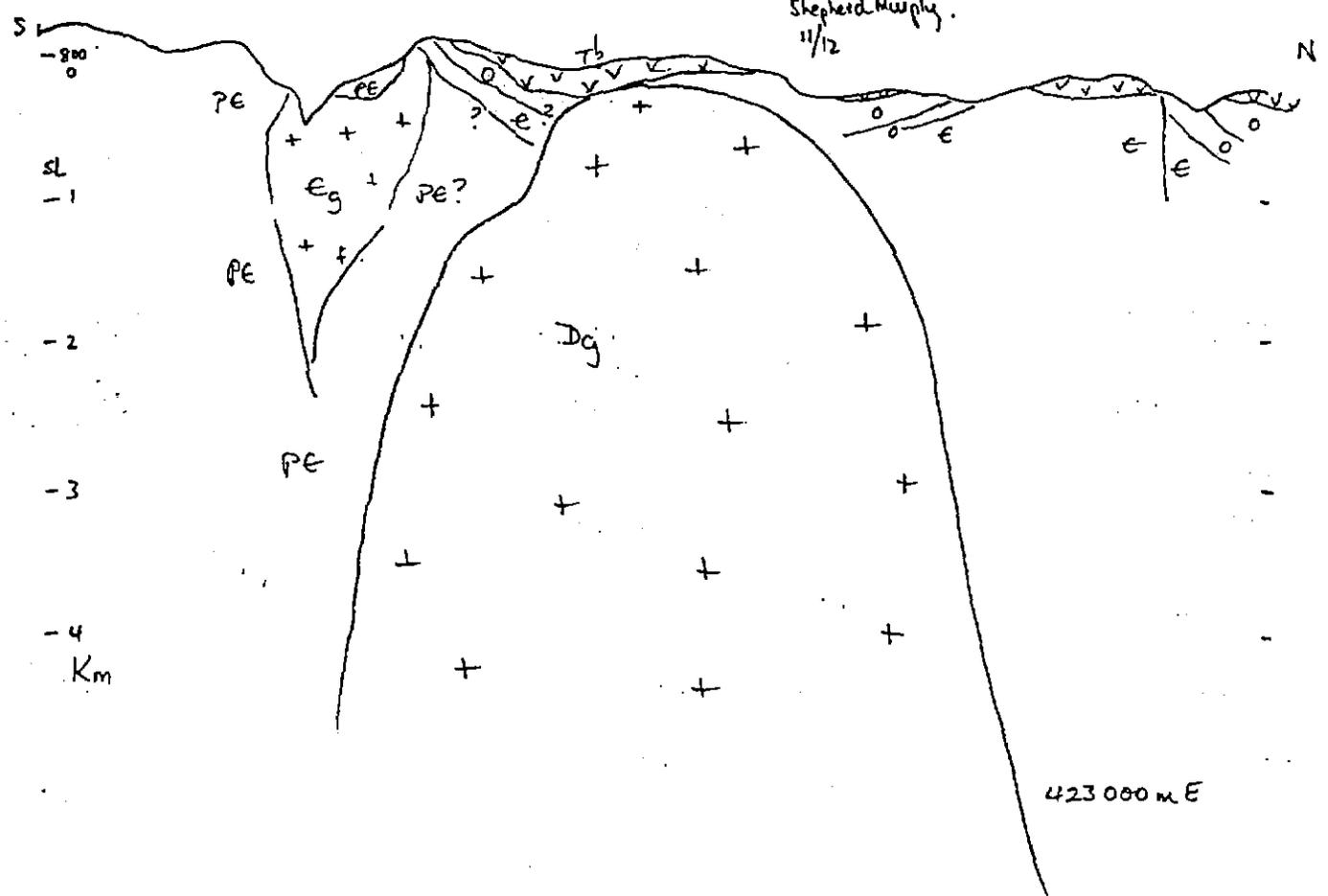
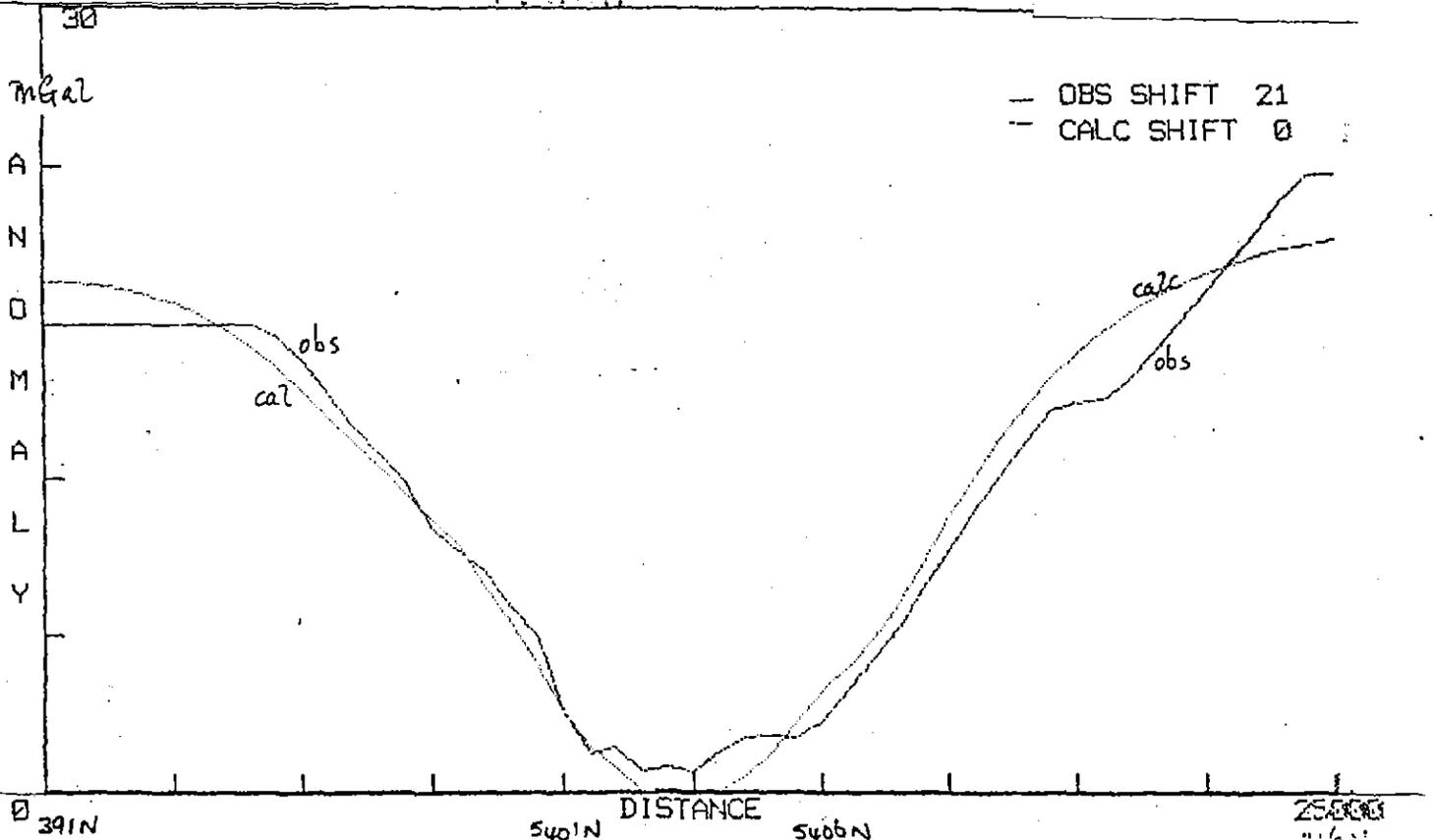
Model 7 (granite) . No Tertiary component



Version #5
Dec 1988

3D INTERPRETATION PROFILE 1 MOINA REGION FIGURE 6
Model 7 (granite) with Model 2 (Tertiary)

218



#5
Dec 1988

3D INTERPRETATION PROFILE 2 MOINA REGION

FIGURE 7

Model 7 (granite) with Model 2 (Tertiary)

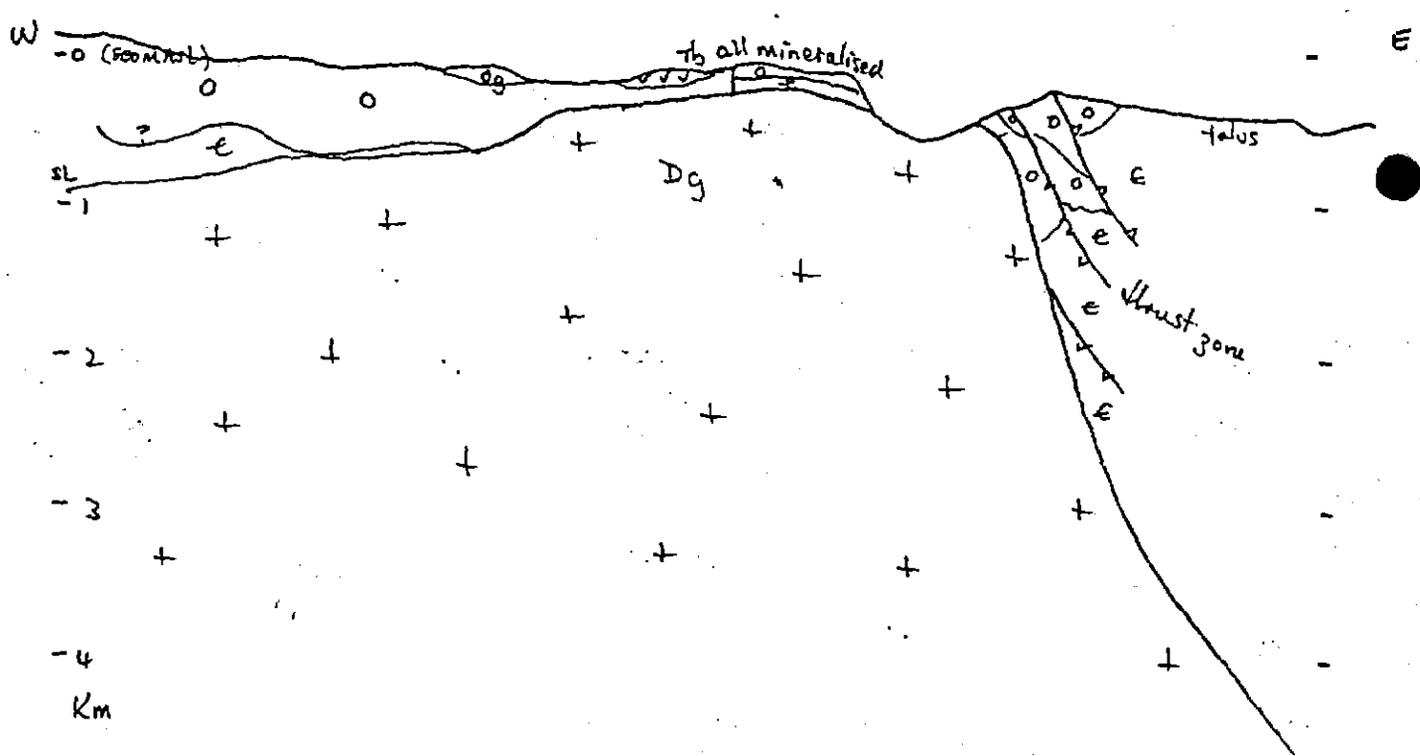
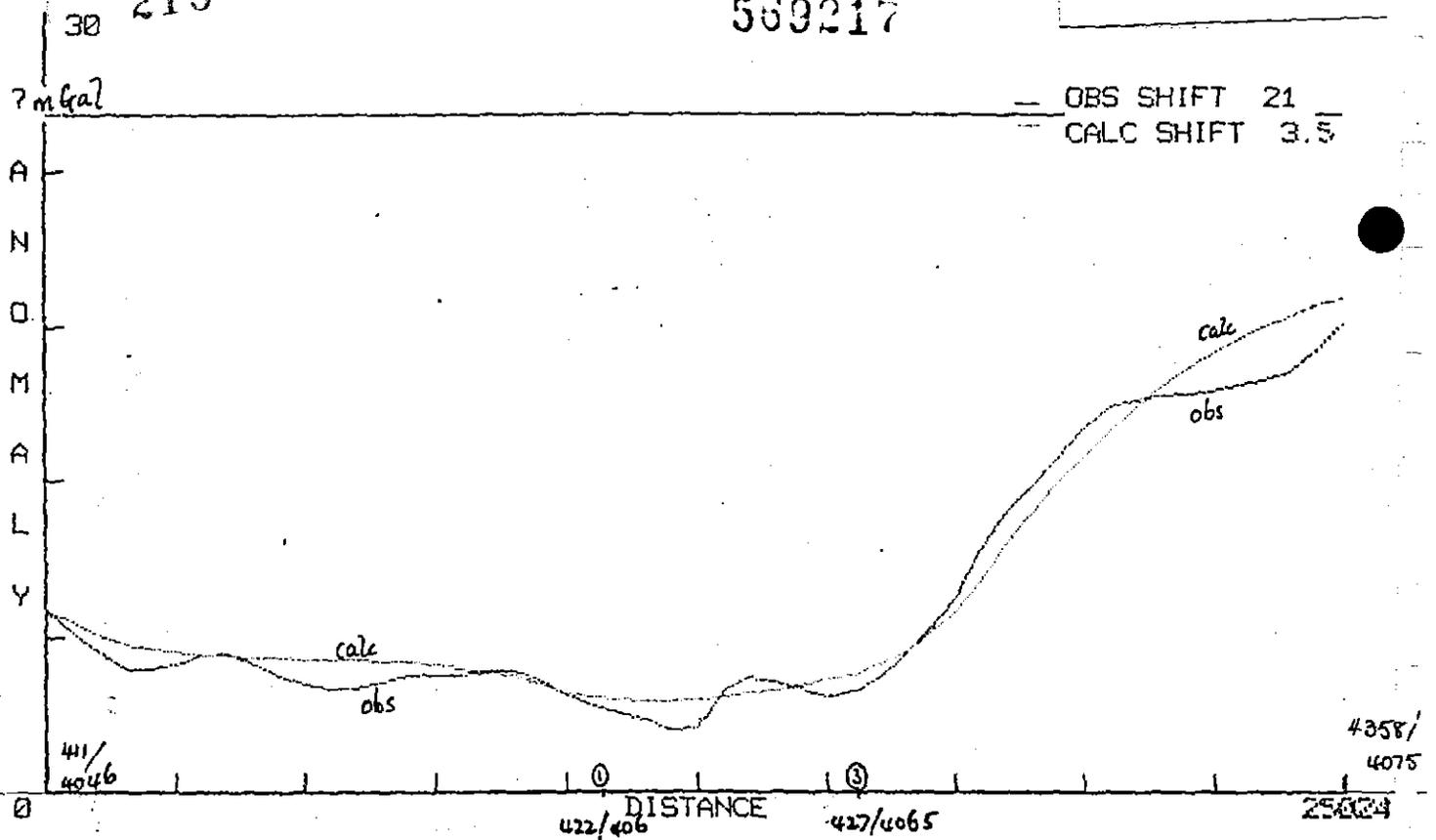
ZERO SHIFT 26.1167

219

15000

569217

LEAMAN GEOPHYSICS
G.P.O. Box 320 D,
Hobart, Tasmania 7001



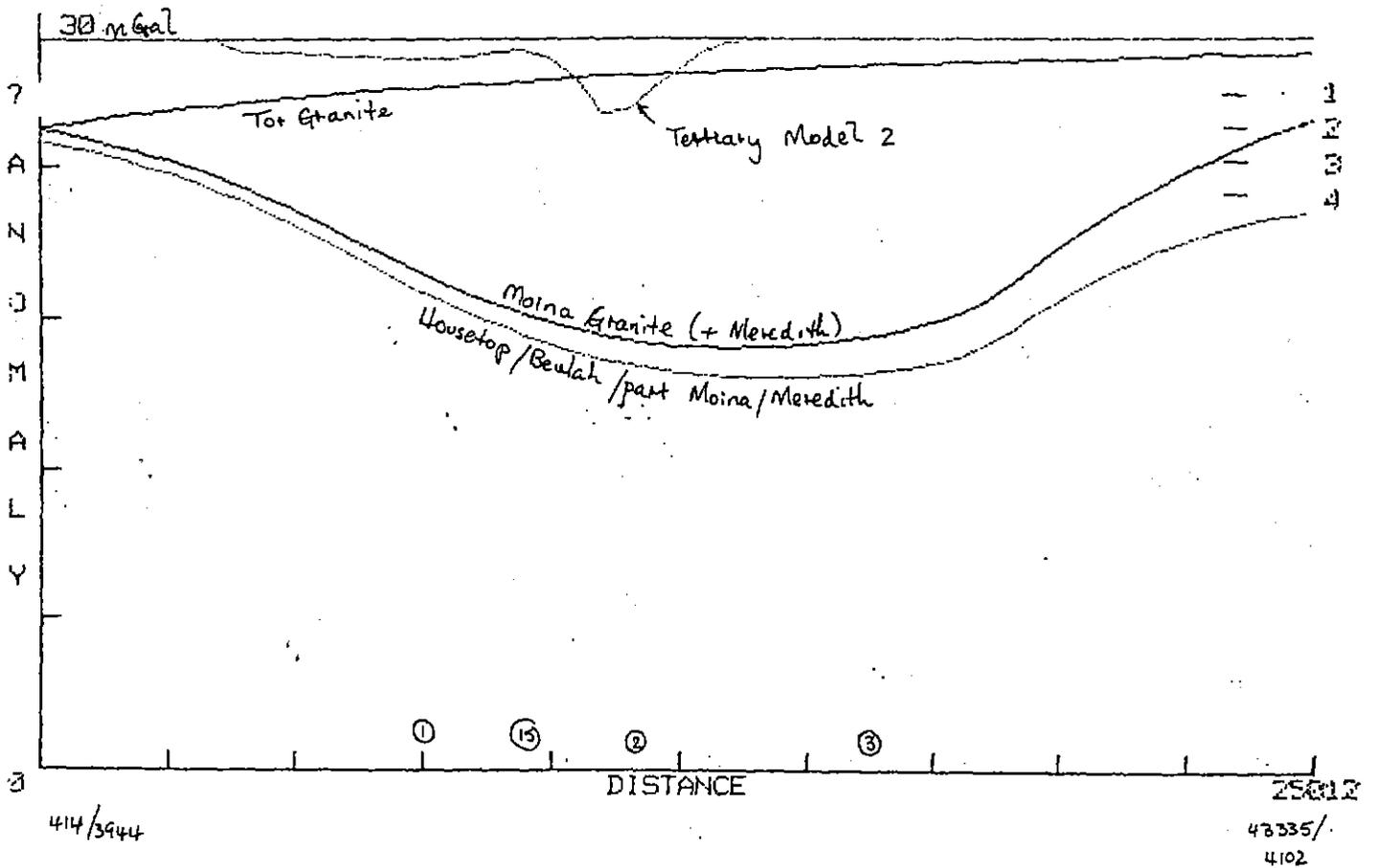
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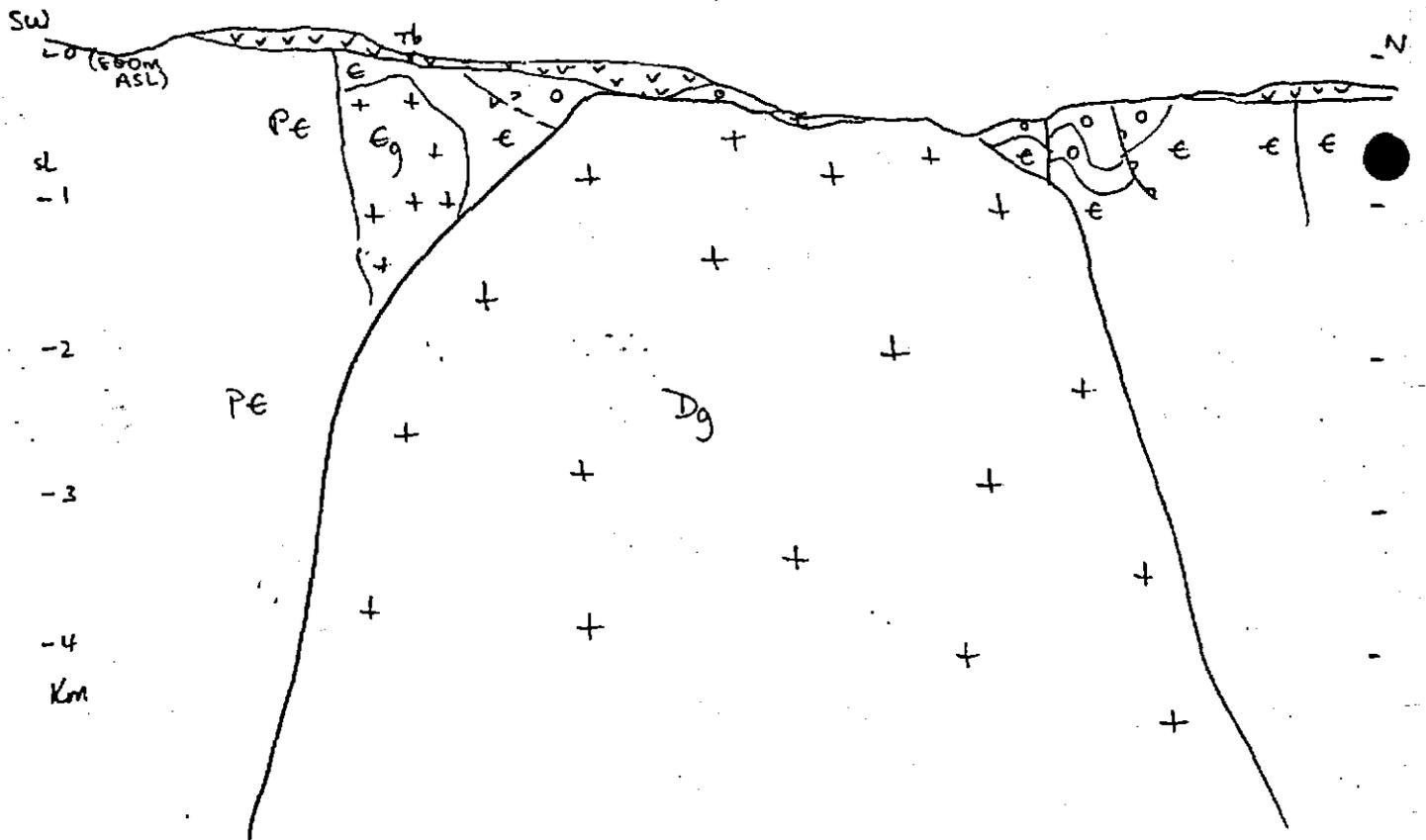
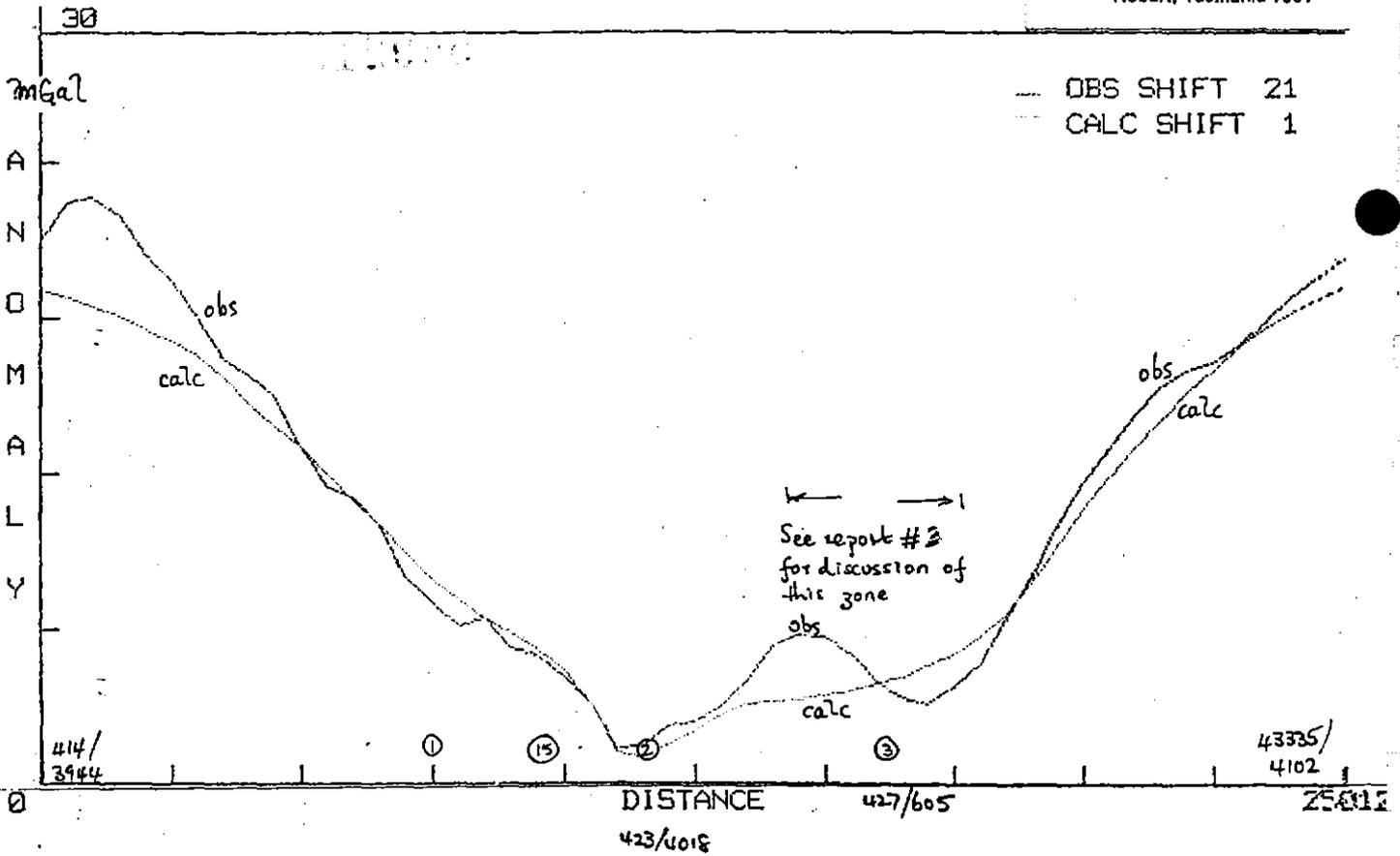
3D INTERPRETATION PROFILE 5 MOINA REGION FIGURE 8
Model 7 (granite)

PROFILE EVALUATION
LEAMAN GEOPHYSICS

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1	1.00	B:GRN1AM6
2	1.20	B:GRN7EM6
3	1.20	B:GRN7CM6
4	4.00	B:TERT2M6

-10.9	-11.3	-11.6	-11.9	-12.4	-12.9	-13.4
-14.2	-15.3	-16.1	-17.0	-18.0	-19.0	-20.0
-21.0	-22.0	-22.9	-23.6	-24.1	-24.8	-25.7
-26.9	-28.8	-29.0	-28.6	-27.9	-27.3	-27.0
-26.9	-26.8	-26.6	-26.4	-26.2	-25.9	-25.5
-25.0	-24.4	-23.5	-22.3	-20.9	-19.5	-18.2
-17.1	-16.0	-15.0	-14.0	-13.1	-12.4	-11.8
-11.3	-10.9					





#5
Dec 1988

3D INTERPRETATION PROFILE 6 MOINA REGION
Model 7 (granite) + Model 2 (Tertiary)

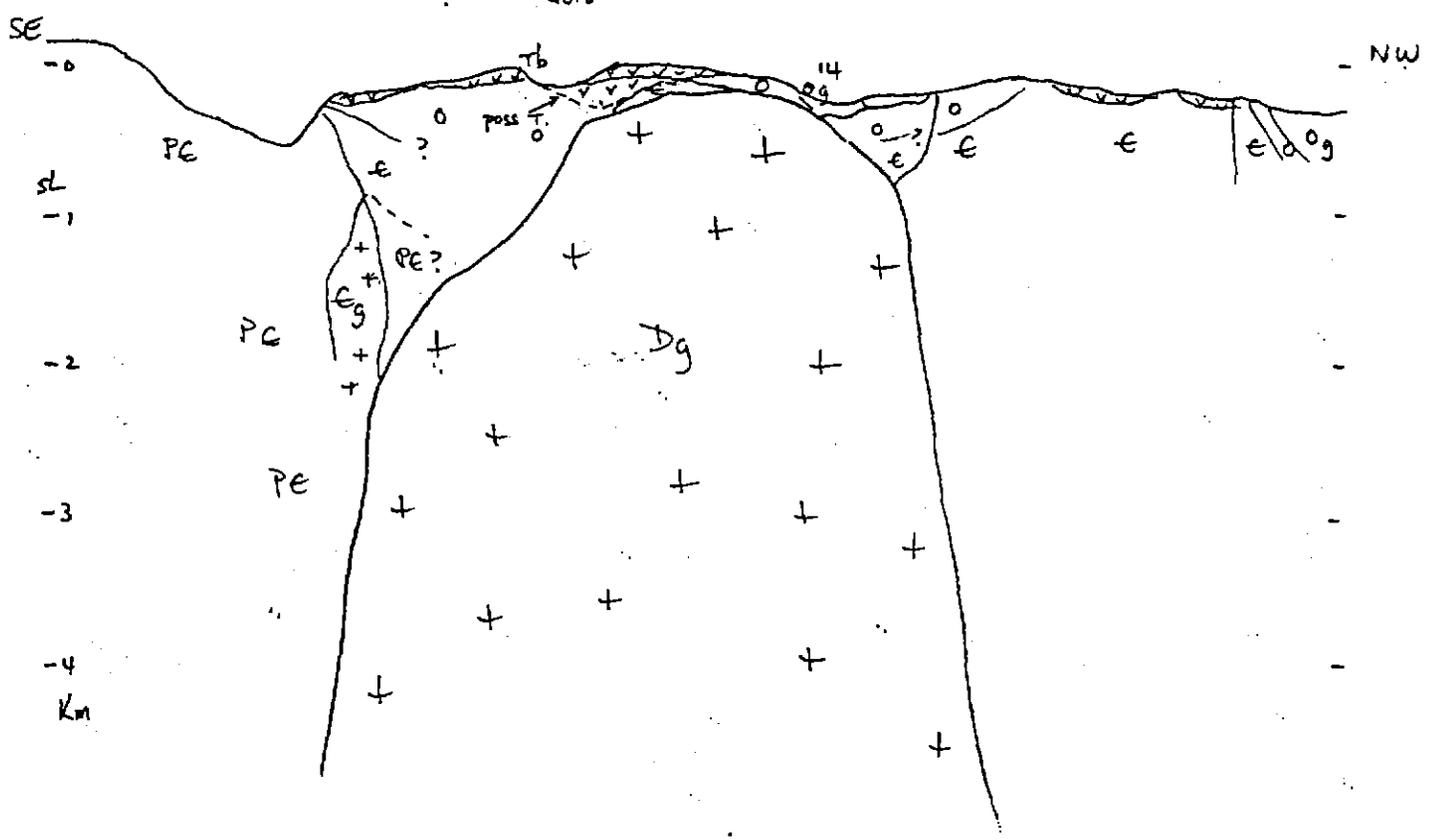
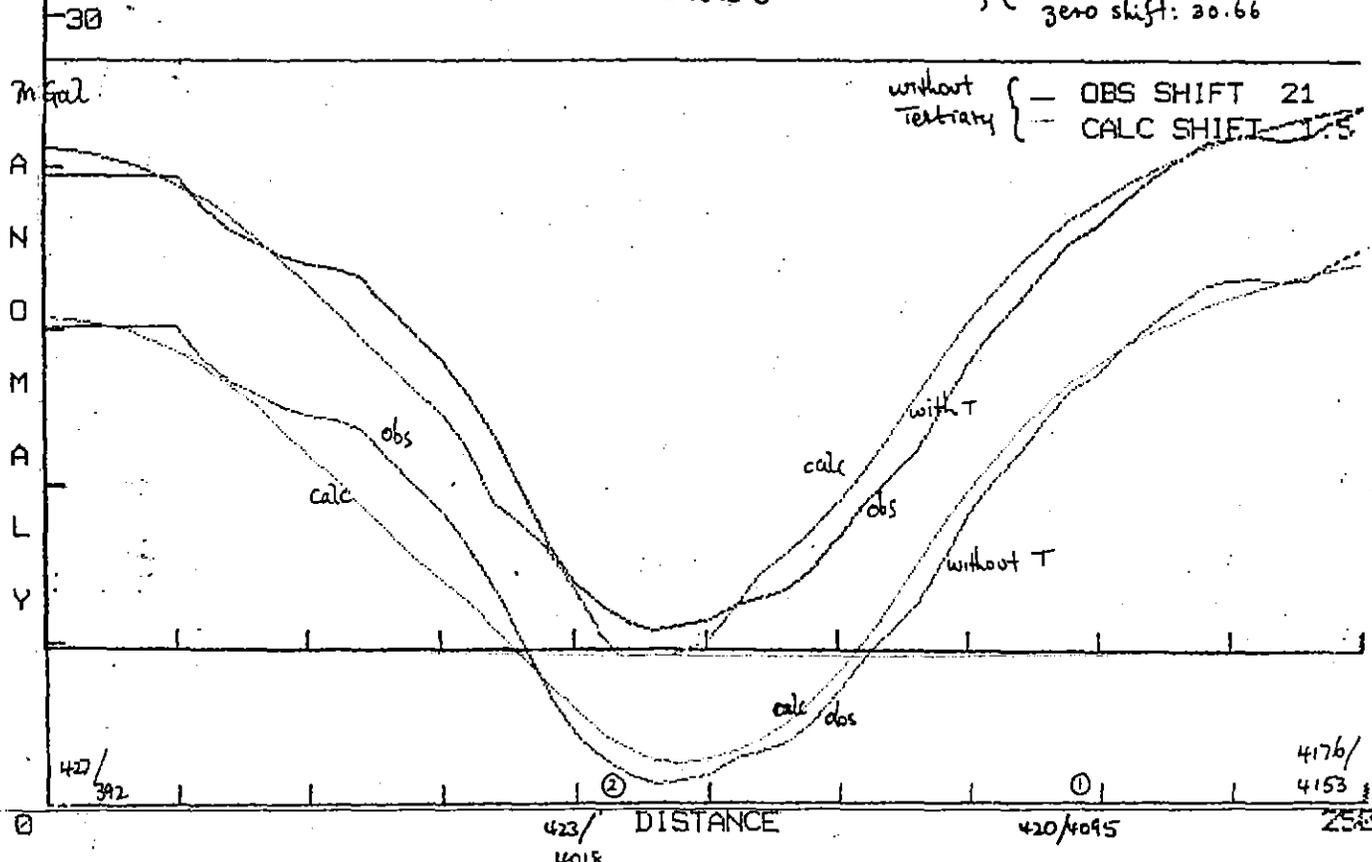
FIGURE 10

222
ZERO SHIFT 28.03171

569220

with Tertiary { OBS SHIFT 21
CALC SHIFT -.5
zero shift: 20.66

without Tertiary { OBS SHIFT 21
CALC SHIFT -.5



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3D INTERPRETATION PROFILE 7 MOINA REGION FIGURE 11
Model 7 (granite) + Model 2 (Tertiary)

223

569221

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G.P.O. Box 320 D.
Hobart, Tasmania 7001

OBS SHIFT 21 -

CALC SHIFT 3

with T2

zero: 26.86

ZERO SHIFT 26.68965

with T1

OBS SHIFT 21

CALC SHIFT 2.3

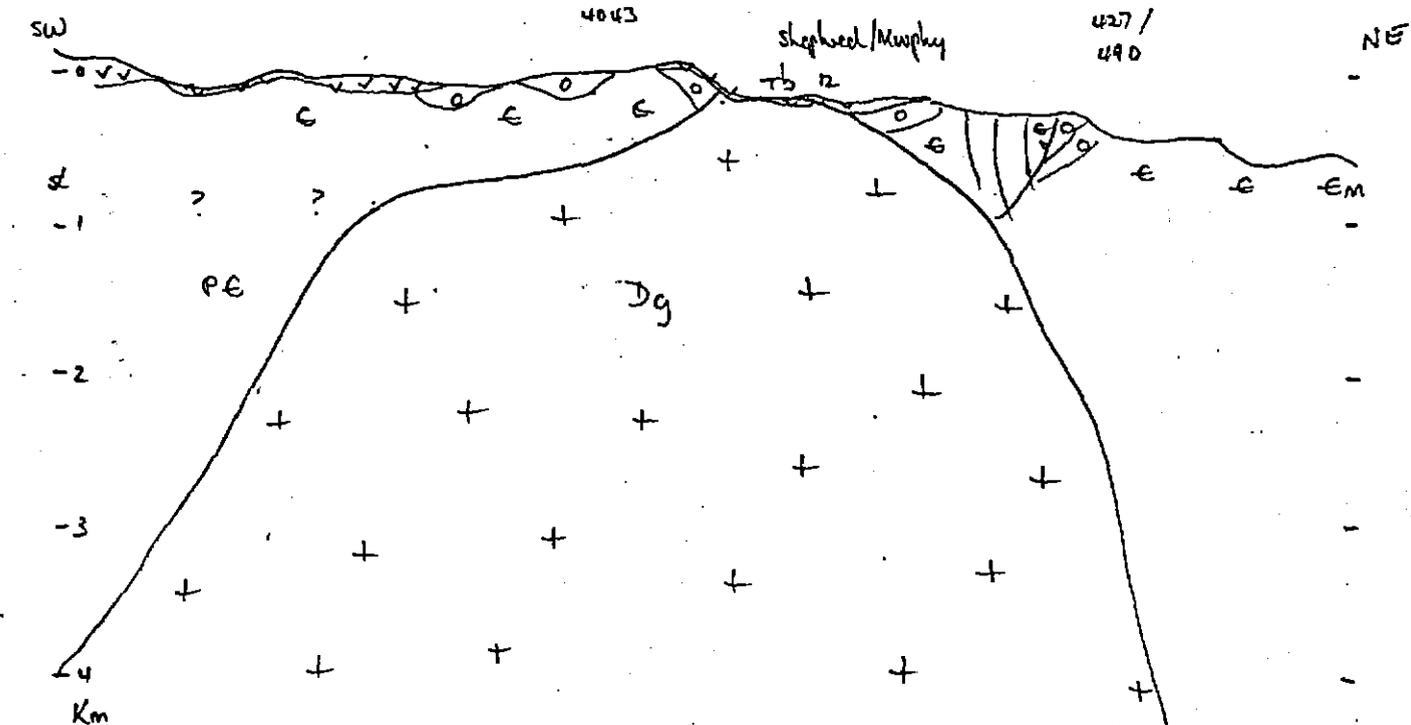
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A
N
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4115/
3973

0 ① ② ③ 431/
413

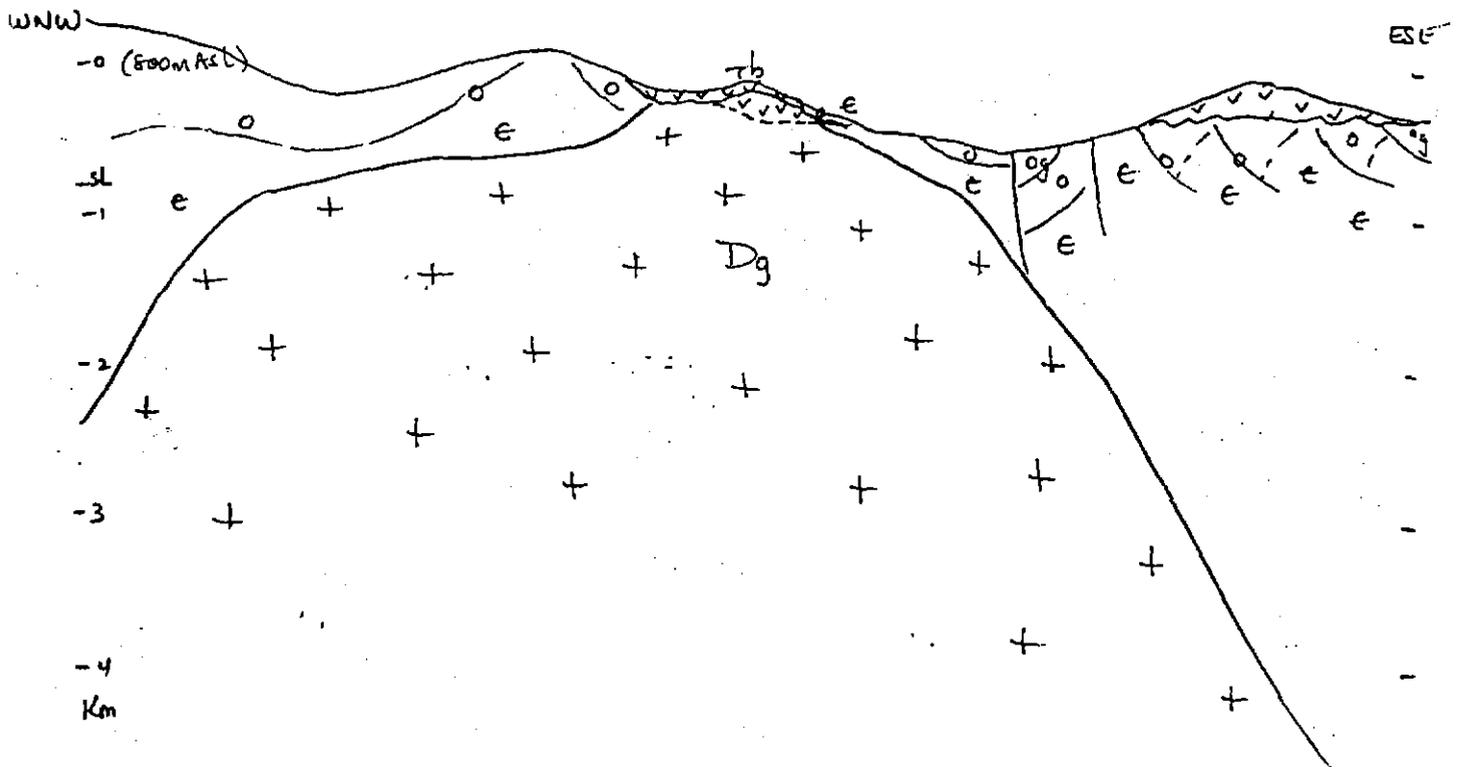
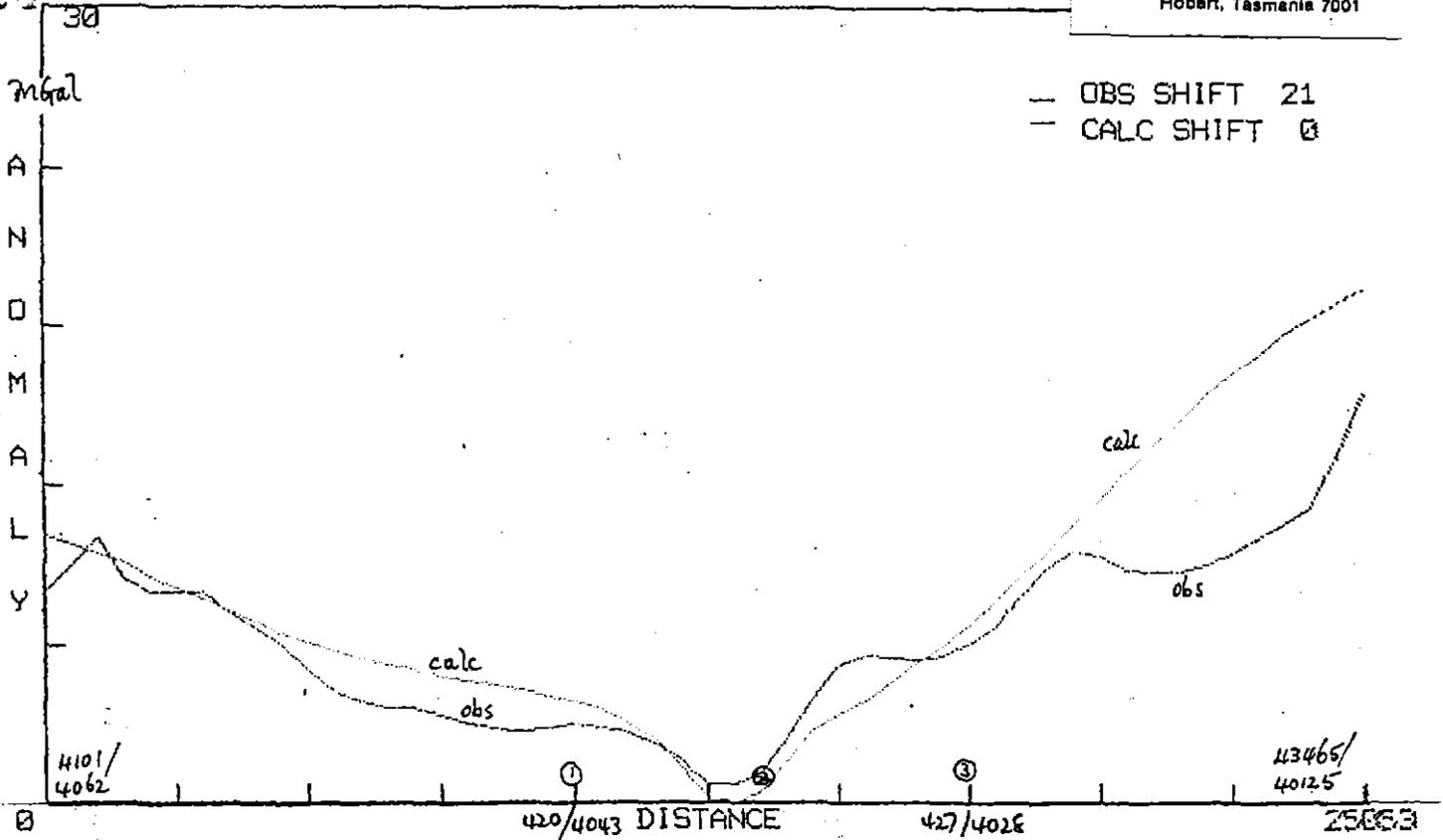
DISTANCE 2 3



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Dec 1988

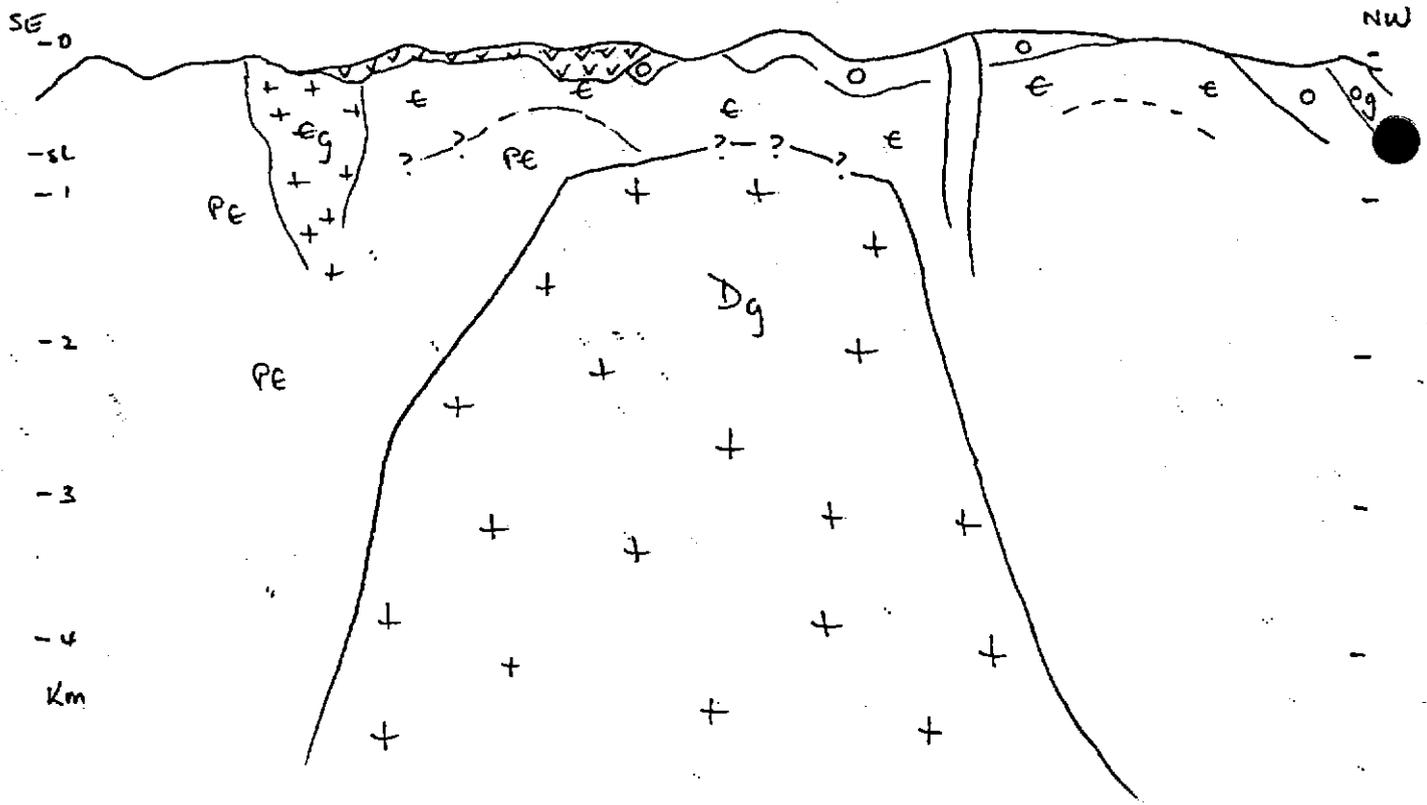
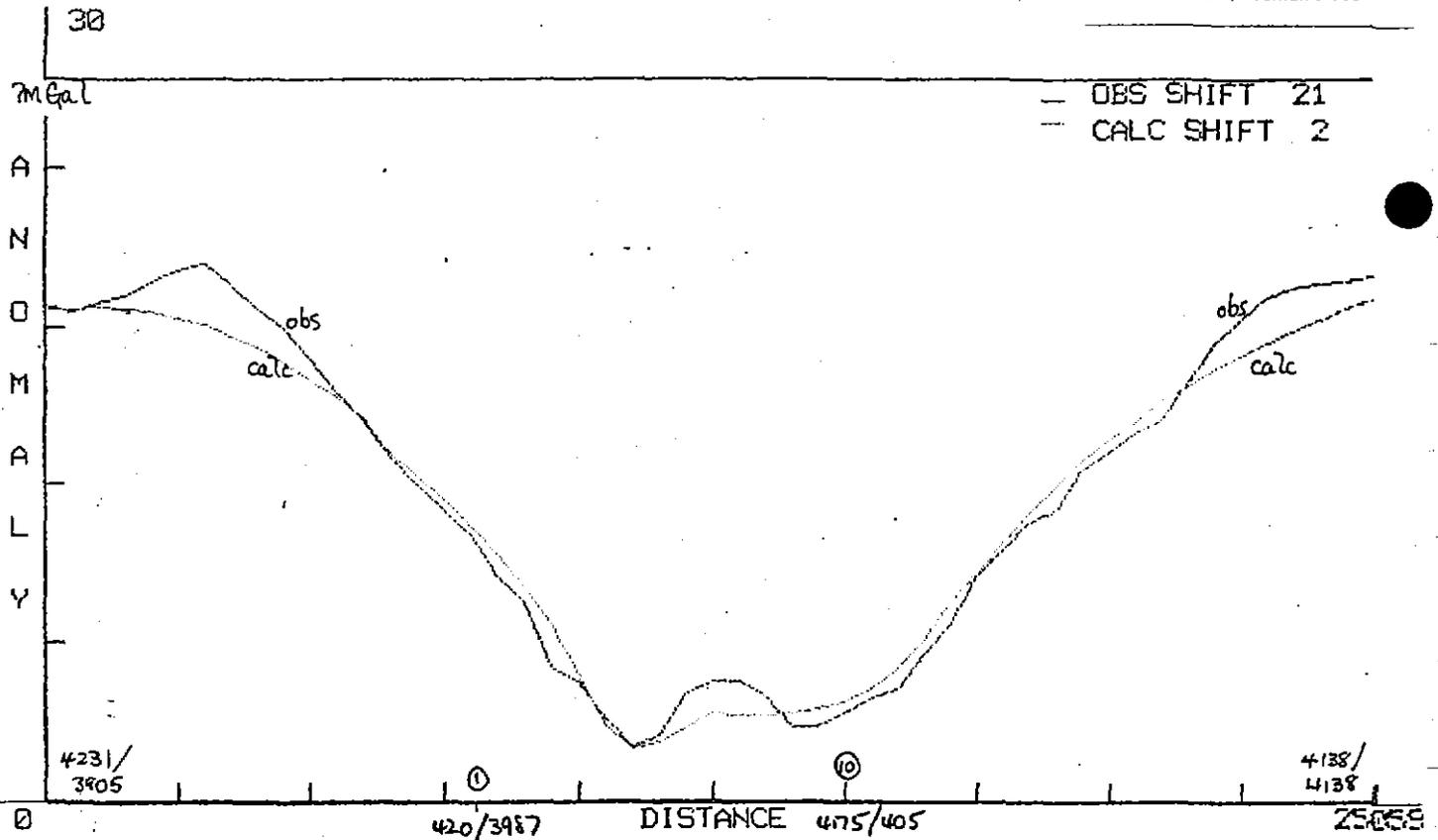
3D INTERPRETATION PROFILE 8 MOINA REGION FIGURE 12
Model 7 (granite) +/- Model 1/2 (Tertiary)

224



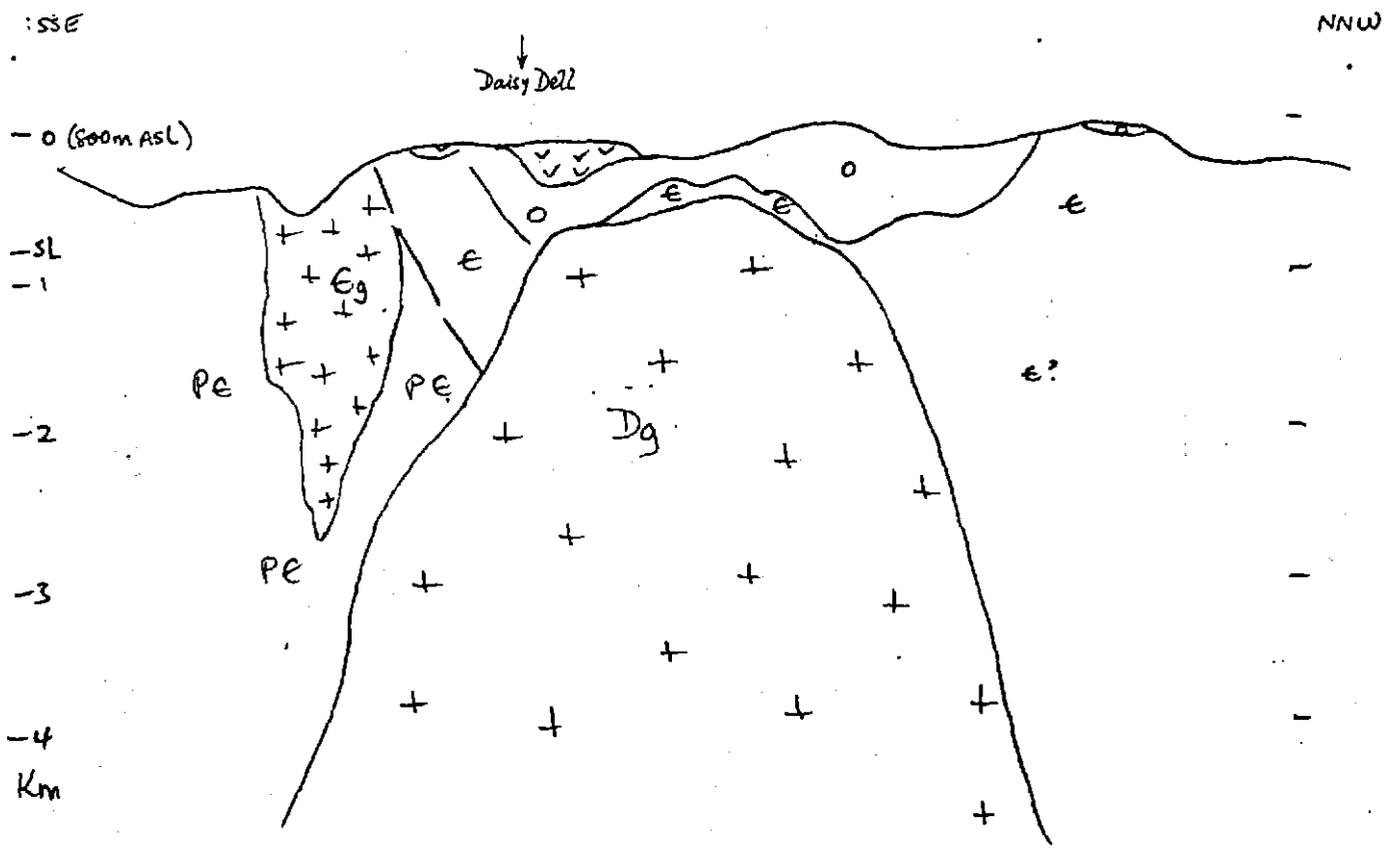
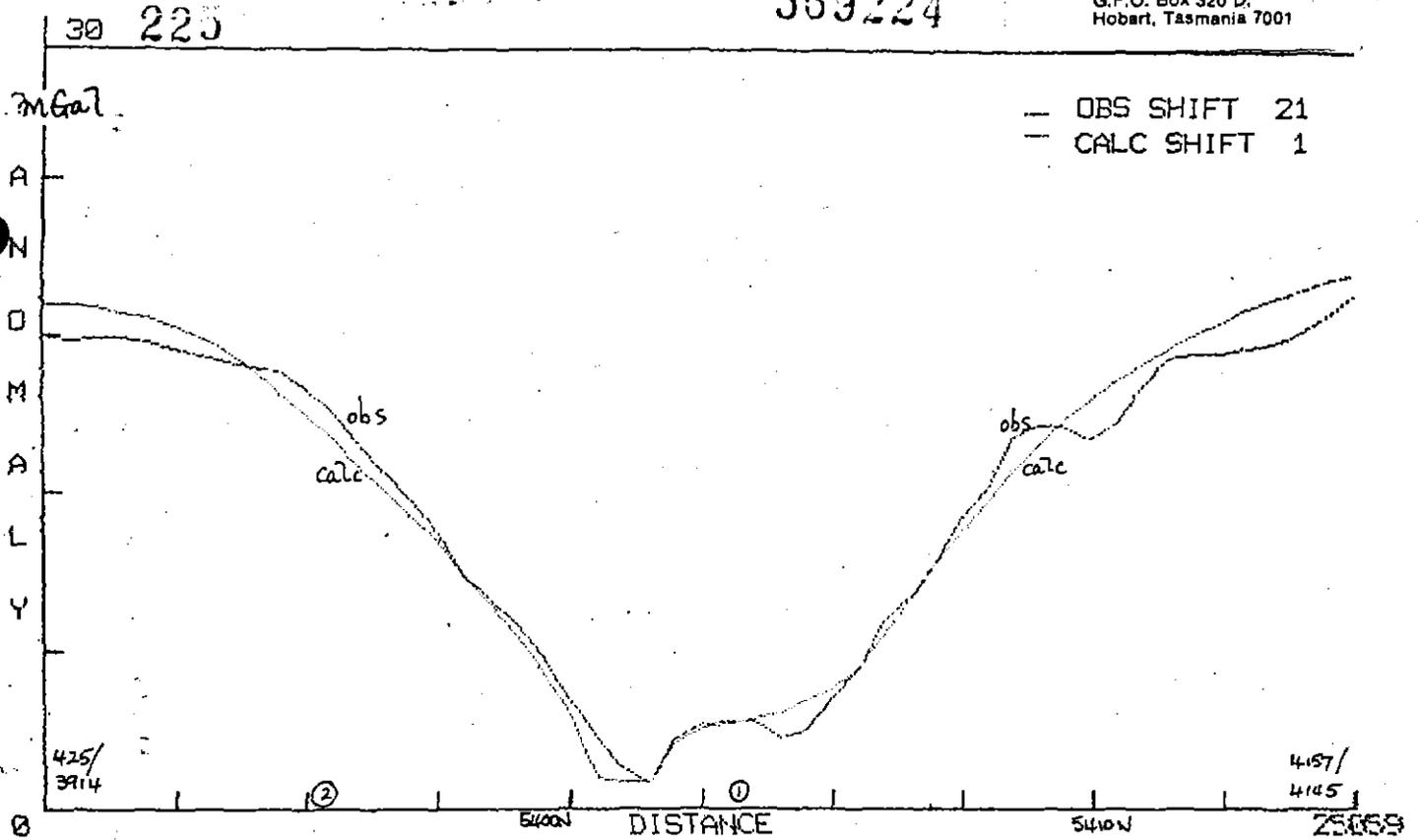
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Dec 1988

3D INTERPRETATION PROFILE 10 MOINA REGION FIGURE 13
Model 7 (granite) + Model 2 (Tertiary).



#5
Dec 1988

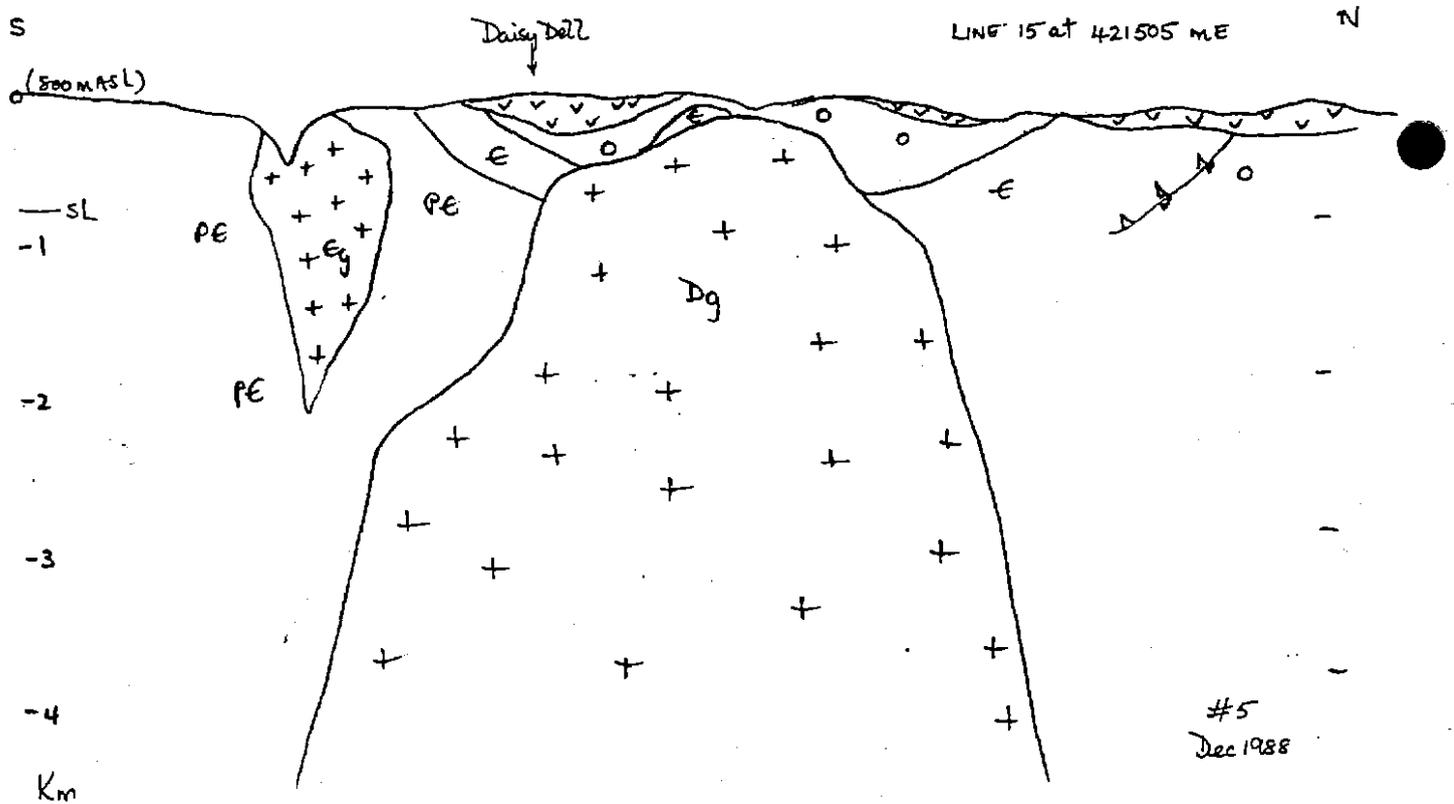
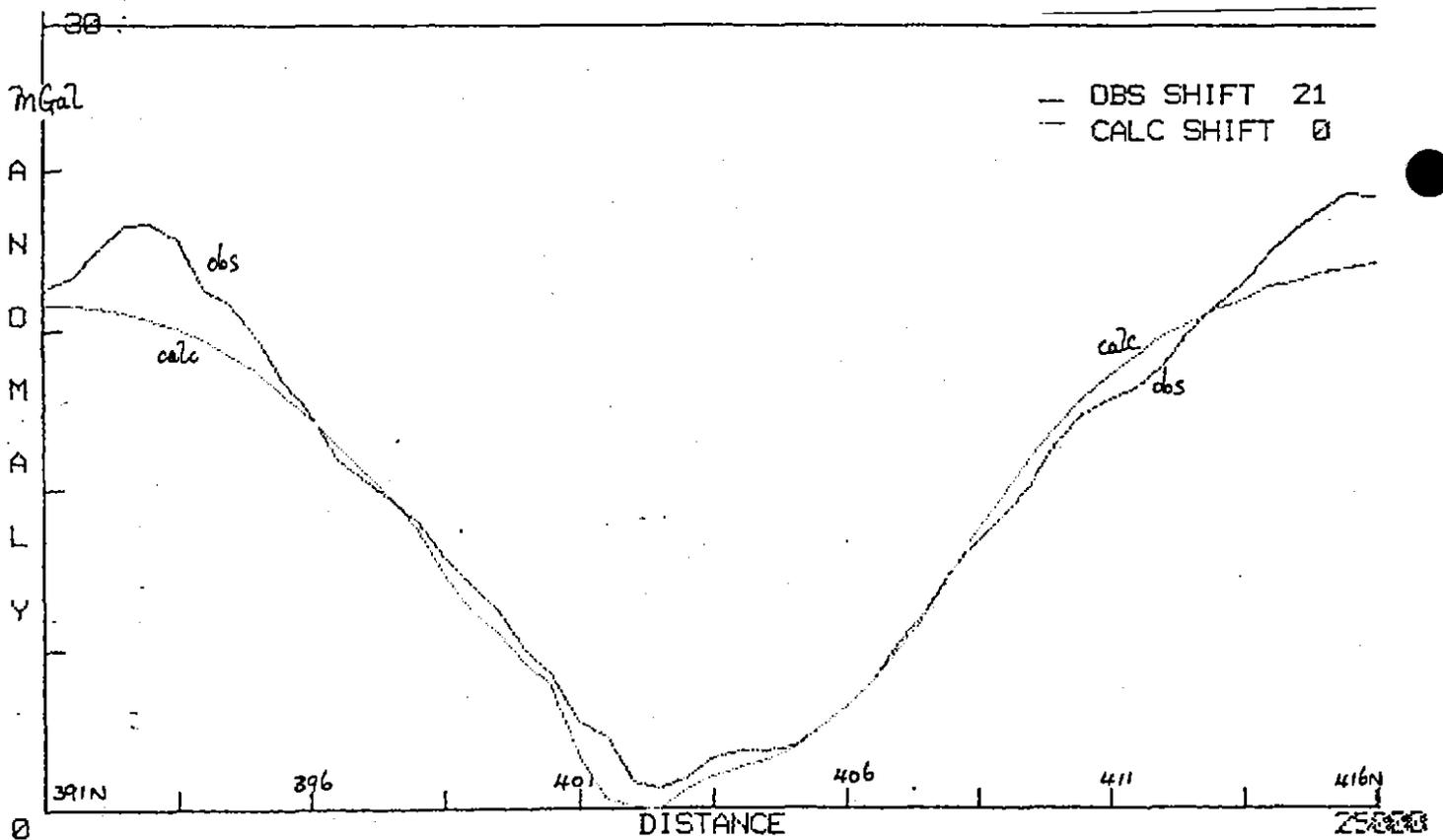
3D INTERPRETATION PROFILE 11 MOINA REGION FIGURE 14
Model 7 (granite) + Model 2 (Tertiary)



#5
Dec 1988

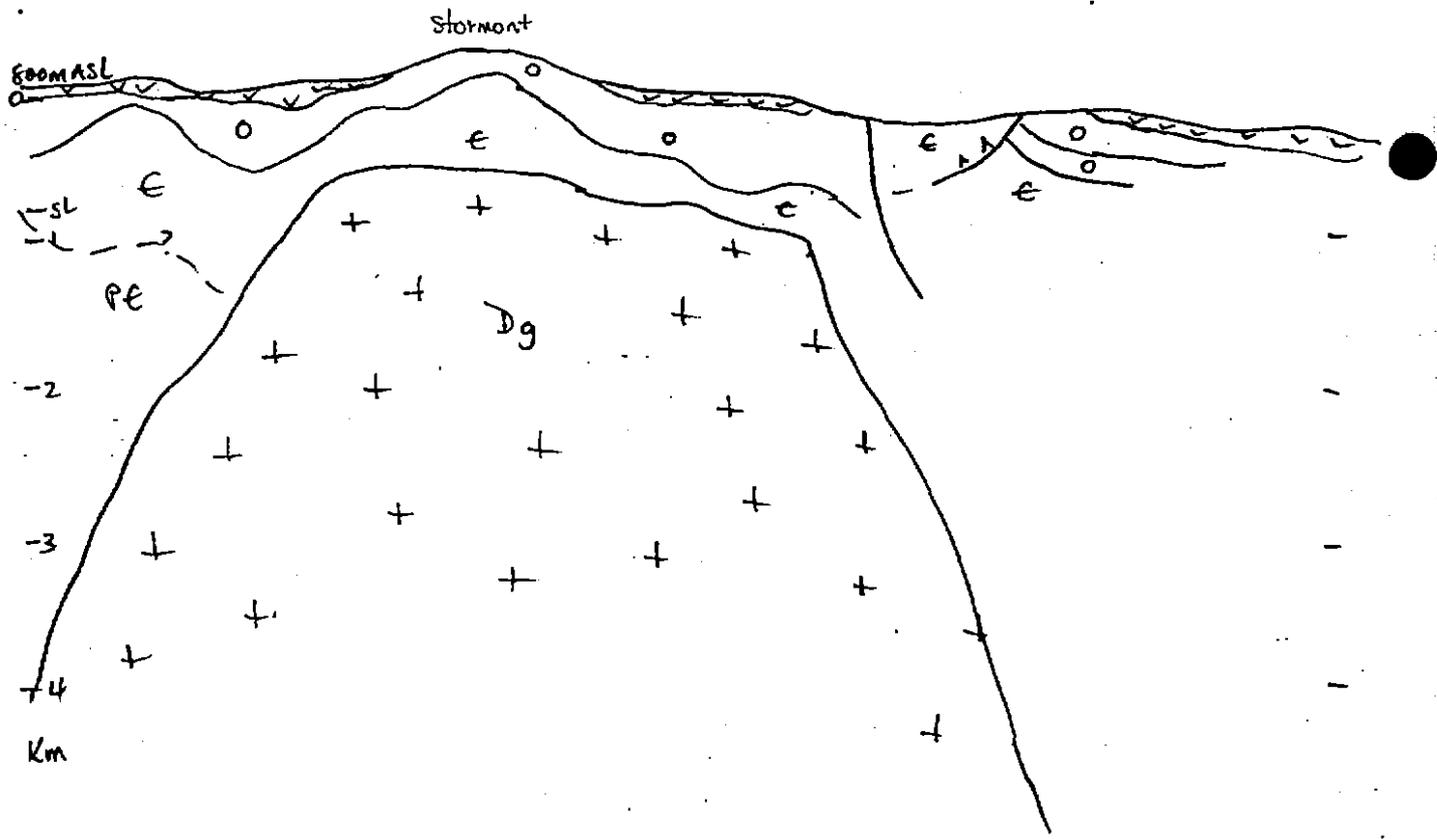
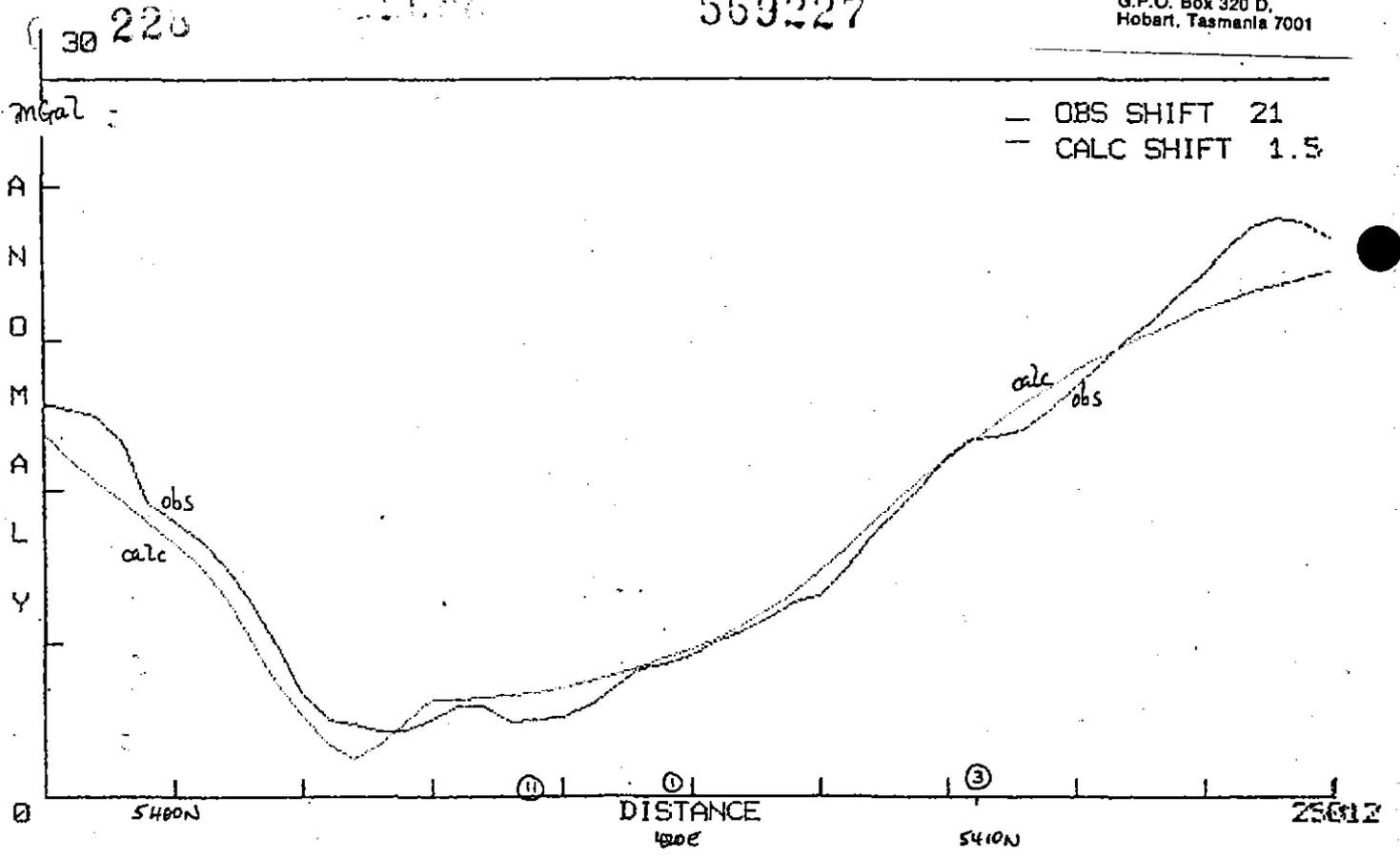
3D INTERPRETATION PROFILE 14 MOINA REGION
(granite model 7 + Tertiary model 2)

FIGURE 15



3D INTERPRETATION PROFILE 15 MOINA REGION
(granite model 7 + Tertiary model 2)

FIGURE 16



#5
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3D INTERPRETATION PROFILE 17
(Granite model 7 + Tertiary model 2)

MOINA REGION

FIGURE 18

APPENDIX 3

HERRMANN'S REPORT - RECONNAISSANCE STREAM SEDIMENT

SAMPLING AND GEOLOGICAL MAPPING

NOTES ON RECONNAISSANCE STREAM SEDIMENT SAMPLING
AND GEOLOGICAL MAPPING
IN THE MOINA-LORINNA AREA, N.W. TASMANIA

FOR: RGC EXPLORATION PTY LTD.,
P.O. BOX 320. ROSNY PARK. TAS. 7018

BY: W. HERRMANN
R.S.D. 1066 DEVONPORT 7310

DATE: JUNE 1989

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4.3 Lake Gairdner Area	11
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LIST OF PLANS

Fig. No.	Title	Scale
1.	Interpreted Geology - Cethana Sheet	1:25000
2.	Interpreted Geology- Liena sheet	1:25000
3.	Observed Geology - Monia Sheet	1:10000
4.	Observed Geology - Lorinna Sheet	1:10000
5.	Stream Sediment Sample Location - Cethana Sheet	1:25000
6.	Stream Sediment Sample Location - Liena Sheet	1:25000-

1.

589232

1. SUMMARY

A programme of stream sediment sampling and reconnaissance geological mapping has been carried out over a group of exploration licences held by RGC Exploration Pty. Ltd., in the Moina-Lorinna area of North Western Tasmania.

Panned concentrates and -200 mesh fractions of stream sediments were collected from about 160 sample sites to provide an average sampling density over the area of about 1.5 samples per sq. km. The samples are to be analysed by neutron activation analysis.

Geological mapping of convenient exposures has allowed the compilation of a 1:25000 scale geological interpretation plan which presents some improvements over the previously available geological maps, particularly with respect to sub-division and lithostratigraphic correlation of the Cambrian(?) volcanic formations.

2. INTRODUCTION

This report outlines the scope and methods and presents the geological results of a programme of stream sediment sampling and geological mapping carried out for RGC Exploration Pty Ltd., in the Moina-Lorinna areas during March-June 1989.

The work was carried out, under a contract agreement, by W. Herrmann ably assisted in the field by D. Were of RGC Exploration.

3.

3. SCOPE AND METHODS

The area covered by this reconnaissance programme comprised about 100 sq. km. extending from Mt. Jacob in the Northwest corner, to the Dove River in the South and as far East as Round Mountain. This area included RGC's Exploration Licences 26/85, 34/87, 8/88 and 36/88.

The task required about 34 days of field work, carried out between 20/3/89 and 6/6/89.

3.1 Stream Sediment Sampling

Panned concentrates and -200 mesh stream sediments were sampled from active streams at about 160 locations to provide a reasonable coverage over most of the area.

Notable omissions were

- * Stormont Creek and tributaries on northern slope of Stormont.
- * Some streams in the Tin Spur-Round Mountain area.
- * Larger streams such as the Dove River, Iris River, Wilmot River.

due mainly to sampling and access problems caused by the unexpectedly high water flows in the larger streams.

Sediment sampling was therefore effectively restricted to small to medium-sized streams with preferred locations just upstream of tributary confluences and otherwise at nominal intervals of about 1 km. along streams.

Sample sites were flagged and tagged with aluminium permatags.

Panned concentrates and -200 samples were allocated individual numbers commencing at T17101 but "synchronised" so that the last two digits were the same for both samples from a site. For example:

T17139	-	-200 mesh sample
T17239	-	Panned concentrate for the same site.

The sampling procedure was generally along the lines of that devised by S. Gatehouse, Senior Geochemist of RGC's Canberra office and summarized as follows.

- a) Active stream sediment from gravel size down was wet screened in the field through an 0.5mm nylon screen cloth in a 30cm diameter sieve. In practice usually about 2-4 sieve loads (~7-15 litres) of sediment was required to provide sufficient -200 mesh material.
- b) The -0.5mm mesh fraction was collected under the first screen in a close fitting sieve covered by -200 mesh nylon screen cloth. Experience showed that usually about a 15mm depth of -0.5mm fraction over the area of the 30cm sieve was sufficient to provide the required volume of -200 mesh material.
- c) This material was then agitated (in the field) and washed through the -200 mesh screen into a close fitting bottom pan. This stage of the process usually required about 15 minutes.
- d) The muddy water in the bottom pan was then treated with a few drops of flocculent solution (Cyanamide) to aggregate the clayey fraction and then an attempt made to decant off the excess water.
- e) The remnant slurry was then placed in a specially built pressure vessel to the base of which was fastened a PVC vial with its base perforated by small nail holes and covered by a small piece of flannellete cloth to act as a filter pad.

The vessel was then pressurized by means of a bicycle pump and set aside for a while to allow the water to filter out in virtually clear droplets. The cake of sediment remaining on the filter after water extraction was sliced down to the level of the rim of the vial (the excess discarded) and the vial covered by a close fitting cap or lid and was then ready for shipment to the analytical laboratory.

- f) The -0.5mm/+200 mesh fraction remaining on the second sieve (usually about 0.5-1 litre) was then pan-concentrated down to a vial full and placed in an identical PVC vial ready for analysis.

The vials had a capacity of about 30ml. or about 50 gm of material.

- g) Both -200 mesh and pan-concentrate samples were despatched by RGC Exploration to Becqueral Laboratories in NSW for analysis by Neutron Activation.

3.2 Geological Mapping

Geological exposures in stream beds etc. were routinely examined as they were encountered en-route to stream sample locations. In this respect the mapping was subordinate to the objective of collecting stream sediments but nevertheless particular attention was given to detailed mapping along Dolcoath Hill Road north of Bull Creek and along the shoreline of Lake Cethana where outcrop ratio was generally fairly high.

Obvious locations for extension of this outcrop specific mapping (if required) include Cethana Road, Lorinna Road and the Lea, Iris and Dove Rivers in a dry season.

Geological observations were recorded in the field onto transparent film overlays of (segmented) 1:10000 scale monochrome air photo enlargements. These were used to prepare 1:10000 scale "fact" plans (Figs 3 & 4 this report) from which the information was condensed and replotted at 1:25000 scale on geological interpretation plans (Figs 1 & 2 this report).

Approximately one hundred rock "type" specimens (numbered M1-106) and twelve rock chip geochemical samples (T17001-17012) were collected during the course of this reconnaissance. The former will be stored for reference with RGC Hobart and the latter will be submitted for appropriate analysis.

4. DESCRIPTION AND DISCUSSION OF GEOLOGY

4.1 Dove River and Five Mile Rise Area

In the Dove River area the basement exposures are dominated by felsic porphyries which are probably largely intrusive (Ep). The typical porphyry contains fairly abundant large (up to 10mm dia.) phenocrysts of rounded, transparent quartz and tabular pink to grey plagioclase(?) with subordinate flakes of biotite and sometimes minor amphibole set in a massive fine granular matrix of quartz and K-feldspar, usually of an orangey-pink to pinkish-grey colour. Small granules of magnetite are an almost ubiquitous accessory and most specimens are perceptibly magnetic. There is some variation in the proportion of ferromagnesians with the least mafic tending also to have smaller quartz and feldspar phenocrysts and a finer perhaps partly glassy matrix; some of these could nearly be extrusives. The outcrops are invariably quite massive, often characterized by broadly orthogonal wide spaced jointing. The massive character, general compositional uniformity and close resemblance to the Bond Range Porphyry which extends southwards beyond Back Peak, strongly suggests that the porphyry originated as a large sub-volcanic perhaps sill-like, intrusive.

Furthermore the porphyry (Ep) appears in places (for instance near the Devon Mine) to be transitional to a recognizably plutonic rock type: Eg, commonly known as the "Dove Granite". This is however, more like a granodiorite or quartz diorite typically consisting of a medium grained hypidiomorphic arrangement of quartz, plagioclase, pink K-feldspar, biotite and often an amphibole. It is not uncommonly weakly porphyritic in quartz and plagioclase and like Ep usually contains accessory magnetite and is perceptibly magnetic. I suspect it is analogous to the "Murchison Granite". The contact with the Precambrian metasediments of the Cradle Mountain Block to the south was not observed but presumably occurs in the Dove River not far south of 5397000N.

The great bend in the Dove River west of the Devon Mine exposes a block of felsic meta-volcanics apparently surrounded by porphyry. The meta-volcanics (Emv) are typically fine to medium grained flinty siliceous hornfelses of pale creamy to dark grey colour, sometimes "spotted" with prominent dark grey siliceous blotches from 2 to 10 mm in diameter. Fine scale planar layering is not uncommon and almost certainly represents relict sedimentary stratification. Specimen M17, from just upstream of the Devon Mine, contains small zoned translucent pink porphyroblasts which may be garnet in a darker grey band. These rocks show no trace of metamorphic foliation nor cleavage. Although the previous mapping (Jennings & Burns, 1958) places these rocks in the Precambrian meta-sedimentary Dove Group I have no doubt that they are in fact low P-thermally metamorphosed felsic volcanics probably largely fine grained vitric tuffs and epiclastic wackes. The contacts between Emv and Ep appear to be sharp with the northern boundary broadly concordant with bedding orientation in the Emv. The eastern and western boundaries shown on Figure 2 are interpreted as being NNW trending faults which appear to control the course of the river here. The Emv certainly does not extend westwards up the gully at about 5397400N. Near the Devon Mine the southern contact is not actually exposed in the river bed but must be sharp and there is evidence of small scale intrusion of Ep along NNW trending fractures in Emv. It is possible therefore that these NNW faults represent quite early synvolcanic-intrusive structures which have partly controlled the form of the intrusion. In general the geological association is quite similar to that in the Back Peak area and on lithological grounds at least these rocks can be confidently correlated with the former, which in turn appear to be correlates of the Tyndall Group further south, probably of about late middle Cambrian age.

Northwards along the Five Mile Rise the Cambrian porphyry and granodiorite are overlain by a consistently gently north dipping sequence of thick bedded orthoquartzite and sandstone; an obvious lithological correlate of the Moina Sandstone. The contact is almost certainly unconformable. An outcrop near 422700E/5398600N exposes gently north dipping sandstone (Os) underlain by a 3m thick unit of hematitic pebbly conglomerate resting in turn on (rather leached looking) Ep porphyry. Northwards towards Lorinna, the sandstone is conformably overlain by limestone also dipping gently northwards.

Several minor occurrences of vein style mineralisation were encountered during mapping in this area. These vary from milky quartz + minor hematite in NNW trending veins in p just south of the Great Caledonian prospect area (T17001); specular hematite + minor quartz in veins and stockwork veinlets in granodiorite (g) on the shores of Lake Cethana (T17009, T17012) to the quartz + galena + pyrite + chalcopyrite + sphalerite vein/s cross cutting the mv/ p content at the Devon Mine (T17002, T17003). As suggested by Jennings (1963) these are probably all related and co-genetic with the lodes of the Five Mile Rise goldfield. The common NNW structural trend suggests an association with the Pb-Ag (Zu) vein mineralisation at Fleece Creek north of Back Peak and further afield at Mt. Pelion East.

4.2 Lorinna - Lake Cethana Area

South west of Lorinna limestone and fossiliferous limestone (Ol), reasonably correlatable with the Ordovician Gordon Group, overlies Moina Sandstone correlate (Os) north of Sunday Creek. A thickness of at least 300m of limestone is implied but on the shores of Lake Cethana west of the Bott's Road/Lorinna Road intersection, the limestone is abruptly succeeded northwards by a group of rhyolitic breccias, extrusives, tuffs and associated fine grained siliceous wackes; the latter presumably had inspired the term Lorinna Greywacke used by Jennings (1963). The volcanics here are distinctly quartz phyrlic but seem to lack significant ferromagnesians and magnetite but this may be partly related to fairly strong tectonically induced sericitic alteration (cleavage formation). Some of the siliceous wackes on the other hand are quite hematitic and weakly magnetic. I suspect they could be roughly equivalent to the Smv part of the volcanic/intrusive assemblage of the Dove River area. The southern contact of this volcanic sedimentary group is not exposed but must be sharp and I think it likely to be faulted; probably a thrust fault with the volcanics overthrust onto limestone. The rhyolite close to the contact (eg: M93, M94 Specimens) is quite intensely brecciated but the adjacent very fossiliferous limestone is surprisingly little deformed and unaltered. The volcanic section here occupies only about 300m across strike to the north and is then succeeded by Moina type sandstone (Os) again. The nature of this contact is obscure but could well be unconformable with the base of Os lying on the Cambrian rocks as the Os sandstone appears to dip gently away to the NNE and is probably succeeded northwards and upwards again by limestone in the broad bay west of Lorinna, occupying a synclinal position obliquely bisected by the southern extension of the NW trending Bismuth Creek Fault.

On the west bank north of 5402000N the Os sandstones are tightly folded about several WNW trending axes and are succeeded northwards by extensively cleaved and sericitised quartz-phyric volcanics (Eqs). The strong cleavage in both volcanics and sandstones, the abundance of milky quartz veining and the observation that the sandstone adjacent to the contact appears to dip north, combine to suggest that this also is a thrust faulted contact possibly dipping at about 60 degrees to the north. This contact has an apparent dextral offset of about 800m. along the (submerged) trace of the Bismuth Creek Fault. If the movement on the latter is strictly vertical and the faulted Os/Eqs contact does dip north then an east side down movement on the Bismuth Creek Fault is implied which is contrary to that interpreted near the Shepherd and Murphy Mine (Jennings et al, 1979). A rotational or substantial strike slip movement is thus implied.

Good exposures along the lake shore north of here and along Dolcoath Hill Road north of Bull Creek has allowed the interpretative delineation of a sequence of felsic volcanics including welded vitric crystal tuffs, pumiceous lithic tuffs, coarse and fine epiclastic sediments and porphyritic rhyolite.

The crystal tuffs (Ext) are prominent in the southern part around the Bull Creek inlet and are invariably quartz phyric. They mostly have a dark greenish gray to almost black colour, nearly too dark for megascopic resolution but appear to consist of small to medium (upto 3mm) sized crystals of clear quartz, occasional feldspar and small pumiceous or glassy fragments set in a dark welded glassy or siliceous matrix, perhaps dusted with fine ferromagnesians. Most are perceptibly magnetic. These are usually quite massive and do not display recognisable flow/compaction foliation or significant cleavage development. However, as previously mentioned, a broad zone adjacent to the supposed thrust faulted contact near the inlet south of Bull Creek, is characterised by very intense cleavage development and strong sericitic alteration; the precursor rock for these dynamically metamorphosed semi-schists was most likely similar to the Ext lithotype. On Dolcoath Hill Road at about 425000E/5404300N where the trace of the Bismuth Creek Fault crosses the road there is a 20m wide zone of "phyllic" (quartz + sericite) alteration with upto 2% disseminated (oxidised) pyrite; sample as T17005.

The Ext unit is succeeded northwards and apparently overlain by an extensive group of felsic epiclastics varying from coarse pebbly breccias through medium grained felsic wackes to very fine grained felsic siltstones; all but the latter are quartz phyric. The medium to fine grained wackes and siltstones are commonly well stratified and thinly bedded and although the overall distribution suggests a broad synclinal structure running through about 5404000N at Lake Cethana, better outcrops on Dolcoath Hill Road indicate that the sequence is at least locally quite tightly folded.

Northwards along Dolcoath Hill Road the epiclastic unit gives way to a quartz + feldspar + biotite porphyritic rhyolite (Epr) in which planar flow(?) laminations are consistently oriented with dips to the south west perhaps indicating that this unit underlies the epiclastic unit in a stratigraphic position approximately equivalent to Ext. The rhyolite contains accessory magnetite and can be considered an extrusive equivalent of the massive (Ep) porphyries in the Dove River area. Indeed all of the volcanics and epiclastics in the Lake Cethana area (previously undifferentiated as the Bull Creek Porphyry; Jennings, 1963) are clearly compositionally related to the Dove River porphyries and by association ultimately to the Tyndall Group of the Mt. Read Volcanics.

West of Dolcoath Hill the rhyolite is unconformably overlain by a siliciclastic conglomerate (Oc) of about 40m. thickness which is in turn conformably succeeded by orthoquartzite and sandstone (Os) dipping gently northwards towards a synclinal axis running approximately east-west between Narrawa Creek and Dolcoath Hill. The sandstone unit appears to persist northwards to beyond Cethana Road but although the contact was not mapped there, cursory observations of the exposure along the road between the Forth River Bridge and Cethana Dam suggest that the felsic volcanics to the north are thrust faulted upon the sandstone sequence.

The Dolcoath Granite outcrops over a circular area of about 2km diameter centred near the confluence of Dolcoath Creek with Lake Cethana. It is typically a pink medium grained biotite bearing granite with local leucocratic phases tending to adamellite, sometimes weakly porphyritic in quartz and/or feldspar. It is easily distinguishable from the Dove River intrusives by the absence of magnetite and hornblende. At the south east contact near Washout Creek there are marginal phases of partly greisenised aplite, leucogranite and pegmatite associated with occasional quartz greisen veins containing minor wolframite, molybdenite and fluorite (which were sampled as T17010, 17011). Similar greisen/pegmatite veins up to 30mm width but without notable metallic mineralisation occur in massive rhyolite exposed in a quarry on Dolcoath Hill Road near 425100E/5405800N. (Sampled as T17006). The southern contacts of the Dolcoath Granite on both shores of Lake Cethana are marked by narrow aureoles of siliceous weakly greisenised hornfels presumably derived by thermal metamorphism of the adjacent felsic volcanics. At the north eastern contact on the east shore of the lake the adjacent sandstone (Os) is similarly recrystallised and weakly greisenised and includes a thin bed(?) of laminated magnetite skarn (Specimen M86) which may relate to the old Hidden Treasure prospect but was not investigated in detail during this reconnaissance.

4.3 Lake Gairdner Area

Short but arduous traverses down the Wilmot River and up the Lea River from the Wilmot Dam indicate that the variably massive to thinly bedded sandstones (Os) south and east of Mt. Jacob have a general shallow to moderate southerly dip although there are numerous open folds of the nature of minor plications with very shallow southerly to south easterly plunges. The sandstones dip southwards towards the axis of an inferred broad synclinal structure the core of which exposes the overlying limestone (Ol) in the structural and topographic basin around Lake Gairdner.

At the Denison Group/volcanic contact in the Wilmot River the basal siliciclastic conglomerate is only about 10 metres thick but its presence indicates that the contact here is an unconformity. The underlying volcanics are quartz phyric glassy rhyolites (locally cleared and sericitised along a NNW trending shear or fault zone) and medium grained felsic volcanic-wackes of bradly similar composition to those found in the Lake Cethana area although I could not detect any magnetite in them.

South of Lake Gairdner the Iris River cuts through a broad anticlinal structure on the eastern flank of Stormont. A thin basal unit of siliciclastic pebbly conglomerate (<10m) is overlain by moderately to shallowly north dipping ortho-quartzite and sandstone. Again, this contact would appear to be unconformable. The underlying Cambrian(?) volcanics were not mapped in detail (due to high river levels) but near Hinman Creek include dark grey quartz phyric crystal vitric tuff (or rhyolite?) and medium grained stratified felsic wackes which are identical to those occurring in the Lake Cethana-Dolcoath Hill Road area.

4.4. Tertiary Basalt

Approximately one half of the area covered in this reconnaissance is covered by Tertiary(?) basalt.

The typical form is massive or columnar jointed fine grained weakly olivine and pyroxene phyric, weakly vesicular dark grey basalt presumably representing thick flows. In places, most notably around Bull Creek between the Cradle Mountain and Dolcoath Hill Roads, there are spectacular volcanic breccias composed of angular and irregular fragments of glassy often very vesicular dark basalt. Some of these could be hyaloclastites; they are often associated with abundant (5-20%) zeolites infilling vesicles and inter fragment

spaces. Minor occurrences of unlithified gravels, sand and micaceous silt were observed in a couple of localities either at the base of the basalt or as thin inter flow horizons.

The interpreted basalt contacts indicate that the flows were extruded onto a topographically irregular surface probably of similar relief to that of the present. The present thickness of the basalt cover is consequently quite variable. For instance: west of Dolcoath Hill Road crossing over Bull Creek the basalt would appear to have a substantial thickness of around 300 metres whilst at Lacey's property at Hinman Creek the thickness would be around 150 metres and south of the Post Office Tree probably only a few tens of metres.

5. REFERENCES

- | | | |
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589245

APPENDIX 4

ASSAY RESULTS

(a) STREAM SEDIMENT & PAN-CONCENTRATED RESULTS

PROJECT: NORTHERN TASMANIAN NEUTRON ACTIVATION DRAINAGE SURVEYS

SAMPLE NUMBER	TNORTH metres	TEAST metres	KIND	SB PPM	AS PPM	AU PPF	MO PPM	AG PPM	SN PPM	W PPM	ZN PPM	TH PPM	U PPM
T 17101	397707	422556	-200#	1.3	7.0	22	-9	-4	-399	7	220		
T 17102	397719	422588	-200#	1.3	5.6	10	-15	-6	-472	-2	364		
T 17103	397372	422846	-200#	0.5	7.7	135	-27	-5	-463	6	252		
T 17104	397234	421599	-200#	-0.3	-1.3	-7	-7	-6	-485	-2	225		
T 17105	397585	421777	-200#	0.8	10.3	11	9	-6	-744	-3	543		
T 17106	399560	425447	-200#	0.9	3.9	1766	-15	-4	-386	-2	41		
T 17107	399595	425409	-200#	1.4	4.5	2060	-10	-3	-300	4	107		
T 17108	399186	424384	-200#	0.8	15.5	19	-4	-4	-294	-2	55		
T 17109	399171	424425	-200#	0.8	3.4	126	-10	-2	-193	3	27		
T 17110	399269	424515	-200#	1.0	1.2	270	-11	-2	-212	3	103		
T 17112	398527	426210	-200#	0.4	4.5	8	-3	-5	-335	-2	202		
T 17158	402510	426349	-200#	0.8	2.0	-5	-4	-5	-169	5	218	7.4	3.1
T 17159	402434	426163	-200#	0.4	2.0	-5	-5	-5	-200	-2	300	3.7	-2.1
T 17161	402029	426052	-200#	0.6	8.8	8	-5	-5	-173	3	287	8.4	3.2
T 17162	401917	425868	-200#	0.3	5.3	7	-3	-5	-146	-1	216	6.5	-1.3
T 17163	401213	426303											
T 17164	400675	426407	-200#	0.3	4.6	6	-3	-5	-134	-1	217	6.1	-0.9
T 17165	400324	426451	-200#	-0.2	3.6	9	1	-6	-155	-0	241	3.0	-1.0
T 17166	400054	426371	-200#	0.4	16.8	97	-3	-4	-109	-1	282	8.4	-1.0
T 17167	400000	426501	-200#	1.0	62.7	164	-5	-3	-118	3	244	9.0	2.1
T 17168	400000	426551	-200#	0.8	16.5	65	5	-3	-116	3	179	10.0	1.3
T 17169	398696	426853	-200#	0.4	3.5	11	-5	-5	-200	5	211	16.1	4.6
T 17170	397532	426861	-200#	0.5	3.7	29	-12	-5	-150	6	205	28.8	5.8
T 17172	404980	427988	-200#	1.7	77.0	8	5	-4	-148	11	335	11.5	2.6
T 17177	402522	427408	-200#	2.4	3.6	15	-5	-3	205	11	183	15.1	4.5
T 17178	402452	427332	-200#	0.5	5.6	5	-6	-4	-200	5	211	8.5	3.1
T 17179	401534	427439	-200#	0.5	4.3	5	-3	-4	-106	2	238	12.3	-1.2
T 17181	398272	427095	-200#	0.5	3.2	139	-27	-5	-169	4	273	38.1	15.6
T 17182	399235	427238	-200#	0.6	5.5	6	-5	-5	-200	3	243	7.8	2.4
T 17183	399734	427458	-200#	0.3	3.9	-3	-3	-4	-200	-0	271	6.9	-0.8
T 17184	401098	427565	-200#	0.3	2.4	5	-1	-2	-123	-1	223	5.3	1.0
T 17185	401129	427591	-200#	0.2	2.1	-3	-3	-4	-144	-0	274	5.3	1.6
T 17186	399178	428049	-200#	0.3	3.3	-2	-3	-4	-152	-1	236	5.5	-1.0
T 17187	398965	428359	-200#	0.3	2.0	12	-4	-6	-213	-1	262	6.6	1.7
T 17188	398976	428411	-200#	1.1	1.6	-3	-3	-4	-111	-0	242	4.1	-0.8

Laboratory:	BECO										
Method :	INAA30										
Det. Limit:	0.100	0.100	5.000	10.000	5.000			2.000		0.100	0.100

559247

PROJECT: NORTHERN TASMANIAN NEUTRON ACTIVATION DRAINAGE SURVEYS

SAMPLE NUMBER	TNORTH metres	TEAST metres	KIND	BA PPM	HF PPM	FE %	SC PPM	ZR PPM	BR PPM	CE PPM	CS PPM	CR PPM	CO PPM
T 17101	397707	422556	-200#	618	16	2.97	8.1	578					
T 17102	397719	422588	-200#	679	29	2.75	9.2	1268					
T 17103	397372	422846	-200#	672	26	3.17	13.4	749					
T 17104	397234	421599	-200#	498	3	4.99	15.4	303					
T 17105	397585	421777	-200#	542	6	4.05	13.7	350					
T 17106	399560	425447	-200#	120	103	0.51	7.0	3932					
T 17107	399595	425409	-200#	36	80	0.67	5.8	3201					
T 17108	399186	424384	-200#	-74	42	3.03	7.1	1581					
T 17109	399171	424425	-200#	-46	72	0.38	3.9	2886					
T 17110	399269	424515	-200#	55	91	0.18	4.6	3555					
T 17112	398527	426210	-200#	416	18	7.78	17.8	1115					
T 17158	402510	426349	-200#	733	17	3.61	10.4	682	72	43	4.9	132.4	22.1
T 17159	402434	426153	-200#	-159	8	5.04	10.2	-544	206	31	3.6	233.3	29.9
T 17161	402029	426052	-200#	124	28	2.39	7.8	1130	75	99	2.8	193.2	14.6
T 17162	401917	425868	-200#	154	8	5.69	15.1	702	62	43	2.6	206.2	48.5
T 17163	401213	426303											
T 17164	400675	426407	-200#	235	5	7.59	20.0	238	45	50	3.2	222.8	49.6
T 17165	400324	426451	-200#	-93	5	7.41	19.0	-217	82	27	-0.8	297.0	55.2
T 17166	400054	426371	-200#	110	16	7.24	16.2	465	13	66	3.7	309.7	41.7
T 17167	400000	426501	-200#	134	11	2.18	6.0	521	68	78	5.7	132.8	12.9
T 17168	400000	426551	-200#	68	19	2.04	5.5	795	69	70	5.0	166.4	6.8
T 17169	398696	426853	-200#	463	28	6.10	15.4	1305	111	79	6.7	146.4	28.9
T 17170	397532	426861	-200#	563	17	4.20	13.8	797	107	122	5.9	92.3	45.4
T 17172	404980	427988	-200#	202	10	2.98	8.3	536	102	79	9.3	71.8	19.5
T 17177	402522	427408	-200#	461	32	3.17	10.7	1344	54	57	15.7	99.4	14.1
T 17178	402452	427332	-200#	294	19	5.35	10.2	844	59	53	5.3	104.4	114.1
T 17179	401534	427439	-200#	313	25	6.25	16.5	1037	18	68	3.1	182.5	40.5
T 17181	398272	427095	-200#	613	19	3.95	13.0	646	147	140	10.4	97.0	25.3
T 17182	399235	427238	-200#	193	15	6.24	14.8	852	93	67	2.4	189.6	69.2
T 17183	399734	427458	-200#	230	8	7.70	18.9	420	33	45	2.6	201.7	56.7
T 17184	401098	427565	-200#	178	8	7.24	18.0	348	48	42	0.8	223.3	48.9
T 17185	401129	427591	-200#	128	8	7.08	17.2	293	38	34	1.9	204.2	45.0
T 17186	399178	428049	-200#	238	7	7.93	18.2	436	35	45	2.0	222.4	62.6
T 17187	398965	428359	-200#	92	10	5.66	15.5	405	45	40	2.0	202.8	37.9
T 17188	398976	428411	-200#	239	5	8.01	18.4	282	47	36	1.0	267.6	57.8

Laboratory:	BECD									
Method :	INAA30									
Det. Limit:	1.000	0.050	0.100			1.000	1.000	0.100	0.100	0.100

569248

PROJECT: NORTHERN TASMANIAN NEUTRON ACTIVATION DRAINAGE SURVEYS

SAMPLE NUMBER	TNORTH metres	TEAST metres	KIND	EU PPM	IR PRB	LA PPM	LU PPM	RB PPM	SM PPM	SE PPM	TA PPM	TH PPM	U PPM	YB PPM
T 17101	397707	422586	-200#											
T 17102	397719	422588	-200#											
T 17103	397372	422846	-200#											
T 17104	397234	421599	-200#											
T 17105	397585	421777	-200#											
T 17106	399560	425447	-200#											
T 17107	399595	425409	-200#											
T 17108	399186	424384	-200#											
T 17109	399171	424425	-200#											
T 17110	399269	424515	-200#											
T 17112	398527	426210	-200#											
T 17158	402510	426349	-200#	1.2	-12.0	29.0	0.4	43.0	4.7	-4.2	1.2	7.4	3.1	2.0
T 17159	402434	426163	-200#	0.9	-19.0	17.7	0.3	-19.0	3.5	-5.0	2.4	3.7	-2.1	1.3
T 17161	402029	426052	-200#	2.3	-16.0	46.9	1.0	40.0	10.5	-4.5	2.6	8.4	3.2	5.4
T 17162	401917	425868	-200#	1.4	-11.0	21.9	0.4	36.0	4.7	-3.6	0.8	6.5	-1.3	2.1
T 17163	401213	426303	-200#											
T 17164	400675	426407	-200#	1.6	-10.0	23.5	0.4	44.0	5.7	-3.9	2.0	6.1	-0.9	2.2
T 17165	400324	426451	-200#	1.0	-11.0	14.4	0.2	-13.0	3.8	-3.6	2.4	3.0	-1.0	1.3
T 17166	400054	426371	-200#	1.2	-8.0	33.3	0.5	49.0	5.7	-3.5	2.6	8.4	-1.0	2.5
T 17167	400000	426501	-200#	1.1	-8.0	37.5	0.5	44.0	6.4	-3.6	1.3	9.0	2.1	2.9
T 17168	400000	426551	-200#	1.0	-8.0	31.5	0.6	18.0	5.5	-2.9	2.1	10.0	1.3	3.2
T 17169	398696	426853	-200#	1.2	-10.0	35.7	0.7	55.0	6.6	-3.4	2.5	16.1	4.6	3.7
T 17170	397532	426861	-200#	2.0	-11.0	61.8	0.9	128.0	10.5	-4.6	2.8	28.8	6.8	4.5
T 17172	404980	427988	-200#	1.3	-10.0	33.9	0.5	87.0	6.9	-3.5	2.4	11.5	2.6	2.7
T 17177	402522	427408	-200#	0.8	-7.0	26.2	0.7	132.0	5.0	-2.9	1.4	15.1	4.5	3.1
T 17178	402452	427332	-200#	1.2	-10.0	34.6	0.6	49.0	6.9	-2.7	1.4	8.5	3.1	3.2
T 17179	401534	427439	-200#	1.2	-8.0	37.0	0.7	65.0	7.2	-3.4	2.5	12.3	-1.2	3.4
T 17181	398272	427095	-200#	1.9	-12.0	69.3	1.2	98.0	12.7	-4.2	2.4	38.1	15.6	6.4
T 17182	399235	427238	-200#	1.8	-10.0	33.5	0.6	36.0	7.4	-3.3	2.3	7.8	2.4	3.2
T 17183	399734	427458	-200#	1.3	-8.0	23.6	0.4	48.0	5.4	-2.7	2.3	6.9	-0.8	2.2
T 17184	401098	427565	-200#	2.0	-4.0	26.2	0.4	29.0	6.3	-1.2	2.7	5.3	1.0	2.4
T 17185	401129	427591	-200#	1.1	11.0	18.3	0.3	31.0	4.3	-2.6	1.9	5.3	1.6	1.6
T 17186	399178	428049	-200#	1.5	-8.0	24.5	0.4	43.0	5.7	-3.2	2.1	5.5	-1.0	2.3
T 17187	398965	428359	-200#	1.3	-11.0	25.9	0.5	40.0	6.0	-3.6	2.2	6.6	1.7	2.5
T 17188	398976	428411	-200#	1.3	-8.0	19.0	0.3	42.0	4.9	-2.7	1.9	4.1	-0.8	1.7

Laboratory:	BECC											
Method :	INAA30	INAP30	INAA30									
Det. Limit:	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100

569249

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PROJECT: NORTHERN TASMANIAN NEUTRON ACTIVATION DRAINAGE SURVEYS

SAMPLE NUMBER	TNORTH metres	TEAST metres	KIND	BA PPM	HF PPM	FE %	SC PPM	ZR PPM	BR PPM	CE PPM	CS PPM	CR PPM	CO PPM
T 17189	399308	428117	-200#	327	8	7.42	18.5	360	34	46	2.5	181.7	50.4
T 17190	398231	428051	-200#	314	9	7.47	17.2	357	20	36	1.3	238.9	47.4
T 17191	398200	428124	-200#	213	3	6.02	14.5	-192	107	28	1.8	169.2	51.1
T 17192	401244	428891	-200#	129	2	6.93	17.8	-208	165	28	1.3	188.4	43.5
T 17193	401190	428925	-200#	246	3	7.59	18.6	175	34	27	1.8	220.1	45.7
T 17201	397707	422556	PC	665	22	10.00	8.8	999					
T 17202	397719	422588	PC	981	14	4.13	9.0	624					
T 17203	397372	422846	PC	673	72	9.88	18.9	2782					
T 17204	397234	421599	PC	1041	8	3.21	8.8	392					
T 17205	397585	421777	PC	799	7	3.97	9.1	489					
T 17206	399560	425447	PC	-20	61	0.07	1.8	2493					
T 17207	399595	425409	PC	-18	57	0.12	2.0	2241					
T 17208	399185	424384	PC	58	84	0.14	2.3	3264					
T 17209	399171	424425	PC	19	70	0.07	1.7	2912					
T 17210	399269	424515	PC	-28	75	0.04	2.0	2890					
T 17212	398527	426210	PC	274	47	8.49	11.6	1696					
T 17258	402510	426349	PC	1025	38	3.57	11.5	1630	5	74	5.1	108.1	10.6
T 17259	402434	426163	PC	110	9	3.18	3.7	277	8	15	2.0	132.6	12.7
T 17261	402029	426052	PC	169	9	2.42	4.7	377	3	29	1.1	98.8	11.0
T 17262	401917	425868	PC	63	10	5.38	8.1	304	19	31	1.9	228.8	22.5
T 17263	401213	426303											
T 17264	400675	426407	PC	115	5	6.01	7.7	198	5	23	1.5	137.2	26.0
T 17265	400324	426451	PC	85	3	6.24	10.3	-125	5	14	0.7	206.7	43.8
T 17266	400054	426371	PC	124	24	1.23	3.4	921	2	139	1.4	238.1	7.3
T 17267	400000	426501	PC	19	3	0.46	2.0	104	5	32	2.1	56.0	2.0
T 17268	400000	426551	PC	-41	17	0.59	1.5	729	4	41	0.8	222.3	1.9
T 17269	398696	426853	PC	417	71	15.31	12.9	2530	12	137	4.3	668.5	31.0
T 17270	397532	426861	PC	602	46	3.38	8.3	1584	4	72	2.4	87.3	14.6
T 17272	404980	427988	PC	277	5	2.17	6.6	206	14	52	9.1	50.7	9.4
T 17277	402522	427408	PC	579	56	3.26	11.1	2290	5	42	10.9	123.0	8.6
T 17278	402452	427332	PC	220	24	1.64	4.5	989	4	22	2.2	63.4	15.7
T 17279	401534	427439	PC	186	37	4.22	9.7	1493	2	85	2.4	220.5	15.6
T 17281	398272	427095	PC	660	19	1.88	5.7	557	5	39	5.4	55.9	7.4
T 17282	399235	427238	PC	78	11	1.40	3.1	444	3	80	1.1	107.0	8.8
T 17283	399734	427458	PC	140	8	7.81	17.1	188	4	37	1.1	315.7	47.6

569251

Laboratory:	BECD									
Method :	INAA30									
Det. Limit:	1.000	0.050	0.100			1.000	1.000	0.100	0.100	0.100

PROJECT: NORTHERN TASMANIAN NEUTRON ACTIVATION DRAINAGE SURVEYS

SAMPLE NUMBER	NORTH metres	EAST metres	KIND	EU PPM	IR PPF	LA PPM	LU PPM	RB PPM	SM PPM	SE PPM	TA PPM	TH PPM	U PPM	YB PPM
T 17189	399308	428117	-200#	1.1	-8.0	24.0	0.4	58.0	5.2	-3.5	1.5	7.1	-1.0	2.4
T 17190	398231	428051	-200#	1.1	-8.0	22.1	0.4	48.0	4.6	-2.6	2.9	5.6	0.9	2.1
T 17191	398200	428121	-200#	1.0	-10.0	14.9	0.2	28.0	3.8	-3.2	1.6	3.1	-1.0	1.5
T 17192	401244	428891	-200#	1.7	-11.0	17.1	0.3	14.0	5.1	-3.5	2.1	3.2	-1.1	1.8
T 17193	401190	428925	-200#	1.3	-8.0	16.3	0.3	45.0	4.5	-2.6	2.1	3.3	-0.8	1.5
T 17201	397707	422556	PC											
T 17202	397719	422588	PC											
T 17203	397372	422846	PC											
T 17204	397234	421599	PC											
T 17205	397585	421777	PC											
T 17206	399560	425447	PC											
T 17207	399595	425409	PC											
T 17208	399186	424384	PC											
T 17209	399171	424425	PC											
T 17210	399269	424515	PC											
T 17212	398527	426210	PC											
T 17258	402510	426349	PC	1.4	-10.0	49.4	0.8	92.0	6.6	-3.7	3.2	12.2	4.9	3.9
T 17259	402434	426163	PC	0.4	-8.0	8.2	0.2	22.0	1.7	-2.6	0.9	2.3	-1.1	0.9
T 17261	402029	426052	PC	0.5	-7.0	17.1	0.2	31.0	2.9	-2.5	0.6	5.0	-1.0	1.3
T 17262	401917	425668	PC	0.7	-8.0	19.0	0.3	22.0	3.4	-2.8	1.9	4.6	1.2	1.7
T 17263	401213	426303												
T 17264	400675	426407	PC	0.5	-5.0	11.7	0.2	34.0	2.6	-1.7	0.8	4.2	-0.5	1.1
T 17265	400324	426451	PC	0.4	-6.0	8.2	0.1	16.0	1.9	-1.9	1.3	2.2	-0.5	0.7
T 17266	400054	426371	PC	1.3	-7.0	63.1	0.4	-7.0	10.6	-2.4	0.7	7.8	1.0	2.0
T 17267	400000	426501	PC	0.5	-3.0	15.7	0.2	20.0	2.7	-1.2	0.6	3.2	-0.3	0.9
T 17268	400000	426551	PC	0.3	-5.0	18.0	0.3	11.0	3.2	-2.0	1.1	3.8	-0.6	1.4
T 17269	398696	426853	PC	1.4	-12.0	81.4	1.1	118.0	10.8	-4.4	2.1	16.6	7.5	5.0
T 17270	397532	426861	PC	1.1	-9.0	34.7	1.5	159.0	6.3	-3.2	4.5	54.6	10.9	7.4
T 17272	404980	427988	PC	0.8	-5.0	24.3	0.4	121.0	4.6	-1.9	0.7	9.6	2.0	1.9
T 17277	402522	427408	PC	0.9	-6.0	23.5	0.8	136.0	4.7	-2.0	2.1	13.6	5.8	3.5
T 17278	402452	427332	PC	0.3	-4.0	12.0	0.4	31.0	2.4	-1.3	1.5	5.8	2.2	1.8
T 17279	401534	427439	PC	0.9	-6.0	45.6	0.6	58.0	8.2	-2.3	2.5	19.8	3.3	2.8
T 17281	398272	427095	PC	0.7	-5.0	19.5	0.8	134.0	3.7	-1.8	2.6	30.7	6.5	3.6
T 17282	399235	427238	PC	0.8	-4.0	38.0	0.3	15.0	6.0	-1.9	1.2	4.3	1.0	1.4
T 17283	399734	427458	PC	0.9	-7.0	17.8	0.3	31.0	4.2	-2.2	2.0	5.6	-0.7	1.5

Laboratory:	BECC											
Method :	INAA30											
Det. Limit:	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100

569232

PROJECT: NORTHERN TASMANIAN NEUTRON ACTIVATION DRAINAGE SURVEYS

SAMPLE NUMBER	TNORTH metres	TEAST metres	KIND	SB PPM	AS PPM	AU PFB	MO PPM	AG PPM	SN PPM	W PPM	ZN PPM	TH PPM	U PPM
T 17284	401098	427565	PC	0.2	1.0	-2	-4	-5	-108	-1	186	5.4	-0.8
T 17285	401129	427591	PC	0.2	1.1	-1	-2	-3	-81	1	137	7.1	1.5
T 17286	399178	428049	PC	0.3	5.5	-3	-3	-6	-82	-1	174	5.2	1.4
T 17287	398965	428359	PC	0.2	0.8	-1	-2	-2	-53	-0	76	8.8	0.7
T 17288	398975	428411	PC	-0.1	2.3	-2	-3	-4	111	-0	186	3.1	-0.8
T 17289	399308	428117	PC	-0.1	1.2	-2	-3	-4	241	-1	159	9.9	-0.8
T 17290	398231	428051	PC	0.3	1.6	-2	-3	-4	-89	4	147	4.4	1.1
T 17291	398200	428124	PC	-0.1	2.5	-3	-3	-5	-115	-1	154	2.9	-0.9
T 17292	401244	428891	PC	-0.2	-0.7	-4	-3	-7	-159	-1	195	2.2	-1.3
T 17293	401190	428925	PC	-0.2	-0.6	-3	-3	-6	-136	-1	180	2.2	-1.1
T 17295	402522	427408											
T 17300	401255	428782	-200#	0.3	4.6	-4	-3	-5	-200	-1	183	24.6	3.3
T 17303	401930	425180	-200#	0.2	2.6	5	-1	-2	-200	-0	215	4.9	-0.5
T 17304	401964	425229	-200#	0.4	4.6	-4	-1	-2	-137	-1	216	6.5	-0.5
T 17305	401772	425145	-200#	-0.2	2.1	9	-2	-2	-162	-2	246	7.1	1.7
T 17306	401709	425156	-200#	0.9	3.0	-4	-1	-2	210	-1	170	10.5	0.6
T 17307	401774	425428	-200#	0.3	2.9	-5	-2	-2	-152	-2	220	4.6	-0.5
T 17308	406806	429557	-200#	1.4	1.5	3	0	-0	-49	2	79	3.5	1.2
T 17309	406590	429368	-200#	2.4	19.0	7	-1	-1	307	2	148	14.0	2.4
T 17310	405982	429901	-200#	2.6	14.4	-3	-5	-1	-87	2	105	13.1	2.9
T 17311	405981	429832	-200#	2.4	61.9	-5	-2	-2	-164	-2	321	7.5	2.7
T 17322	408747	422317	-200#	1.2	50.0	-4	8	-1	-125	2	254	8.5	0.9
T 17323	409002	422125	-200#	0.6	3.4	28	-3	-0	-81	15	158	5.2	1.7
T 17324	409045	422151	-200#	1.2	4.8	6	-4	-1	106	-1	142	8.5	2.1
T 17325	409017	422675	-200#	1.9	20.8	6	-4	-1	-200	-1	169	11.5	2.3
T 17328	408352	421277	-200#	1.7	87.1	-3	-5	-1	-92	3	119	9.1	4.4
T 17329	408226	420830	-200#	1.5	24.7	47	-6	-1	-91	2	140	9.0	3.2
T 17330	408221	420779	-200#	1.1	13.2	70	-4	-1	-200	3	177	8.8	2.3
T 17331	408082	421951	-200#	1.9	17.7	-7	-5	-3	-217	-3	703	5.0	-0.9
T 17332	407905	421966	-200#	1.4	10.8	-6	-6	-2	-181	-2	568	4.9	-2.1
T 17333	407428	421540	-200#	0.5	7.2	11	-2	-1	-132	-0	351	3.5	-0.5
T 17334	407201	421385	-200#	0.9	8.9	8	-3	-1	-122	10	273	5.4	-0.6
T 17335	407049	421268	-200#	1.4	6.3	-3	-2	-1	-80	5	255	6.7	0.7
T 17336	407033	422456	-200#	0.6	5.4	6	-2	-1	-98	21	267	4.6	-0.5

Laboratory:	BECO												
Method:	INAA30												
Det. Limit:	0.100	0.100	5.000	10.000	5.000			2.000				0.100	0.100

569253

PROJECT: NORTHERN TASMANIAN NEUTRON ACTIVATION DRAINAGE SURVEYS

SAMPLE NUMBER	NORTH metres	EAST metres	KIND	BA PPM	HF PPM	FE %	SC PPM	ZR PPM	BR PPM	CE PPM	CS PPM	CR PPM	CD PPM
T 17284	401098	427565	PC	137	9	6.60	17.9	455	2	26	-0.6	330.7	34.6
T 17285	401129	427591	PC	145	9	5.73	14.7	525	3	33	1.0	261.7	39.0
T 17286	399178	428049	PC	188	5	12.44	21.5	330	10	43	2.0	358.8	75.8
T 17287	398965	428359	PC	165	12	2.03	5.1	545	2	38	1.0	65.4	10.1
T 17288	398976	428411	PC	221	3	12.60	21.2	255	11	31	0.7	436.3	104.8
T 17289	399308	428117	PC	118	14	6.54	24.7	574	2	51	0.6	472.5	36.8
T 17290	398231	428051	PC	189	4	5.66	16.7	-137	3	29	1.9	292.4	37.6
T 17291	398200	428124	PC	178	3	9.57	20.1	-185	6	20	-0.7	300.8	46.9
T 17292	401244	428891	PC	143	3	9.09	30.2	-246	11	20	-0.9	368.6	58.8
T 17293	401190	428925	PC	176	2	9.73	23.3	-212	7	22	2.4	356.5	79.2
T 17295	402522	427408											
T 17300	399560	425447	-200#										
T 17301	401255	428782	-200#	317	35	6.56	21.4	1392	15	119	3.1	166.4	39.8
T 17303	401930	425180	-200#	149	6	8.14	20.0	159	59	39	2.3	256.6	59.9
T 17304	401964	425229	-200#	257	11	7.64	16.5	772	51	52	2.6	287.4	56.2
T 17305	401772	425145	-200#	239	10	7.12	19.2	434	72	39	2.4	244.7	49.4
T 17306	401709	425156	-200#	238	17	7.03	18.1	889	49	60	2.8	212.6	50.8
T 17307	401774	425428	-200#	105	7	7.38	21.0	433	105	32	2.3	256.4	49.9
T 17308	406806	429557	-200#	24	20	0.27	2.1	766	17	24	0.3	23.2	-0.3
T 17309	406590	429368	-200#	197	19	3.73	10.6	710	16	81	5.6	189.0	14.5
T 17310	405982	429901	-200#	205	20	3.13	9.7	798	9	78	5.3	181.1	13.2
T 17311	405981	429832	-200#	202	23	8.99	8.6	754	107	68	3.4	152.7	47.1
T 17322	408747	422317	-200#	118	14	0.96	5.9	714	71	73	6.0	211.9	1.6
T 17323	409002	422125	-200#	75	28	0.41	2.7	1125	45	43	1.5	268.3	0.7
T 17324	409045	422151	-200#	99	24	0.77	4.7	876	30	77	3.9	303.7	1.2
T 17325	409017	422675	-200#	98	29	1.96	7.1	1253	53	89	7.6	377.4	1.9
T 17328	408352	421277	-200#	116	71	1.12	5.3	2840	35	71	2.7	420.7	3.5
T 17329	408226	420830	-200#	-22	37	0.94	4.4	1540	34	80	2.2	287.8	1.6
T 17330	408221	420779	-200#	223	21	3.86	12.4	1013	45	59	4.9	234.1	26.8
T 17331	408082	421951	-200#	227	20	5.02	14.5	1164	122	85	4.7	306.1	98.0
T 17332	407905	421966	-200#	102	9	4.31	11.2	388	255	43	5.9	207.8	38.2
T 17333	407428	421540	-200#	247	7	6.99	15.9	397	232	34	2.3	229.6	44.9
T 17334	407201	421385	-200#	152	10	4.07	11.6	408	230	65	5.5	176.7	84.0
T 17335	407049	421268	-200#	253	14	5.56	12.0	546	60	49	6.2	238.3	61.7
T 17336	407033	422456	-200#	231	13	8.56	18.3	554	79	32	3.2	287.2	46.5

Laboratory:	BECO									
Method:	INAA30									
Det. Limit:	1.000	0.050	0.100		1.000	1.000	0.100	0.100	0.100	

COCKAT COMP. BY: 1/10/89

569254

PROJECT: NORTHERN TASMANIAN NEUTRON ACTIVATION DRAINAGE SURVEYS

SAMPLE NUMBER	TNORTH metres	TEAST metres	KIND	EU PPM	IR PPF	LA PPM	LU PPM	RB PPM	SM PPM	SE PPM	TA PPM	TH PPM	U PPM	YB PPM
T 17284	401098	427565	PC	0.5	-8.0	12.7	0.2	27.0	3.0	-2.5	2.3	5.4	-0.8	1.3
T 17285	401129	427591	PC	0.6	-6.0	17.0	0.3	33.0	3.8	-2.0	2.3	7.1	1.5	1.3
T 17286	399178	428049	PC	1.4	-10.0	21.2	0.3	72.0	4.9	-3.4	1.6	5.2	1.4	1.7
T 17287	398965	428359	PC	0.3	-4.0	20.9	0.3	23.0	3.7	-1.4	1.4	8.8	0.7	1.5
T 17288	398976	428411	PC	1.1	-8.0	11.6	0.2	40.0	3.6	-2.4	1.3	3.1	-0.8	1.3
T 17289	399308	428117	PC	0.7	-8.0	27.0	0.4	31.0	5.4	-2.5	1.9	9.9	-0.8	1.8
T 17290	398231	428051	PC	0.7	-7.0	15.7	0.3	55.0	3.3	-2.1	1.4	4.4	1.1	1.3
T 17291	398200	428124	PC	0.9	-9.0	11.3	0.1	47.0	2.9	-2.7	-0.7	2.9	-0.9	1.0
T 17292	401244	428891	PC	1.5	-12.0	12.9	0.2	-16.0	4.3	-4.0	1.5	2.2	-1.3	1.5
T 17293	401190	428925	PC	1.5	-10.0	12.0	0.2	30.0	3.6	-3.4	1.5	2.2	-1.1	1.0
T 17295	402522	427408												
T 17300	399560	425447	-200#											
T 17301	401255	428782	-200#	1.6	-10.0	68.3	0.9	67.0	11.7	-4.7	3.1	24.6	3.3	4.4
T 17303	401930	425180	-200#	1.5	-4.0	21.9	0.4	26.0	5.4	-1.3	1.0	4.9	-0.5	2.2
T 17304	401964	425229	-200#	1.6	-6.0	29.8	0.4	29.0	5.8	-1.4	1.6	6.5	-0.5	2.3
T 17305	401772	425145	-200#	1.3	-5.0	23.0	0.4	33.0	4.9	-4.8	2.8	7.1	1.7	2.2
T 17306	401709	425156	-200#	1.3	-4.0	31.3	0.5	23.0	5.9	-1.2	2.5	10.5	0.6	2.7
T 17307	401774	425428	-200#	1.6	-5.0	20.3	0.4	35.0	4.9	-1.5	2.1	4.6	-0.5	2.0
T 17308	406806	429557	-200#	0.5	-1.0	12.4	0.5	6.0	2.3	-0.5	0.9	3.5	1.2	2.4
T 17309	406550	429368	-200#	1.2	-3.0	42.5	0.6	92.0	7.3	-1.1	1.1	14.0	2.4	3.4
T 17310	405982	429901	-200#	1.2	-3.0	42.4	0.7	98.0	7.0	-2.9	2.0	13.1	2.9	3.1
T 17311	405981	429832	-200#	1.8	-7.0	31.9	0.9	15.0	8.1	-1.6	1.1	7.5	2.7	4.6
T 17322	408747	422317	-200#	0.9	-4.0	37.0	0.6	55.0	5.6	-1.3	2.1	8.5	0.9	2.8
T 17323	409002	422125	-200#	0.6	-2.0	21.3	0.6	9.0	3.2	-0.9	1.2	5.2	1.7	2.9
T 17324	409045	422151	-200#	0.9	-3.0	39.3	0.7	26.0	5.8	-1.0	1.8	8.5	2.1	3.6
T 17325	409017	422675	-200#	1.2	-4.0	44.7	0.8	71.0	7.1	-4.0	1.7	11.5	2.3	4.2
T 17328	408352	421277	-200#	1.5	-8.0	31.0	1.3	21.0	6.9	-1.0	1.7	9.1	4.4	6.1
T 17329	408226	420830	-200#	1.3	-8.0	38.3	1.0	15.0	7.1	-3.1	0.8	9.0	3.2	4.8
T 17330	408221	420779	-200#	1.2	-3.0	31.2	0.6	47.0	5.4	-1.1	2.2	8.8	2.3	3.3
T 17331	408082	421951	-200#	3.3	-6.0	48.0	1.0	17.0	11.4	-2.1	-0.4	5.0	-0.9	4.9
T 17332	407905	421966	-200#	1.9	-5.0	30.8	0.5	18.0	5.8	-1.7	0.9	4.9	-2.1	2.6
T 17333	407428	421540	-200#	1.6	-6.6	22.5	0.4	-3.8	5.8	-1.3	0.9	3.5	-0.5	2.3
T 17334	407201	421385	-200#	2.0	-3.6	49.8	0.6	26.5	9.5	-3.7	0.6	5.4	-0.6	3.6
T 17335	407049	421268	-200#	1.4	-7.2	27.5	0.5	66.2	5.5	-0.8	1.4	6.7	0.7	2.5
T 17336	407033	422456	-200#	1.4	-3.6	19.0	0.4	25.2	4.9	-1.0	1.5	4.6	-0.5	2.2

Laboratory:	BECD											
Method :	INAA30											
Det. Limit:	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100

569255

257

PROJECT: NORTHERN TASMANIAN NEUTRON ACTIVATION DRAINAGE SURVEYS

SAMPLE NUMBER	TNORTH metres	TEAST metres	KIND	SE PPM	AS PPM	AU PPM	MO PPM	AG PPM	SN PPM	W PPM	ZN PPM	TH PPM	U PPM
T 17337	407272	422822	-200#	7.5	33.1	1177	114	-6	8028	5907	623	14.8	-3.5
T 17338	408240	423438	-200#	1.4	4.4	-2	-5	-1	-64	16	100	8.8	2.9
T 17339	408166	423452	-200#	0.6	4.3	8	-3	-2	-112	-3	362	4.4	0.6
T 17343	408529	422774	-200#	3.1	73.2	73	-1	-1	-67	-1	860	10.2	1.1
T 17344	405950	422659	-200#	0.6	5.3	7	-2	-2	-114	5	304	4.4	0.9
T 17345	406183	421496	-200#	1.3	6.9	5	-1	-1	-67	6	412	6.8	1.8
T 17346	406028	420606	-200#	0.5	4.7	-4	-2	-2	-105	-1	339	4.6	-0.6
T 17347	405880	420547	-200#	0.6	4.7	-2	1	-0	-58	5	152	3.6	2.4
T 17348	405483	420356	-200#	2.1	22.9	7	-10	-1	-105	8	231	11.3	5.3
T 17349	405535	420296	-200#	1.1	3.4	52	-6	-0	-57	3	140	7.5	2.9
T 17350	406195	420846	-200#	8.1	27.8	911	-1	-1	109	42	212	8.1	2.7
T 17351	406264	420848	-200#	0.6	1.7	-4	-2	-1	186	-3	320	2.6	-0.5
T 17352	406386	420903	-200#	0.4	2.2	9	-2	-1	-91	21	295	2.7	-1.5
T 17353	406602	421318	-200#	2.1	22.1	29	-5	-1	122	18	245	6.4	2.2
T 17361	404507	421788	-200#	0.4	2.2	-6	-3	-2	-126	-5	351	7.3	-0.7
T 17362	403186	421612	-200#	0.4	-0.5	-5	-5	-1	260	-1	218	5.4	-0.6
T 17363	403129	421606	-200#	-0.2	2.0	-5	-2	-1	-101	-1	270	2.1	-0.6
T 17364	403684	421551	-200#	-0.2	2.1	-4	-2	-1	-93	-1	244	1.6	-0.5
T 17365	404019	421661	-200#	-0.1	0.9	-5	-2	-1	-81	-2	233	2.1	-0.6
T 17401	401255	428782	PC	0.2	-0.9	-6	-7	-6	-180	-2	113	114.6	11.0
T 17403	401930	425180	PC	0.4	2.3	-2	-1	-1	-77	-0	89	3.3	-0.3
T 17404	401964	425229	PC	0.6	12.9	-2	-4	-1	246	3	81	10.2	2.3
T 17405	401772	425145	PC	0.3	1.9	-2	-1	-1	-66	-1	82	7.3	0.6
T 17406	401709	425156	PC	0.2	1.8	-1	-5	-1	-89	3	75	25.8	2.7
T 17407	401774	425428	PC	0.7	3.6	-3	-1	-1	320	-1	144	5.8	1.6
T 17408	406806	429557	PC	0.7	0.7	-0	-1	-0	-31	1	37	1.5	0.6
T 17409	406590	429368	PC	2.6	17.2	-2	-3	-1	-64	2	88	7.7	1.5
T 17410	405982	429901	PC	2.9	19.2	-2	-1	-1	-70	-1	101	7.9	1.0
T 17411	405981	429832	PC	1.7	14.5	-1	-2	-0	-52	2	106	4.1	1.4
T 17422	408747	422317	PC	0.5	13.6	354	-1	0	-34	4	20	1.8	0.4
T 17423	409002	422125	PC	0.3	0.3	-0	-1	-0	-31	22	47	1.4	-0.2
T 17424	409045	422151	PC	0.4	0.6	-1	-1	-0	-52	-0	37	1.4	0.6
T 17425	409017	422675	PC	0.6	2.3	-1	-0	-0	-40	-0	18	2.8	-0.2
T 17428	408352	421277	PC	0.5	10.8	-1	-2	-0	-38	-0	43	2.1	-0.2
T 17429	408226	420830	PC	0.4	6.7	-1	-3	-0	-36	1	46	2.5	2.0

Laboratory:	BECD									
Method :	INAA30									
Det. Limit:	0.100	0.100	5.000	10.000	5.000		2.000		0.100	0.100

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PROJECT: NORTHERN TASMANIAN NEUTRON ACTIVATION DRAINAGE SURVEYS

SAMPLE NUMBER	TNORTH metres	TEAST metres	KIND	BA PPM	HF PPM	FE %	SC PPM	ZR PPM	BR PPM	CE PPM	CS PPM	CR PPM	CO PPM
T 17337	407272	422822	-200#	356	23	20.52	21.4	1062	37	83	18.0	297.6	63.6
T 17338	408240	423438	-200#	83	44	1.68	6.9	1505	28	56	2.8	294.9	14.1
T 17339	408166	423452	-200#	222	9	6.82	14.3	584	110	34	2.4	228.9	57.7
T 17343	408529	422774	-200#	221	15	2.38	7.2	630	46	80	4.4	188.5	37.6
T 17344	405950	422659	-200#	130	10	6.38	16.5	414	197	34	3.4	299.8	43.3
T 17345	406183	421496	-200#	155	10	4.08	9.5	354	42	43	4.6	185.5	25.6
T 17346	406028	420606	-200#	178	15	5.16	11.0	557	200	48	2.7	277.5	37.9
T 17347	405880	420547	-200#	9	40	0.33	2.2	1319	43	29	0.7	159.8	-0.3
T 17348	405483	420356	-200#	301	89	1.47	6.4	2925	101	83	5.3	278.9	1.1
T 17349	405535	420296	-200#	75	56	0.30	3.9	1802	25	49	1.7	167.6	0.6
T 17350	406195	420846	-200#	138	44	9.17	6.1	1414	47	51	3.7	219.7	5.2
T 17351	406264	420848	-200#	131	8	7.65	14.8	274	115	22	2.4	234.8	42.1
T 17352	406386	420803	-200#	255	8	8.75	15.2	216	132	25	1.3	245.3	53.4
T 17353	406602	421318	-200#	193	17	4.82	6.7	643	95	41	4.0	162.1	21.3
T 17361	404507	421788	-200#	527	7	7.41	18.9	244	214	63	5.3	272.1	51.5
T 17362	403186	421612	-200#	423	6	1.01	7.4	366	304	70	3.8	54.1	13.2
T 17363	403129	421606	-200#	199	2	7.81	19.4	199	146	28	0.9	261.7	65.5
T 17364	403684	421551	-200#	93	2	6.87	15.5	361	294	15	1.0	231.5	47.5
T 17365	404019	421661	-200#	173	2	8.63	16.4	253	173	32	1.2	304.3	56.0
T 17401	401255	428782	PC	91	131	4.27	14.8	5219	-1	404	-0.9	237.0	17.2
T 17403	401930	425180	PC	224	4	5.86	10.1	286	9	21	1.3	160.1	41.6
T 17404	401964	425229	PC	22	36	2.44	4.9	1291	3	50	1.1	158.9	8.4
T 17405	401772	425145	PC	186	11	3.21	6.2	300	5	42	1.2	151.5	16.3
T 17406	401709	425156	PC	132	44	1.69	6.0	1868	2	133	0.9	211.1	9.7
T 17407	401774	425428	PC	201	11	5.86	10.7	493	5	31	1.0	233.5	27.6
T 17408	406806	429557	PC	14	11	0.15	0.8	404	3	18	0.2	12.9	0.4
T 17409	406590	429368	PC	147	6	3.14	6.8	150	4	50	3.2	103.8	11.9
T 17410	405982	429901	PC	153	6	3.23	6.9	249	4	48	3.5	106.3	12.7
T 17411	405981	429832	PC	38	9	1.72	2.7	405	7	30	2.2	70.4	8.4
T 17422	408747	422317	PC	28	5	0.18	1.4	234	2	21	1.2	94.6	0.4
T 17423	409002	422125	PC	-8	13	0.05	0.6	552	2	12	0.5	141.4	0.5
T 17424	409045	422151	PC	5	4	0.11	0.9	162	2	14	0.7	63.8	0.4
T 17425	409017	422675	PC	47	4	0.26	2.0	221	3	29	2.0	78.6	0.6
T 17428	408352	421277	PC	-8	11	0.12	0.9	442	2	17	0.4	154.7	1.1
T 17429	408226	420830	PC	20	13	0.13	1.1	495	2	16	0.4	197.5	0.6

Laboratory:	BECD									
Method:	INAA30									
Det. Limit:	1.000	0.050	0.100		1.000	1.000	0.100	0.100	0.100	0.100

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PROJECT: NORTHERN TASMANIAN NEUTRON ACTIVATION DRAINAGE SURVEYS

SAMPLE NUMBER	TNORTH metres	TEAST metres	KIND	EU PPM	IR PPB	LA PPM	LU PPM	RB PPM	SM PPM	SE PPM	TA PPM	TH PPM	U PPM	YR PPM
T 17337	407272	422822	-200#	2.1	-13.2	49.5	1.1	373.2	11.3	-4.5	1.7	14.8	-3.5	4.8
T 17338	408240	423438	-200#	0.9	-1.9	25.1	0.8	26.7	5.2	-2.1	1.3	8.8	2.9	4.0
T 17339	408166	423452	-200#	1.3	-3.3	20.1	0.4	25.0	5.6	-3.3	0.4	4.4	0.6	2.4
T 17343	408529	422774	-200#	0.9	-1.9	31.9	0.6	34.0	7.4	-2.1	0.7	10.2	1.1	3.2
T 17344	405950	422659	-200#	0.9	-3.4	14.0	0.4	9.5	5.1	-1.1	1.2	4.4	0.9	2.2
T 17345	406183	421496	-200#	0.6	-6.0	17.8	0.4	23.4	5.0	-2.1	0.6	6.8	1.8	2.4
T 17346	406028	420606	-200#	0.7	-3.1	16.3	0.5	-3.3	5.4	-1.0	0.6	4.6	-0.6	2.4
T 17347	405880	420547	-200#	0.2	-1.7	9.1	0.6	5.6	2.6	-2.0	0.6	3.6	2.4	3.1
T 17348	405483	420356	-200#	0.8	-3.1	28.4	1.3	36.2	8.0	-3.5	0.7	11.3	5.3	6.6
T 17349	405535	420296	-200#	0.4	-5.0	15.5	0.9	16.8	4.6	-0.6	0.9	7.5	2.9	4.8
T 17350	406195	420846	-200#	0.5	-2.0	15.8	0.8	36.4	4.6	-0.8	1.1	8.1	2.7	3.7
T 17351	406264	420848	-200#	0.9	-2.7	12.2	0.2	7.1	3.2	-0.9	1.3	2.6	-0.5	1.4
T 17352	406386	420903	-200#	1.1	-2.8	13.6	0.3	12.6	3.8	-0.9	0.8	2.7	-1.5	1.7
T 17353	406602	421318	-200#	0.6	-2.9	17.0	0.4	40.0	3.9	-1.0	1.0	6.4	2.2	2.3
T 17361	404507	421788	-200#	1.6	-3.7	30.1	0.4	49.3	6.8	-1.2	1.5	7.3	-0.7	2.6
T 17362	403186	421612	-200#	4.2	-8.9	71.5	1.2	19.1	18.4	-1.0	0.2	5.4	-0.6	7.6
T 17363	403129	421606	-200#	1.8	-3.1	14.5	0.3	8.6	5.0	-1.0	1.4	2.1	-0.6	1.8
T 17364	403684	421551	-200#	1.1	-2.7	9.2	0.2	3.0	2.9	-0.9	0.8	1.6	-0.5	1.0
T 17365	404019	421661	-200#	1.6	-2.5	14.0	0.2	14.8	4.3	-0.8	1.4	2.1	-0.6	1.4
T 17401	401255	428782	PC	1.4	-16.0	258.9	2.0	48.0	38.1	-6.4	4.2	114.6	11.0	8.2
T 17403	401930	425180	PC	0.7	-2.0	12.1	0.2	29.0	2.7	-0.8	1.2	3.3	-0.3	1.1
T 17404	401964	425229	PC	0.6	-2.0	28.5	0.5	23.0	4.3	-0.8	1.4	10.2	2.3	2.3
T 17405	401772	425145	PC	0.6	-2.0	23.8	0.3	26.0	3.7	-0.7	1.1	7.3	0.6	1.4
T 17406	401709	425156	PC	0.9	-3.0	71.1	0.8	38.0	11.3	-1.0	2.6	25.8	2.7	3.8
T 17407	401774	425428	PC	0.6	-5.0	17.8	0.3	24.0	3.2	-2.8	1.3	5.8	1.6	1.3
T 17408	406805	429557	PC	0.4	-1.0	10.2	0.2	4.0	1.7	-0.4	0.2	1.5	0.6	1.0
T 17409	406590	429368	PC	0.9	-2.0	26.3	0.4	53.0	4.9	-0.7	0.7	7.7	1.5	1.8
T 17410	405962	429901	PC	0.8	-2.0	26.0	0.4	61.0	4.8	-0.7	0.9	7.9	1.0	1.9
T 17411	405981	429832	PC	0.6	-1.0	14.7	0.3	23.0	2.6	-0.6	0.7	4.1	1.4	1.3
T 17422	408747	422317	PC	0.3	-1.0	10.9	0.1	13.0	1.7	-0.4	0.5	1.8	0.4	0.7
T 17423	409002	422125	PC	0.1	-3.0	5.9	0.2	3.0	1.0	-0.4	0.6	1.4	-0.2	0.8
T 17424	409045	422151	PC	0.3	-4.0	7.4	0.1	8.0	1.2	-0.3	0.3	1.4	0.6	0.5
T 17425	409017	422675	PC	0.4	-1.0	14.2	0.2	22.0	2.3	-0.4	0.2	2.8	-0.2	0.8
T 17428	408352	421277	PC	0.3	-3.0	8.5	0.2	4.0	1.8	-1.2	0.3	2.1	-0.2	0.9
T 17429	408226	420830	PC	0.4	-1.0	7.5	0.2	7.0	1.7	-0.4	0.8	2.5	2.0	1.1

Laboratory:	BECC											
Method:	INAA30											
Det. Limit:	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100

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RGC EXPLORATION PTY. LTD.

DATA SHEET

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PROJECT: NORTHERN TASMANIAN NEUTRON ACTIVATION DRAINAGE SURVEYS

SAMPLE NUMBER	TNORTH met res	TEAST met res	KIND	SB PPM	AS PPM	AU PPM	MO PPM	AG PPM	SN PPM	W PPM	ZN PPM	TH PPM	U PPM
T 17430	408221	420779	PC	1.5	5.0	417	-3	-0	-86	5	71	4.0	1.6
T 17431	408082	421951	PC	0.8	7.2	1196	-1	-0	-74	-1	114	2.6	1.0
T 17432	407905	421966	PC	0.8	5.3	-1	-1	-0	168	-0	150	2.2	0.7
T 17433	407428	421540	PC	0.6	5.6	-1	-0	-0	-47	-0	175	2.2	-0.2
T 17434	407201	421385	PC	0.4	1.3	-0	-1	-0	-25	2	76	1.6	0.4
T 17435	407049	421268	PC	0.7	2.4	-1	-0	-0	48	8	81	2.3	0.2
T 17436	407033	422456	PC	0.6	2.8	-1	-0	-0	147	22	96	2.7	0.2
T 17437	407272	422822	PC	44.6	64.4	5705	-102	-23	179757	101914	930	72.5	54.4
T 17438	408240	423438	PC	0.6	0.9	2	-3	-0	534	47	61	2.9	1.5
T 17439	408166	423452	PC	0.4	1.6	-0	-0	-0	97	8	83	1.6	-0.1
T 17442	407707	422922	PC	0.8	13.3	-1	-1	-0	146	19	97	1.9	0.6
T 17443	408529	422774	PC	1.9	34.3	-1	-1	-0	104	3	134	3.5	0.7
T 17444	405950	422659	PC	0.3	1.6	-1	-0	-0	-48	12	101	1.6	-0.2
T 17445	406183	421496	PC	2.1	4.8	-1	-0	-0	149	7	183	3.3	0.6
T 17446	406028	420606	PC	0.3	1.5	-1	-0	-0	50	1	90	1.5	-0.1
T 17447	405880	420547	PC	0.3	0.9	-0	-1	-0	-17	1	39	1.1	-0.1
T 17448	405483	420356	PC	1.2	3.0	-1	-4	-0	-44	3	68	4.6	2.2
T 17449	405535	420296	PC	0.5	1.3	1	-2	-0	73	2	43	3.5	0.9
T 17450	406195	420846	PC	4.6	15.1	5085	-1	-1	704	322	72	5.1	-0.4
T 17451	406264	420848	PC	0.3	1.1	-0	-0	-0	-30	2	79	1.4	-0.1
T 17452	406386	420903	PC	0.2	1.5	3	-0	-0	-40	4	120	1.6	-0.2
T 17453	406602	421318	PC	1.0	4.4	7	-0	-0	71	12	57	2.8	0.7
T 17461	404507	421788	PC	1.3	2.2	-2	-6	-0	81	-1	180	11.6	3.4
T 17462	403186	421612	PC	-0.1	0.8	-0	-1	-1	121	-0	168	1.1	-0.3
T 17463	403129	421606	PC	-0.1	0.6	-0	-1	-1	-72	-0	234	1.6	-0.3
T 17464	403684	421551	PC	0.2	0.7	-0	-1	-1	141	-0	173	1.5	-0.3
T 17465	404019	421661	PC	-0.0	0.2	-0	-1	-1	-60	1	158	0.6	-0.3

Laboratory:	BECC											
Method:	INAA30											
Det. Limit:	0.100	0.100	5.000	10.000	5.000				2.000		0.100	0.100

GUY WOODBURN, HUNTER 1032105, HUNTER@CCK.HUNTER

569259

PROJECT: NORTHERN TASMANIAN NEUTRON ACTIVATION DRAINAGE SURVEYS

SAMPLE NUMBER	TNORTH metres	TEAST metres	KIND	EU PPM	IR PPB	LA PPM	LU PPM	RB PPM	SM PPM	SE PPM	TA PPM	TH PPM	U PPM	YB PPM
T 17430	408221	420779	PC	0.6	-2.0	18.2	0.4	24.0	3.4	-0.7	0.8	4.0	1.5	1.7
T 17431	408082	421951	PC	0.4	-1.0	15.0	0.2	7.0	2.3	-0.6	0.7	2.6	1.0	1.0
T 17432	407905	421955	PC	0.4	-1.0	12.2	0.2	7.0	2.1	-0.5	0.2	2.2	0.7	0.8
T 17433	407428	421540	PC	0.5	-1.9	10.1	0.1	24.6	2.2	-0.5	0.6	2.2	-0.2	0.7
T 17434	407201	421385	PC	0.2	-0.7	8.1	0.1	7.6	1.3	-0.9	0.4	1.6	0.4	0.5
T 17435	407049	421268	PC	0.5	-1.0	9.7	0.2	20.1	2.3	-0.4	0.3	2.3	0.2	1.1
T 17436	407033	422456	PC	0.5	-1.2	12.4	0.2	27.7	2.4	-0.4	0.7	2.7	0.2	0.9
T 17437	407272	422822	PC	4.0	-93.8	234.7	7.0	102.3	22.5	-34.5	7.1	72.5	54.4	17.6
T 17438	408240	423438	PC	0.7	-1.0	14.3	0.4	6.0	3.4	-0.4	1.0	2.9	1.5	1.9
T 17439	408166	423452	PC	0.4	1.1	10.3	0.1	10.7	1.9	-0.4	0.4	1.6	-0.1	0.6
T 17442	407707	422922	PC	0.4	-1.1	10.9	0.2	8.8	2.1	-0.4	0.2	1.9	0.6	0.8
T 17443	408529	422774	PC	0.6	-1.0	17.0	0.2	23.4	3.2	-0.4	0.5	3.5	0.7	1.2
T 17444	405950	422659	PC	0.4	-1.4	12.9	0.1	20.5	2.3	-0.5	0.4	1.6	-0.2	0.5
T 17445	406183	421496	PC	0.4	-1.2	9.3	0.2	15.3	2.1	-0.4	0.7	3.3	0.6	1.1
T 17446	406028	420606	PC	0.4	-0.9	9.2	0.1	6.6	1.8	-1.0	0.6	1.5	-0.1	0.5
T 17447	405890	420347	PC	0.2	-0.5	9.4	0.1	3.6	1.4	-0.2	0.4	1.1	-0.1	0.4
T 17448	405483	420358	PC	1.2	-1.3	39.6	0.5	25.5	6.9	-1.6	1.4	4.6	2.2	2.2
T 17449	405535	420296	PC	0.4	-0.8	13.5	0.2	23.8	2.3	-0.3	0.5	3.5	0.9	1.0
T 17450	406195	420846	PC	1.6	-2.4	54.0	0.7	30.8	10.2	-1.0	1.3	5.1	-0.4	2.7
T 17451	406264	420848	PC	0.2	-0.9	7.5	0.1	6.4	1.4	-0.3	0.3	1.4	-0.1	0.5
T 17452	406386	420903	PC	0.3	-1.2	6.6	0.1	8.8	1.4	-1.3	0.5	1.6	-0.2	0.7
T 17453	406602	421318	PC	0.6	-0.9	15.5	0.2	21.6	2.8	-0.3	0.5	2.8	0.7	0.9
T 17461	404507	421788	PC	1.2	-1.7	32.3	0.5	102.1	6.3	-0.6	1.1	11.6	3.4	2.9
T 17462	403186	421612	PC	0.7	-2.3	5.8	0.1	18.0	2.1	-0.7	0.5	1.1	-0.3	0.8
T 17463	403129	421606	PC	0.5	-3.3	4.7	0.1	11.1	1.6	-0.7	1.2	1.6	-0.3	0.7
T 17464	403684	421551	PC	0.5	-2.1	6.0	0.1	19.5	1.7	-0.7	1.2	1.5	-0.3	0.8
T 17465	404019	421661	PC	0.2	-1.8	2.4		11.5	0.8	-0.6	0.2	0.6	-0.3	0.3

Laboratory:	BECO											
Method :	INAA30											
Det. Limit:	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100

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569201

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569202

(b) ROUND MOUNTAIN GRID SOIL GEOCHEMISTRY

PROJECT: EL 8/88 ROUND MT GRID SOIL SAMPLING

SAMPLE NUMBER	NORTH metres	DEPTH metres	EAST metres	KIND	CU PPM	PB PPM	ZN PPM	AG PPM	BI PPM	AS PPM	AU PPM	AUCHK PPM	SN PPM
T 14101	4950		6600	RC									
T 14102	4976	0.3	6600	SL	5	10	5	-0.5	-10	-1	-0.010		-3
T 14103	5000	0.3	6600	SL	5	5	10	-0.5	-10	-1	-0.010		-3
T 14104	5025	0.5	6600	SL	5	5	5	-0.5	-10	2	-0.010	-0.010	-3
T 14105	5050		6600	RC	5	-5	5	-0.5	-10	1	-0.010		-3
T 14106	5075	0.5	6600	SL	5	10	5	-0.5	-10	1	-0.010		4
T 14107	5100	0.6	6600	SL	10	10	25	0.5	-10	4	-0.010		4
T 14108	5125		6600	SL	5	15	15	-0.5	-10	2	-0.010		-3
T 14109	5150		6600	RC	10	15	50	-0.5	-10	4	-0.010		-3
T 14110	5150		6500	RC	30	15	130	-0.5	-10	13	-0.010		3
T 14111	5125	1.3	6500	SL	20	90	55	0.5	-10	9	-0.010	-0.010	-3
T 14112	5100	0.3	6500	SL	10	10	10	-0.5	-10	1	-0.010		-3
T 14113	5075		6500	SL	10	40	15	-0.5	-10	23	-0.010		3
T 14114	5050		6500	RC	5	-5	10	-0.5	-10	1	-0.010		-3
T 14115	5025		6500	SL	10	15	5	-0.5	-10	2	-0.010		3
T 14116	5000	0.5	6500	SL	5	-5	5	-0.5	-10	1	-0.010		-3
T 14117	4930	0.8	6400	SL	5	-5	5	-0.5	-10	-1	-0.010		-3
T 14118	4975	1.0	6400	SL	5	-5	5	-0.5	-10	-1	-0.010		-3
T 14119	5000	0.3	6400	SL	5	-5	5	-0.5	-10	1	-0.010		-3
T 14120											E. 670		
T 14121	5025	0.3	6400	SL	10	-5	5	-0.5	-10	1	-0.010		-3
T 14122	5050	0.5	6400	SL	5	-5	5	-0.5	-10	3	-0.010		-3
T 14123	5075		6400	SL	5	-5	5	-0.5	-10	4	-0.010		-3
T 14124	5100	0.3	6400	SL	5	-5	5	2.0	-10	3	-0.010		-3
T 14125	5125	0.5	6400	SL	5	5	5	3.0	-10	2	-0.010		-3
T 14126	5150		6400	RC	5	-5	10	1.0	-10	4	-0.010		-3
T 14127	5175		6400	RC	5	5	5	-0.5	-10	2	-0.010		-3
T 14128	5200	0.5	6300	SL	10	25	15	1.5	-10	3	-0.010		-3
T 14129	5175		6300	RC	5	-5	10	-0.5	-10	5	-0.010		-3
T 14130	5150		6300	RC	5	5	5	-0.5	-10	1	-0.010		-3
T 14131	5125		6300	RC	5	5	10	-0.5	-10	1	-0.010		-3
T 14132	5100	0.8	6300	SL	25	50	25	1.5	-10	22	-0.010		3
T 14133	5075		6300	RC	5	5	10	-0.5	-10	3	-0.010		-3
T 14134	5050		6300	RC	5	-5	5	-0.5	-10	1	-0.010		-3
T 14135	5025		6300	RC	-5	10	5	-0.5	-10	2	-0.010		-3

Laboratory:	ANALAB								
Method :	101	101	101	101	101	114	309	309	401
Det. Limit:	5.000	5.000	5.000	0.500	10.000	1.000	0.008	0.008	3.000

569263

PROJECT: EL 8/88 ROUND MT GRID SOIL SAMPLING

SAMPLE NUMBER	NORTH metres	DEPTH metres	EAST metres	KIND	CU PPM	PB PPM	ZN PPM	AG PPM	BI PPM	AS PPM	AU PPM	AUCHK PPM	SN PPM
T 14136	5000		5300	RC	5	-5	10	-0.5	-10	3	-0.010		-3
T 14137	4925	0.3	6400	SL	5	-5	10	-0.5	-10	3	-0.010		-3
T 14138	4925	0.4	6600	SL	-5	-5	10	-0.5	-10	2	-0.010		-3
T 14139	4900		6600	RC	10	-5	10	-0.5	-10	5	-0.010	-0.010	-3
T 14140											1.520		
T 14141	4875	2.0	6600	SL	5	10	15	-0.5	-10	2	-0.010		3
T 14142	4850		6600	RC	5	-5	10	-0.5	-10	1	-0.010		-3
T 14143	4825	0.4	6600	SL	5	5	15	-0.5	-10	1	-0.010		-3
T 14144	4800	0.3	6600	SL	5	-5	10	-0.5	-10	1	-0.010		-3
T 14145	4775		6600	RC	5	5	10	-0.5	-10	8	-0.010		-3
T 14146	4750		6600	RC	5	-5	5	-0.5	-10	3	-0.010		3
T 14147	4725		6600	RC	10	190	10	-0.5	-10	8	-0.010		-3
T 14148	4700		6600	RC	5	15	10	-0.5	-10	12	-0.010		-3
T 14149	4675		6600	RC	5	5	10	-0.5	-10	8	-0.010		-3
T 14150	4650	0.3	6600	SL	5	-5	10	-0.5	-10	4	-0.010		-3
T 14151	4625	0.4	6600	SL	-5	-5	10	-0.5	-10	4	-0.010		-3
T 14152	4600	0.5	6600	SL	-5	-5	10	-0.5	-10	4	-0.010		-3
T 14153	4575	0.5	6600	SL	-5	-5	15	-0.5	-10	5	-0.010		-3
T 14154	4550	0.5	6600	SL	5	-5	15	-0.5	-10	2	-0.010	-0.010	3
T 14155	4525	0.4	6600	SL	5	45	20	-0.5	-10	12	-0.010		9
T 14156	4500	0.9	6600	SL	5	30	20	-0.5	-10	12	-0.010		4
T 14157	4475	0.5	6600	SL	5	80	20	-0.5	-10	7	-0.010		4
T 14158	4450	2.0	6600	SL	55	75	135	0.5	-10	6	-0.010	-0.010	5
T 14159	4425	2.7	6600	SL	75	10	165	-0.5	-10	3	-0.010		-3
T 14160											0.130		
T 14161	4400	2.4	6600	SL	70	15	190	-0.5	-10	9	-0.010		5
T 14162					50	30	135	-0.5	-10	14	-0.010	-0.010	4
T 14163	4375	1.8	6600	SL	50	35	145	-0.5	-10	24	-0.010		7
T 14164	4350	1.0	6600	SL	55	10	155	-0.5	-10	19	-0.010		5
T 14165	4325	1.0	6600	SL	60	10	90	-0.5	-10	11	-0.010		3
T 14166	4300	1.5	6600	SL	60	25	125	-0.5	-10	11	-0.010		3
T 14167	4275	1.5	6600	SL	55	145	255	-0.5	-10	103	-0.010		-3
T 14168	4250	0.8	6600	SL	25	120	130	0.5	-10	29	-0.010		9
T 14169	4225	1.8	6600	SL	60	90	430	-0.5	-10	21	-0.010		9
T 14170	4200	1.1	6600	SL	30	100	90	-0.5	-10	15	-0.010		7

Laboratory:	ANALAB								
Method:	101	101	101	101	101	114	309	309	401
Det. Limit:	5.000	5.000	5.000	0.500	10.000	1.000	0.008	0.008	3.000

569264

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PROJECT: EL 8/88 ROUND MT GRID SOIL SAMPLING

SAMPLE NUMBER	NORTH metres	DEPTH metres	EAST metres	KIND	CU PPM	PB PPM	ZN PPM	AG PPM	BI PPM	AS PPM	AU PPM	AUCHK PPM	SN PPM
T 14206	3350	0.5	6600	SL	5	95	35	-0.5	-10	7	-0.010		7
T 14207	3325	0.6	6600	SL	5	85	25	0.5	-10	6	-0.010		7
T 14208	3300	0.6	6600	SL	5	85	20	0.5	-10	10	-0.010		7
T 14209	3275	0.5	6600	SL	5	95	25	-0.5	-10	9	-0.010		11
T 14210	3250	1.0	6600	SL	5	85	20	-0.5	-10	10	-0.010		15
T 14211	3225	1.0	6600	SL	5	135	60	-0.5	-10	44	-0.010		10
T 14212	3200	0.4	6600	SL	5	90	55	-0.5	-10	38	-0.010		5
T 14213	3175	0.6	6600	SL	5	55	55	-0.5	-10	19	-0.010		4
T 14214	3150	0.3	6600	SL	5	50	35	-0.5	-10	10	-0.010		7
T 14215	3125		6600	SL	5	40	50	-0.5	-10	8	-0.010		4
T 14216	3100		6600	RC	10	35	35	-0.5	-10	18	-0.010		4
T 14217	3075		6600	RC	10	1650	15	7.5	-10	570	-0.010	0.020	6
T 14218	3050		6600	RC	5	15	15	0.5	-10	3	-0.010		3
T 14219	3025		6600	RC	10	5	15	-0.5	-10	6	-0.010		11
T 14220	3000		6600	RC	5	5	30	-0.5	-10	3	-0.010		11
T 14221	2975		6600	RC	5	5	20	-0.5	-10	6	-0.010		6
T 14222	2950		6600	RC	5	5	10	-0.5	-10	2	-0.010		3
T 14223	2925		6600	RC	20	30	100	-0.5	-10	8	-0.010		4
T 14224	2900	0.0	6600	SL	20	30	60	-0.5	-10	17	-0.010		9
T 14225	2875	0.6	6600	SL	10	25	65	-0.5	-10	11	-0.010		12
T 14226	2850	0.4	6600	SL	20	115	100	-0.5	-10	17	-0.010		7
T 14227	2825	0.8	6600	SL	10	45	60	-0.5	-10	15	-0.010		21
T 14228	2800	0.3	6600	SL	15	45	85	-0.5	-10	14	-0.010		8
T 14229	2775	0.9	6600	SL	20	290	115	-0.5	-10	14	-0.010		7
T 14230	2750	0.3	6600	SL	20	405	100	-0.5	-10	20	-0.010	-0.010	4
T 14231	3775	0.7	6400	SL									
T 14232	3800	1.0	6400	SL	75	1900	260	1.0	-10	140	-0.010		25
T 14233	3825	0.8	6400	SL									
T 14234	3850	0.8	6400	SL	85	435	150	0.5	-10	50	-0.010		8
T 14235	3875	0.5	6400	SL	50	150	170	0.5	-10	46	-0.010		17
T 14236	3900	0.3	6400	SL	35	170	155	-0.5	-10	51	-0.010		21
T 14237	3925	1.1	6400	SL	15	85	80	0.5	-10	18	-0.010		15
T 14238	3950		6400	RC	10	15	25	-0.5	-10	6	-0.010		3
T 14239	3975		6400	RC	10	10	15	-0.5	-10	5	-0.010		3
T 14240											0.510		

Laboratory:	ANALAB								
Method :	101	101	101	101	101	114	309	309	401
Det. Limit:	5.000	5.000	5.000	0.500	10.000	1.000	0.008	0.008	3.000

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DATA SHEET

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PROJECT: EL 8/88 ROUND MT GRID SOIL SAMPLING

SAMPLE NUMBER	NORTH metres	DEPTH metres	EAST metres	KIND	CU PPM	PB PPM	ZN PPM	AG PPM	BI PPM	AS PPM	AU PPM	AUCHK PPM	SN PPM
T 14241	4000		6400	RC	10	10	20	-0.5	-10	9	-0.010		-3
T 14242	4025		6400	RC	5	35	40	-0.5	-10	6	-0.010		-3
T 14243	4050		6400	RC	5	5	25	0.5	-10	5	-0.010		-3
T 14244	4075	0.4	6400	SL	10	80	20	-0.5	-10	4	-0.010		6
T 14245	4100	0.5	6400	SL	15	140	40	-0.5	-10	14	-0.010		10
T 14246	4125	0.4	6400	SL	15	80	40	-0.5	-10	14	-0.010	-0.010	7
T 14247	4150	0.7	6400	SL	35	215	40	-0.5	-10	14	-0.010		7
T 14248	4175	0.3	6400	SL	15	125	40	-0.5	-10	17	-0.010		12
T 14249	4200	0.8	6400	SL	1150	90	30	-0.5	90	4	-0.010		4
T 14250	4225	0.2	6400	SL	10	80	15	-0.5	-10	3	-0.010		-3
T 14251	4250	0.9	6400	SL	25	95	140	-0.5	-10	28	-0.010		9
T 14252	4275	0.3	6400	SL	35	85	170	-0.5	-10	58	-0.010		15
T 14253	4300	0.6	6400	SL	40	295	250	-0.5	-10	44	-0.010		7
T 14254	4025	0.4	6400	SL	55	120	175	-0.5	-10	9	-0.010		5
T 14255	4350	1.3	6400	SL	65	5	155	-0.5	-10	4	-0.010		-3
T 14256	4375	0.9	6400	SL	65	20	160	13.0	-10	6	-0.010		-3
T 14257	4400	1.0	6400	SL	75	50	155	-0.5	-10	9	-0.010		-3
T 14258	4425	0.6	6400	SL	15	425	30	2.0	-10	39	-0.010		-3
T 14259	4450	0.9	6400	SL	10	500	20	1.0	-10	20	-0.010		-3
T 14260										0.150	0.150		
T 14261	4475	0.6	6400	SL	10	150	15	2.0	-10	12	-0.010		4
T 14262	4500	0.4	6400	SL	10	35	15	-0.5	-10	3	0.010		3
T 14263	4525	0.3	6400	SL	10	10	15	1.0	-10	1	-0.010		-3
T 14264	4550	0.4	6400	SL	10	15	10	0.5	-10	1	-0.010		-3
T 14265	4575	0.4	6400	SL	10	15	10	-0.5	-10	2	-0.010		-3
T 14266	4600	0.6	6400	SL	10	125	10	-0.5	-10	5	-0.010		3
T 14267	4625	0.7	6400	SL	10	780	15	7.5	-10	36	-0.010		7
T 14268	4650	0.7	6400	SL	5	65	10	-0.5	-10	2	-0.010	-0.010	-3
T 14269	4675	0.7	6400	SL	5	20	10	-0.5	-10	-1	-0.010		3
T 14270	4700	0.5	6400	SL	10	5	10	-0.5	-10	2	-0.010		-3
T 14271	4725	0.5	6400	SL	10	160	10	-0.5	-10	1	-0.010		3
T 14272	4750	0.4	6400	SL	10	-5	5	-0.5	-10	1	-0.010		-3
T 14273	4775	0.5	6400	SL	10	-5	5	-0.5	-10	-1	-0.010		3
T 14274	4800	0.6	6400	SL	5	-5	5	-0.5	-10	-1	-0.010		-3
T 14275	4825	0.6	6400	SL	5	-5	-5	-0.5	-10	-1	-0.010		-3

Laboratory:	ANALAB								
Method :	101	101	101	101	101	114	309	309	401
Det. Limit:	5.000	5.000	5.000	0.500	10.000	1.000	0.008	0.008	3.000

569207

PROJECT: EL-8/88 ROUND MT GRID SOIL SAMPLING

SAMPLE NUMBER	NORTH metres	DEPTH metres	EAST metres	KIND	CU PPM	PR PPM	ZN PPM	AG PPM	BI PPM	AS PPM	AU PPM	AUCHK PPM	SN PPM
T 14276	4850	0.8	6400	SL	10	-5	5	-0.5	-10	-1	-0.010		5
T 14277	4875	1.0	6400	SL	10	-5	5	-0.5	-10	1	-0.010		4
T 14278	4900		6400	RC	10	-5	5	-0.5	-10	1	-0.010		-3
T 14279													
T 14280											0.780		
T 14281	4925		6200	RC	5	-5	25	-0.5	-10	3	-0.008	-0.008	6
T 14282	4900	1.0	6200	SL	5	-5	-5	-0.5	-10	-1	-0.010		-3
T 14283	4675	0.6	6200	SL	5	-5	5	-0.5	-10	-1	-0.010		-3
T 14284	4850		6200	RC	10	-5	-5	-0.5	-10	1	-0.010		-3
T 14285	4825	0.5	6200	SL	5	-5	5	-0.5	-10	-1	-0.010		-3
T 14286	4800	0.4	6200	SL	10	20	10	-0.5	-10	1	-0.010		-3
T 14287	4775	0.4	6200	SL	5	45	10	-0.5	-10	1	-0.010		-3
T 14288	4750	0.4	6200	SL	10	5	10	-0.5	-10	-1	-0.010		-3
T 14289	4725		6200	SL	10	-5	5	-0.5	-10	-1	-0.010	-0.010	-3
T 14290	4700	0.6	6200	SL	10	-5	10	-0.5	-10	-1	-0.010		3
T 14291	4675	0.4	6200	SL	10	10	10	-0.5	-10	-1	-0.010		-3
T 14292	4650		6200	RC	10	80	15	-0.5	-10	7	-0.010		3
T 14293	6425		6200	RC	-5	20	15	-0.5	-10	3	-0.010		-3
T 14294	4600	0.6	6200	SL	70	40	15	-0.5	20	5	-0.010		-3
T 14295	4575	0.7	6200	SL	50	40	10	-0.5	-10	4	-0.010		3
T 14296	4550	0.4	6200	SL	20	10	10	-0.5	-10	2	-0.010		4
T 14297	4525	1.0	6200	SL	10	155	20	-0.5	-10	16	-0.010		4
T 14298	4500	1.1	6200	SL	5	70	15	-0.5	-10	7	-0.010	-0.010	3
T 14299	4475	0.9	6200	SL	10	80	20	-0.5	-10	9	-0.010		4
T 14300											0.270		
T 14301	4450	0.5	6200	SL	15	10	10	-0.5	10	6	-0.010		6
T 14302	4425	1.4	6200	SL	10	25	50	-0.5	-10	8	-0.010		3
T 14303	4400	0.5	6200	SL	5	-5	10	-0.5	-10	3	-0.010		5
T 14304	4375	0.7	6200	SL	5	15	30	-0.5	20	28	-0.008	-0.008	10
T 14305	4350	0.9	6200	SL	20	390	175	0.5	80	108	-0.008		15
T 14306	4325	0.7	6200	SL	20	60	115	-0.5	60	94	-0.008		15
T 14307	4300	0.5	6200	SL	40	140	145	-0.5	60	25	0.015		9
T 14308	4275	0.7	6200	SL	55	110	180	0.5	70	48	-0.008		10
T 14309	4250	1.3	6200	SL	40	75	160	-0.5	50	16	-0.008		20
T 14310	4225	0.6	6200	SL	15	60	60	-0.5	30	17	-0.008		25

Laboratory:	ANALAB									
Method:	101	101	101	101	101	114	309	309	401	
Det. Limit:	5.000	5.000	5.000	0.500	10.000	1.000	0.008	0.008	3.000	

569268

270

PROJECT: EL B/BB ROUND MT GRID SOIL SAMPLING

SAMPLE NUMBER	NORTH metres	DEPTH metres	EAST metres	KIND	CU PPM	PB PPM	ZN PPM	AG PPM	BI PPM	AS PPM	AU PPM	AUCHK PPM	SN PPM
T 14311	4200	0.5	6200	SL	10	50	40	-0.5	30	15	-0.008		25
T 14312	4175	0.5	6200	SL	10	30	35	-0.5	30	17	-0.008		15
T 14313	4150		6200	RC	5	-5	20	-0.5	10	7	-0.008		30
T 14314	4125		6200	RC	5	-5	15	-0.5	-10	5	-0.008		10
T 14315	4100		6200	SL	5	120	45	-0.5	10	32	-0.008		20
T 14316	4075		6200	RC	10	5	35	-0.5	10	40	-0.008		-3
T 14317	4050		6200	RC	5	-5	20	-0.5	-10	6	-0.008		3
T 14318	4025		6200	RC	5	85	40	-0.5	10	14	-0.008		3
T 14319	4000		6200	RC	5	15	55	-0.5	20	12	-0.008		-3
T 14320											0.168	0.165	
T 14321	3875	0.4	6000	SL	5	10	15	-0.5	10	4	-0.008		85
T 14322	3900		6000	RC	-5	-5	20	-0.5	10	2	-0.008		3
T 14323	3925		6000	RC	5	-5	20	-0.5	10	3	-0.008		5
T 14324	3950	0.4	6000	SL	5	5	25	-0.5	10	6	-0.008		45
T 14325	3975	0.6	6000	SL	5	80	25	-0.5	30	47	-0.008		45
T 14326	4000		6000	RC	5	5	20	-0.5	10	35	-0.008		15
T 14327	4025		6000	RC	5	-5	20	-0.5	10	11	-0.008		8
T 14328	4050	1.0	6000	SL	10	520	40	0.5	60	270	0.040		55
T 14329	4075		6000	RC	-5	10	40	-0.5	30	8	-0.008		8
T 14330	4100	0.6	6000	SL	5	45	40	-0.5	30	55	-0.008		60
T 14331	4125	1.0	6000	SL	5	20	40	-0.5	20	16	-0.008		30
T 14332	4150	0.5	6000	SL	5	-5	25	-0.5	20	10	-0.008		25
T 14333	4175	1.1	6000	SL	10	185	55	-0.5	30	55	0.017	0.009	70
T 14334	4200	1.4	6000	SL	15	155	70	-0.5	20	32	0.015		35
T 14335	4250	1.2	6000	SL	15	135	80	-0.5	20	45	0.017		40
T 14336	4250	1.5	6000	SL	25	220	110	-0.5	30	80	0.008		40
T 14337	4275	2.4	6000	SL	35	125	105	-0.5	40	47	-0.008		25
T 14338	4300	1.3	6000	SL	55	60	185	1.0	70	30	-0.008		15
T 14339	4325	1.0	6000	SL	30	125	130	-0.5	40	30	-0.008		10
T 14340											0.234		
T 14341	4350	1.0	6000	SL	25	205	130	-0.5	30	23	-0.008		10
T 14342	4375		6000	SL	40	-5	125	0.5	50	7	-0.008		-3
T 14343	4400	1.5	6000	SL	70	-5	110	0.5	80	10	-0.008		3
T 14344	4425	0.7	6000	SL	10	5	20	-0.5	20	3	-0.008		8
T 14345	4450	0.7	6000	SL	10	-5	20	-0.5	20	3	-0.008		15

Laboratory:	ANALAB								
Method :	101	101	101	101	101	114	309	309	401
Det. Limit:	5.000	5.000	5.000	0.500	10.000	1.000	0.008	0.008	3.000

559269

PROJECT: EL B/88 ROUND MT GRID SOIL SAMPLING

SAMPLE NUMBER	NORTH metres	DEPTH metres	EAST metres	KIND	CU PPM	PB PPM	ZN PPM	AG PPM	BI PPM	AS PPM	AU PPM	AUCHK PPM	SN PPM
T 14346	4475		6000	SL	10	-5	15	-0.5	10	2	-0.008		-3
T 14347	4500	0.7	6000	SL	5	410	20	-0.5	20	5	-0.008		7
T 14348	4525	0.4	6000	SL	5	10	20	-0.5	10	6	-0.008		9
T 14349	4550	0.5	6000	SL	5	-5	15	-0.5	10	3	-0.008		3
T 14350	4575	0.5	6000	SL	5	-5	15	-0.5	-10	2	-0.008		10
T 14351	4600	0.4	6000	SL	10	-5	15	-0.5	10	3	-0.008		9
T 14352	4625		6000	RC	10	-5	-5	-0.5	10	1	-0.008		15
T 14353	4650	0.6	6000	SL	10	-5	5	-0.5	10	2	-0.008		-3
T 14354	4675		6000	SL	10	-5	5	-0.5	20	1	-0.008		8
T 14355	4700	0.4	6000	SL	5	-5	5	-0.5	30	1	-0.008		6
T 14356	4725		6000	RC	10	-5	10	-0.5	30	1	-0.008		-3
T 14357	4750		6000	RC	10	-5	10	-0.5	20	1	-0.008		-3
T 14358	4775		6000	RC	5	5	10	-0.5	20	1	-0.008		-3
T 14359	4800		6000	SL	5	-5	10	-0.5	20	2	-0.008		-3
T 14360											0.756		
T 14361	4825		6000	RC	10	5	10	-0.5	30	4	-0.008		-3
T 14362	4850		6000	RC	5	-5	10	-0.5	20	1	-0.008		3
T 14363	4875	1.0	6000	SL	5	-5	10	-0.5	20	1	-0.008		7
T 14364	4900	0.7	6000	SL	5	-5	5	-0.5	20	1	-0.008		7
T 14365	4925	0.6	6000	SL	5	-5	10	-0.5	10	2	-0.008		5
T 14366	4950		6000	RC	5	-5	10	-0.5	20	3	-0.008		-3
T 14367	4950	0.0	5800	RC	5	-5	15	-0.5	10	2	-0.008		-3
T 14368	4925	0.6	5800	SL	5	-5	10	-0.5	10	1	-0.008		-3
T 14369	4900	0.5	5800	SL	5	-5	10	-0.5	20	2	-0.008		9
T 14370	4875	0.4	5800	SL	5	-5	10	-0.5	20	1	-0.008		8
T 14371	4850	0.6	5800	SL	5	-5	10	-0.5	20	2	-0.008		25
T 14372	4825	0.8	5800	SL	5	-5	10	-0.5	30	1	-0.008		15
T 14373	4800	0.5	5800	SL	5	-5	10	-0.5	20	3	-0.008		-3
T 14374	4775		5800	RC	5	-5	10	-0.5	10	1	-0.008		10
T 14375	4750	0.4	5800	SL	5	-5	10	-0.5	20	1	-0.008		-3
T 14376	4725	0.4	5800	SL	5	-5	10	-0.5	10	2	-0.008		7
T 14377	4700	0.4	5800	SL	5	-5	10	-0.5	20	1	-0.008		7
T 14378	4675		5800	RC	5	10	10	-0.5	-10	1	-0.008		-3
T 14379	4650		5800	RC	10	230	15	-0.5	-10	14	-0.008		-3
T 14380											0.148		

Laboratory:	ANALAB								
Method :	101	101	101	101	101	114	309	309	401
Det. Limit:	5.000	5.000	5.000	0.500	10.000	1.000	0.008	0.008	3.000

RGC EXPLORATION PTY LTD

569270

272

PROJECT: EL 8/88 ROUND MT GRID SOIL SAMPLING

SAMPLE NUMBER	NORTH metres	DEPTH metres	EAST metres	KIND	CU PPM	PB PPM	ZN PPM	AG PPM	BI PPM	AS PPM	AU PPM	AUCHK PPM	SN PPM
T 14381	4625	0.5	5800	SL	5	-5	10	-0.5	-10	2	-0.008		10
T 14382	4600	0.0	5800	RC	5	10	10	-0.5	-10	2	-0.008		3
T 14383	4575	0.4	5800	SL	5	-5	10	-0.5	-10	1	-0.008		9
T 14384	4550	0.4	5800	SL	5	-5	10	-0.5	-10	2	-0.008		10
T 14385	4525	0.4	5800	SL	5	-5	15	-0.5	-10	3	-0.008		10
T 14386	4500	0.5	5800	SL	5	-5	15	-0.5	10	2	-0.008		9
T 14387	4475		5800	RC	5	5	15	-0.5	10	5	-0.008		4
T 14388	4450	0.6	5800	SL	5	5	15	-0.5	10	2	-0.008		8
T 14389	4425	0.9	5800	SL	45	35	110	1.0	80	17	0.032		15
T 14390	4400	0.7	5800	SL	70	15	200	1.0	100	8	-0.008		10
T 14391	4375	0.8	5800	SL	90	5	190	1.0	80	6	-0.008		15
T 14392	4350	0.3	5800	SL	65	475	325	0.5	70	110	0.010		15
T 14393	4325	0.8	5800	SL	30	260	185	-0.5	50	190	0.014	0.014	65
T 14394	4300	0.9	5800	SL	25	220	70	0.5	40	110	0.010		70
T 14395	4275	0.8	5800	SL	15	115	35	-0.5	20	34	0.047		55
T 14396	4250	0.6	5800	SL	55	260	40	1.0	30	90	0.021		120
T 14397	4225	0.7	5800	SL	10	10	20	-0.5	20	9	-0.008		65
T 14398	4200	0.6	5800	SL	5	-5	20	-0.5	10	5	-0.008		75
T 14399	4175	0.5	5800	SL	5	-5	20	-0.5	-10	5	-0.008		55
T 14400											0.856		
T 14401	4150	0.8	5800	SL	25	475	25	1.0	-10	24	-0.008		45
T 14402	4125	0.9	5800	SL	10	135	35	1.0	10	320	0.026		95
T 14403	4100		5800	RC	5	-5	20	0.5	-10	5	-0.008		55
T 14404	4075	0.6	5800	SL	-5	5	25	-0.5	-10	11	-0.008		45
T 14405	4050	0.6	5800	SL	5	-5	20	-0.5	-10	8	-0.008	-0.008	100
T 14406	4025	1.0	5800	SL	9	35	20	0.5	-10	10	-0.008		80
T 14407	4000		5800	RC	5	-5	20	0.5	-10	10	-0.008		30
T 14408	3975	0.4	5800	SL	-5	20	20	0.5	-10	7	-0.008		80
T 14409	3950		5800	RC	-5	-5	20	0.5	-10	5	-0.008		4
T 14410	3975		5600	RC	-5	-5	20	0.5	-10	18	-0.008		15
T 14411	4000	0.6	5600	SL	-5	-5	20	0.5	-10	7	0.016		110
T 14412	4025	0.7	5600	SL	-5	10	25	0.5	-10	15	-0.008		55
T 14413	4050		5600	RC	-5	-5	20	-0.5	-10	5	-0.008		30
T 14414	4075		5600	RC	-5	-5	20	-0.5	-10	4	-0.008		7
T 14415	4100		5600	RC	-5	-5	20	-0.5	-10	3	-0.008		-3

Laboratory:	ANALAB								
Method :	101	101	101	101	101	114	309	309	401
Det. Limit:	5.000	5.000	5.000	0.500	10.000	1.000	0.008	0.008	3.000

569271

273

PROJECT: EL 8/88 ROUND MT GRID SOIL SAMPLING

SAMPLE NUMBER	NORTH metres	DEPTH metres	EAST metres	KIND	CU PPM	PB PPM	ZN PPM	AG PPM	BI PPM	AS PPM	AU PPM	AUCLK PPM	SN PPM
T 14416	4125	0.6	5600	SL	-5	-5	20	-0.5	-10	4	-0.008		95
T 14417	4150	0.6	5600	SL	-5	-5	20	-0.5	-10	4	-0.008		120
T 14418	4175	0.8	5600	SL	-5	-5	20	-0.5	-10	4	-0.008		80
T 14419	4200	0.7	5600	SL	-5	-5	20	-0.5	-10	4	-0.008		70
T 14420											0.227	0.228	
T 14421	4225	0.7	5600	SL	-5	-5	25	-0.5	-10	4	-0.008		55
T 14422	4250	1.0	5600	SL	-5	-5	20	-0.5	-10	7	-0.008		60
T 14423	4275	0.8	5600	SL	-5	-5	20	-0.5	-10	5	-0.008		70
T 14424	4300	1.0	5600	SL	15	50	65	1.5	-10	58	-0.008		65
T 14425	4325	1.0	5600	SL	35	90	140	2.0	-10	110	0.012		60
T 14426	4350	0.6	5600	SL	5	5	30	0.5	-10	5	-0.008		70
T 14427	4375	0.5	5600	SL	10	60	60	0.5	-10	53	-0.008		80
T 14428	4400	1.0	5600	SL	15	70	160	1.0	-10	19	-0.008		15
T 14429	4425	0.6	5600	SL	20	50	85	1.0	-10	50	-0.008		15
T 14430	4450	0.5	5600	SL	5	-5	25	-0.5	-10	6	-0.008		6
T 14431	4475	0.5	5600	SL	5	-5	25	-0.5	-10	3	-0.008		-3
T 14432	4500	0.5	5600	SL	5	-5	20	0.5	-10	5	-0.008		5
T 14433	4525	0.2	5600	SL	5	-5	20	0.5	-10	4	-0.008		10
T 14434	4550	0.5	5600	RC	-5	-5	20	-0.5	-10	68	0.008		4
T 14435	4575		5600	RC	-5	-5	20	-0.5	-10	4	-0.008		5
T 14436	4600		5600	RC	-5	-5	20	0.5	-10	3	-0.008		-3
T 14437	4625	0.5	5600	RC	-5	-5	20	0.5	-10	3	-0.008		-3
T 14438	4650		5600	RC	-5	-5	20	-0.5	-10	3	-0.008		-3
T 14439	4675		5600	RC	-5	60	20	0.5	-10	4	-0.008		-3
T 14440											1.510	1.680	
T 14441	4700		5600	RC	-5	-5	20	0.5	-10	3	-0.008		-3
T 14442	4725		5600	RC	-5	-5	20	0.5	-10	3	-0.008		6
T 14443	4750		5600	RC	-5	10	20	0.5	-10	4	-0.008		-3
T 14444	4800		5600	RC	-5	-5	15	0.5	-10	3	-0.008		4
T 14445	4800		5600	RC	-5	-5	20	0.5	-10	3	-0.008		6
T 14446	4825	0.4	5600	SL	-5	-5	20	-0.5	-10	3	-0.008		5
T 14447	4850		5600	RC	-5	5	20	-0.5	-10	3	-0.008		6
T 14448	4875		5600	RC	-5	25	20	0.5	-10	9	0.014		6
T 14449	4900	0.5	5600	SL	5	-5	35	0.5	-10	3	-0.008		10
T 14450	4925		5600	RC	5	5	30	0.5	20	5	-0.008		-3

Laboratory:	ANALAB								
Method :	101	101	101	101	101	114	309	309	401
Det. Limit:	5.000	5.000	5.000	0.500	10.000	1.000	0.008	0.008	3.000

REFERRING TO THE SHEET

569272

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RGC EXPLORATION PTY. LTD. DATA SHEET

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PROJECT: EL 8/88 ROUND MT. GRID SOIL SAMPLING

SAMPLE NUMBER	NORTH metres	DEPTH metres	EAST metres	KIND	CU PPM	PB PPM	ZN PPM	AG PPM	BI PPM	AS PPM	AU PPM	AUCHK PPM	SN PPM
T 14451	4950		5600	SL	5	-5	25	0.5	20	3	-0.008		7
T 14452	4975		5600	RC	5	-5	25	0.5	10	2	-0.008		-3
T 14453	5000	0.6	5400	SL	5	-5	25	0.5	10	2	-0.008		4
T 14454	4975	0.5	5400	SL	5	-5	25	0.5	-10	2	-0.008		5
T 14455	4950	0.5	5400	SL	-5	-5	25	0.5	-10	3	-0.008		10
T 14456	4925	0.5	5400	SL	5	-5	25	0.5	-10	2	-0.008		5
T 14457	4900	0.5	5400	SL	5	-5	25	0.5	10	3	-0.008		-3
T 14458	4875	0.4	5400	SL	5	-5	25	1.0	20	2	-0.008		-3
T 14459	4850	0.4	5400	SL	5	-5	45	0.5	20	3	-0.008		-3
T 14460											0.804	0.745	
T 14461	4825		5400	RC	5	-5	25	0.5	-10	2	-0.008		5
T 14462	4800		5400	RC	5	-5	25	0.5	-10	2	-0.008		6
T 14463	4775		5400	RC	5	10	25	0.5	10	2	-0.008		-3
T 14464	4750		5400	RC	5	-5	25	-0.5	10	2	-0.008		-3
T 14465	4725		5400	RC	20	-5	25	-0.5	-10	17	-0.008		4
T 14466	4700		5400	RC	5	-5	35	0.5	10	3	-0.008		5
T 14467	4675		5400	RC	5	-5	25	0.5	10	2	0.013		-3
T 14468	4650	0.4	5400	SL	5	-5	25	0.5	-10	2	-0.008		10
T 14469	4625		5400	RC	5	-5	25	-0.5	-10	4	-0.008		-3
T 14470	4600		5400	RC	5	-5	25	0.5	-10	4	-0.008		-3
T 14471	4575	0.4	5400	SL	5	-5	30	1.0	20	2	-0.008		8
T 14472	4550	0.3	5400	SL	5	-5	40	0.5	-10	3	0.009		4
T 14473	4525	0.5	5400	SL	5	-5	30	-0.5	10	3	-0.008		8
T 14474	4500	0.4	5400	SL	5	-5	30	-0.5	-10	3	-0.008	-0.008	10
T 14475	4475		5400	RC	10	-5	50	-0.5	-10	5	-0.008		5
T 14476	4450		5400	RC	5	-5	25	0.5	-10	4	-0.008		-3
T 14477	4425	0.5	5400	SL	5	-5	30	0.5	-10	5	-0.008		70
T 14478	4400	0.6	5400	SL	35	40	90	-0.5	-10	95	-0.008	0.010	110
T 14479	4375	0.5	5400	SL	10	-5	25	-0.5	-10	6	-0.008		40
T 14480											1.250		
T 14481	4350	1.0	5400	SL	35	20	35	0.5	-10	25	-0.008		55
T 14482	4325	0.4	5400	SL	25	-5	20	0.5	-10	9	-0.008		30
T 14483	4300	0.6	5400	SL	10	-5	30	0.5	-10	3	-0.008		45
T 14484	4275	0.8	5400	SL	5	-5	25	-0.5	-10	5	-0.008		40
T 14485	4250	0.5	5400	SL	5	-5	25	-0.5	-10	3	-0.008		45

Laboratory:	ANALAB								
Method:	101	101	101	101	101	114	309	309	401
Det. Limit:	5.000	5.000	5.000	0.500	10.000	1.000	0.008	0.008	3.000

569273

PROJECT: EL 8/88 ROUND MT GRID SOIL SAMPLING

SAMPLE NUMBER	NORTH metres	DEPTH metres	EAST metres	KIND	CU PPM	PB PPM	ZN PPM	AG PPM	BI PPM	AS PPM	AU PPM	AUCLK PPM	SN PPM
T 14486	4225	0.5	5400	SL	5	-5	25	0.5	-10	7	-0.008		75
T 14487	4200		5400	RC	5	-5	25	0.5	-10	6	-0.008		30
T 14488	4175		5400	RC	5	-5	25	0.5	-10	3	-0.008		15
T 14489	4150		5400	RC	5	-5	20	-0.5	-10	3	-0.008		35
T 14490	4125		5400	RC	5	-5	20	-0.5	10	3	-0.008		7
T 14491	4100	0.5	5400	SL	5	-5	20	0.5	-10	3	-0.008	-0.008	65
T 14492	4075	0.6	5400	SL	5	-5	30	0.5	-10	3	-0.008		50
T 14493	4050	0.3	5400	SL	5	-5	25	0.5	-10	2	-0.008		170
T 14494	4025	0.4	5400	SL	5	-5	25	-0.5	10	2	-0.008		220
T 14495	4000	0.5	5400	SL	5	-5	25	-0.5	10	3	-0.008		280
T 14496	3975	0.4	5400	SL	5	-5	15	0.5	-10	2	-0.008		310
T 14497	3950	0.4	5400	SL	-5	10	20	-0.5	-10	4	-0.008		340
T 14498	3925	0.4	5400	SL	5	-5	20	-0.5	-10	3	-0.008		200
T 14499	3900	0.6	5400	SL	5	-5	25	-0.5	-10	3	0.286		220
T 14500													
T 14501	3875		5400	RC	20	-5	20	-0.5	10	180	-0.008		170
T 14502	3850		5400	RC	25	-5	25	-0.5	-10	78	-0.008		15
T 14503	3825		5400	RC	20	5	20	-0.5	10	71	-0.008		50
T 14504	3800		5400	RC	25	5	20	-0.5	10	720	-0.008		10
T 14505	3775		5400	RC	15	-5	20	-0.5	-10	36	-0.008		65
T 14506	3725	0.4	5200	SL	15	30	35	-0.5	10	15	0.015		150
T 14507	3750		5200	RC	25	20	25	4.5	20	180	-0.008	-0.008	20
T 14508	3725	0.4	5200	SL	20	30	30	-0.5	-10	18	-0.008		190
T 14509	3800		5200	RC	10	20	40	-0.5	-10	13	-0.008		20
T 14510	3825		5200	RC	30	35	20	-0.5	20	93	-0.008		40
T 14511	3850		5200	RC	35	55	25	-0.5	10	91	-0.008		30
T 14512	3875		5200	RC	15	15	35	-0.5	10	29	-0.008		130
T 14513	3900		5200	RC	15	35	20	-0.5	-10	18	-0.008		150
T 14514	3925		5200	RC	10	-5	20	-0.5	-10	7	-0.008		30
T 14515	3950		5200	RC	5	5	15	-0.5	10	4	-0.008		15
T 14516	3975	0.4	5200	SL	5	-5	15	-0.5	-10	5	-0.008		150
T 14517	4000	0.4	5200	SL	5	-5	15	-0.5	-10	3	-0.008		160
T 14518	4025	0.5	5200	SL	5	-5	15	-0.5	-10	4	-0.008		120
T 14519	4050	0.5	5200	SL	5	-5	10	-0.5	-10	3	-0.008		75
T 14520											0.215		

Laboratory:	ANALAB								
Method :	101	101	101	101	101	114	309	309	401
Det. Limit:	5.000	5.000	5.000	0.500	10.000	1.000	0.008	0.008	3.000

569274

PROJECT: EL 8/88 ROUND MI GRID SOIL SAMPLING

SAMPLE NUMBER	NORTH metres	DEPTH metres	EAST metres	KIND	CU PPM	PB PPM	ZN PPM	AG PPM	BI PPM	AS PPM	AU PPM	AUCHK PPM	SN PPM
T 14521	4075	0.5	5200	SL	5	-5	15	-0.5	-10	4	-0.008		70
T 14522	4100		5200	SL	5	-5	10	-0.5	-10	4	-0.008		180
T 14523	4125	0.6	5200	SL	5	-5	15	-0.5	-10	3	0.018		150
T 14524	4150	0.6	5200	SL	-5	-5	10	-0.5	-10	4	-0.008		120
T 14525	4175	0.4	5200	SL	5	-5	10	-0.5	-10	3	0.012		140
T 14526	4200		5200	RC	5	-5	10	-0.5	-10	3	-0.008		5
T 14527	4225	0.0	5200	RC	-5	-5	20	-0.5	-10	5	-0.008		15
T 14528	4250		5200	RC	5	-5	10	-0.5	-10	4	-0.018		5
T 14529	4275		5200	RC	-5	-5	15	-0.5	-10	5	-0.008		25
T 14530	4300	0.7	5200	SL	-5	10	50	-0.5	-10	9	-0.008		55
T 14531	4325	0.6	5200	SL	10	10	55	-0.5	-10	8	-0.008		7
T 14532	4350		5200	RC	10	-5	30	-0.5	-10	12	-0.008		7
T 14533	4375		5200	RC	5	-5	20	-0.5	-10	12	-0.008		5
T 14534	4400		5200	RC	10	-5	140	-0.5	-10	260	-0.008		15
T 14535	4425		5200	RC	15	-5	45	-0.5	-10	150	-0.008		25
T 14536	4450	0.6	5200	SL	5	-5	20	-0.5	-10	5	-0.008		25
T 14537	4475		5200	RC	15	20	20	-0.5	-10	10	-0.008		6
T 14538	4500		5200	RC	5	-5	15	-0.5	-10	2	-0.008		-3
T 14539	4525		5200	RC	-5	-5	15	-0.5	-10	1	-0.008		10
T 14540											1.520		
T 14541	4550		5200	RC	5	-5	15	-0.5	-10	1	-0.008		10
T 14542	4575		5200	RC	-5	-5	15	-0.5	-10	1	-0.008		5
T 14543	4600		5200	RC	-5	-5	15	-0.5	-10	1	-0.008		4
T 14544	4625		5200	RC	-5	-5	15	-0.5	-10	1	-0.008		-3
T 14545	4650		5200	RC	-5	-5	10	-0.5	-10	1	-0.008		-3
T 14546	4675		5200	RC	5	-5	15	-0.5	10	1	-0.008		-3
T 14547	4700		5200	RC	20	30	15	-0.5	-10	47	-0.008		-3
T 14548	4725	0.3	5200	SL	5	-5	20	-0.5	-10	1	-0.008		10
T 14549	4750	0.3	5200	SL	-5	-5	15	-0.5	-10	2	-0.008		8
T 14550	4775	0.3	5200	SL	5	-5	10	-0.5	-10	1	-0.008		5
T 14551	4800	0.5	5200	SL	5	-5	15	-0.5	-10	2	-0.008		4
T 14552	4825	0.6	5200	SL	5	-5	10	-0.5	-10	1	-0.008		-3
T 14553	4850	0.5	5200	SL	-5	-5	15	-0.5	-10	1	-0.008		5
T 14554	4875		5200	RC	-5	-5	10	-0.5	-10	2	-0.008		5
T 14555	4900	0.5	5200	SL	-5	-5	10	-0.5	-10	1	0.008		-3

Laboratory:	ANALAB								
Method:	101	101	101	101	101	114	309	309	401
Det. Limit:	5.000	5.000	5.000	0.500	10.000	1.000	0.008	0.008	3.000

559275

PROJECT: EL. B/BS. ROUND MT. GRID SOIL SAMPLING

SAMPLE NUMBER	NORTH metres	DEPTH metres	EAST metres	KIND	CU PPM	PB PPM	ZN PPM	AG PPM	BI PPM	AS PPM	AU PPM	AUCHK PPM	SN PPM
T 14591	4075	0.5	4800	SL	10	-5	10	-0.5	-10	-1	-0.008		35
T 14592	4100	0.4	4800	SL	5	-5	10	-0.5	-10	-1	-0.008		75
T 14593	4125	0.4	4800	SL	5	-5	10	0.5	-10	-1	-0.008		50
T 14594	4150	0.4	4800	SL	5	-5	10	0.5	-10	-1	-0.008		130
T 14595	4175		4800	RC	5	-5	10	0.5	-10	-1	-0.008		25
T 14596	4200		4800	RC	5	-5	10	0.5	-10	2	-0.008		20
T 14597	4225	0.6	4800	SL	10	-5	10	0.5	-10	-1	-0.008		80
T 14598	4250		4800	RC	5	-5	10	0.5	-10	1	-0.008		20
T 14599	4275		4800	RC	5	-5	10	0.5	-10	-1	-0.008		10
T 14600											1.050		
T 14601	5000	0.7	5000	SL	5	-5	10	0.5	-10	-1	-0.008		5
T 14602	4975	1.0	5000	SL	5	-5	10	0.5	-10	-1	-0.008		15
T 14603	4950	0.9	5000	SL	5	-5	15	0.5	-10	-1	-0.008		15
T 14604	4925	0.6	5000	SL	5	-5	10	0.5	-10	-1	-0.008		8
T 14605	4900	0.5	5000	SL	5	-5	10	0.5	-10	-1	-0.008		-3
T 14606	4875	0.5	5000	SL	5	-5	15	-0.5	-10	1	-0.008		4
T 14607	4850	0.7	5000	SL	5	-5	10	0.5	-10	1	-0.008		5
T 14608	4825	0.5	5000	SL	5	-5	10	0.5	-10	-1	-0.008		6
T 14609	4800	0.6	5000	SL	5	-5	15	-0.5	-10	-1	-0.008		7
T 14610	4775	0.5	5000	SL	5	-5	10	0.5	-10	-1	-0.008		-3
T 14611	4750	0.6	5000	SL	5	-5	10	0.5	-10	-1	-0.008		4
T 14612	4725	0.7	5000	SL	5	-5	10	-0.5	-10	-1	-0.008		7
T 14613	4700	0.4	5000	SL	5	-5	10	0.5	-10	-1	-0.008		6
T 14614	4675		5000	RC	5	-5	10	-0.5	-10	-1	-0.008		-3
T 14615	4650		5000	RC	5	-5	10	-0.5	-10	-1	-0.008		-3
T 14616	4625		5000	RC	5	-5	10	-0.5	-10	-1	-0.008		4
T 14617	4600	0.5	5000	SL	5	-5	10	0.5	-10	-1	-0.008		5
T 14618	4575		5000	RC	5	-5	10	-0.5	-10	-1	-0.008		-3
T 14619	4550		5000	RC	5	-5	15	-0.5	-10	1	-0.008		15
T 14620											2.730		
T 14621	4525	0.8	5000	SL	5	-5	15	-0.5	10	1	-0.008		8
T 14622	4500	0.6	5000	SL	5	-5	15	-0.5	-10	1	-0.008		20
T 14623	4475		5000	RC	5	-5	20	-0.5	-10	15	-0.008		5
T 14624	4450	0.7	5000	SL	5	-5	15	-0.5	-10	3	-0.008		20
T 14625	4425	0.6	5000	SL	5	-5	20	-0.5	-10	6	-0.008		15

Laboratory:	ANALAB								
Method:	101	101	101	101	101	114	309	309	401
Det. Limit:	5.000	5.000	5.000	0.500	10.000	1.000	0.008	0.008	3.000

559277

PROJECT: EL 8/88 ROUND MT. GRID SOIL SAMPLING

SAMPLE NUMBER	NORTH metres	DEPTH metres	EAST metres	KIND	CU PPM	PB PPM	ZN PPM	AG PPM	BI PPM	AS PPM	AU PPM	BUCHX PPM	SN PPM
T 14626	4400	0.7	5000	SL	10	-5	15	-0.5	-10	11	-0.008		35
T 14627	4375	0.6	5000	SL	5	-5	20	-0.5	-10	8	-0.008		35
T 14628	4350		5000	RC	10	-5	15	-0.5	-10	17	-0.008		7
T 14629	4325	1.2	5000	SL	5	-5	15	-0.5	-10	2	-0.008		400
T 14630	4300	0.6	4800	SL	5	-5	15	-0.5	-10	-1	-0.008		300
T 14631	4325		4800	RC	5	-5	10	-0.5	-10	1	-0.008		45
T 14632	4350		4800	RC	5	-5	15	-0.5	-10	3	-0.008		30
T 14633	4375		4800	RC	5	-5	20	-0.5	-10	2	-0.008		15
T 14634	4400		4800	RC	5	-5	15	-0.5	-10	12	-0.008		30
T 14635	4425		4800	RC	10	-5	15	-0.5	-10	1	-0.008		25
T 14636	4450		4800	RC	5	-5	10	-0.5	-10	1	-0.008		10
T 14637	4475		4800	RC	5	-5	15	-0.5	-10	5	-0.008		7
T 14638	4500	0.7	4800	SL	5	-5	15	-0.5	-10	1	-0.008		65
T 14639	4525		4800	RC	5	-5	15	-0.5	-10	5	-0.008		8
T 14640											0.242		
T 14641	4550		4800	RC	5	-5	15	-0.5	-10	-1	-0.008		130
T 14642	4575		4800	RC	5	-5	10	-0.5	-10	-1	-0.008		4
T 14643	4600	0.6	4800	SL	5	-5	10	-0.5	-10	-1	-0.008		5
T 14644	4625	0.5	4800	SL	5	-5	15	-0.5	-10	-1	-0.008		8
T 14645	4650	0.5	4800	SL	5	-5	15	-0.5	-10	-1	-0.008		5
T 14646	4675	0.5	4800	SL	5	-5	15	-0.5	-10	-1	-0.008	-0.008	7
T 14647	4700	0.6	4800	SL	5	-5	10	0.5	-10	-1	-0.008		15
T 14648	4725	0.7	4800	SL	5	-5	15	-0.5	-10	-1	-0.008		-3
T 14649	4750	0.5	4800	SL	5	-5	10	-0.5	-10	-1	-0.008		6
T 14650	4775	1.1	4800	SL	5	10	10	-0.5	-10	-1	-0.008		-3
T 14651	4800	0.4	4800	SL	5	-5	15	-0.5	-10	-1	-0.008		5
T 14652	4825	0.5	4800	SL	5	-5	15	-0.5	-10	-1	-0.008		10
T 14653	4850		4800	RC	5	-5	10	-0.5	-10	1	-0.008		6
T 14654	4875	0.5	4800	SL	5	-5	15	-0.5	-10	-1	-0.008		8
T 14655	4900	0.8	4800	SL	5	30	20	-0.5	-10	7	-0.008		15
T 14656	4925		4800	RC	10	5	33	-0.5	-10	3	-0.008		8
T 14657	4950	0.6	4800	SL	5	-5	20	-0.5	-10	1	-0.008		5
T 14658	4975	0.6	4800	SL	5	-5	10	-0.5	-10	1	-0.008		8
T 14659	5000	0.5	4800	SL	-5	-5	15	-0.5	-10	1	-0.008		10
T 14660											1.390	1.400	

Laboratory:	ANALAB								
Method:	101	101	101	101	101	114	309	309	401
Det. Limit:	5.000	5.000	5.000	0.500	10.000	1.000	0.008	0.008	3.000

569278

PROJECT: EL 8/88 ROUND MT GRID SOIL SAMPLING

SAMPLE NUMBER	NORTH metres	DEPTH metres	EAST metres	KIND	CU PPM	PB PPM	ZN PPM	AG PPM	BI PPM	AS PPM	AU PPM	AUCLP PPM	SN PPM
T 14661	5025		4800	RC	5	-5	15	-0.5	-10	9	-0.008		3
T 14662	5050	0.4	4800	SL	5	-5	10	-0.5	-10	-1	-0.008		10
T 14663	5075	0.5	4800	SL	5	-5	10	-0.5	-10	-1	-0.008		3
T 14664	5100	0.5	4800	SL	5	-5	10	-0.5	-10	1	-0.008		9
T 14665	5200	0.3	4800	SL	-5	-5	10	-0.5	-10	1	-0.008		8
T 14666	5175	0.6	4600	SL	5	-5	10	-0.5	-10	1	-0.008		7
T 14667	5150	0.6	4600	SL	-5	-5	10	-0.5	-10	1	-0.008		7
T 14668	5125	0.4	4600	SL	-5	-5	15	-0.5	-10	1	-0.008		9
T 14669	5100	0.6	4600	SL	5	-5	10	-0.5	-10	1	-0.008		10
T 14670	5075	0.4	4600	SL	5	-5	10	-0.5	-10	1	-0.008		7
T 14671	5050	0.6	4600	SL	5	-5	10	-0.5	-10	1	-0.008		9
T 14672	5025	0.6	4600	SL	-5	-5	10	-0.5	-10	1	-0.008		5
T 14673	5000		4600	RC	10	10	15	0.5	-10	8	-0.008		3
T 14674	4975	0.6	4600	SL	5	-5	20	1.0	-10	8	-0.008		5
T 14675	4950		4600	RC	5	-5	5	-0.5	-10	2	-0.008		5
T 14676	4925		4600	RC	5	-5	10	0.5	-10	-1	-0.008		3
T 14677	4900	0.7	4600	SL	5	280	15	-0.5	-10	6	-0.008		10
T 14678	4875	0.7	4600	SL	10	35	30	-0.5	-10	22	-0.008		15
T 14679	4850		4600	RC	10	-5	10	-0.5	-10	6	-0.008		7
T 14680											0.145		
T 14681	4825	0.5	4600	SL	5	5	10	-0.5	-10	3	-0.008		3
T 14682	4800		4600	RC	10	-5	25	-0.5	-10	11	-0.008		8
T 14683	4775		4600	RC	10	150	20	-0.5	-10	3	-0.008		7
T 14684	4750	0.7	4600	SL	5	25	45	-0.5	-10	29	-0.008		6
T 14685	4725	1.0	4600	SL	5	-5	15	-0.5	-10	3	-0.008		3
T 14686	4700		4600	RC	5	-5	15	-0.5	-10	-1	-0.008		6
T 14687	4675		4600	RC	15	-5	15	-0.5	-10	13	-0.008		3
T 14688	4650	1.0	4600	SL	10	15	20	-0.5	-10	18	-0.008		20
T 14689	4625	0.2	4600	SL	10	60	20	-0.5	-10	43	-0.008		25
T 14690	4600		4600	RC	5	-5	15	-0.5	-10	13	-0.008		3
T 14691	4575		4600	RC	5	-5	25	-0.5	-10	1	-0.008		7
T 14692	4550		4600	RC	25	-5	80	-0.5	-10	13	-0.008		70
T 14693	4525		4600	RC	20	15	35	-0.5	-10	22	-0.008		45
T 14694	4500		4600	RC	15	-5	15	0.5	-10	4	-0.008		10
T 14695	4475		4600	RC	10	-5	25	-0.5	-10	6	-0.008		15

Laboratory:	ANALAB								
Method :	101	101	101	101	101	114	309	309	401
Det. Limit:	5.000	5.000	5.000	0.500	10.000	1.000	0.008	0.008	3.000

569279

PROJECT: EL 8/88 ROUND MT GRID SOIL SAMPLING

SAMPLE NUMBER	NORTH metres	DEPTH metres	EAST metres	KIND	CU PPM	PB PPM	ZN PPM	AG PPM	BI PPM	AS PPM	AU PPM	AUCLR PPM	SN PPM
T 14696	4450		4600	RC	5	-5	35	-0.5	-10	5	-0.008		20
T 14697	4425		4600	RC	10	-5	15	-0.5	-10	6	-0.008		7
T 14698	4400		4600	RC	5	-5	5	-0.5	-10	2	-0.008		6
T 14699	4375		4600	RC	5	-5	15	-0.5	-10	-1	-0.008		3
T 14700											1.130		
T 14701	4350	0.4	4600	SL	5	-5	15	0.5	-10	-1	-0.008		45
T 14702	4325	0.8	4600	SL	-5	-5	10	-0.5	-10	-1	-0.008		95
T 14703	4300		4600	SL	-5	-5	15	0.5	-10	1	-0.008		50
T 14704	4275	0.6	4600	SL	-5	-5	10	-0.5	-10	1	-0.008		70
T 14705	4250	1.0	4600	SL	5	-5	20	-0.5	-10	9	-0.008		95
T 14706	4225		4600	RC	5	-5	15	-0.5	-10	-1	-0.008		30
T 14707	4200		4600	RC	5	-5	10	-0.5	-10	-1	-0.008		20
T 14708	4175	0.4	4600	SL	5	-5	15	0.5	-10	1	-0.008		50
T 14709	4150	1.2	4600	SL	5	-5	15	0.5	-10	8	-0.008		120
T 14710	4125	0.8	4600	SL	10	-5	15	2.0	-10	2	-0.008		110
T 14711	4100		4600	RC	5	-5	10	0.5	-10	-1	-0.008		80
T 14712	4075		4600	RC	-5	-5	10	-0.5	-10	-1	-0.008		170
T 14713	4050		4600	RC	-5	-5	10	-0.5	-10	-1	-0.008		20
T 14714	5150	0.8	4400	SL	-5	-5	15	-0.5	-10	-1	-0.008		5
T 14715	5125	0.6	4400	SL	-5	-5	15	-0.5	-10	-1	-0.008		9
T 14716	5100	0.7	4400	SL	-5	-5	15	-0.5	-10	1	-0.008		15
T 14717	5075	0.6	4400	SL	-5	-5	15	-0.5	-10	-1	-0.008		6
T 14718	5050	0.5	4400	SL	-5	-5	15	0.5	-10	-1	-0.008		5
T 14719	5025	0.7	4400	SL	-5	-5	10	0.5	-10	-1	-0.008		9
T 14720	5000	0.5	4400	SL	-5	-5	15	-0.5	-10	-1	-0.008		3
T 14721	4975		4400	RC	-5	-5	15	-0.5	-10	3	-0.008		15
T 14722											0.747		
T 14723	4950	0.5	4400	SL	5	-5	15	-0.5	-10	3	-0.008		7
T 14724	4925		4400	RC	10	5	15	-0.5	10	10	-0.008		3
T 14725	4900		4400	RC	20	10	20	1.0	20	13	-0.008		6
T 14726	4875	0.5	4400	SL	5	-5	15	-0.5	10	1	-0.008		9
T 14727	4850	0.5	4400	SL	5	-5	15	0.5	10	-1	-0.008		-3
T 14728	4825	0.7	4400	SL	5	-5	15	0.5	10	-1	0.011		-3
T 14729	4800	0.5	4400	SL	5	-5	15	-0.5	-10	3	-0.008		6
T 14730	4775	0.5	4400	SL	10	-5	15	0.5	10	2	-0.008		5

Laboratory:	ANALAB								
Method:	101	101	101	101	101	114	309	309	401
Det. Limit:	5.000	5.000	5.000	0.500	10.000	1.000	0.008	0.008	3.000

559200

PROJECT: EL 8/88 ROUND MT GRID SOIL SAMPLING

SAMPLE NUMBER	NORTH metres	DEPTH metres	EAST metres	KIND	CU PPM	PB PPM	ZN PPM	AG PPM	BI PPM	AS PPM	AU PPM	AUCHK PPM	SN PPM
T 14731	4750		4400	RC	10	-5	20	-0.5	-10	7	-0.008		5
T 14732	4725		4400	RC	10	5	20	-0.5	10	9	-0.008		3
T 14733	4700	0.6	4400	SL	10	-5	30	-0.5	10	7	-0.008		6
T 14734	4675		4400	RC	5	-5	15	-0.5	10	2	-0.008		7
T 14735	4650		4400	RC	5	-5	20	-0.5	10	11	-0.008		10
T 14736	4625		4440	RC	10	-5	40	-0.5	10	2	-0.008		-3
T 14737	4600		4400	RC	10	-5	20	-0.5	10	5	-0.008		-3
T 14738	4575		4400	RC	10	-5	20	-0.5	10	13	-0.008		-3
T 14739	4550		4400	RC	20	-5	20	-0.5	10	9	-0.008		40
T 14740											0.233		
T 14741	4525		4400	RC	25	-5	30	-0.5	20	15	-0.008		230
T 14742	4500		4400	RC	50	5	40	-0.5	10	8	-0.008		35
T 14743	4475		4400	RC	35	5	210	-0.5	-10	4	-0.008		35
T 14744	4450		4400	RC	40	10	60	-0.5	10	6	-0.008		10
T 14745	4425		4400	RC	35	-5	60	-0.5	-10	9	-0.008		9
T 14746	4400	0.6	4400	SL	5	-5	20	-0.5	10	1	-0.008		30
T 14747	4375	0.8	4400	SL	45	5	105	-0.5	10	49	-0.008		95
T 14748	4350	1.2	4400	SL	100	5	40	-0.5	10	110	0.020		300
T 14749	4325		4400	RC	60	5	40	-0.5	-10	13	-0.008		30
T 14750	4300	0.6	4400	SL	5	-5	10	-0.5	-10	3	-0.008	-0.008	390
T 14751	4275	2.0	4400	SL	5	-5	10	-0.5	10	1	-0.008		140
T 14752	4250	0.5	4400	SL	5	-5	10	-0.5	-10	-1	0.010		100
T 14753	5125	0.8	4200	SL	-5	-5	5	-0.5	-10	-1	0.012		5
T 14754	5100	0.8	4200	SL	-5	-5	10	-0.5	-10	-1	-0.008		4
T 14755	5075	0.6	4200	SL	-5	-5	5	-0.5	-10	1	-0.008		5
T 14756	5050		4200	RC	5	-5	10	-0.5	-10	12	-0.008		5
T 14757	5025		4200	RC	5	-5	10	-0.5	-10	-1	-0.008		5
T 14758	5000	0.5	4200	SL	-5	-5	10	-0.5	-10	-1	-0.008		3
T 14759	4975	0.5	4200	SL	-5	-5	10	-0.5	-10	-1	-0.008		6
T 14760											0.911	0.856	
T 14761	4950	0.5	4200	SL	5	15	10	-0.5	-10	-1	-0.008		-3
T 14762	4925	0.5	4200	SL	5	20	10	-0.5	-10	1	-0.008		4
T 14763	4900	0.5	4200	SL	5	5	10	-0.5	10	7	-0.008		5
T 14764	4875	1.0	4200	SL	5	80	15	-0.5	-10	14	-0.008		7
T 14765	4850	1.2	4200	SL	5	95	15	-0.5	-10	12	-0.008		4

Laboratory:	ANALAB								
Method :	101	101	101	101	101	114	309	309	401
Det. Limit:	5.000	5.000	5.000	0.500	10.000	1.000	0.008	0.008	3.000

1806981

PROJECT: EL 8/88 ROUND MT GRID SOIL SAMPLING

SAMPLE NUMBER	NORTH metres	DEPTH metres	EAST metres	KIND	CU PPM	PB PPM	ZN PPM	AG PPM	BI PPM	AS PPM	AU PPM	AUCHK PPM	SN PPM
T 14766	4825		4200	RC	5	-5	10	-0.5	-10	2	-0.008		4
T 14767	4800		4200	RC	5	10	10	-0.5	-10	2	-0.008		-3
T 14768	4775		4200	RC	5	-5	15	-0.5	-10	1	-0.008		4
T 14769	4750	0.6	4200	SL	5	-5	15	-0.5	-10	1	-0.008		9
T 14770	4725		4200	RC	5	-5	15	-0.5	-10	3	-0.008		5
T 14771	4700		4200	RC	5	-5	20	-0.5	-10	4	-0.008		5
T 14772	4675		4200	RC	5	-5	15	-0.5	-10	-1	-0.008		5
T 14773	4650		4200	RC	10	-5	15	-0.5	-10	29	-0.008		5
T 14774	4625		4200	RC	10	25	20	-0.5	-10	10	-0.008		8
T 14775	5150	2.1	4000	SL	5	10	10	-0.5	-10	5	-0.008	-0.008	4
T 14776	5125		4000	NIL									
T 14777	5100		4000	NIL									
T 14778	5075		4000	RC	5	20	150	-0.5	-10	29	-0.008		8
T 14779	5050		4000	RC	20	30	15	2.5	-10	12	-0.008		5
T 14780											1.060		
T 14781	5025		4000	SL	5	-5	15	-0.5	-10	2	-0.008		5
T 14782	5000		4000	RC	5	-5	10	-0.5	10	1	-0.008		3
T 14783	4975	0.5	4000	SL	-5	-5	10	-0.5	-10	1	-0.008		7
T 14784	4950	0.5	4000	SL	-5	-5	10	-0.5	-10	-1	-0.008		3
T 14785	4925	0.5	4000	SL	5	-5	10	-0.5	-10	-1	-0.008		6
T 14786	4900	0.5	4000	SL	5	-5	10	-0.5	-10	-1	0.013		5
T 14787	4875	0.5	4000	SL	5	-5	10	-0.5	-10	1	-0.008		6
T 14788	4850		4000	RC	5	-5	10	-0.5	10	3	-0.008		-3
T 14789	4825	0.5	4000	SL	5	-5	10	-0.5	-10	1	-0.008		3
T 14790	4800		4000	RC	5	-5	10	-0.5	-10	5	-0.008		5
T 14791	4775		4000	RC	5	-5	15	-0.5	-10	5	-0.008		-3
T 14792	4750		4000	RC	-5	-5	15	-0.5	-10	-1	-0.008		4
T 14793	5175		4000	RC	-5	20	15	-0.5	-10	2	-0.008		7
T 14794	5200	0.6	4000	SL	-5	-5	10	-0.5	-10	1	-0.008		4
T 14795	5225	0.7	4000	SL	5	-5	10	-0.5	-10	2	-0.008		6
T 14796	5250	0.6	4000	SL	5	35	10	-0.5	-10	5	-0.008		8
T 14797	5275	0.7	4000	SL	-5	-5	10	-0.5	-10	2	-0.008		-3
T 14798	5300	0.7	4000	SL	5	-5	5	-0.5	-10	3	-0.008		6
T 14799	5325		4000	RC	5	-5	5	-0.5	-10	1	-0.008		5
T 14800											2.800	3.200	

Laboratory:	ANALAB								
Method :	101	101	101	101	101	114	309	309	401
Det. Limit:	5.000	5.000	5.000	0.500	10.000	1.000	0.008	0.008	3.000

MULTI-COPY SYSTEMS SUPPLIED BY DATA SERVICES

509282

PROJECT: EL 8/88 ROUND MT. GRID SOIL SAMPLING

SAMPLE NUMBER	NORTH metres	DEPTH metres	EAST metres	KIND	CU PPM	PB PPM	ZN PPM	AG PPM	BI PPM	AS PPM	AU PPM	AUCHK PPM	SN PPM
T 14801	5350		4000	RC	5	5	10	-0.5	-10	5	-0.008		3
T 14802	5450	0.6	4100	SL	5	5	5	-0.5	-10	1	-0.008		-3
T 14803	5425	0.7	4100	SL	5	5	5	-0.5	-10	1	-0.008		5
T 14804	5400		4100	RC	5	5	5	-0.5	-10	1	-0.008		4
T 14805	5375		4100	RC	5	5	5	-0.5	-10	1	-0.008		5
T 14806	5350		4100	RC	5	5	10	-0.5	-10	1	-0.008		3
T 14807	5325	0.6	4100	SL	5	5	10	-0.5	-10	1	-0.008		6
T 14808	5300	0.6	4100	SL	5	5	5	-0.5	-10	2	-0.008	-0.008	-3
T 14809	5275	0.6	4100	SL	5	5	15	-0.5	-10	1	-0.008		5
T 14810	5250	0.5	4100	SL	5	5	10	-0.5	-10	1	-0.008		3
T 14811	5225	0.5	4100	SL	5	5	10	-0.5	-10	2	-0.008		-3
T 14812	5200	0.7	4100	SL	5	5	10	-0.5	-10	1	-0.008		3
T 14813	5175	0.5	4100	SL	5	5	5	-0.5	-10	1	-0.008		8
T 14814	5150	1.4	4100	SL	5	5	5	-0.5	-10	3	-0.008		-3
T 14815	5125	1.0	4100	SL	10	50	40	-0.5	-10	32	-0.008		8
T 14816	5100		4100	RC	5	5	10	-0.5	-10	5	-0.008		4
T 14817	5075		4100	RC	5	55	10	5.5	-10	11	-0.008		25
T 14818	5050	0.4	4100	SL	5	5	10	-0.5	-10	3	-0.008		8
T 14819	5025	0.4	4100	SL	5	5	5	-0.5	-10	1	-0.008		6
T 14820											0.231		
T 14821	5000	0.4	4100	SL	5	5	5	-0.5	-10	2	-0.008		5
T 14822	5150	0.4	4200	SL	5	5	5	-0.5	-10	2	-0.008		-2
T 14823	5175	0.7	4200	SL	5	5	5	-0.5	-10	1	-0.008		4
T 14824	5200	0.9	4200	SL	5	5	10	-0.5	-10	2	-0.008		8
T 14825	5225	0.8	4200	SL	5	5	5	-0.5	-10	2	-0.008		10
T 14826	5250		4200	SL	5	5	10	-0.5	-10	1	-0.008		3
T 14827	5275	1.4	4200	SL	5	5	35	-0.5	-10	8	-0.008		3
T 14828	5300	1.0	4200	SL	5	5	10	-0.5	-10	1	-0.008		5
T 14829	5325	1.0	4200	SL	5	5	5	-0.5	-10	1	-0.008		3
T 14830	5350	0.6	4200	SL	5	5	5	-0.5	-10	1	-0.008		5
T 14831	5375	0.9	4200	SL	5	5	5	-0.5	-10	-1	-0.008		4
T 14832	5400	0.5	4200	SL	5	5	5	-0.5	-10	-1	-0.008		4
T 14833	5425	0.5	4200	SL	5	5	5	-0.5	-10	-1	-0.008		-3
T 14834	5450	0.8	4200	SL	5	5	5	-0.5	-10	-1	-0.008		4
T 14835	5475		4200	RC	5	5	10	-0.5	-10	1	-0.008		3

Laboratory:	ANALAB								
Method :	101	101	101	101	101	114	309	309	401
Det. Limit:	5.000	5.000	5.000	0.500	10.000	1.000	0.008	0.008	3.000

559283

PROJECT: EL 8/88 ROUND MT GRID SOIL SAMPLING

SAMPLE NUMBER	NORTH metres	DEPTH metres	EAST metres	KIND	CU PPM	PB PPM	ZN PPM	AG PPM	BI PPM	AS PPM	AU PPM	AUCHK PPM	SN PPM
T 14836	5500		4200	RC	5	10	10	-0.5	-10	3	0.014		-3
T 14837	5475		4300	RC	5	5	10	-0.5	-10	1	-0.008	-0.008	3
T 14838	5450		4300	RC	5	15	5	-0.5	-10	6	-0.008		-3
T 14839	5425		4300	RC	5	785	230	-0.5	-10	14	-0.008		3
T 14840											1.490		
T 14841	5400	1.0	4300	SL	5	20	15	-0.5	-10	5	-0.008		-3
T 14842	5375		4300	RC	5	5	10	-0.5	-10	7	-0.008		5
T 14843	5350		4300	RC	5	5	10	-0.5	-10	-1	-0.008		-3
T 14844	5325	0.6	4300	SL	5	5	10	-0.5	-10	1	-0.008		6
T 14845	5300	0.6	4300	SL	5	5	5	-0.5	-10	-1	-0.008		3
T 14846	5275	0.6	4300	SL	5	5	5	-0.5	-10	-1	-0.008		5
T 14847	5250	0.7	4300	SL	5	5	10	-0.5	-10	-1	-0.008		4
T 14848	5225	0.7	4300	SL	5	5	5	-0.5	-10	1	-0.008		6
T 14849	5200	0.5	4300	SL	5	5	10	-0.5	-10	-1	-0.008		5
T 14850	5175	0.4	4300	SL	5	5	10	-0.5	-10	-1	-0.008		-3
T 14851	5150		4300	SL	5	5	5	-0.5	-10	1	-0.008		7
T 14852	5125	1.0	4300	SL	5	5	5	-0.5	-10	-1	-0.008		15
T 14853	5100	0.6	4300	SL	5	5	5	-0.5	-10	1	-0.008		15
T 14854	5075	0.6	4300	SL	5	5	5	-0.5	-10	-1	-0.008		15
T 14855	5050	0.6	4300	SL	5	5	5	-0.5	-10	-1	-0.008		7
T 14856	5025	0.7	4300	SL	5	5	5	-0.5	-10	1	-0.008		6
T 14857	5000	0.8	4300	SL	5	5	5	-0.5	-10	1	-0.008		3
T 14858	5175	0.6	4400	SL	5	5	5	-0.5	-10	-1	-0.008		7
T 14859	5200	0.5	4400	SL	5	10	10	-0.5	-10	1	-0.008		10
T 14860											0.930		
T 14861	5225	0.5	4400	SL	5	5	5	-0.5	-10	1	-0.008		5
T 14862	5250	0.7	4400	SL	5	5	5	-0.5	-10	-1	-0.008		6
T 14863	5275		4400	RC	5	5	10	-0.5	-10	-1	-0.008		5
T 14864	5300		4400	RC	5	5	10	-0.5	-10	1	-0.008		-3
T 14865	5325		4400	RC	5	5	35	-0.5	-10	2	0.012		4
T 14866	5225	1.1	4500	SL	5	5	5	-0.5	-10	-1	-0.008	-0.008	15
T 14867	5200	0.6	4500	SL	5	5	5	-0.5	-10	1	-0.008		6
T 14868	5175	1.0	4500	SL	5	5	10	-0.5	-10	1	-0.008		7
T 14869	5150	0.6	4500	SL	5	5	50	-0.5	-10	-1	-0.008		-3
T 14870	5125	0.5	4500	SL	5	5	10	-0.5	-10	1	-0.008		3

Laboratory:	ANALAB								
Method :	101	101	101	101	101	114	309	309	401
Det. Limit:	5.000	5.000	5.000	0.500	10.000	1.000	0.008	0.008	3.000

569284

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PROJECT: EL 8/88 ROUND MT GRID SOIL SAMPLING

SAMPLE NUMBER	NORTH metres	DEPTH metres	EAST metres	KIND	CU PPM	PB PPM	ZN PPM	AG PPM	BI PPM	AS PPM	AU PPM	AUCHK PPM	SN PPM
T 14871	5100	0.5	4500	SL	-5	-5	5	-0.5	-10	-1	-0.008		4
T 14872	5075	0.5	4500	SL	-5	-5	5	-0.5	-10	-1	-0.008		4
T 14873	5050	0.6	4500	SL	-5	-5	10	-0.5	-10	-1	-0.008		-3
T 14874	5025	0.5	4500	SL	-5	-5	10	-0.5	-10	-1	-0.008		3
T 14875	5000	0.5	4500	SL	-5	-5	10	-0.5	-10	-1	-0.008		9
T 14876	5225	0.6	5225	SL	-5	-5	5	-0.5	-10	1	-0.008		7
T 14877	5250	0.8	5225	SL	5	-5	10	-0.5	-10	-1	-0.008		5
T 14878	5275		5225	RC	5	-5	10	-0.5	-10	1	-0.008		7
T 14879	5300		5225	RC	5	-5	10	-0.5	-10	1	-0.008		3
T 14880											3.040		
T 14881	5325		5225	RC	10	330	10	-0.5	-10	16	-0.008		4
T 14882	5350		5225	RC	5	45	30	-0.5	-10	4	-0.008		5
T 14883	5375		5225	RC	5	1050	220	-0.5	-10	9	-0.008		4
T 14884	5400		5225	RC	5	20	25	-0.5	-10	6	-0.008		4
T 14885	5425		5225	RC	10	20	70	-0.5	-10	4	-0.008		5
T 14886	5450		5225	RC	5	-5	10	-0.5	-10	4	-0.008		-3
T 14887	5475		5225	RC	5	100	10	-0.5	-10	3	-0.008		-3
T 14888	5500	0.4	5225	SL	5	55	15	-0.5	-10	4	-0.008		3
T 14889	5525		5225	RC	-5	-5	15	-0.5	-10	-1	-0.008		7
T 14890	5500		4700	RC	10	285	15	1.5	-10	8	0.014		3
T 14891	5475		4700	RC	10	105	125	-0.5	-10	9	-0.008		5
T 14892	5475		4700	RC	5	10	135	-0.5	-10	5	-0.008		5
T 14893	5425		4700	RC	5	10	30	-0.5	-10	8	-0.008		5
T 14894	5400		4700	RC	5	-5	15	-0.5	-10	4	-0.008		-3
T 14895	5375		4700	RC	5	5	15	-0.5	-10	4	-0.008		-3
T 14896	5350		4700	RC	30	7075	2500	6.0	-10	320	0.012		9
T 14897	5325		4700	RC	40	1600	100	27.0	-10	200	0.009		-3
T 14898	5300		4700	RC	5	10	15	-0.5	-10	3	-0.008		4
T 14899	5275		4700	RC	-5	-5	10	-0.5	-10	1	-0.008		15
T 14900				RC							0.235		
T 14901	5250		4700	RC	5	-5	10	-0.5	10	6	-0.008		15
T 14902	5225	0.7	4700	SL	-5	10	30	-0.5	-10	7	-0.008		25
T 14903	5200	1.3	4700	SL	5	40	40	-0.5	-10	48	-0.008		15
T 14904	5175	0.9	4700	SL	-5	-5	10	-0.5	-10	2	-0.008		7
T 14905	5130	0.6	4700	SL	-5	-5	10	-0.5	-10	-1	-0.008		10

Laboratory:	ANALAB								
Method :	101	101	101	101	101	114	309	309	401
Det. Limit:	5.000	5.000	5.000	0.500	10.000	1.000	0.008	0.008	3.000

569285

PROJECT: EL 8/88 ROUND MT GRID SOIL SAMPLING

SAMPLE NUMBER	NORTH metres	DEPTH metres	EAST metres	KIND	CU PPM	PB PPM	ZN PPM	AG PPM	BI PPM	AS PPM	AU PPM	AUCHK PPM	SN PPM
T 14906	5125	0.6	4700	SL	-5	-5	10	-0.5	-10	1	-0.008		6
T 14907	5100	0.7	4700	SL	-5	-5	10	-0.5	-10	1	-0.008		6
T 14908	5075	0.7	4700	SL	-5	-5	5	-0.5	-10	-1	-0.008		6
T 14909	5050	0.7	4700	SL	-5	-5	5	-0.5	-10	-1	-0.008		4
T 14910	5025		4700	RC	10	-5	10	-0.5	-10	5	-0.008		-3
T 14911	5000		4700	RC	10	70	10	-0.5	-10	4	-0.008		6
T 14912	5125	0.7	4800	SL	5	-5	10	-0.5	-10	1	-0.008		5
T 14913	5150	0.7	4800	SL	-5	-5	10	-0.5	-10	-1	-0.008		10
T 14914	5175	0.7	4800	SL	5	-5	10	-0.5	-10	1	-0.008		7
T 14915	5200	1.3	4800	SL	5	25	80	-0.5	-10	55	-0.008		15
T 14916	5225	0.7	4800	SL	5	-5	10	-0.5	-10	1	-0.008		10
T 14917	5250		4800	RC	5	-5	10	-0.5	-10	2	-0.008		4
T 14918	5275	1.2	4800	SL	-5	-5	10	-0.5	-10	-1	-0.008		8
T 14919	5300	1.2	4800	SL	-5	-5	10	-0.5	-10	1	-0.008		6
T 14920											0.874		
T 14921	5150	0.6	4900	SL	-5	-5	10	-0.5	-10	1	-0.008		15
T 14922	5125	0.7	4900	SL	-5	-5	10	-0.5	-10	-1	-0.008		5
T 14923	5100	0.9	4900	SL	5	-5	5	-0.5	-10	1	-0.008		-3
T 14924	5075	1.2	4900	SL	-5	-5	10	-0.5	-10	-1	-0.008		-3
T 14925	5050	0.5	4900	SL	-5	-5	10	-0.5	-10	1	-0.008		4
T 14926	5025	0.4	4900	SL	-5	-5	10	-0.5	-10	-1	-0.008		10
T 14927	5000	0.3	4900	SL	5	-5	10	-0.5	-10	-1	-0.008		8
T 14928	5025		5000	RC	5	-5	5	-0.5	-10	1	-0.008		4
T 14929	5050		5000	RC	-5	-5	10	-0.5	-10	2	-0.008		20
T 14930	5075	1.2	5000	SL	-5	-5	10	-0.5	-10	1	-0.008		5
T 14931	5100	0.8	5000	SL	5	-5	5	-0.5	-10	-1	-0.008		7
T 14932	5125	0.6	5000	SL	-5	-5	5	-0.5	-10	-1	-0.008		15
T 14933	5150	0.7	5000	SL	-5	-5	5	-0.5	-10	-1	-0.008		10
T 14934	5175	0.8	5000	SL	-5	-5	10	-0.5	-10	1	-0.008		9
T 14935	5200	0.7	5000	SL	-5	-5	5	-0.5	-10	-1	-0.008		3
T 14936	5000	0.5	5000	SL	-5	-5	5	-0.5	-10	-1	-0.008		8
T 14937	5025		5100	RC	-5	-5	10	-0.5	-10	1	-0.008		3
T 14938	5050	0.5	5100	RC	-5	-5	10	-0.5	-10	1	-0.008		3
T 14939	5075	0.5	5100	SL	-5	-5	10	-0.5	-10	1	-0.008		3
T 14940											0.881		

Laboratory:	ANALAB								
Method :	101	101	101	101	101	114	309	309	401
Det. Limit:	5.000	5.000	5.000	0.500	10.000	1.000	0.008	0.008	3.000

569286

PROJECT: EL 8/88 ROUND MT GRID SOIL SAMPLING

SAMPLE NUMBER	NORTH metres	DEPTH metres	EAST metres	KIND	CU PPM	PB PPM	ZN PPM	AG PPM	BI PPM	AS PPM	AL PPM	AUCHK PPM	SN PPM
T 14941	5100	0.6	5100	SL	-5	-5	10	-0.5	-10	-1	-0.008		3
T 14942	5125	0.5	5100	SL	-5	-5	5	-0.5	-10	-1	-0.008		9
T 14943	5150	0.6	5100	SL	-5	-5	5	-0.5	-10	-1	-0.008		5
T 14944	5175	0.6	5100	SL	5	-5	10	-0.5	-10	-1	-0.008		9
T 14945	5200	0.5	5100	SL	5	-5	10	-0.5	-10	-1	-0.008		6
T 14946	5225	0.5	5100	SL	5	-5	10	-0.5	-10	1	-0.008		9
T 14947	5250	0.5	5100	SL	5	30	10	-0.5	-10	1	-0.008		15
T 14948	5025		5200	RC	5	-5	15	-0.5	-10	1	-0.008		4
T 14949	5050		5200	RC	-5	-5	10	-0.5	-10	-1	-0.008		-3
T 14950	5075	0.8	5200	SL	-5	-5	10	-0.5	-10	-1	-0.008		3
T 14951	5100	0.8	5200	SL	-5	-5	10	-0.5	-10	1	-0.008		3
T 14952	5000	1.1	5300	SL	-5	-5	10	-0.5	-10	-1	-0.008		5
T 14953	5025	1.0	5300	SL	135	65	25	-0.5	-10	9	-0.008		7
T 14954	5050		5300	RC	5	-5	10	-0.5	-10	5	-0.008		4
T 14955	5075	0.8	5300	SL	10	5	15	-0.5	-10	1	-0.008	-0.008	10
T 14956	5100	1.2	5300	SL	10	15	15	-0.5	-10	5	-0.008		9
T 14957	5125		5300	SL	5	-5	10	-0.5	-10	1	-0.008		7
T 14958	5150		5300	SL	5	-5	10	-0.5	-10	-1	-0.008		5
T 14959	5175		5300	RC	-5	-5	10	-0.5	-10	-1	-0.008		-3
T 14960											1.440		
T 14961	4950	0.9	6200	SL	-5	-5	10	-0.5	-10	-1	-0.008		5
T 14962	4975	1.4	6200	SL	-5	-5	10	-0.5	-10	-1	-0.008		7
T 14963	5000		6200	RC	5	-5	10	-0.5	-10	1	-0.008		-3
T 14964	5025	1.4	6200	SL	5	-5	10	-0.5	-10	1	-0.008		-3
T 14965	5050	0.7	6200	SL	-5	-5	10	-0.5	-10	-1	-0.008		-3
T 14966	5075	0.8	6200	SL	-5	-5	10	-0.5	-10	1	-0.008		-3
T 14967	5100	1.0	6200	SL	-5	-5	10	-0.5	-10	1	-0.008		5
T 14968	5125	1.2	6200	SL	-5	-5	155	-0.5	-10	4	-0.008		3
T 14969	5150	1.0	6200	SL	5	15	85	-0.5	-10	15	-0.008		10
T 14970	5175	1.0	6200	SL	25	435	540	-0.5	-10	80	-0.008		8
T 14971	5195	1.2	6200	SL	10	130	2500	-0.5	-10	26	-0.008		15
T 14972	5275		6100	RC	5	-5	10	-0.5	-10	4	-0.008		3
T 14973	5250	0.8	6100	SL	10	-5	15	-0.5	-10	3	-0.008		8
T 14974	5227	1.0	6100	SL	25	100	140	-0.5	-10	48	-0.008		4
T 14975	5200		6100	RC	5	20	55	-0.5	-10	5	-0.008		3

Laboratory:	ANALAB							
Method :	101	101	101	101	101	114	309	309 401
Det. Limit:	5.000	5.000	5.000	0.500	10.000	1.000	0.008	0.008 3.000

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RBC EXPLORATION PTY. LTD.

DATA SHEET

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PROJECT - EL 8/88 ROUND MT GRID SOIL SAMPLING

SAMPLE NUMBER	NORTH metres	DEPTH metres	EAST metres	KIND	CU PPM	PB PPM	ZN PPM	AG PPM	BI PPM	AS PPM	AU PPM	ALCHK PPM	SN PPM
T 14976	5775	0.5	6100	SL	15	90	140	-0.5	-10	20	-0.008		-3
T 14977	5150	0.7	6100	SL	20	55	175	-0.5	-10	19	-0.008		6
T 14978	5125	0.6	6100	SL	15	85	190	-0.5	-10	18	-0.008		7
T 14979	5100	1.2	6100	SL	10	125	165	0.5	-10	13	-0.008		-3
T 14980													
T 14981	5075	0.6	6100	SL	5	-5	15	-0.5	-10	1	-0.008		3
T 14982	5050	0.5	6100	SL	5	-5	10	-0.5	-10	1	-0.008	-0.008	4
T 14983	5025	1.4	6100	SL	5	-5	10	-0.5	-10	1	-0.008		8
T 14984	5000	0.7	6100	SL	5	-5	10	-0.5	-10	1	-0.008		5
T 14985	4975		6000	RC	5	-5	10	-0.5	-10	-1	-0.008		-3
T 14986	5000	1.3	6000	SL	-5	-5	10	-0.5	-10	-1	-0.008		5
T 14987	5025	0.7	6000	SL	5	-5	10	-0.5	-10	1	-0.008		6
T 14988	5050	0.6	6000	SL	5	-5	10	-0.5	-10	-1	-0.008		7
T 14989	5075	0.7	6000	SL	5	50	30	-0.5	-10	4	-0.008		6
T 14990	5100	0.6	6000	SL	10	205	205	-0.5	-10	17	-0.008		10
T 14991	5125		6000	RC	10	30	380	-0.5	-10	8	-0.008		-3
T 14992	5150		6000	RC	5	-5	40	-0.5	-10	4	-0.008		3
T 14993	5175		6000	RC	5	15	20	-0.5	-10	5	-0.008		-3
T 14994	5200		6000	RC	5	10	40	-0.5	-10	4	-0.008		7
T 14995	5225		6000	RC	5	35	800	-0.5	-10	10	-0.008		7
T 14996	5256		6000	RC	5	15	15	-0.5	-10	3	-0.008		-3
T 14997	5268		6000	RC	10	25	15	-0.5	-10	6	-0.008		6
T 14998	5300		5900	RC	10	-5	10	-0.5	-10	4	-0.008		-3
T 14999	5275		5300	RC	5	-5	10	-0.5	-10	3	-0.008		3
T 15000				RC						1.100	1.260		
T 17501	5250	0.8	5900	SL	5	-5	15	-0.5	-10	3	-0.008		-3
T 17502	5225		5900	RC	20	85	25	-0.5	-10	45	-0.008		-3
T 17503	5200		5900	RC	5	20	70	-0.5	-10	11	-0.008		-3
T 17504	5175		5900	RC	5	30	120	-0.5	-10	17	-0.008		-3
T 17505	5150	0.6	5900	SL	10	145	545	-0.5	-10	36	-0.008		4
T 17506	5125	0.6	5900	SL	30	430	1250	-0.5	-10	37	-0.008		9
T 17507	5100	0.5	5900	SL	15	480	195	-0.5	-10	22	-0.008		6
T 17508	5075	0.6	5900	SL	-5	15	15	-0.5	-10	3	-0.008		6
T 17509	5050	0.6	5900	SL	-5	-5	10	-0.5	-10	1	-0.008		9
T 17510	5025	0.6	5900	SL	-5	-5	10	-0.5	-10	-1	-0.008		6

Laboratory:	ANALAB								
Method :	101	101	101	101	101	114	309	309	401
Det. Limit:	5.000	5.000	5.000	0.500	10.000	1.000	0.008	0.008	3.000

569238

PROJECT: EL B/88 ROUND MT GRID SOIL SAMPLING

SAMPLE NUMBER	NORTH metres	DEPTH metres	EAST metres	KIND	CU PPM	PB PPM	ZN PPM	AG PPM	BI PPM	AS PPM	AU PPM	AUCHK PPM	SN PPM
T 17511	5000	0.6	5900	SL	-5	-5	10	-0.5	-10	-1	-0.008		5
T 17512	5300		5800	RC	-5	-5	10	-0.5	-10	3	-0.008		5
T 17513	5275		5800	RC	10	-5	10	-0.5	-10	8	-0.008		3
T 17514	5250		5800	SL	10	55	15	-0.5	-10	16	-0.008		-3
T 17515	5225		5800	RC	5	5	25	-0.5	-10	5	-0.008		-3
T 17516	5200		5800	RC	-5	-5	40	-0.5	-10	4	-0.008		-3
T 17517	5175	0.8	5800	SL	-5	-5	10	-0.5	-10	1	-0.008		6
T 17518	5150	0.7	5800	SL	-5	-5	10	-0.5	-10	1	-0.008		3
T 17519	5125		5800	RC	-5	-5	10	-0.5	-10	-1	-0.008		3
T 17520											0.801		
T 17521	5100	0.9	5800	SL	-5	-5	10	-0.5	-10	1	-0.008		5
T 17522	5075	0.7	5800	SL	-5	-5	10	-0.5	-10	-1	-0.008		3
T 17523	5050	1.0	5800	SL	-5	-5	15	0.5	-10	1	-0.008		4
T 17524	5025	0.7	5800	SL	-5	-5	10	-0.5	-10	-1	-0.008		3
T 17525	5000	0.8	5800	SL	-5	-5	10	-0.5	-10	1	-0.008		6
T 17526	4975	0.7	5800	SL	-5	-5	10	-0.5	-10	-1	-0.008		6
T 17527	5000	0.6	5700	SL	-5	-5	10	-0.5	-10	1	-0.010		3
T 17528	5025	0.8	5700	SL	-5	15	10	-0.5	-10	-1	-0.010		6
T 17529	5050	0.5	5700	SL	-5	-5	10	-0.5	-10	-1	-0.010		9
T 17530	5075	1.3	5700	SL	-5	-5	10	-0.5	-10	-1	-0.010		-5
T 17531	5100	0.5	5700	SL	5	-5	5	-0.5	-10	-1	-0.010		-5
T 17532	5125	0.6	5700	SL	-5	-5	5	-0.5	-10	-1	-0.010		-5
T 17533	5150	0.5	5700	SL	5	-5	10	-0.5	-10	-1	-0.010	-0.010	5
T 17534	5175	0.9	5700	SL	-5	-5	10	-0.5	-10	-1	-0.010		-5
T 17535	5200		5700	RC	-5	5	25	-0.5	-10	10	-0.010		3
T 17536	5225		5700	RC	5	13	15	-0.5	-10	8	-0.010		-5
T 17537	5275		5600	RC	10	-5	10	-0.5	-10	6	-0.010	-0.010	4
T 17538	5300	0.7	5600	RC	5	-5	10	-0.5	-10	2	-0.010		-5
T 17539	5225		5600	RC	5	-5	10	-0.5	-10	-1	-0.010		-5
T 17540											0.130		
T 17541	5250		5600	RC	5	10	50	-0.5	-10	12	-0.010		-5
T 17542	5225		5600	RC	-5	5	15	-0.5	-10	2	-0.010		3
T 17543	5200		5600	RC	5	10	15	-0.5	-10	2	-0.010		-5
T 17544	5175		5600	RC	5	-5	15	-0.5	-10	2	-0.010		-5
T 17545	5150	1.0	5600	SL	-5	-5	10	-0.5	-10	-1	-0.010	-0.010	4

Laboratory:	ANALAB								
Method :	101	101	101	101	101	114	309	309	401
Det. Limit:	5.000	5.000	5.000	0.500	10.000	1.000	0.008	0.008	3.000

569289

PROJECT: EL 8/88 ROUND MT GRID SOIL SAMPLING

SAMPLE NUMBER	NORTH metres	DEPTH metres	EAST metres	KIND	CU PPM	PR PPM	ZN PPM	AG PPM	BI PPM	AS PPM	AU PPM	ALCHK PPM	SN PPM
T 17546	5125	0.7	5600	SL	-5	-5	10	-0.5	-10	-1	-0.010		-5
T 17547	5100		5600	SL	-5	-5	10	-0.5	-10	-1	-0.010		4
T 17548	5075	0.4	5600	SL	-5	-5	10	-0.5	-10	-1	-0.010		-5
T 17549	5050	1.0	5600	SL	-5	25	15	-0.5	-10	2	-0.010		10
T 17550	5025	1.0	5600	SL	-5	-5	10	-0.5	-10	-1	-0.010		-5
T 17551	5000	1.0	5600	SL	-5	-5	10	-0.5	-10	-1	-0.010		5
T 17552	5025		5400	RC	-5	-5	10	-0.5	-10	-1	-0.010	-0.010	-5
T 17553	5050		5400	RC	-5	-5	10	-0.5	-10	-1	-0.010		-5
T 17554	5075		5400	RC	5	10	10	-0.5	-10	-1	-0.010		-5
T 17555	5100	1.3	5400	SL	5	5	15	-0.5	-10	-1	-0.010		4
T 17556	5125	1.3	5400	SL	-5	-5	5	-0.5	-10	-1	-0.010		-5
T 17557	5150	1.3	5400	SL	-5	-5	10	-0.5	-10	-1	-0.010	-0.010	-5
T 17558	5175	1.6	5400	SL	5	-5	10	-0.5	-10	-1	-0.010		-5
T 17559	5200	1.3	5400	SL	5	25	40	-0.5	-10	7	-0.010		-5
T 17560											1.010		
T 17561	5300		5300	RC	5	-5	10	-0.5	-10	3	-0.010		-5
T 17562	5275	1.6	5300	SL	10	-5	20	-0.5	-10	2	-0.010		-5
T 17563	5250	0.6	5300	SL	5	5	10	-0.5	-10	-1	-0.010		-5
T 17564	5225	0.7	5300	SL	5	-5	10	-0.5	-10	-1	-0.010		5
T 17565	5200	1.3	5300	SL	5	-5	10	-0.5	-10	-1	-0.010	-0.010	-5
T 17566	5275	0.5	5200	SL	5	-5	10	-0.5	-10	-1	-0.010		-5
T 17567	5250	0.5	5200	SL	5	-5	10	-0.5	-10	-1	-0.010		6
T 17568	5225	0.7	5200	SL	5	-5	10	-0.5	-10	-1	-0.010		4
T 17569	5200	1.2	5200	SL	5	20	10	-0.5	-10	-1	-0.010		-5
T 17570	5175	1.2	5200	SL	-5	-5	10	-0.5	-10	-1	-0.010		-5
T 17571	5150	0.5	5200	SL	5	-5	5	-0.5	-10	-1	-0.010		-5
T 17572	5125	0.5	5200	SL	5	-5	10	-0.5	-10	-1	-0.010		-5
T 17573	5250		5500	SL	10	45	20	-0.5	-10	27	-0.010	-0.010	3
T 17574	5225		5500	RC	20	35	2550	-0.5	-10	8	-0.010	-0.010	8
T 17575	5200	0.6	5500	SL	5	25	20	-0.5	-10	13	-0.010		3
T 17576	5175	0.6	5500	SL	5	-5	15	-0.5	-10	-1	-0.010		4
T 17577	5150	0.5	5500	SL	5	-5	10	-0.5	-10	-1	-0.010		3
T 17578	5125		5500	RC	5	10	35	-0.5	-10	3	-0.010		-5
T 17579	5100		5500	RC	5	-5	20	-0.5	-10	1	-0.010		-5
T 17580											0.830		

Laboratory:	ANALAB								
Method :	101	101	101	101	101	114	309	309	401
Det. Limit:	5.000	5.000	5.000	0.500	10.000	1.000	0.008	0.008	3.000

569200

PROJECT: EL 8/88 ROUND MT GRID SOIL SAMPLING

SAMPLE NUMBER	NORTH metres	DEPTH metres	EAST metres	KIND	CU PPM	PB PPM	ZN PPM	AG PPM	BI PPM	AS PPM	AU PPM	AUCHK PPM	SN PPM
T 17581	5075		5500	RC	5	-5	10	-0.5	-10	9	-0.010		-5
T 17582	5050		5500	RC	5	-5	10	-0.5	-10	-1	-0.010		-5
T 17583	5025	0.6	5500	SL	5	-5	10	-0.5	-10	-1	-0.010		-5
T 17584	5000	1.4	5500	SL	5	-5	10	-0.5	-10	-1	-0.010		-5
T 17585	5225	0.9	5000	SL	5	-5	10	-0.5	-10	-1	-0.010		3
T 17586	5250	1.3	5000	SL	15	55	35	-0.5	-10	8	-0.010		-5
T 17587	5275	1.4	5000	SL	40	725		46.0	-10	102	-0.010		-5
T 17588	5300		5000	RC	10	105	65	1.0	-10	30	-0.010		-5
T 17589	5325	0.5	5000	SL	30	2400	375	17.0	-10	50	-0.010		9
T 17590	5350		5000	SL	25	630	190	0.5	-10	11	-0.010	-0.010	6
T 17591	5375		5000	RC	110	35	770	-0.5	-10	8	-0.010		5
T 17592	5400		5000	RC	10	110	50	-0.5	-10	14	-0.010		5
T 17593	5425		5000	RC	10	45	20	-0.5	-10	10	-0.010		3
T 17594	5050		5000	RC	10	15	15	-0.5	-10	5	-0.010		3
T 17595	5475		5000	RC	5	25	30	-0.5	-10	10	-0.010		7
T 17596	5500		5100	RC	5	15	25	-0.5	-10	7	-0.010		-5
T 17597	5475		5100	RC	10	15	20	-0.5	-10	5	-0.010		4
T 17598	5450		5100	RC	5	25	10	-0.5	-10	2	-0.010	-0.010	-5
T 17599	5425		5100	RC	65	540	20	-0.5	-10	290	-0.010		-5
T 17600											1.410		
T 17801	5400	1.4	5100	SL	45	55	75	-0.5	-10	6	-0.010		9
T 17802	5375	1.4	5100	SL	10	85	35	-0.5	-10	22	-0.010		6
T 17803	5350	0.4	5100	SL	5	-5	10	-0.5	-10	3	-0.010		-5
T 17804	5325		5100	SL	15	280	195	1.5	-10	91	-0.010		13
T 17805	5300	1.0	5100	SL	10	125	55	-0.5	-10	30	-0.010		8
T 17806	5275	1.2	5100	SL	5	-5	25	-0.5	-10	2	-0.010		3
T 17807	5175	0.4	4900	SL	5	-5	10	-0.5	-10	-1	-0.010		6
T 17808	5200	0.7	4900	SL	5	-5	5	-0.5	-10	-1	-0.010		4
T 17809	5225	0.6	4900	SL	-5	5	10	-0.5	-10	-1	-0.010		7
T 17810	5250	0.5	4900	SL	-5	-5	15	-0.5	-10	-1	-0.010		8
T 17811	5275		4900	RC	5	20	10	-0.5	-10	-1	-0.010		3
T 17812	5300		4900	RC	5	5	10	-0.5	-10	-1	-0.010		-5
T 17813	5325		4900	RC	-5	-5	5	-0.5	-10	-1	-0.010		3
T 17814	5350	0.6	4900	SL	5	-5	10	-0.5	-10	-1	-0.010		7
T 17815	5375	0.8	4900	SL	-5	-5	15	-0.5	-10	-1	-0.010	-0.010	-5

Laboratory:	ANALAB								
Method :	101	101	101	101	101	114	309	309	401
Det. Limit:	5.000	5.000	5.000	0.500	10.000	1.000	0.008	0.008	3.000

RGC EXPLORATION PTY. LTD.

569291

PROJECT: EL 8/88 ROUND MT GRID SOIL SAMPLING

SAMPLE NUMBER	NORTH metres	DEPTH metres	EAST metres	KIND	CU PPM	PB PPM	ZN PPM	AG PPM	BI PPM	AS PPM	AU PPM	AUCHK PPM	SN PPM
T 17816	5400	0.7	4900	SL	5	-5	15	-0.5	-10	3	-0.010	-0.010	-5
T 17817	5425	0.8	4900	SL	5	125	15	-0.5	-10	10	-0.010		11
T 17818	5450		4900	RC	5	20	25	-0.5	-10	9	-0.010		4
T 17819	5475		4900	RC	120	375	30	-0.5	-10	43	-0.010		6
T 17820											0.730		
T 17821	5475		4800	RC	10	80	25	-0.5	-10	12	-0.010		-5
T 17822	5450	0.6	4800	SL	10	140	15	0.5	-10	19	0.020		5
T 17823	5425		4800	RC	170	17500	100	33.0	-10	190	0.160	0.260	3
T 17824	5400		4800	RC	155	7200	38	27.0	-10	30	0.020		7
T 17825	5375		4800		25	2100	15	-2.0	-10	8	-0.010		-5
T 17826	5350		4800	RC	80	2000	90	5.0	-10	61	-0.010		5
T 17827	5325	0.7	4800	SL	5	-5	15	-0.5	-10	1	-0.010		3
T 17828	5250	0.6	4500	SL	5	-5	10	-0.5	-10	-1	-0.010	-0.010	-5
T 17829	5275		4500	RC	5	10	10	-0.5	-10	4	-0.010		6
T 17830	5300		4500	RC	5	-5	10	-0.5	-10	-1	-0.010		4
T 17831	5325		4500	RC	10	25	25	-0.5	-10	3	-0.010	-0.010	-5
T 17832	5350		4500	RC	10	40	70	-0.5	-10	11	-0.010		3
T 17833	5375		4500	RC	5	35	15	-0.5	-10	6	-0.010		-5
T 17834	5400		4500	RC	10	185	150	-0.5	-10	9	-0.010		-5
T 17835	5425		4500	RC	5	35	90	-0.5	-10	10	-0.010		7
T 17836	5450		4500	RC	10	345	240	-0.5	-10	5	-0.010		7
T 17837	5475	1.0	4500	SL	5	180	15	-0.5	-10	5	-0.010		-5
T 17838	5500		4500	RC	5	-5	10	-0.5	-10	1	-0.010	-0.010	5
T 17839	5525		4500	RC	5	25	10	-0.5	-10	3	-0.010		4
T 17840											1.130		
T 17841	5550	0.8	4500	SL	5	5	5	-0.5	-10	-1	-0.010		-5
T 17842	5575		4500	RC	-5	5	5	-0.5	-10	-1	-0.010		3
T 17843	5550		4600	RC	-5	-5	10	-0.5	-10	-1	-0.010		-5
T 17844	5575		4600	RC	-5	-5	10	-0.5	-10	-1	-0.010		-5
T 17845	5600		4600	RC	5	5	10	-0.5	-10	-1	-0.010	-0.010	4
T 17846	5625		4600	RC	5	5	10	-0.5	-10	-1	-0.010	-0.010	-5
T 17847	5650	0.6	4600	SL	-5	-5	5	-0.5	-10	-1	-0.010		-5
T 17848	5675		4600	RC	5	15	10	-0.5	-10	22	-0.010	-0.010	12
T 17849	5700		4600	RC	5	5	5	-0.5	-10	-1	-0.010		3
T 17850	5725		4600	RC	-5	-5	5	-0.5	-10	-1	-0.010		-5

Laboratory:	ANALAB								
Method :	101	101	101	101	101	114	309	309	401
Det. Limit:	5.000	5.000	5.000	0.500	10.000	1.000	0.008	0.008	3.000

569292

01 292

RGC EXPLORATION PTY. LTD.

DATA SHEET

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PROJECT: EL 8/88 ROUND MT GRID SOIL SAMPLING

SAMPLE NUMBER	NORTH metres	DEPTH metres	EAST metres	KIND	CU PPM	PB PPM	ZN PPM	AG PPM	BI PPM	AS PPM	AU PPM	AUCHK PPM	SN PPM
T 17851	5750		4600	RC	-5	10	5	-0.5	-10	-1	-0.010		-5

569293

Laboratory:	ANALAB								
Method :	101	101	101	101	101	114	309	309	401
Det. Limit:	5.000	5.000	5.000	0.500	10.000	1.000	0.008	0.008	3.000

569294

APPENDIX 5

PETROLOGY - DOUG MASON: AMDEL

technology and enterprise

Amdel Limited
 (Incorporated in S.A.)
 31 Flemington Street,
 Frewville, S.A. 5063

Telephone: (08) 372 2700

P.O. Box 114,
 Eastwood, S.A. 5063

Telex: AA82520
 Facsimile: (08) 79 6623

569295

11 July 1989

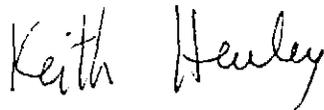
RGC Exploration Pty Ltd
 PO Box 320
 ROSNY PARK TAS 7018

ATT: MR C CASTRO

REPORT G 8075/89

YOUR REFERENCE:	Letter-of-request, 19/5/89
IDENTIFICATION:	T-08750, -11903, -14008, -14016, -14017, -14019, -14018, -14022, -14027, -14028, -14032, -14035, -14044
MATERIAL:	Rock samples
LOCATION:	Tasmania
DATE RECEIVED:	24 May 1989
WORK REQUIRED:	Thin sections, polished thin sections, petrography, mineragraphy, assays, interpretation.

Investigation and Report by: Dr Douglas R Mason



Dr Keith J Henley
 Manager
 Geological Services Section

bp

PETROLOGICAL STUDIES OF 13 ROCK SAMPLES
FROM THE LORINNA / MOINA AREA, TASMANIA

SUMMARY

1. Petrographic and mineragraphic studies have been performed on 13 rock samples from the Lorinna/Moina area, Tasmania.
2. Three groups of rock types have been distinguished: meta-sediments (mainly quartzites), meta-volcanics (meta-rhyolites), and olivine basalts of presumed Tertiary age.
3. Low-grade, pervasive alteration has affected the quartzose sediments and rhyolitic volcanics. The mineral assemblage is sericite + leucoxene ± opaques (including pyrite). In the meta-sediments, the occurrence of fine grained pyrite in the recrystallised matrix indicates that the pyrite formed during matrix recrystallisation.
4. The origin of the low-grade alteration event is unclear from the samples studied. Two possibilities exist: low-grade regional alteration, or low-grade hydrothermal alteration in the contact aureole of a granitic intrusion.
5. Three of the rock samples were analysed for Cu, Pb, Zn, As, Bi, Ag, Au and Sn. No anomalous assays were obtained.

**PETROLOGICAL STUDIES OF 13 ROCK SAMPLES
FROM THE LORINNA / MOINA AREA, TASMANIA**

1. INTRODUCTION

Thirteen rock samples were received on May 24, 1989, from Mr. Carlos Castro (RGC Exploration Pty. Ltd., Burnie Office, Tasmania).

Specific requests were:

- To prepare thin sections and provide petrographic descriptions for the 13 rock samples labelled T-08700, T-11903, T-14008, T-14016, T-14017, T-14018, T-14019, T-14022, T-14027, T-14028, T-14032, T-14035, T-14044.
- To assay the samples T-11903, T-14008, and T-14022 for the elements Cu, Pb, Zn, Ag, Au, Bi, As, and Sn.

This report presents the results of this work.

2. METHODS

All samples were examined in hand specimen, and section lines were drawn in preparation for sectioning. Thin sections TSC51784-96 were prepared, one for each sample. In order to elucidate the opaque mineralogy, polished thin sections (PTS C51853-57) were prepared for samples T11903, T14016, T14022, T14032 and T14044.

Petrographic and mineragraphic descriptions (Appendix 1) were prepared using conventional transmitted and reflected light microscopy. Colour photomicrographs (Appendix 2) were taken to illustrate important mineralogical and textural features.

Assays were obtained using conventional methods: Cu, Pb, Zn, As, Bi and Ag by atomic absorption spectroscopy, Sn by X-ray fluorescence, and Au by fire assay.

3. RESULTS

Complete petrographic (and, where relevant, mineragraphic descriptions) are presented in Appendix 1.

Assay data are presented in Table 1.

4. DISCUSSION

4.1 Rock types

Three groups of rock types have been distinguished:

- Meta-sedimentary rocks, mainly quartzites;
- Meta-volcanic rocks, mainly meta-rhyolites;
- Basaltic lavas (olivine basalts).

The meta-sedimentary rocks are mainly quartzites that appear to have formed by deposition of moderately well-sorted quartzose sands in a shallow marine environment. The samples included in this category are T-14008, T-14016, T-14017, T-14018, T-14028, T-14032, T-14035, and T-14044. Some were very mature in their clastic mineralogy, whereas others contained a significant proportion of fine silty matrix and thin silty lenses and laminae. A shallow marine environment is confirmed by the presence of shell fragments of spiriferid fossils in some samples (T-14028, T-14032, T-14035).

The meta-volcanic rocks are meta-rhyolites that include samples T-11903, T-14022, and T-14027. Phenocrysts of quartz are well preserved, and phenocrysts of feldspar (?plagioclase), biotite, and accessory Fe-Ti oxide (?magnetite) may be inferred from preserved primary textures and alteration mineralogy (see later). Certain textural features suggest that the rhyolites formed as lavas rather than ignimbritic deposits: phenocrysts retain their euhedral forms and are not fragmented; phenocrysts are uniformly distributed; relict welding textures are absent, and fiamme are absent.

Basaltic lavas are represented by samples T-0870 and T-14019. Both are olivine basalts, with olivine microphenocrysts uniformly distributed. The samples differ in their degree of crystallinity: sample T-0870 is hemihyaline (i.e. partly glassy), with abundant dark brown glass interstitial to plagioclase laths. In places, incipiently crystallised pyroxene sheaves are present in the interstitial glassy patches. Sample T-14019 is almost entirely crystallised (plagioclase + augite + olivine + Fe-Ti oxide), but a small proportion of weathered interstitial glass is present. Both samples represent Tertiary alkali basaltic volcanism.

4.2 Alteration

Alteration is present in most of the rock samples, and is of two kinds:

- Pervasive, low-grade alteration;
- Near-surface meteoric alteration (i.e. weathering).

Pervasive, low-grade alteration is evident in all of the meta-sedimentary and meta-rhyolitic rock samples. In the meta-sediments, pervasive recrystallisation of matrix quartz is evident in the quartzose variants. In those containing a silty matrix or silty laminae, fine grained sericite + leucoxene + pyrite has formed. In the meta-rhyolites, the alteration assemblage is sericite + leucoxene ± opaques. Plagioclase has been completely replaced by sericite, and biotite has been completely replaced by muscovite + leucoxene ± opaques. In places, the quartzo-feldspathic groundmass has also been replaced by irregular patches of sericite.

The origin of the low-grade alteration is not evident from the rock samples studied. Two possibilities are that the rock sequence has suffered low-grade regional alteration (either diagenesis or low-grade regional metamorphism), or that the rock sequence has been affected by hydrothermal fluids emanating from a nearby granitic intrusive body. Certain textural evidence supports the former: pyrite in the quartzites formed during recrystallisation of the matrix, and the pervasive nature of the alteration suggests that fluids had a long time period to effect the alteration. However, other evidence may support a contact aureole origin for the alteration: thin veinlets are present in some samples, sericitic alteration of rhyolitic groundmass is patchy in some samples, and granitic rock bodies of Devonian age are known in the general vicinity.

Weathering has affected most of the rock samples, generating the mineral assemblage goethite + clays. In the sulphide-bearing meta-sedimentary rocks, weathering has caused extensive replacement of pyrite by goethite. Subsequent dissolution and re-precipitation of the iron oxide has caused the development of solution cavities.

4.3 Assays

As presented in Table 1, none of the assays are particularly anomalous. All samples are below detection limits for As, Bi, Ag and Au. Copper, Pb and Zn are in the low ppm range for all samples. Tin reaches a maximum of 38 ppm in sample T14008.

TABLE 1: ASSAY DATA FOR THREE ROCK SAMPLES

Sample	Cu	Pb	Zn	As	Bi	Ag	Au	Sn
T11903	4	12	2	<50	<10	1	<0.01	4
T14008	9	6	12	<50	<10	<1	<0.01	38
T14022	3	<4	<2	<50	<10	<1	<0.01	<4

NOTE: All values reported as ppm

Cu, Pb, Zn, As, Bi and Ag by A.A.S.

Sn by XRF

Au by fire assay

302

569301

APPENDIX 1

PETROGRAPHIC DESCRIPTIONS

A-1.

SAMPLE: T-08700 : TSC51784

Rock Name:

Glassy olivine basalt

Hand Specimen:

The rock sample is a fine grained, dark grey, massive igneous rock with uniformly dispersed small translucent green microphenocrysts on the millimetre scale.

Petrography:

Mineral	Vol.%	Origin
Olivine	15	igneous
Plagioclase	20	igneous
Pyroxene	15	quench igneous
Glass	45	quench igneous
Calcite	2	weathering
Clays	3	weathering

In thin section, this sample displays a microporphyritic, intersertal igneous texture typical of many glassy basaltic rocks.

Olivine occurs as subhedral, corroded phenocrysts (average size ~1.0 mm) and also as small, equant granules in the groundmass.

Plagioclase builds small laths (average size ~0.3 mm) that are uniformly distributed throughout the rock. In places they are flow-aligned.

Dark brown to black interstitial areas are occupied by sheaves of microcrystalline pyroxene and isotropic glass.

In places, incipient alteration has generated fine grained calcite in plagioclase, and very fine grained reddish-brown clays in the glassy groundmass. Alteration is limited to weathering rinds on the rock sample, leaving internal cores quite fresh.

The rock represents an olivine basalt lava that contained small olivine microphenocrysts and plagioclase laths when it was erupted. Rapid quenching generated interstitial glass with incipiently crystallised pyroxene sheaves. The very fresh nature of the rock indicates that it has not suffered any degree of hydrothermal or metamorphic alteration. More recently, a minor degree of weathering has generated small amounts of calcite and clays in rinds.

SAMPLE: T-11903 TS: C51785 PTS: C51853

Rock Name:

Meta-rhyolite

Hand Specimen:

The rock sample is a uniform, grey, volcanogenic rock containing abundant translucent quartz crystals in a very fine grained groundmass. A weakly developed foliation appears to cut the rock.

Petrography and Mineragraphy:

Mineral	Vol.%	Origin
<u>Phenocrysts</u>		
Quartz	20	relict igneous
"Feldspar" (sericite + opaques + leucoxene)	25	"igneous" (metamorphic)
<u>Groundmass</u>		
Quartz	15	igneous
"Feldspar" (sericite)	23	"igneous" (metamorphic)
Leucoxene	Tr	metamorphic
Opagues	2	metamorphic
Zircon	Tr	igneous
Clays + goethite	5	weathering

In thin section, this sample displays a relict porphyritic texture.

Quartz occurs as euhedral, corroded phenocrysts (average size ~1.5 mm) and as small (average size ~0.1 mm) anhedral grains in the groundmass.

Feldspar also occurred as both phenocrystic and groundmass grains. However, both occurrences have been completely replaced by very fine grained, massive sericite. In some former feldspar sites, minute granules of leucoxene and associated opaque aggregates are present. It is possible that some of these replacement sites may have been phenocrystic biotite rather than feldspar, but there is no independent evidence of this. The leucoxene and opaque phases also occur as scattered patches in the groundmass, where some opaque grains have a cubic form.

In polished thin section, the opaque phases are observed to be dull grey goethite, presumably after magnetite. The anhedral goethite grains tend to be associated with leucoxene granules and rods in possible altered biotite sites.

Small euhedral prisms of zircon occur in accessory amounts. Weathering has generated cryptocrystalline clay (?smectite) and goethite along widely-spaced subparallel fractures.

A-3.

The sample represents a rhyolitic volcanic rock that contained phenocrysts of quartz and feldspar. The equigranular texture of the groundmass suggests it formed by devitrification of rhyolitic glass rather than direct magmatic crystallisation. There are no clear textural indications as to whether the rhyolite was a lava flow or an ignimbrite, but the euhedral, non-fractured form of the quartz phenocrysts and inferred feldspar phenocrysts suggests that the rhyolite was a lava flow.

Subsequent to deposition of the glassy rhyolite, devitrification of the glassy groundmass to quartz + feldspar occurred.

An important alteration event occurred, causing complete replacement of feldspar by massive, fine grained sericite with minor associated leucoxene and opaques. Deposition of sericite along widely-spaced fractures suggests that the rock body was first fractured, then affected by pervading hydrothermal fluids. The origin of the fluids is not clear from this thin section: they may have been of low-grade regional metamorphic origin, or may have been derived from a nearby granitic intrusive body.

SAMPLE: T-14008 :TSC51786

Rock Name:

Quartzite

Hand Specimen:

The rock sample is a very hard, pale pinkish quartzitic sandstone that displays weak lamination defined by concentrations of larger clasts.

Petrography:

Mineral	Vol.%	Origin
<u>Clasts</u>		
Quartz	65	clastic
Lithics	10	clastic
Leucoxene	Tr	clastic
Zircon	Tr	clastic
<u>Matrix</u>		
Quartz	20	overgrowth cement
Opauques (?iron oxides)	5	clast frostings

In thin section, this sample displays a relict, poorly-sorted clastic arenaceous texture that has been modified by the development of overgrowth cement.

Quartz is the dominant clastic component. Larger grains up to 4 mm in size are subrounded in shape, but smaller grains (average size ~0.4 mm) were subangular when deposited.

Lithic fragments are moderately abundant. All appear to be fine grained meta-sediments (e.g. sericitic meta-siltstone). Other clastic fragments include subrounded zircon crystals and subhedral leucoxene grains (possibly after magnetite).

The matrix of the rock is composed mainly of quartz that occurs as an optically continuous cement. It has overgrown clastic quartz, completely filling interparticle pore space. A minor amount of very fine grained opaque material (?iron oxides) occurs as discontinuous coatings on detrital quartz grains. The iron oxide may have been a primary frosting on the detrital quartz, or it may have been deposited diagenetically, just prior to development of the quartz overgrowths. The presence of the iron oxide generates the slight pinkish colouration of the rock in hand specimen.

The rock represents a moderately mature quartzose sandstone that has experienced a significant degree of post-depositional cementation, involving iron oxides and quartz.

SAMPLE: T-14016 : TSC51787

Rock Name:

Quartzite with quartz veins

Hand Specimen:

The rock sample is fine grained, pale grey, massive (i.e. non-laminated) and hard. It is cut by a single vein approximately 5 mm wide that is filled by white quartz with minor small vughs containing a silvery sulphide mineral.

Petrography and Mineragraphy:

Mineral	Vol.%	Origin
<u>Clasts (75%)</u>		
Quartz	75	clastic
Tourmaline	Tr	clastic
Zircon	Tr	clastic
Rutile	Tr	clastic
<u>Matrix (20%)</u>		
Quartz	15	metamorphic
Sericite	4	metamorphic
Leucoxene	Tr	metamorphic
Pyrite	1	metamorphic
<u>Quartz veins (5%)</u>		
Quartz	5	metamorphic
Vughs	Tr	metamorphic
Pyrite	Tr	metamorphic

In thin section, this sample displays a relict clastic sedimentary texture that indicates it was a moderately well-sorted quartzose sandstone. It has been modified by recrystallisation of the fine grained silty matrix, and a moderate degree of grain boundary suturing.

Detrital clasts were dominated by quartz which was deposited as subrounded to subangular clasts of average size ~ 0.3 mm. Accessory clasts include greenish brown tourmaline, subrounded clear zircon, and rare deep reddish brown rutile.

The matrix is composed of cryptocrystalline quartz intergrown with very small flakes of sericite. Minor granules of leucoxene are present. This matrix material is considered to represent recrystallised primary silty matrix. Pyrite is distributed throughout the matrix as minute cubes ($\sim 5-10\mu\text{m}$ in size) and as ragged aggregates up to 0.2 mm in size.

The quartz vein is composed of prismatic intergrown quartz crystals that grew approximately perpendicular to the vein walls. A moderate degree of straining, recrystallisation and grain boundary suturing indicates that the quartz vein formed prior to or during the low grade regional event that has affected the rock. Small angular vughs are present, and minor subhedral pyrite cubes occur in the vughs.

A-6.

The rock represents a moderately mature, well-sorted quartzose sandstone that contained a small proportion of silty matrix. Recrystallisation, probably under low grade regional metamorphic conditions, generated very fine grained quartz + sericite + leucoxene + pyrite in the matrix. The widely-spaced veins of quartz (+ pyrite) formed before or during this event.

SAMPLE: T-14017 : TSC51788

Rock Name:

Quartzite

Hand Specimen:

The rock sample is a fine grained, pale grey, non-laminated sandstone. Its uniform appearance and competency suggests extensive cementation.

Petrography:

Mineral	Vol. %	Origin
Quartz	99	clastic
Tourmaline	Tr	clastic
Monazite	Tr	clastic
Rutile	Tr	clastic
Leucoxene	Tr	clastic

In thin section, this sample displays a relict arenaceous texture indicating that the primary sandstone was well-sorted and very mature. Interparticle pore space has been completely filled by quartz as the result of grain boundary dissolution and migration.

Quartz completely dominated the clastic components of the sediment. Average grain size was ~0.15 mm, and the grains were very well-sorted. Subsequent grain boundary migration has destroyed precise primary grain shapes.

Accessory clastic phases include subrounded, squat monazite prisms, rare reddish brown rutile grains, and granular leucoxene (presumably after magnetite).

The rock represents a well-sorted, mature quartzose sandstone that experienced significant solution and grain boundary migration of clastic quartz, resulting in a very tough, compact rock. These post-depositional changes may have occurred under diagenetic or low-grade regional metamorphic conditions.

SAMPLE: T-14018 : TSC51789

Rock Name:
Quartzite

Hand Specimen:

The rock sample is pale grey with pervasive pale brown weathering stains. It is very hard and compact, with no lamination evident.

Petrography:

Mineral	Vol.%	Origin
Quartz		clastic
Tourmaline	Tr	clastic
Zircon	Tr	clastic
Rutile	Tr	clastic
Sericite	3	metamorphic
Clays (?smectite)	5	weathering

In thin section, this sample displays a relict arenaceous texture that indicates the sediment was well-sorted and mature. It has been modified by subsequent grain boundary migration and suturing.

Quartz was the dominant clastic phase. It was deposited as grains of average size ~0.2 mm.

Accessory clastic phases include tourmaline, zircon and rutile.

A minor amount of sericite occurs as very small flakes, commonly tracing outlines of primary quartz particles. In places, weathering patches have generated very fine grained clays, some of which may be after sericite.

The rock represents a well-sorted, mature quartzose sandstone that contained a small proportion of silty matrix. Diagenesis or low-grade regional metamorphism has caused grain boundary solution and migration of clastic quartz

SAMPLE: T-14019 :TSC51790

Rock Name:

Olivine basalt

Hand Specimen:

The rock sample is fine grained, grey, massive, and crystalline in texture. Weathering has generated a thin brown oxidation rind, and brownish stains follow fractures through the rock.

Petrography:

Mineral	Vol.%	Origin
Plagioclase	45	igneous
Pyroxene	25	igneous
Olivine	10	igneous
Brown glass	5	quench igneous
Opagues (?ilmenite)	5	igneous
Clays (red-brown) + goethite	10	weathering

In thin section, this sample displays a microporphyritic, intergranular igneous texture modified slightly by recent weathering.

Plagioclase laths are abundant. They are ~0.4 mm long, quite fresh, and display a typical felted texture.

Pyroxene forms small prisms (~0.05 mm long) and granular aggregates that tend to occur interstitially to the plagioclase laths.

Olivine forms microphenocrysts up to 1 mm long. They were magmatically corroded prior to partial replacement by reddish brown clays during weathering.

Opagues (?ilmenite) build interstitial rods, and angular patches of isotropic brown glass are present. The latter have been partly replaced by clays during weathering.

Weathering has also resulted in the deposition of clays and goethite along fractures that cut the rock.

The rock represents an olivine basalt, possibly a lava flow rock, that was microporphyritic in olivine prior to extrusion. Subsequently the lava crystallised plagioclase + pyroxene + ilmenite, leaving minor residual silicate liquid to quench as glass. Recent weathering has resulted in the generation of reddish brown clays that have partly replaced olivine and glass, and in places have been deposited together with goethite on fractures.

SAMPLE: T-14022 : TSC51791

Rock Name:

Altered rhyolite

Hand Specimen:

The rock sample is a tough, compact, grey rock. It contains large translucent quartz crystals in a pale grey groundmass. Discontinuous fractures, best seen on the sawn surface, are thinly filled by creamish brown material.

Petrography and Mineragraphy:

Mineral	Vol.%	Origin
<u>Phenocrysts</u>		
Quartz	20	igneous
"Feldspar" (sericite)	20	"igneous" (alteration)
"Biotite" (sericite + goethite + leucoxene)	5	"igneous" (alteration)
<u>Groundmass</u>		
Feldspar	29	relict igneous
Sericite	15	alteration
Quartz	10	relict igneous
Leucoxene	Tr	alteration
Goethite	1	alteration
Zircon	Tr	igneous

In thin section, the sample displays a relict porphyritic texture modified by extensive pervasive alteration.

Quartz occurs both as relict phenocrysts and as groundmass grains. The euhedral phenocrysts (up to 4 mm in size) are magmatically corroded with consequent loss of form. Groundmass quartz occurs as small (~0.1 mm) equant anhedral grains that are intergrown with relict feldspar in a mosaic texture.

Feldspar phenocrysts (probably plagioclase) formed tabular crystals of average size 2 mm. They have been completely replaced by massive, fine grained sericite. In the groundmass, equant anhedral grains of K-feldspar form a mosaic with quartz.

Biotite formed phenocrystic plates ~1 mm long. They have been completely replaced by sericite flakes, associated granules of leucoxene, and anhedral goethite specks. Small zircon prisms may occur in the altered biotite, and represent relict primary accessory grains.

Apart from causing complete replacement of phenocrystic feldspar and biotite, alteration has also resulted in pervasive alteration of the groundmass by patches of massive, fine grained sericite and granules of leucoxene. In addition, sparse thin veinlets ~0.1 mm wide cut the rock. They are discontinuous, tend to comprise a subparallel set, and are filled by very fine grained leucoxene and bladed goethite.

The mineralogy and texture of this sample is consistent with the following evolution:

- Extrusion of a rhyolitic flow rock containing phenocrysts of quartz, feldspar and biotite. The flow rock most likely was a lava, because no textural features suggestive of ignimbritic deposition have been observed.
- Consolidation of the rhyolitic flow rock occurred, generating a glassy rhyolite. Devitrification generated a microcrystalline groundmass mosaic of abundant K-feldspar and lesser quartz.
- Low-grade hydrothermal alteration generated the assemblage sericite + leucoxene + ?magnetite. Thin veinlets filled by leucoxene + ?magnetite formed at this time. The origin of the hydrothermal fluids is not apparent: they may have been of low-grade regional metamorphic origin, but may also have originated from a nearby cooling granitic intrusion. The lack of foliation in the sericite, its massive, very fine grain size, and its heterogenous distribution through the groundmass suggest that the latter origin is more likely.
- Near-surface circulation of meteoric fluids caused replacement of ?magnetite by bladed goethite.

SAMPLE: T-14027 :TSC51792

Rock Name:

Altered porphyritic rhyolite

Hand Specimen:

The rock sample is an altered acid volcanic rock, composed of large translucent quartz phenocrysts and smaller greenish altered feldspar phenocrysts in a pale greenish cream groundmass. The rock appears to be massive (i.e. no directional structures), apart from the presence of microfractures that appear to define a weakly subparallel set.

Petrography:

Mineral	Vol.%	Origin
<u>Phenocrysts</u>		
Quartz	15	igneous
"Feldspar" (sericite)	20	"igneous" (alteration)
"Biotite" (muscovite + zoisite + leucoxene)	10	"igneous" (alteration)
"Magnetite" (leucoxene)	Tr	"igneous" (weathering)
<u>Groundmass</u>		
Feldspar	15	relict igneous
Quartz	20	igneous
Sericite	15	alteration
Zircon	Tr	igneous
Clays (yellow-green)	5	weathering

In thin section, this sample displays a relict porphyritic texture modified by extensive pervasive alteration.

Feldspar occurs as phenocrysts and in the groundmass. Plagioclase phenocrysts (average size ~2 mm) have been completely replaced by very fine grained, massive sericite. In places, relict traces of twinning planes have been preserved in the sericite. Groundmass feldspar has been heavily sericitised, but relict K-feldspar is present. Primary feldspars formed an equigranular mosaic with quartz.

Quartz forms phenocrysts up to 4 mm in size. They are equant and euhedral, but have been partly resorbed by magmatic corrosion. Groundmass quartz occurs as anhedral equant grains in a mosaic with feldspar.

Primary biotite phenocrysts have been completely replaced by sericite that in places is sufficiently coarse to be named muscovite. It is commonly accompanied by very fine granules of leucoxene, and traces of zoisite and quartz.

Primary magnetite phenocrysts ~0.3 mm in size are commonly enclosed by, or associated with, the biotite phenocrysts. The magnetite has been completely replaced by very dark reddish brown to opaque goethite.

A-13.

Small euhedral zircon prisms occur as inclusions in primary biotite sites, and as grains scattered through the groundmass.

Near-surface weathering has generated fine grained, greenish-yellow clay (?smectite) that has partly replaced biotite sites and has pervasively stained the sericite in the groundmass.

The rock represents a rhyolitic flow rock, most probably a lava rather than an ignimbrite. This interpretation is based on the well-preserved, non-fractured forms of the phenocrysts, and on the equigranular, holocrystalline groundmass texture. In addition, none of the usual features of ignimbritic rocks is present (e.g. fiamme, bent biotites, relict welded textures).

The mineralogy and textures of the sample are consistent with the following evolution:

- Extrusion of a rhyolitic lava containing phenocrysts of plagioclase, quartz, biotite, and minor magnetite.
- Pervasive hydrothermal alteration, generating the assemblage sericite + leucoxene ± zoisite. The origin of the hydrothermal fluids is not clear from this single sample. However, the lack of cleavage indicates that a static regime operated at the time, suggesting a static, low-grade regional metamorphic event or a static hydrothermal event related to granitoid emplacement.
- Near-surface weathering has generated the assemblage clay + goethite.

SAMPLE: T-14028 : TSC51793

Rock Name:

Fossiliferous weathered quartzite

Hand Specimen:

The rock sample is uniform, non-laminated, and pale grey with yellowish orange ferruginous staining throughout. It has the appearance of a tough, compact quartzite, and spiriferid brachiopod fossils are scattered throughout the sample.

Petrography:

Mineral	Vol.%	Origin
Quartz	77	clastic / metamorphic
Tourmaline	Tr	clastic
Rutile	Tr	clastic
Zircon	Tr	clastic
Opagues	Tr	clastic
Clays (?smectite)	15	weathering
Goethite	8	weathering

In thin section, this sample displays a relict well-sorted arenaceous texture that has been modified by grain boundary migration and suturing.

Quartz completely dominates the mineralogy of the rock, forming an equigranular mosaic (average grain size ~0.1 mm). In general, the present grain size reflects the primary particle size of the detrital quartz. However, extensive suturing of adjacent grains has occurred, completely occluding the primary interparticle pore spaces.

Accessory detrital phases include greenish brown tourmaline, subrounded zircon, and rare deep yellowish brown rutile. Minor opaques occur as subrounded equant grains. Some grains display a well-preserved, cubic morphology that suggests they formed post-depositionally, and may therefore be pseudomorphs after authigenic or hydrothermal sulphide (?pyrite).

Fine grained yellowish-orange clay (?smectite) is scattered throughout the rock in loose aggregates. Deep reddish brown goethite occurs as disseminated anhedral aggregates, and also as pseudomorphs after a fine grained idiomorphic cubic phase (?pyrite).

The textures and mineralogy of the rock are consistent with the following evolution:

- Deposition of well-sorted, quartzose, bioclastic sand in a near-shore marine environment. The presence of the spiriferid fossils confirms the littoral environment of deposition.

A-15.

- Following deep burial, the deposit experienced extensive grain solution and redeposition, resulting in grain boundary migration. This caused pervasive particle suturing and the filling of interparticle pore spaces. The excellent preservation of fossil forms indicates that static pressure conditions prevailed.
- Possible minor sulphide (?pyrite) crystallised either during the above event, or during a subsequent hydrothermal event.
- Near-surface weathering has resulted in pervasive introduction of clays, and complete replacement of ?pyrite by goethite.

SAMPLE: T-14032 : TSC51794

Rock Name:

Weathered, mineralised quartzite (meta- bioclastic sandstone)

Hand Specimen:

The rock sample is a massive, non-laminated quartzose meta-sediment that has been pervasively weathered, generating abundant fine-grained reddish brown weathering products (hydrated iron oxides, clays). Strongly-ribbed molds of spiriferid brachiopod fossils have been preserved, indicating a shallow-marine (littoral) environment of deposition of the detrital sand.

Petrography and Mineragraphy:

Mineral	Vol.%	Origin
Quartz	53	clastic/metamorphic
Tourmaline	Tr	clastic
Zircon	Tr	clastic
Opagues	Tr	hydroth./metamorphic
Goethite	15	weathering
Clays (?smectite)	10	weathering
Sericite	10	hydroth./metamorphic
Pore space	12	weathering (sol. cavs.)

In thin section, this sample displays a relict arenaceous texture that has been modified by grain boundary suturing, crystallisation of hydrothermal/metamorphic phases, and subsequent pervasive dissolution and precipitation of weathering products.

Quartz is the dominant mineral. It forms an equigranular mosaic of average particle size ~0.15 mm. Preservation of some primary detrital grain shapes indicates that the sand particles were well-rounded to subrounded when deposited. Most particles have experienced grain boundary migration, resulting in suturing of grains and occlusion of interparticle pore space.

Other detrital phases include accessory greenish brown tourmaline and rare zircon.

A minor amount of detrital silty material has recrystallised to very fine grained sericite, which is distributed in discontinuous lenticles and patches.

Cubic solution cavities are abundant in the sericitic patches. Rarely, cubic goethite pseudomorphs after ?pyrite have been preserved in the sericitic patches and elsewhere throughout the rock. Fine grained brownish yellow clay (?smectite) has lined and partly filled solution cavities and discontinuous fractures through the rock.

The following evolution is consistent with the mineralogy and texture of this sample:

- Deposition of a well-sorted bioclastic sandstone with minor silty patches and lenses. The presence of spiriferid brachiopod fossil forms confirms a littoral (shallow, near-shore marine) environment of deposition.
- Deep burial, with consequent post-depositional grain boundary migration and particle suturing under static pressure conditions. Silty lenses recrystallised to fine sericite.
- Mineralisation, with development of sulphide (?pyrite) preferentially in the silty lenses and streaks. This mineralisation event may have occurred during the above event, i.e. it may have occurred during diagenesis or low grade regional alteration, or alternatively it may have occurred during a much later event (e.g. nearby granitoid emplacement). There is no independent petrographic evidence to support either scenario.
- Near-surface circulation of meteoric fluids (i.e. weathering), with consequent replacement of ?pyrite by goethite, and partial dissolution and reprecipitation of goethite to generate goethite-lined solution cavities.

320

A-18.

SAMPLE: T-14035 : TSC51795

Rock Name:

Weathered, mineralised quartzite (meta- bioclastic sandstone)

Hand Specimen:

The rock sample is similar in appearance to sample T-14032. Fine grained white quartz is liberally disseminated with reddish brown and yellowish brown iron oxide weathering products. Fossil molds are barely discernible, but are most likely to be spiriferid brachiopods by comparison with T-14032.

Petrography and Mineragraphy:

Mineral	Vol.%	Origin
Quartz	60	clastic/metamorphic
Tourmaline	Tr	clastic
Zircon	Tr	clastic
Rutile	Tr	clastic
Sericite	10	hydroth./metamorphic
Pyrite	Tr	metamorphic
Goethite	20	weathering
Clays (?smectite)	5	weathering
Pore space	5	solution cavs., plucking

In thin section, this sample displays a relict well-sorted arenaceous texture that has been extensively modified by grain boundary suturing and generation of hydrothermal/metamorphic phases.

Quartz dominates the mineralogy, forming a sutured mosaic with average grain size ~0.15 mm. In places, primary shapes of detrital grains have been preserved, indicating that they were rounded when deposited.

Accessory detrital grains include greenish brown tourmaline, angular to subrounded zircon, and rounded rutile grains.

Scattered through the rock are irregular patches, lenses and trails of fine grained sericite. These are considered to represent recrystallised detrital silty lenses. Commonly, cubic solution cavities and goethite pseudomorphs (after ?pyrite) are present in the sericitic patches, but also occur disseminated throughout the rock. Rarely, minute cubes of pyrite (~4-8 μ m in size) have been preserved in fractures in relict quartz clasts. Fine grained yellowish-brown clay (?smectite) may be associated with the goethite.

589320

A-19.

The evolution of this sample may be described in similar terms as for sample T-124032. Following littoral deposition of the well-sorted bioclastic sand, deep burial resulted in textural modification of the rock to generate a sutured quartzite. During this diagenetic or low-grade regional metamorphic event, recrystallisation of silty patches occurred, generating fine grained sericite. Disseminated sulphide (pyrite) may have crystallised during this event or subsequently. More recently, near-surface weathering has caused replacement of sulphide by goethite, and partial dissolution of goethite to generate solution cavities partly filled by reprecipitated goethite and clays.

SAMPLE: T-14044 : TSC51796

Rock Name:

Silty sandstone

Hand Specimen:

The rock sample is greenish-grey, fine grained, and weakly laminated on the millimetre to centimetre scale.

Petrography:

Mineral	Vol.%	Origin
Quartz	52	clastic
Tourmaline	Tr	clastic
Zircon	Tr	clastic
Feldspar	1	clastic
Rutile	Tr	clastic
Sericite	35	metamorphic
Goethite	8	weathering
Clay (?smectite)	5	weathering

In thin section, this sample displays a well-preserved clastic texture with poorly-defined laminations on the millimetre scale in response to variable particle size and mineral abundance.

Detrital quartz forms angular to subrounded clasts (average size ~0.3 mm, but ranging from 0.1 mm to 1.0 mm). In general they are poorly-sorted. Accessory clastic phases include feldspar (K-feldspar), greenish brown tourmaline, zircon, and rutile.

The sandy detrital particles lie in a fine grained, silty matrix composed of very fine detrital quartz particles and abundant fine grained sericite of metamorphic origin. In places, a lack of sand-sized detrital particles results in discontinuous silty laminae.

Throughout the rock are irregularly shaped patches of deep reddish brown to yellowish brown goethite and associated yellowish clay (?smectite)sulphide (?pyrite) aggregates.

Throughout the rock are irregularly shaped patches of deep reddish brown to yellowish brown goethite and associated yellowish clay (?smectite). In places, the presence of cubic forms suggests that the goethite is pseudomorphous after ?pyrite. Very rare, tiny cubes of pyrite several microns in size are preserved within quartz grains.

The mineralogy and texture of this sample are consistent with the following evolution:

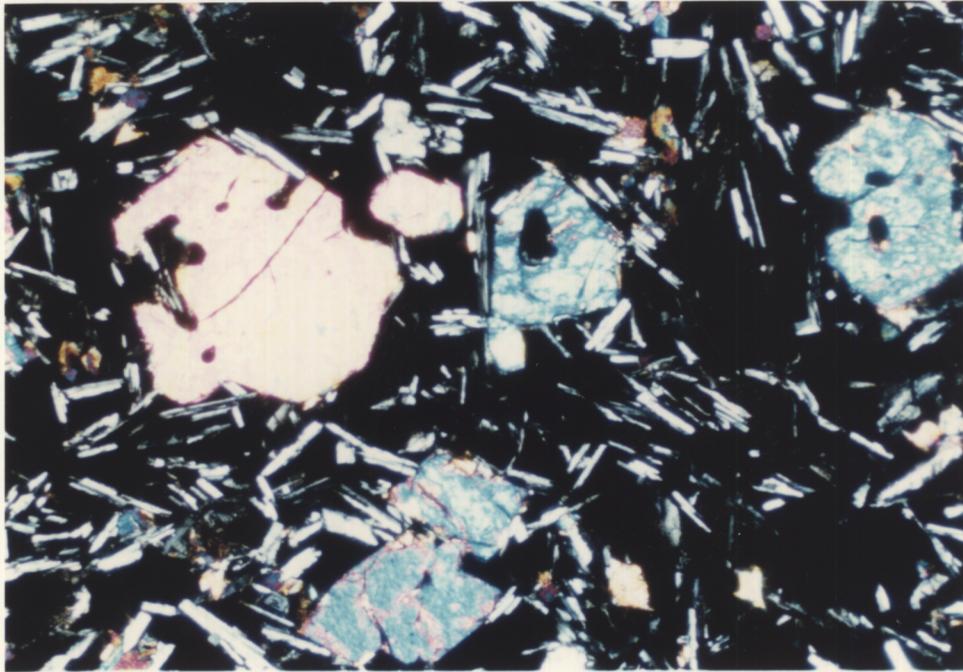
- Deposition of silty sand comprising detrital sand in silty matrix.

- Deep burial, with accompanying recrystallisation of the silty matrix to fine grained sericite. This recrystallisation event may have occurred under diagenetic or low-grade regional metamorphic conditions. No directed regional pressure was evident.
- Possible crystallisation of disseminated sulphide (?pyrite), perhaps during the low grade alteration event described above.
- Near-surface meteoric alteration (i.e. weathering), causing replacement of ?sulphide by goethite and deposition of disseminated clay.

APPENDIX 2**PHOTOMICROGRAPHS**

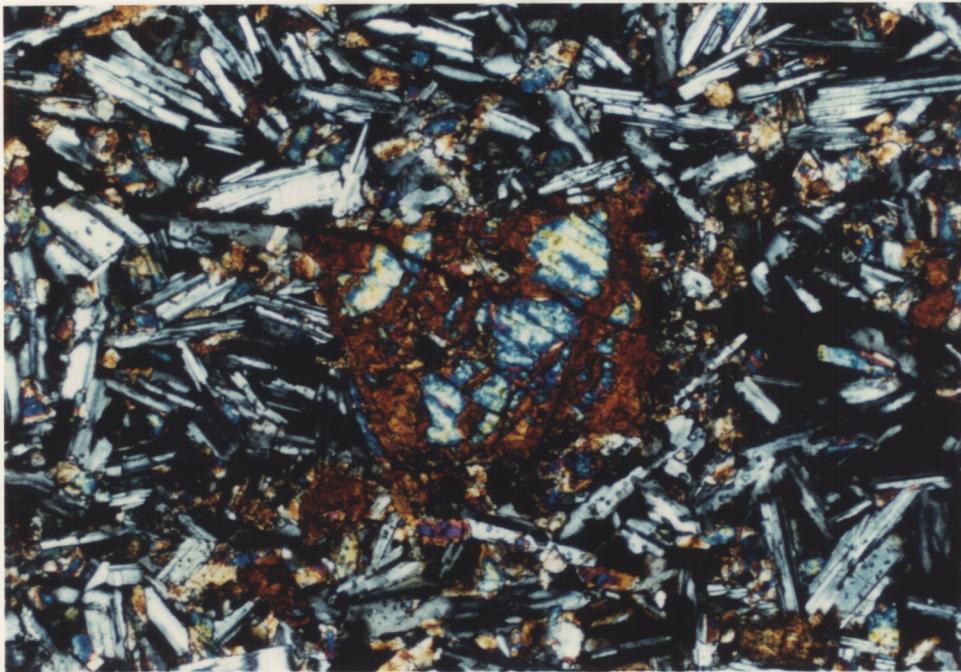
- PLATE 1: Photomicrographs of basalts
PLATES 2-3: Photomicrographs of altered rhyolites
PLATES 4-9: Photomicrographs of metasediments

PLATE 1: PHOTOMICROGRAPHS OF BASALTS

500 μm

a) Sample T08700, Transmitted Light, Crossed Polars ($\times 5$, 4/1)

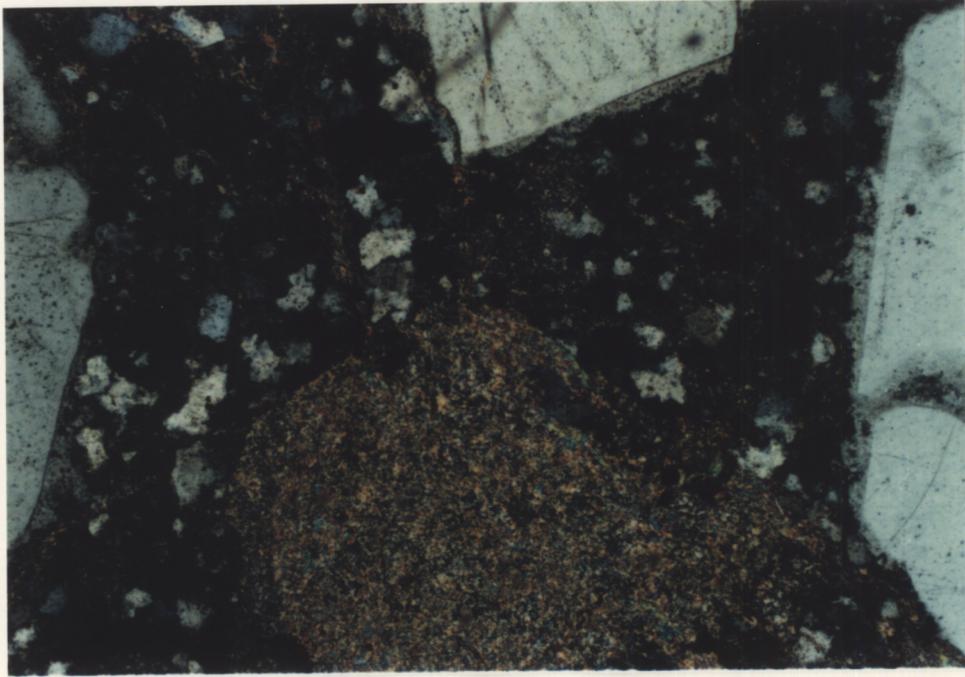
Olivine microphenocrysts (pastel colours) display magmatic resorption and lie in a groundmass of small plagioclase laths and dark glass.

500 μm

b) Sample T14019, Transmitted Light, Crossed Polars ($\times 5$, 13/1)

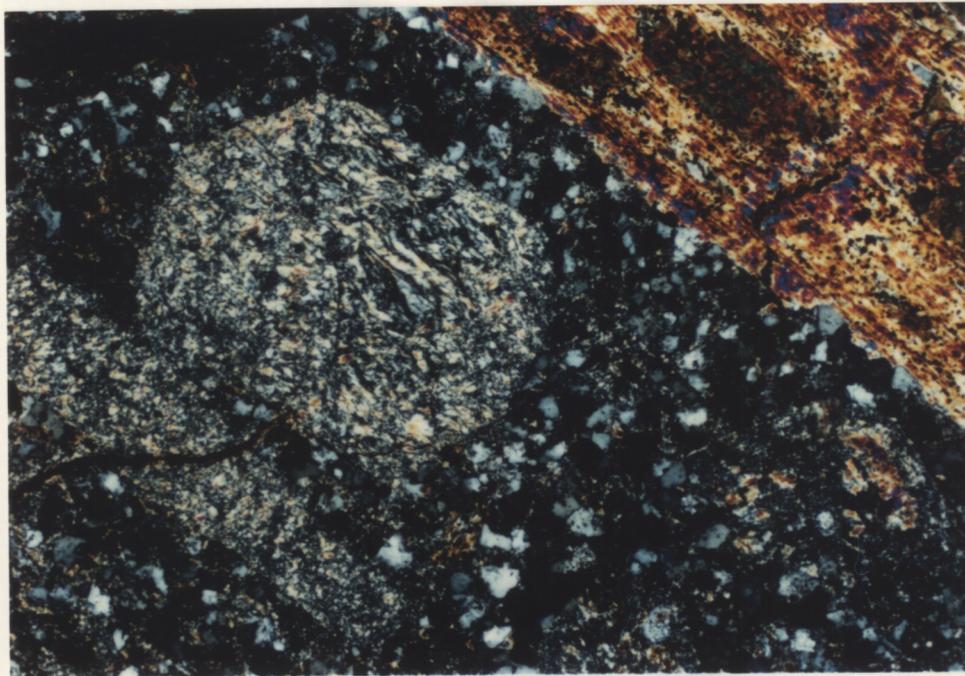
This basalt contains altered olivine phenocrysts (centre) in a groundmass of plagioclase laths, small augite granules (orange-yellow), and accessory opaque oxides.

PLATE 2: PHOTOMICROGRAPHS OF ALTERED RHYOLITES

500 μm

a) Sample T11903, Transmitted Light, Crossed Polars ($\times 5$, 1/1)

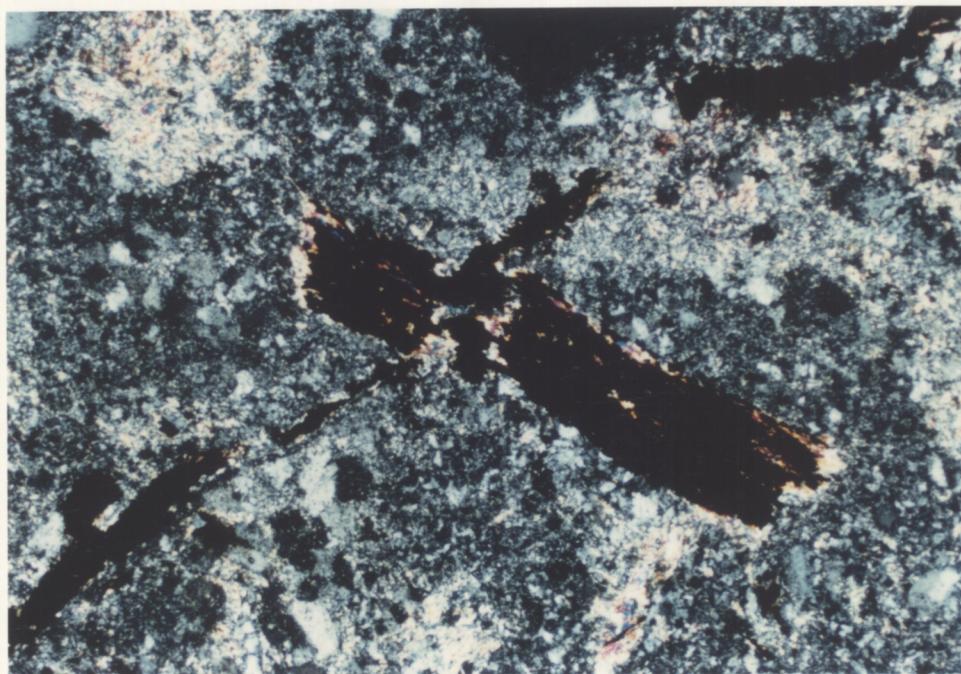
This view shows clear quartz phenocrysts (white to grey, at left, top and right) and a sericitised feldspar phenocryst (centre) in an altered groundmass of quartz, sericite and relict feldspar.

500 μm

b) Sample T14027, Transmitted Light, Crossed Polars ($\times 5$, 17/1)

Sericitised feldspar phenocrysts (euhedral, left) and a biotite phenocryst replaced by muscovite (yellow to blue) plus leucoxene (dark spots), lie in a partially sericitised groundmass composed of quartz, sericite and relict feldspar.

PLATE 3: PHOTOMICROGRAPHS OF ALTERED RHYOLITES (CONTD.)

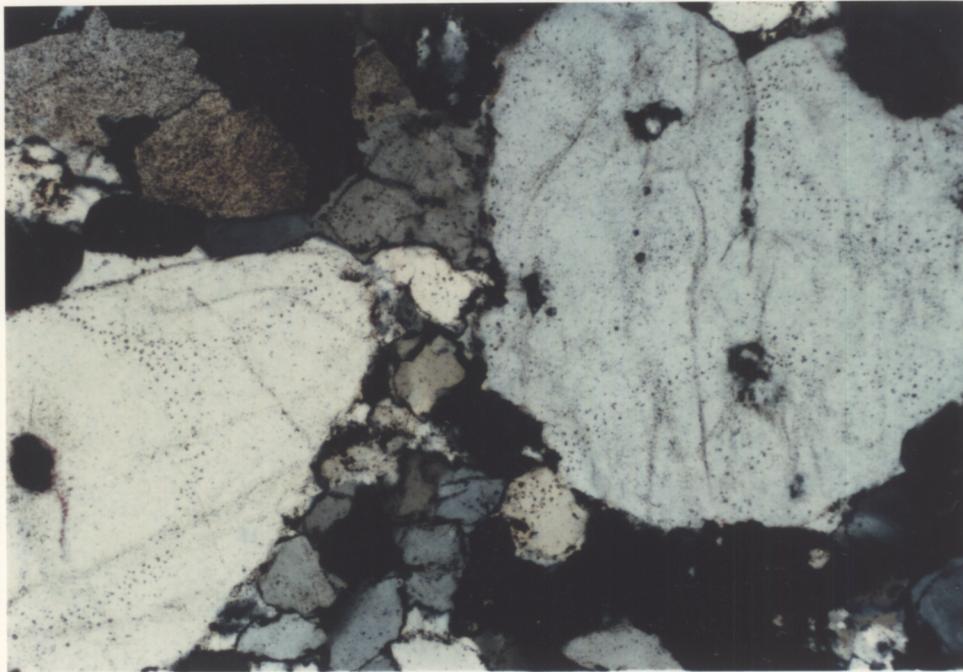
500 μm a) Sample T14022, Transmitted Light, Crossed Polars ($\times 5$, 15/1)

This view shows a biotite phenocryst (centre) that has been completely replaced by sericite and dark leucoxene + opaques. Note the thin, discontinuous veinlet (oriented NE-SW) that has been filled by fine-grained opaques, and pervasively sericitised groundmass.

200 μm b) Sample T14022, Reflected Light ($\times 10$, 16/1)

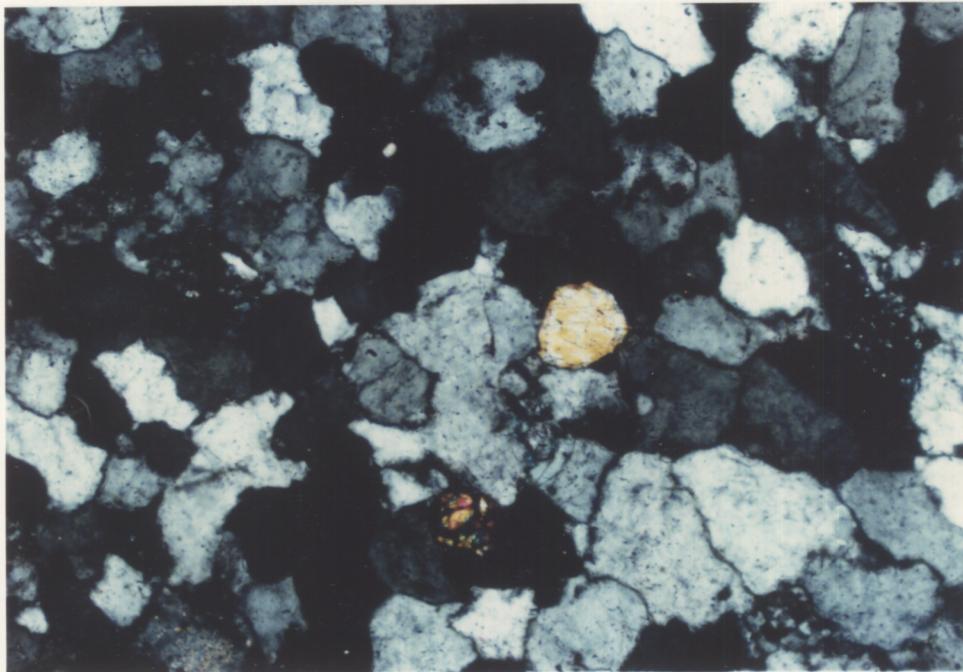
This is a closer view of the veinlet in Plate 3a. Note that it is composed mainly of bladed goethite (grey). An aggregate of rutile/leucoxene needles is present at upper centre adjacent to the veinlet.

PLATE 4: PHOTOMICROGRAPHS OF METASEDIMENTS

500 μm

a) Sample T14008, Transmitted Light, Crossed Polars ($\times 5$, 6/1)

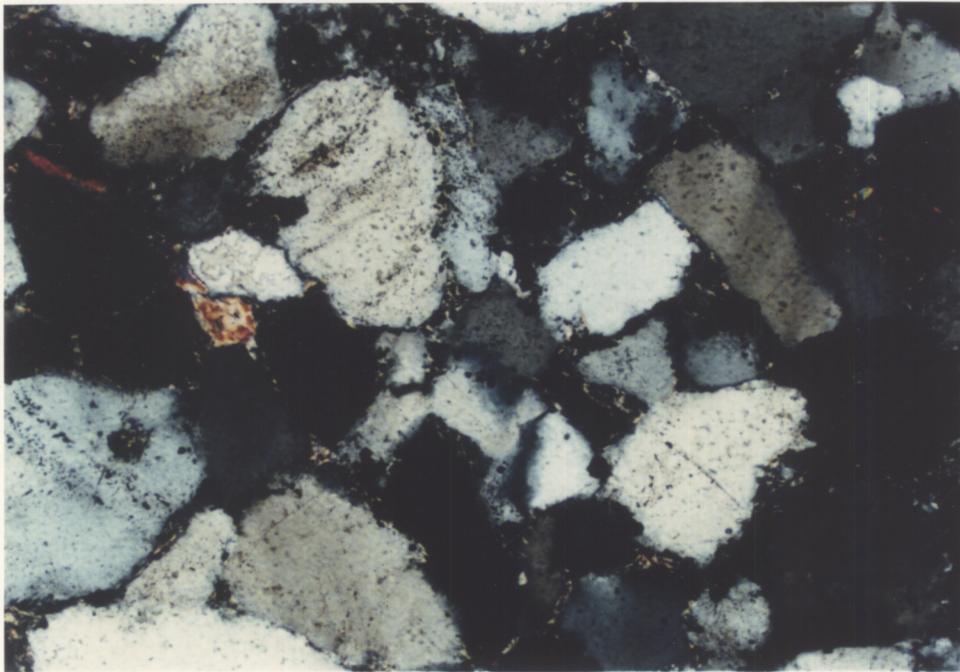
This view shows larger relict primary quartz clasts (upper right, lower left) that have retained their detrital shapes. They lie in a matrix of quartz grains that have suffered grain boundary suturing in response to low grade metamorphism.

200 μm

b) Sample T14017, Transmitted Light, Crossed Polars ($\times 10$, 7/1)

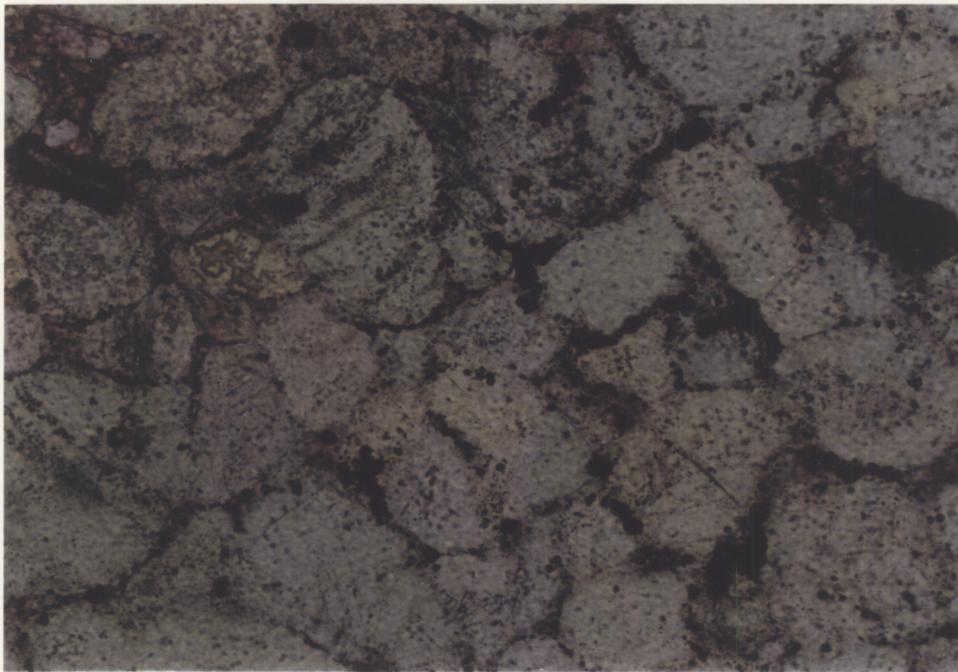
This is a view of a well-sorted metamorphosed quartzose sandstone. Note the accessory detrital tourmaline (yellow, centre) and zircon (bright colours, lower centre). Primary quartz clasts have been sutured and all interparticle pore space has been occluded.

PLATE 5: PHOTOMICROGRAPHS OF METASEDIMENTS (CONTD.)

200 μm

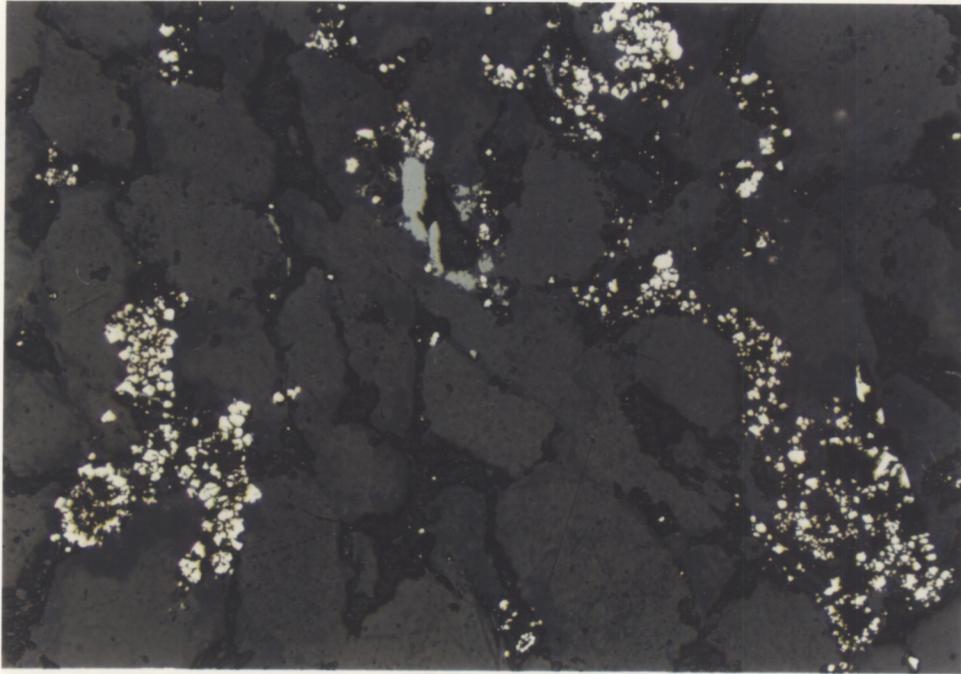
a) Sample T14016, Transmitted Light, Crossed Polars ($\times 10$, 7/1)

This view shows sutured detrital quartz grains, with accessory zircon at upper left and upper right. Note the presence of minor sericite around quartz grain boundaries.

200 μm

b) Sample T14016, Transmitted Plane, Polarised Light ($\times 10$, 8/1)

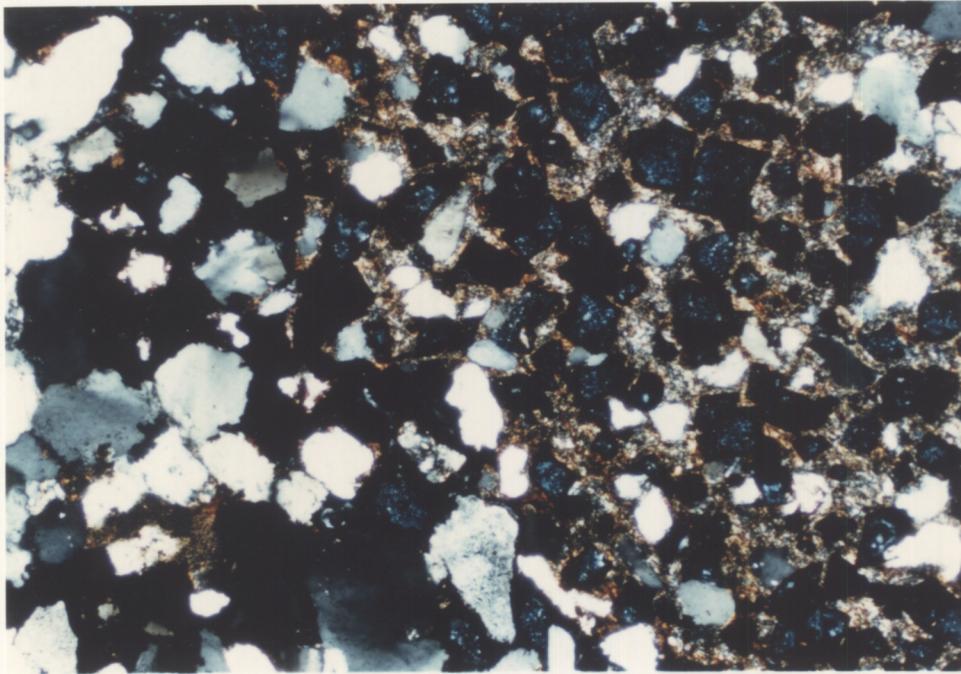
This is the same field of view as in Plate 5a. Note the presence of small black cubes of pyrite that accompany sericite around quartz grain boundaries.

200 μm

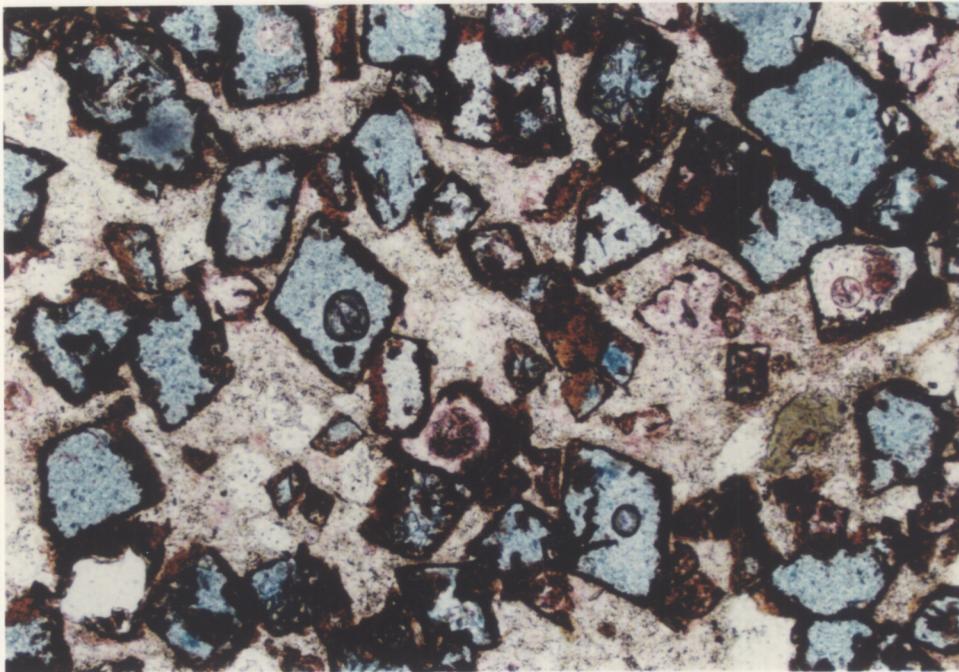
a) Sample T14016, Reflected Light (×10, 9/1)

This view shows the small pyrite cubes referred to in Plate 5b. Note the minor rutile (pale grey, centre).

PLATE 7: PHOTOMICROGRAPHS OF METASEDIMENTS (CONTD.)

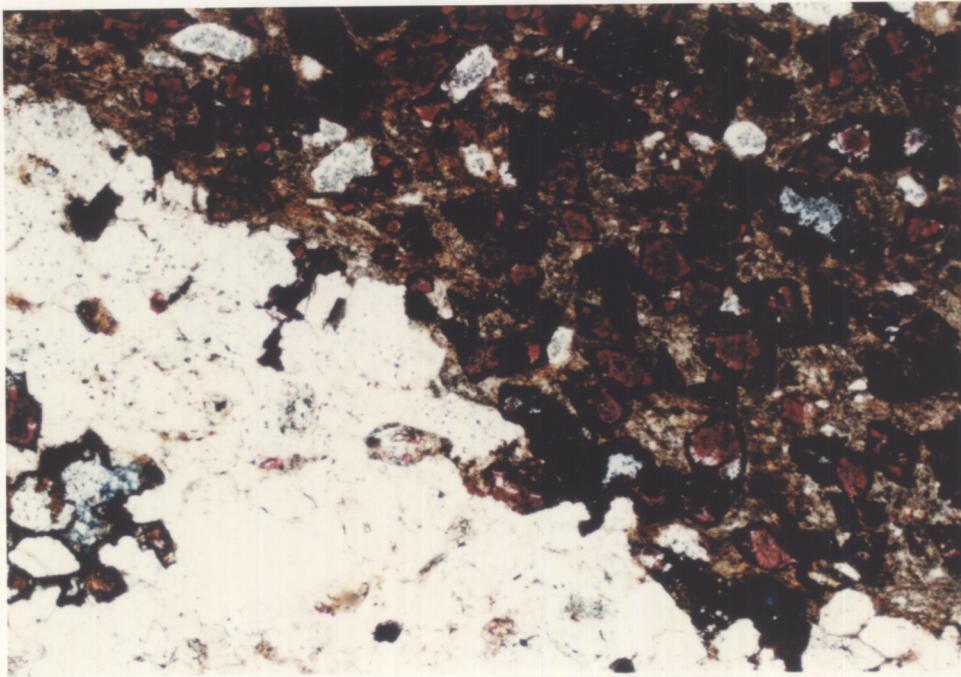
500 μm a) Sample T14032, Transmitted Light, Crossed Polars ($\times 5$, 20/1)

This view shows sutured detrital quartz (white to grey) and metamorphosed silty patches (right) that is now composed of sericite (yellow) and cubic solution cavities after pyrite.

200 μm b) Sample T14032, Transmitted Plane, Polarised Light ($\times 10$, 19/1)

This is a closer view of the pyrite solution cavities mentioned in Plate 7a. Note that the pyrite forms have been retained, but all pyrite has been completely replaced and dissolved, leaving cavities that have been lined by orange-brown goethite.

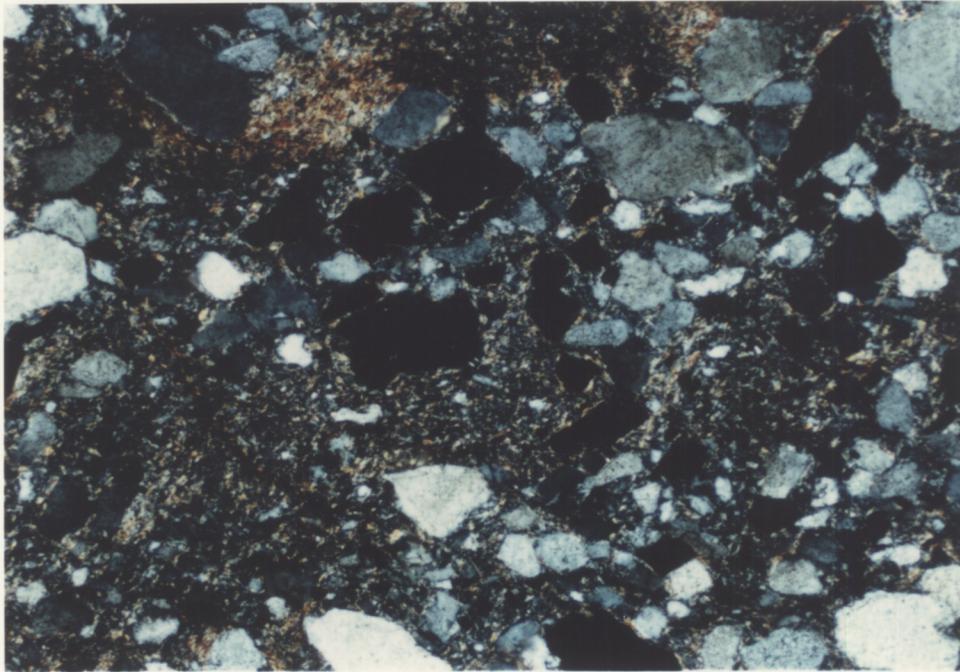
PLATE 8: PHOTOMICROGRAPHS OF METASEDIMENTS (CONTD.)

500 μm

a) Sample T14035, Transmitted Plane, Polarised Light ($\times 5$, 21/1)

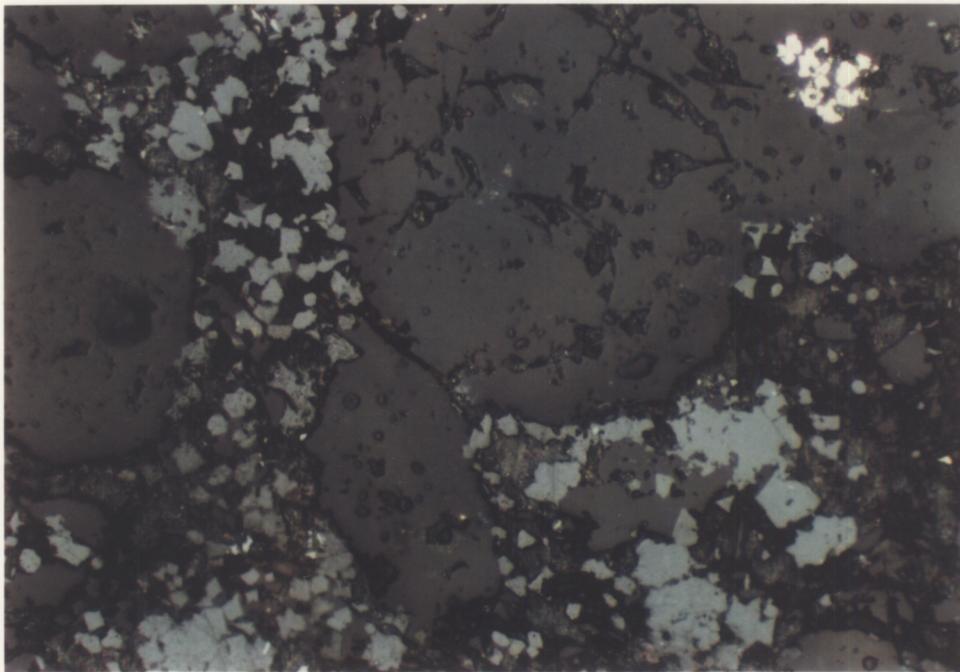
In this view, a silty lamina (upper right) has been replaced by fine-grained sericite and pyrite. The latter has been completely replaced and dissolved leaving solution cavities (emphasised by false alizarin red-S stain). Sutured quartz at lower left.

PLATE 9: PHOTOMICROGRAPHS OF METASEDIMENTS (CONTD.)



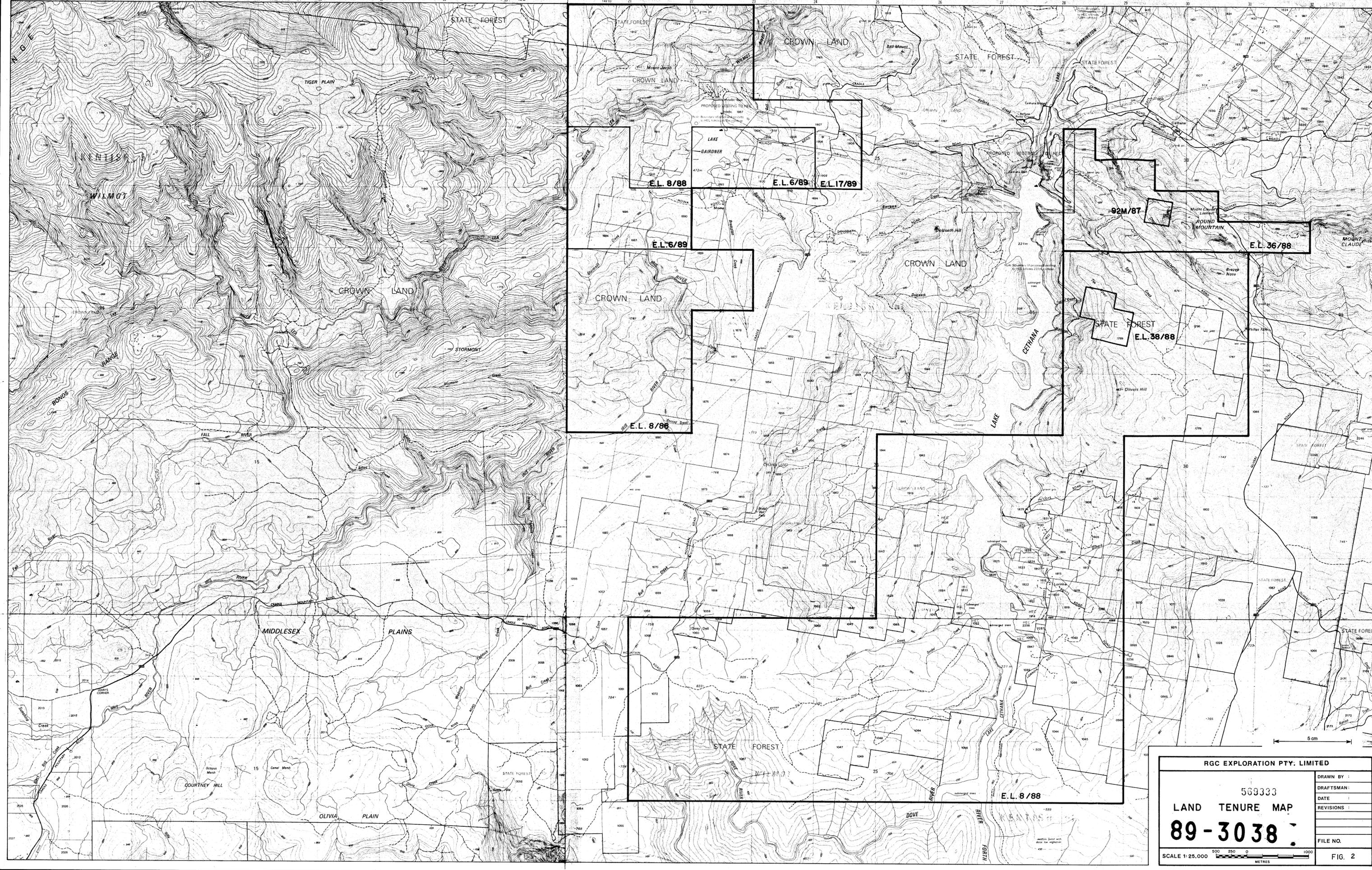
a) Sample T14044, Transmitted Light, Crossed Polars ($\times 5$, 22/1)

This is a general view showing poorly-sorted quartz clasts in a fine-grained silty matrix that has been recrystallised to sericite (yellow specks).

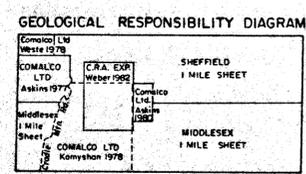
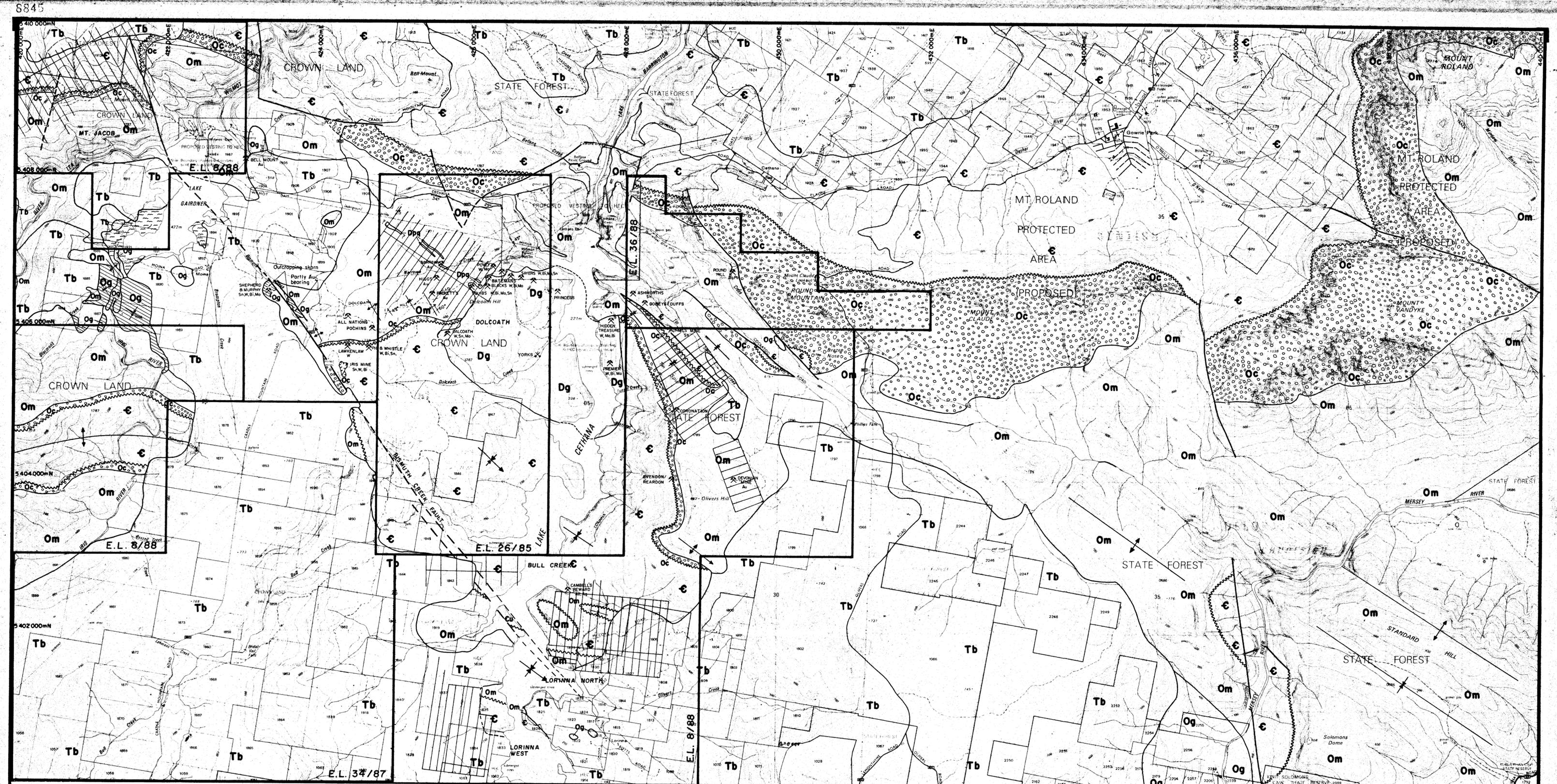


b) Sample T14044, Reflected Light ($\times 20$, 23/1)

This view shows fine grained goethite (pale grey) that is pseudomorphous after pyrite in the recrystallised fine-grained matrix. Note the presence of some relict pyrite, preserved from the effects of weathering within a quartz clast (upper right).



RGC EXPLORATION PTY. LIMITED	
569333	
LAND TENURE MAP	
89-3038	
SCALE 1:25,000	
DRAWN BY :	DATE :
DRAFTSMAN :	REVISIONS :
FILE NO. :	FIG. 2



- TERTIARY**
- Tb Basalt, Basalt scree & Greytill
- DEVONIAN**
- Dg Dolcoath Granite
 - Dpq Quartz-porphry dykes

- ORDOVICIAN**
- Og Gordan Limestone
 - Oq Skarn
 - Om Maina Sandstone
 - Ooc Owen Conglomerate Equivalents
- CAMBRIAN**
- € Undifferentiated Volcanics

- LEGEND**
- Strike & Dip
 - Anticline
 - Syncline
 - Cut Grid
 - Geology Contact
 - Fault
 - Higgs Au
 - Old Mines & contained metals
 - Unconformity Surface

5 cm

INDEX TO ADJOINING MAPS

GUILDFORD 3641	LOONGANA 4041	WARRISTON 4241
PEARSE 3640	LEA 4040	CETHANA 4240
CHARTER 3639	PENICH PINE 4039	LIENA 4239

RGC EXPLORATION PTY. LIMITED

CETHANA 569334

INTERPRETED GEOLOGY

(October, 1988)

SCALE 1: 25,000

500 0 500 1000 METRES

DRAWN BY :

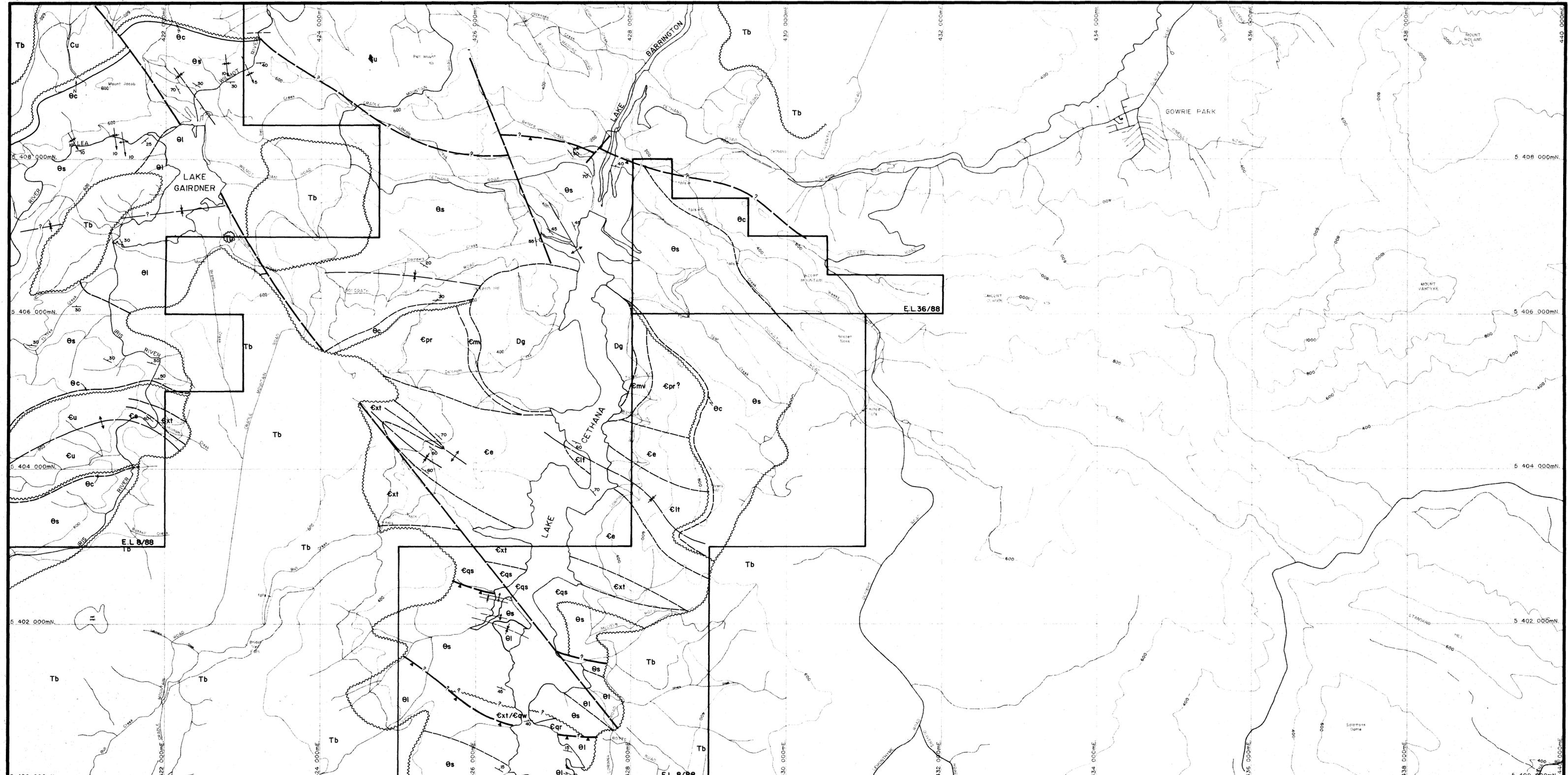
DRAFTSMAN :

DATE :

REVISIONS :

FILE NO. :

FIG. 3



LITHOLOGICAL REFERENCE

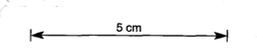
Tertiary	Tb Basaltic extrusives and Breccia	Late cambrian to early ordovician (= Denison group)	Θs Orthoquartzite and sandstone locally bioturbated minor siliceous siltstone
	Ts Sub basaltic, un lithified silt, sand and gravel		Θc Pebbly-cobbly siliciclastic conglomerate
Late Devonian	Dg Bistite granite, local leucogranite adamellite phases ("Dolcoath granite")	Cambrian ?	Θu Undifferentiated (unmapped) felsic volcanics
Ordovician	Θl Limestone calcareous (metasomatised) sandstone	Cambrian	Θqs Quartz + sericite schist, intensely cleaved foliated quartz phyrlic felsic volcanic. Mainly derived from Ext ?
			Θqw Fine medium grained volcanic quartzite-quartz wacke. Sometimes hematitic magnetic
			Θe Fine medium grained felsic epiclastic wacke and medium to coarse grained felsic lithic wacke and breccia
			Θxt Quartz ± feldspar phyrlic vitric crystal tuff and ignimbrite
			Θlt Quartz ± feldspar phyrlic pumiceous lithic tuffs and breccia

Θpr Quartz + feldspar porphyritic phylitic extrusive	Θqr Fine grained glassy quartz porphyritic phylitic extrusive and breccia
Θmv Felsic metavolcanics partly greisenised adjacent to Dg	Θp Qtz. + feldspar + biot + hbl phrophy (probably intrusive)
Θg Granodiorite: locally quartz porphyritic and transitional to Ep	

- Geological boundary
- ~ Trace unconformity
- Fault, inferred
- ▲ Thrust fault inferred, teeth on downthrown block
- Trend of bedding
- ↗ Fold axis with indication of plunge

INDEX TO ADJOINING SHEETS

LOONGANA	WILMOT	SHEFFIELD
LAKE LEA	CETHANA	000
PENCIL PINE	LIENA	MOLE CREEK



RGC EXPLORATION PTY. LIMITED

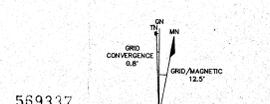
COMPILED	M.F.	569335 CETHANA INTERPRETED GEOLOGY E.L. 8/88 MAPPING BY W. HERMAN
DRAWN	M.O.W.	
DATE	SEPT 89	
CHECKED		
1:25,000 REFERENCE	CETHANA	

BASE PLAN No. _____ OVERLAY PLAN No. _____ SCALE 1:25 000 METRES

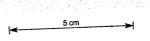


8848

T1005 Rock chip geochemical sample location & number
 M61 Rock specimen sample location & number



569337



89-3038

RGC EXPLORATION PTY. LIMITED	
COMPILED: DRAWN: M.D.W. DATE: CHECKED: APPROVED: LORINNA REFERENCED:	LORINNA SHEET ROCK CHIP SAMPLE LOCATIONS E.L. 8/88
BASE PLAN No.	OVERLAY PLAN No.
100 0 100 200 300 SCALE: 1 : 10,000	



LAKE CETHANA

DEVON MINE

E. L. 8/88

0.384	10.5
7	25
410	36
45	20
30	10

0.095	10.5
1	55
40	45
30	220
160	9

0.000	10.5
3	25
20	75
25	95
30	8

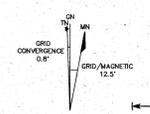
3.430	428.0
3900	67500
230	19500
760	15
120	7

6.230	445.0
3900	77500
50	4600
26500	10
230	10

Au	Ag
As	Pb
Bi	Cu
Zn	Sn
W	Mo

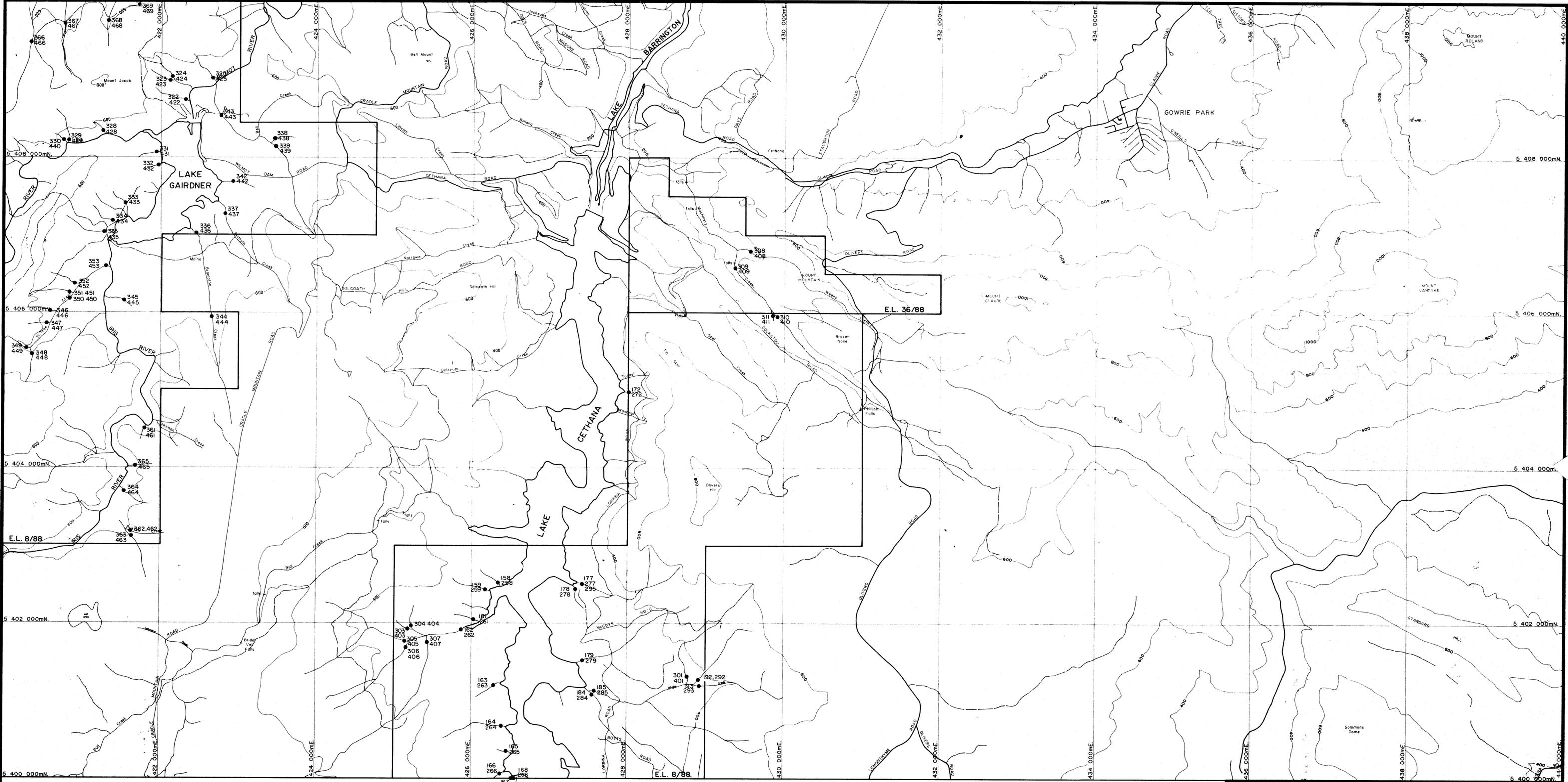
Order of assay values

* High graded sample



569338 89-3038

RGC EXPLORATION PTY. LIMITED	
COMPILED:	M.O.W.
DATE:	SEPT 89
CHECKED:	
REFERENCE:	CETHANA
OVERLAY PLAN No.:	LORINNA
LORINNA SHEET	
ROCK CHIP ASSAYS	
E.L.8/88	
SCALE: 1:10,000	FIGURE No. 7

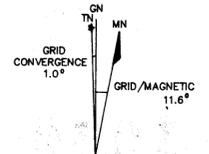


NOTE: All sample numbers have prefix: T17 ie ● 302 402 means ● T17302 T17402

CODE: Sample Nos T17101-193 and T17301-369 are -200 # samples
 Sample Nos T17201-293 and T17401-469 are Panned Concentrates
 Sample Nos T17294-300 are "oversize sand" (0.5/+1.0 mm)

Even 20s (ie. T17120,140,160) were reserved for STANDARDS

5 cm



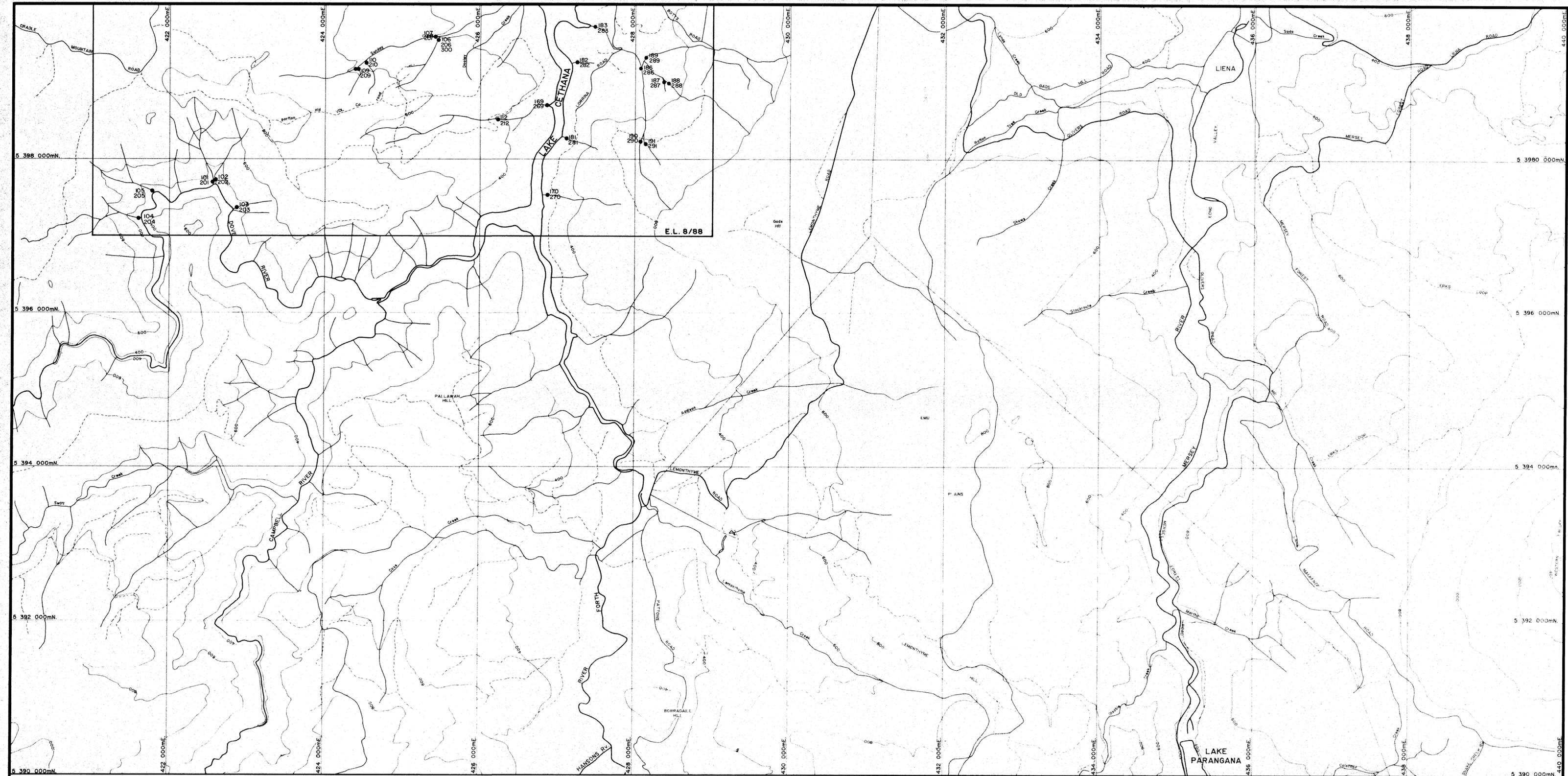
INDEX TO ADJOINING SHEETS

LOONGANA	WILMOT	SHEFFIELD
LAKE LEA	CETHANA	900
PENCIL PINE	LIENA	MOLE CREEK

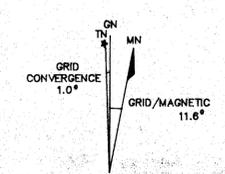
RGC EXPLORATION PTY. LIMITED
(INC. IN N.S.W.)

COMPILED	M.R.C.
DRAWN	M.O.W.
DATE	SEP 1989
CHECKED	
1:25,000 REFERENCE	CETHANA

569339 CETHANA
 STREAM SEDIMENT
 SAMPLE LOCATIONS
 E.L. 8/88

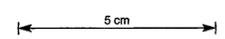


SEE CETHANA SHEET FOR LEGEND



INDEX TO ADJOINING SHEETS

LAKE LEA	GETHANA	000
PENCL. PINE	LIENA	MOLE CREEK
CRADLE MT.	BORRADALE	LAKE MACKENZIE



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

COMPILED	C.H.C.	569340 LIENA STREAM SEDIMENT SAMPLE LOCATIONS E.L. 8/88
DRAWN	M.O.W.	
DATE	SEP 1989	
CHECKED		
1:25,000 REFERENCE	LIENA	

BASE PLAN No.	SCALE 1:25 000	FIG. 9
OVERLAY PLAN No.		

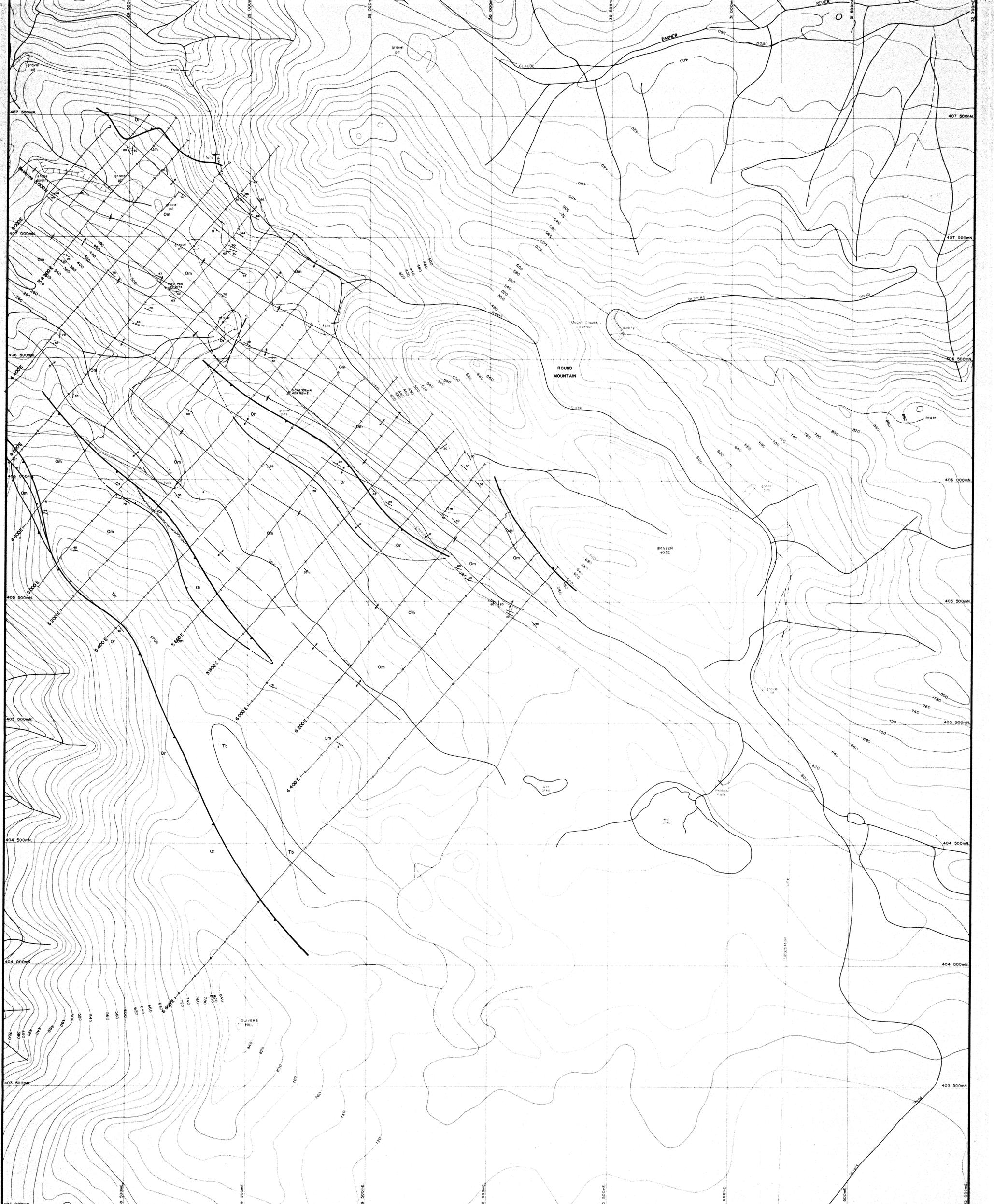


8852

5 cm

89-3038

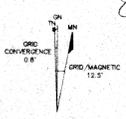
RGC EXPLORATION PTY. LIMITED <small>(INC. IN N.S.W.)</small>																	
<table border="1"> <tr><td>COMPILED</td><td></td></tr> <tr><td>DRAWN</td><td></td></tr> <tr><td>DATE</td><td></td></tr> <tr><td>CHECKED</td><td></td></tr> <tr><td>25000 REFERENCE</td><td></td></tr> </table>	COMPILED		DRAWN		DATE		CHECKED		25000 REFERENCE		<table border="1"> <tr><td colspan="2" style="text-align: center;">ROUND MOUNTAIN</td></tr> <tr><td style="text-align: center;">E.L. 8/88</td><td style="text-align: center;">569341</td></tr> <tr><td colspan="2" style="text-align: center;">ACCESS & GRID</td></tr> </table>	ROUND MOUNTAIN		E.L. 8/88	569341	ACCESS & GRID	
COMPILED																	
DRAWN																	
DATE																	
CHECKED																	
25000 REFERENCE																	
ROUND MOUNTAIN																	
E.L. 8/88	569341																
ACCESS & GRID																	
BASE PLAN No.	OVERLAY PLAN No.																
SCALE: 1 : 5000																	
FIGURE No.	10																



GEOLOGICAL REFERENCE

- TERTIARY Tb Basic intrusives
- LATE CAMBRIAN TO EARLY OROOVICAN Om Orthoquartzite and sandstone locally bedded with minor siliceous siltstone (Moira sandstone)
- Or Pebbly, cobby siliceous conglomerate (Round conglomerate)
- CAMBRIAN Cu Undifferentiated (unmapped) felsic volcanics

- Geological boundary
- Trace of unconformity
- Main thrust fault inferred teeth on upthrown block
- Minor thrust fault inferred teeth on upthrown block
- Strike/dip of bedding
- Fold axis



8853

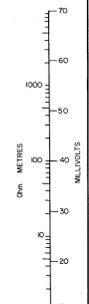
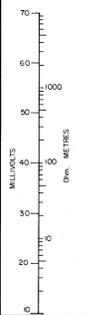
569342

89-3038

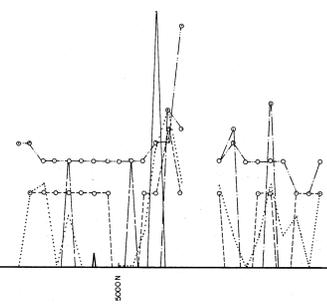
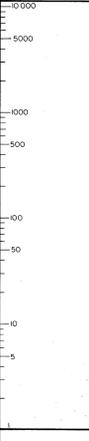
5 cm

RGC EXPLORATION PTY. LIMITED		ROUND MOUNTAIN	
COMPILED:	C. H. C.	E.L. 8/88	
DRAWN:	M. O. W.	GEOLOGY INTERPRETATION	
DATE:	SEPT. 89		
CHECKED:			
SCALE:	1 : 5000		

GRADIENT ARRAY
I.P.



SOIL
GEOCHEMISTRY
(ppm)



MAGNETICS
(gammas)

TOPOGRAPHY &
GEOLOGY
(A.S.L.)



8854

8854

569343

LITHOLOGICAL REFERENCE

- TERTIARY
 - T₃ BASALTIC EXTRUSIVES & BRECCIA
 - T₁ SUB-BASALTIC, UNLITHIFIED SILT SAND & GRAVEL
- LATE DEVONIAN
 - D₂ BIOTITE GRANITE, LOCAL LEUCOGRANITE ADAMELITE PHASES ("DOLCATH GRANITE")
- ORDOVICIAN
 - O₂ LIMESTONE, CALCAREOUS (METASOMATISED) SANDSTONE

- LATE CAMBRIAN TO EARLY ORDOVICIAN (-DENISON GROUP)
 - Or ORTHOQUARTZITE & SANDSTONE, LOCALLY BIOTURBATED MINOR SILICEOUS SLTSTONE
 - Dr PEBBLY-COBBLY SILICICLASTIC CONGLOMERATE
- CAMBRIAN?
 - Eu UNDIFFERENTIATED (UNMAPPED) FELSIC VOLCANICS

GEOLOGY LEGEND

- GEOLOGICAL BOUNDARY
- TRACE OF UNCONFORMITY
- FAULT, INFERRED

GEOCHEMISTRY

- TIN - Sn
- COPPER - Cu
- LEAD - Pb
- ZINC - Zn
- GOLD - Au
- ARSENIC - As
- SILVER - Ag
- BISMUTH - Bi
- MAGNETICS

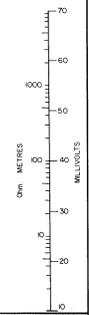
RGC EXPLORATION PTY. LIMITED
(INC. IN N.S.W.)

COMPILED	C.H.C.
DRAWN	M.O.W.
DATE	AUG 1989
CHECKED	
25,000 REFERENCE	

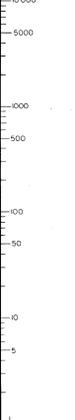
ROUND MOUNTAIN GRID
E.L. 8/88, E.L. 36/88
Line Profile
4000 E

BASE PLAN No. OVERLAY PLAN No. SCALE 1:5000 FIG 13

GRADIENT ARRAY
I.P.



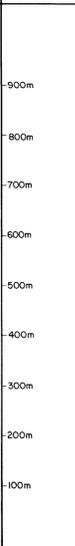
SOIL
GEOCHEMISTRY
(ppm)



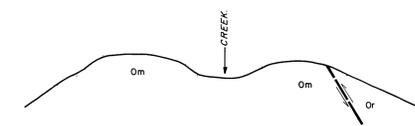
MAGNETICS
(gammas)



TOPOGRAPHY
&
GEOLOGY
(A.S.L.)



-4800 N -4400 N -4000 N -3600 N -3200 N -2800 N -2400 N



LITHOLOGICAL REFERENCE

TERTIARY	Ts	BASALTIC EXTRUSIVES & BRECCIA
	Ts	SUB-BASALTIC UNLITHIFIED SILT SAND & GRAVEL
LATE DEVONIAN	Dg	BIOTITE GRANITE, LOCAL LEUCOGRANITE ADAMELITE PHASES ("DOLGOATH GRANITE")
ORDOVICIAN	Og	LIMESTONE CALCAREOUS (METASOMATISED) SANDSTONE

LATE CAMBRIAN TO EARLY ORDOVICIAN (EDENISON GROUP)

Og	ORTHOQUARTZITE & SANDSTONE LOCALLY BIOTURBATED MINOR SILICEOUS SLTSTONE
Or	PEBBLY-COBBLY SILICICLASTIC CONGLOMERATE
Eu	UNDIFFERENTIATED (UNMAPPED) FELSIC VOLCANICS

GEOLOGY LEGEND

—	GEOLOGICAL BOUNDARY
-----	TRACE OF UNCONFORMITY
---	FAULT, INFERRED

GEOCHEMISTRY

○—○	TIN - Sn
○—○	COPPER - Cu
○—○	LEAD - Pb
○—○	ZINC - Zn
○—○	GOLD - Au
○—○	ARSENIC - As
○—○	SILVER - Ag
○—○	BISMUTH - Bi

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

COMPILED	C.H.C.
DRAWN	M.O.W.
DATE	AUG 1989
CHECKED	
25,000 REFERENCE	

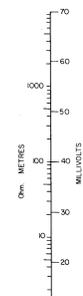
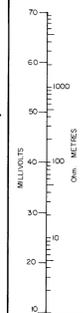
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E.L. 8/88, E.L. 36/88
Line Profile
569344 4200 E

BASE PLAN No. _____ OVERLAY PLAN No. _____ SCALE 1:5000

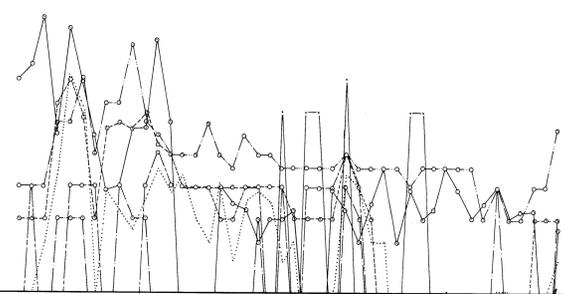
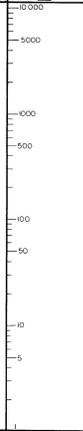
8855
89-3038

8856

GRADIENT ARRAY
I.P.

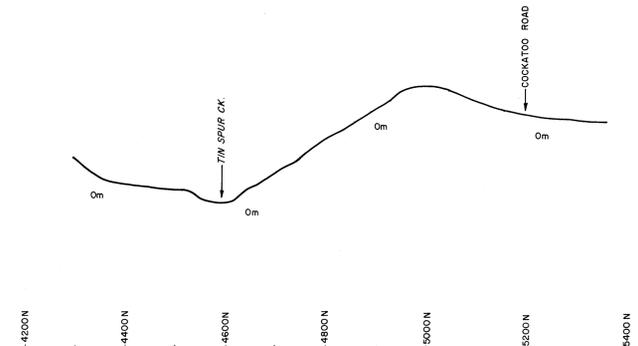
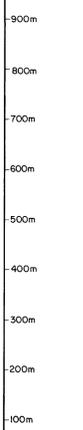


SOIL
GEOCHEMISTRY
(ppm)



MAGNETICS
(gammas)

TOPOGRAPHY
&
GEOLOGY
(A.S.L.)



8856

8856

569345

89-3038

LITHOLOGICAL REFERENCE

- TERTIARY: T₁ BASALTIC EXTRUSIVES & BRECCIA; T₂ SUB-BASALTIC UNLITHIFIED SILT SAND & GRAVEL
- LATE DEVONIAN: D₁ BIOTITE GRANITE, LOCAL LEUCOGRAHITE ADAMELITE PHASES ('DOLCATH GRANITE')
- ORDOVICIAN: O₁ LIMESTONE CALCAREOUS (METASOMATISED) SANDSTONE

LATE CAMBRIAN TO EARLY ORDOVICIAN (DENISON GROUP)

- O₁ ORTHOQUARTZITE & SANDSTONE LOCALLY BIOTURBATED MINOR SILICEOUS SLISTONE
- O₂ PEBBLY-COBBLY SILICICLASTIC CONGLOMERATE
- O₃ UNDIFFERENTIATED (UNMAPPED) FELSIC VOLCANICS

GEOLOGY LEGEND

- GEOLOGICAL BOUNDARY
- TRACE OF UNCONFORMITY
- FAULT, INFERRED

GEOCHEMISTRY

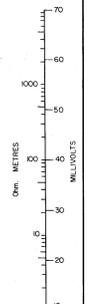
- TIN - Sn
- COPPER - Cu
- LEAD - Pb
- ZINC - Zn
- GOLD - Au
- ARSENIC - As
- SILVER - Ag
- BISMUTH - Bi
- MAGNETICS

RGC EXPLORATION PTY. LIMITED

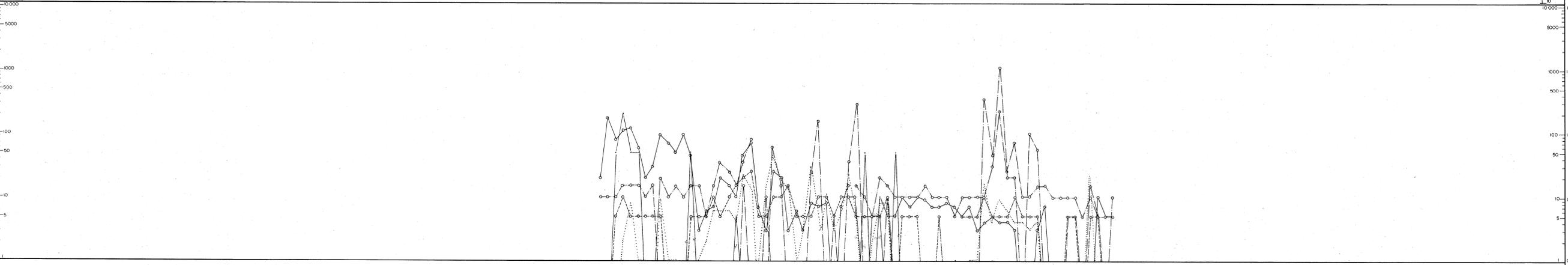
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DRAWN	M.G.W.
DATE	AUG. 1989
CHECKED	
REFERENCE	1:25,000

ROUND MOUNTAIN GRID
E.L. 8/88, E.L. 36/88
Line Profile
4400 E

GRADIENT ARRAY
I.P.



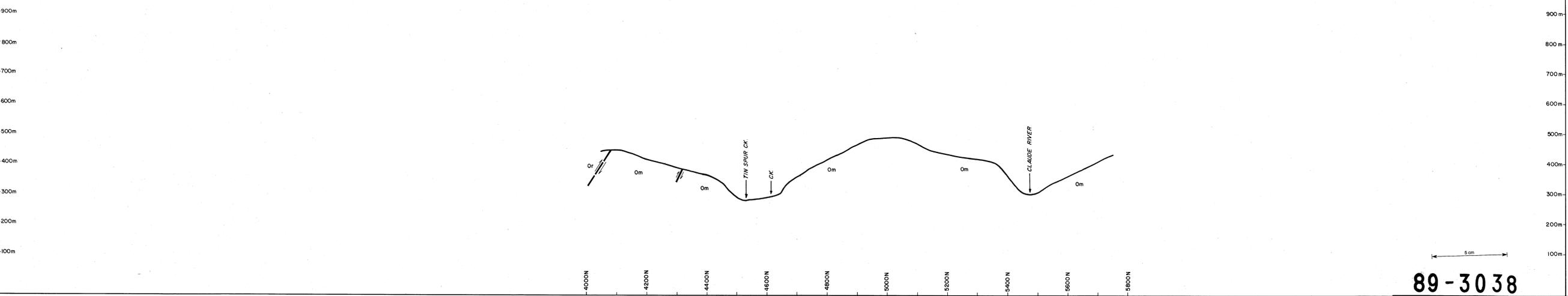
SOIL
GEOCHEMISTRY
(ppm)



A_g SCALE

MAGNETICS
(gammas)

TOPOGRAPHY
&
GEOLOGY
(A.S.L.)



8857

8857

89-3038

569346

LITHOLOGICAL REFERENCE

- T₃ BASALTIC EXTRUSIVES & BRECCIA
- T₂ SUB-BASALTIC, UNLITHIFIED SILT SAND & GRAVEL
- D₅ BIOTITE GRANITE, LOCAL LEUCOGRANITE ADAMELITE PHASES ("DOLCOATH GRANITE")
- O₃ LIMESTONE CALCAREOUS (METASOMATISED) SANDSTONE

LATE CAMBRIAN TO EARLY ORDOVICIAN (DENISON GROUP)

- O₁ ORTHOQUARTZITE & SANDSTONE, LOCALLY BIOTURBATED MINOR SILICEOUS SLTSTONE
- O₂ PEBBLY-COBBLY SILICICLASTIC CONGLOMERATE
- C₁ UNDIFFERENTIATED (UNMAPPED) FELSIC VOLCANICS

GEOLOGY LEGEND

- GEOLOGICAL BOUNDARY
- TRACE OF UNCONFORMITY
- FAULT, INFERRED

GEOCHEMISTRY

- TIN - Sn
- COPPER - Cu
- LEAD - Pb
- ZINC - Zn
- GOLD - Au
- ARSENIC - As
- SILVER - Ag
- BISMUTH - Bi
- MAGNETICS

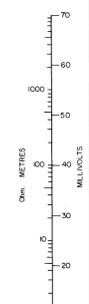
RGC EXPLORATION PTY. LIMITED

COMPILED: C.H.C.
DRAWN: M.O.W.
DATE: AUG 1989
CHECKED:
30,000 REFERENCE

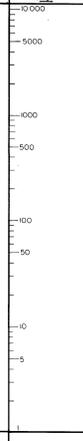
ROUND MOUNTAIN GRID
E.L. 8/88, E.L. 36/88
Line Profile
4600 E

BASE PLAN No. OVERLAY PLAN No. SCALE 1:5000 FIG. 16

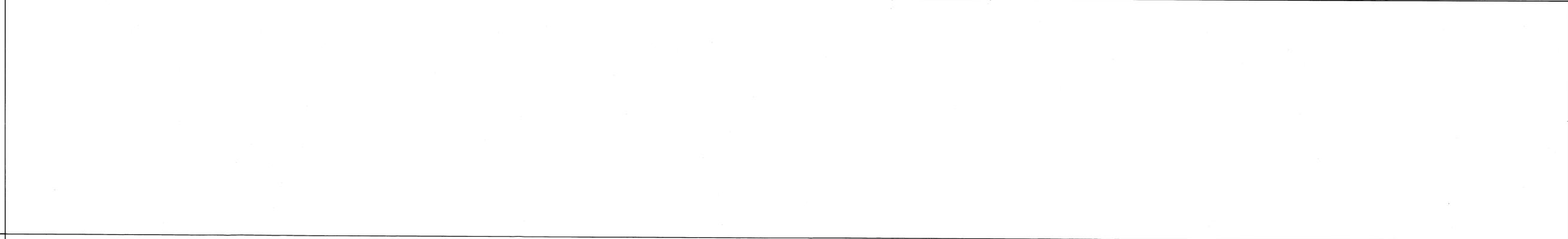
GRADIENT ARRAY
I.P.



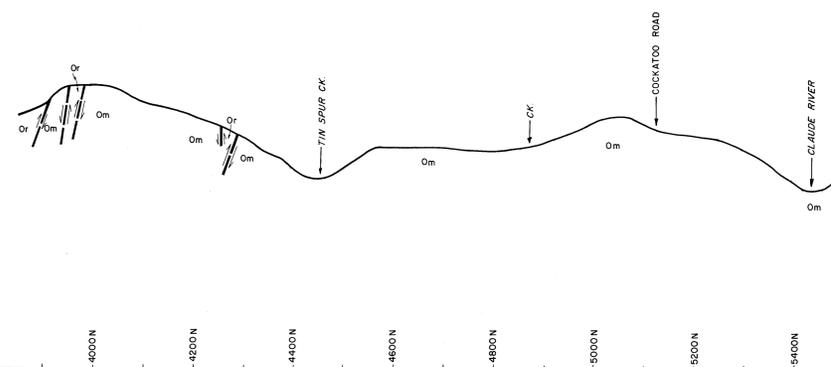
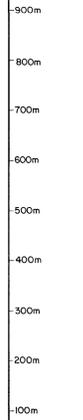
SOIL
GEOCHEMISTRY
(ppm)



MAGNETICS
(gammas)



TOPOGRAPHY &
GEOLOGY
(A.S.L.)



8588

8588

89-3038

569347

LITHOLOGICAL REFERENCE

TERTIARY	Td	BASALTIC EXTRUSIVES & BRECCIA	LATE CAMBRIAN TO EARLY ORDOVICIAN (DENISON GROUP)	Or	ORTHOQUARTZITE & SANDSTONE LOCALLY BIOTURBATED MINOR SILICEOUS SLTSTONE
	vs	SUB-BASALTIC UNLITHIFIED SILT SAND & GRAVEL		Or	PEBBLY-COBBLY SILICICLASTIC CONGLOMERATE
LATE DEVONIAN	Dg	BIOTITE GRANITE, LOCAL LEUCOGRANITE ADAMELITE PHASES ('DOLLOATH GRANITE')	CAMBRIAN?	Eu	UNDIFFERENTIATED (UNMAPED) FELSIC VOLCANICS
ORDOVICIAN	Og	LIMESTONE CALCAREOUS (METASOMATISED) SANDSTONE			

GEOLOGY LEGEND

—	GEOLOGICAL BOUNDARY	—	MAGNETICS
-----	TRACE OF UNCONFORMITY	○-○-○-○	TIN - Sn
—	FAULT, INFERRED	○-○-○-○	COPPER - Cu
		○-○-○-○	LEAD - Pb
		○-○-○-○	ZINC - Zn
		○-○-○-○	GOLD - Au
		○-○-○-○	ARSENIC - As
		○-○-○-○	SILVER - Ag
		○-○-○-○	BISMUTH - Bi

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

ROUND MOUNTAIN GRID
E.L. 8/88, E.L. 36/88
Line Profile
4800 E

COMPILED	C.H.C.
DRAWN	M.O.W.
DATE	AUG. 1989
CHECKED	
25,000 REFERENCE	

BASE PLAN No. _____ SCALE 1:5000 0 100 250m FIG 17
OVERLAY PLAN No. _____

E.L. 8/88 - LORINNA

AND

E.L. 36/88 - ROUND MOUNTAIN

ANNUAL REPORT 1989

VOLUME 2

89-3038

MINES	
File Ref. EL8/88 + EL36/88	
23 OCT 1989	
Doc. Ref.	
Action Officer	Initials
COVER	SHEET
OF REPORT	
ON FILE	
REFERS	
Resubmit to	Date

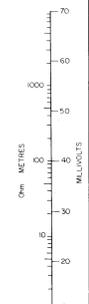
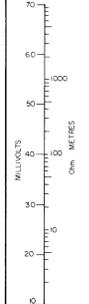
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RGC Exploration Pty. Ltd. (2)

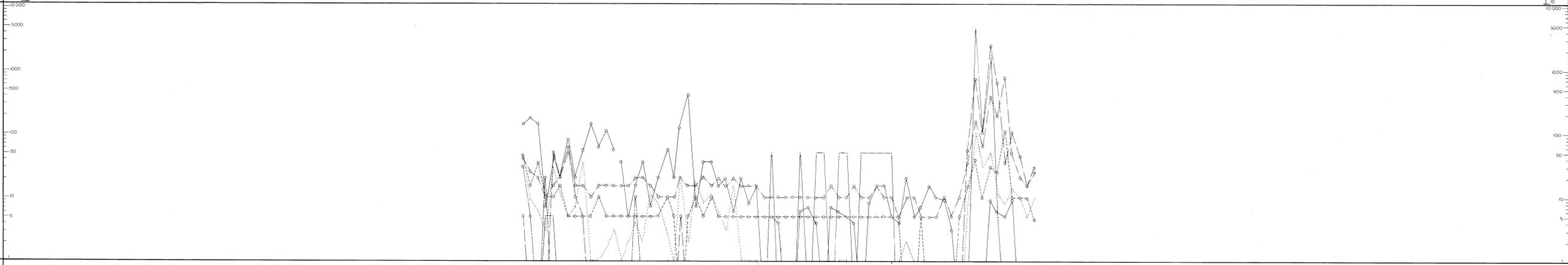
September, 1989.

OPEN FILE

GRADIENT ARRAY
I.P.



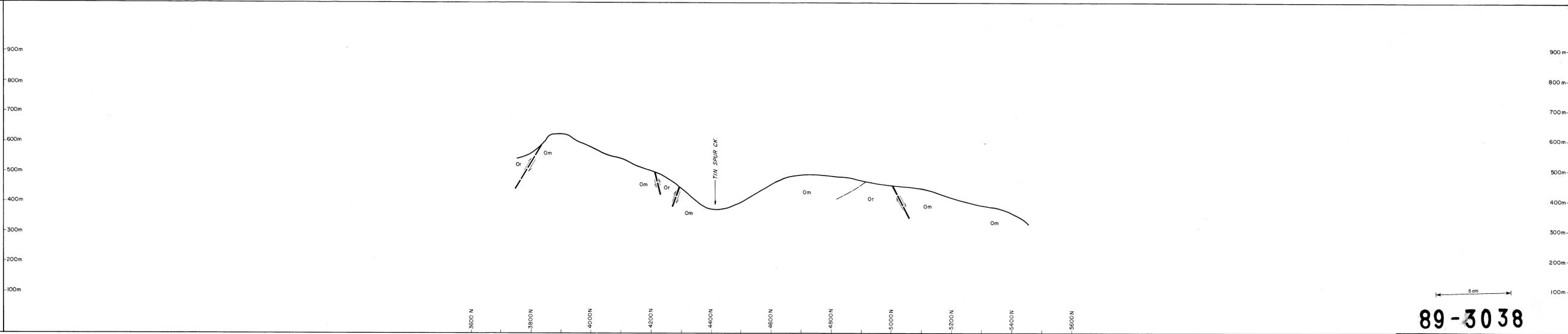
SOIL
GEOCHEMISTRY
(ppm)



MAGNETICS
(gammas)



TOPOGRAPHY
&
GEOLOGY
(A.S.L.)



8859

6588

LITHOLOGICAL REFERENCE

- TERTIARY:
 - Td BASALTIC EXTRUSIVES & BRECCIA
 - Ts SUB-BASALTIC UNLITHIFIED SILT SAND & GRAVEL
- LATE DEVONIAN:
 - Dd BIOTITE GRANITE, LOCAL LEUCOGNANITE ADAMELITE PHASES ("DOLCOATH GRANITE")
- ORDOVICIAN:
 - Og LIMESTONE CALCAREOUS (METASOMATISED) SANDSTONE

LATE CAMBRIAN TO EARLY ORDOVICIAN (DENISON GROUP)

- Or ORTHOQUARTZITE & SANDSTONE LOCALLY BIOTURBATED MINOR SILICEOUS SLTSTONE
- Or PEBBLY-COBBLY SILICICLASTIC CONGLOMERATE
- Ev UNDIFFERENTIATED (UNMAPPED) FELSIC VOLCANICS

GEOLOGY LEGEND

- GEOLOGICAL BOUNDARY
- TRACE OF UNCONFORMITY
- FAULT INFERRED

GEOCHEMISTRY

- TIN - Sn
- COPPER - Cu
- LEAD - Pb
- ZINC - Zn
- GOLD - Au
- ARSENIC - As
- SILVER - Ag
- BISMUTH - Bi
- MAGNETICS

89-3038

569349

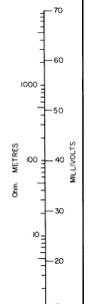
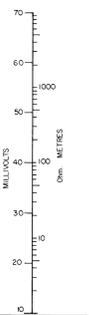
RGX EXPLORATION PTY. LIMITED

COMPILED	C.H.C.
DRAWN	M.O.W.
DATE	AUG 1989
CHECKED	
25,000 REFERENCE	

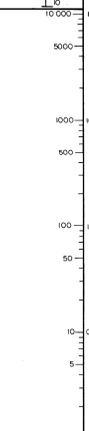
ROUND MOUNTAIN GRID
E.L. 8/88, E.L. 36/88
Line Profile
5000 E

8860

GRADIENT ARRAY
I.P.



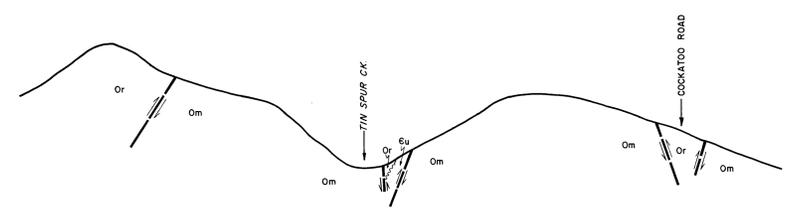
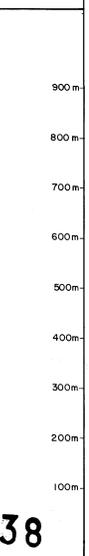
SOIL
GEOCHEMISTRY
(ppm)



MAGNETICS
(gammas)



TOPOGRAPHY
&
GEOLOGY
(A.S.L.)



0988

8860

89-3038

569350

LITHOLOGICAL REFERENCE

- TERTIARY
 - Tb BASALTIC EXTRUSIVES & BRECCIA
 - Ts SUB-BASALTIC UNLITHIFIED SILT SAND & GRAVEL
- LATE DEVONIAN
 - Ds BIOTITE GRANITE, LOCAL LEUCOGRANITE ADAMELLITE PHASES ('DOLGATH GRANITE')
- ORDOVICIAN
 - Og LIMESTONE, CALCAREOUS (METASOMATISED) SANDSTONE

LATE CAMBRIAN TO EARLY ORDOVICIAN (DENISON GROUP)

- Om ORTHOQUARTZITE & SANDSTONE, LOCALLY BIOTURBATED MINOR SILICEOUS SLTSTONE
- Or PEBBLY-COBBLY SILICICLASTIC CONGLOMERATE
- Eu UNDIFFERENTIATED (UNMAPPED) FELSIC VOLCANICS

GEOLOGY LEGEND

- GEOLOGICAL BOUNDARY
- TRACE OF UNCONFORMITY
- FAULT, INFERRED

GEOCHEMISTRY

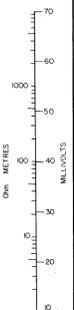
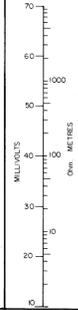
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- COPPER - Cu
- LEAD - Pb
- ZINC - Zn
- GOLD - Au
- ARSENIC - As
- SILVER - Ag
- BISMUTH - Bi
- MAGNETICS

RGC EXPLORATION PTY. LIMITED

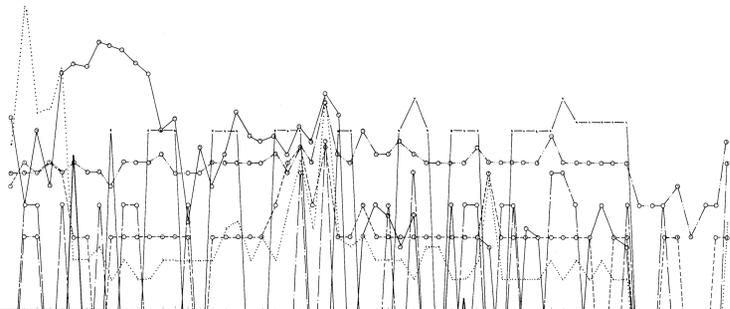
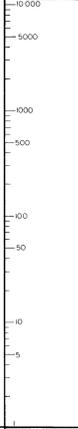
COMPLETED	C.H.C.
DRAWN	M.D.W.
DATE	AUG 1989
CHECKED	
25,000 REFERENCE	

ROUND MOUNTAIN GRID
E.L. 8/88, E.L. 36/88
Line Profile
5200 E

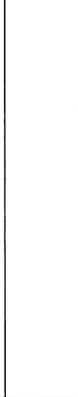
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I.P.



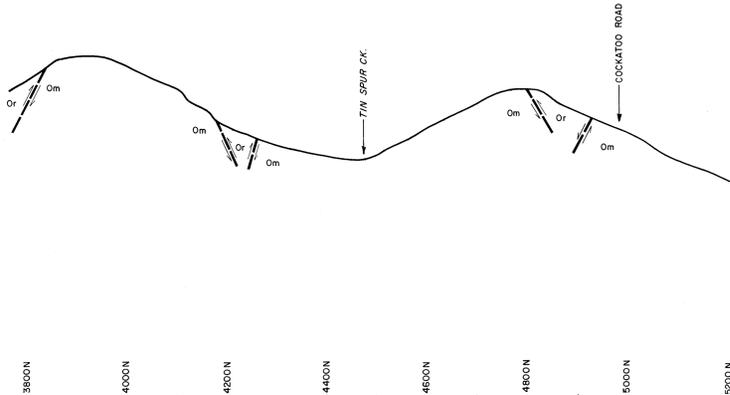
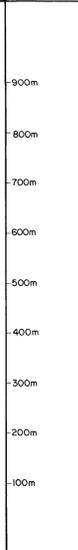
SOIL
GEOCHEMISTRY
(ppm)



MAGNETICS
(gammas)



TOPOGRAPHY
&
GEOLOGY
(A.S.L.)



1988

1988

89-3038

599351

LITHOLOGICAL REFERENCE

- TERTIARY
 - Tb BASALTIC EXTRUSIVES & BRECCIA
 - Ts SUB-BASALTIC, UNLITHIFIED SILT SAND & GRAVEL
- LATE DEVONIAN
 - Dg BIOTITE GRANITE, LOCAL LEUCOGRANITE ADAMELLITE PHASES ('DOLCATH GRANITE')
- ORDOVICIAN
 - Bg LIMESTONE CALCAREOUS (METASOMATISED) SANDSTONE

- LATE CAMBRIAN TO EARLY ORDOVICIAN (DENISON GROUP)
 - Om ORTHOQUARTZITE & SANDSTONE LOCALLY BIOTURBATED MINOR SILICEOUS SLTSTONE
 - Or PEBBLY COBBLY SILICICLASTIC CONGLOMERATE
- CAMBRIAN?
 - Eu UNDIFFERENTIATED (UNMAPPED) FELSIC VOLCANICS

GEOLOGY LEGEND

- GEOLOGICAL BOUNDARY
- TRACE OF UNCONFORMITY
- FAULT, INFERRED

GEOCHEMISTRY

- TIN - Sn
- COPPER - Cu
- LEAD - Pb
- ZINC - Zn
- GOLD - Au
- ARSENIC - As
- SILVER - Ag
- BISMUTH - Bi

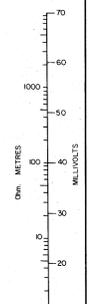
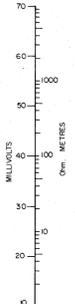
MAGNETICS

RGC EXPLORATION PTY. LIMITED

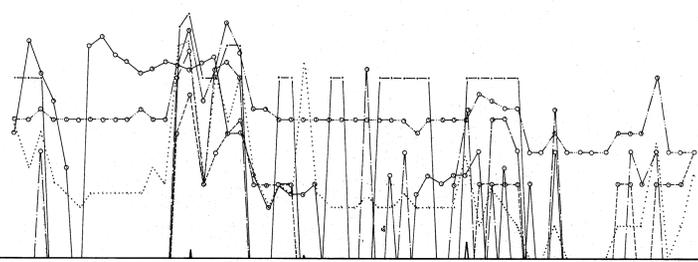
COMPILED	C.H.C.
DRAWN	M.O.W.
DATE	AUG 1989
CHECKED	
RELIEF REFERENCE	

ROUND MOUNTAIN GRID
E.L. 8/88, E.L. 36/88
Line Profile
5400 E

GRADIENT ARRAY
I.P.

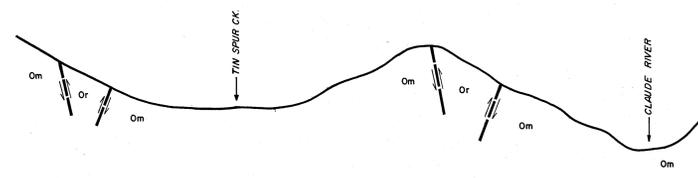
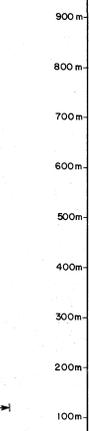


SOIL
GEOCHEMISTRY
(ppm)



MAGNETICS
(gammas)

TOPOGRAPHY
&
GEOLOGY
(A.S.L.)



8862

8862

89-3038

589352

LITHOLOGICAL REFERENCE

- TERTIARY: BASALTIC EXTRUSIVES & BRECCIA, SUB-BASALTIC UNLITHIFIED SILT SAND & GRAVEL
LATE DEVONIAN: BIOTITE GRANITE, LOCAL LEUCOGRANITE ADAMELUTE PHASES
ORDOVICIAN: LIMESTONE CALCAREOUS (METASOMATISED) SANDSTONE

- LATE CAMBRIAN TO EARLY ORDOVICIAN: ORTHOQUARTZITE & SANDSTONE, BIOTURBATED MINOR SILICEOUS SLTSTONE, PEBBLY-COBBLY SILICICLASTIC CONGLOMERATE
CAMBRIAN?: UNDIFFERENTIATED (UNMAPPED) FELSIC VOLCANICS

GEOLOGY LEGEND

- GEOLOGICAL BOUNDARY, TRACE OF UNCONFORMITY, FAULT, INFERRED

GEOCHEMISTRY

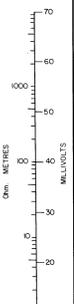
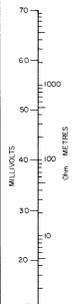
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MAGNETICS

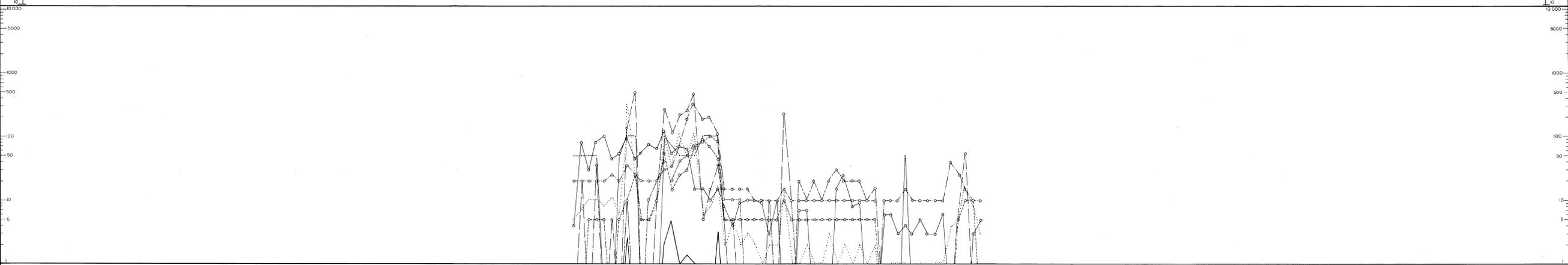
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1 SF63

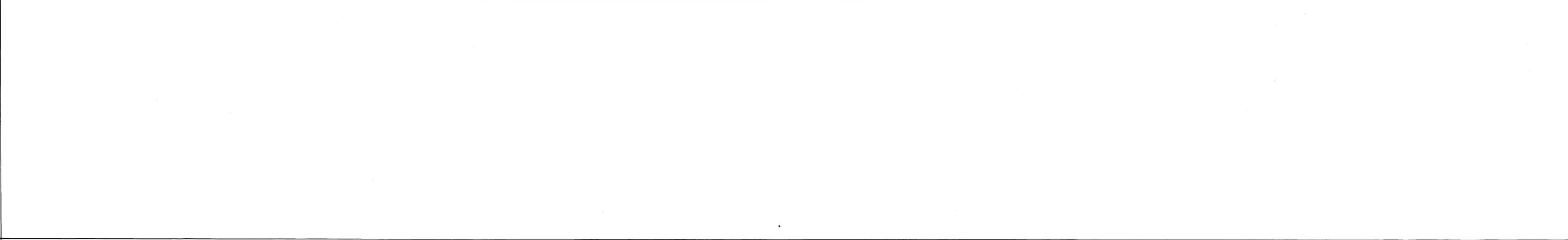
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I.P.



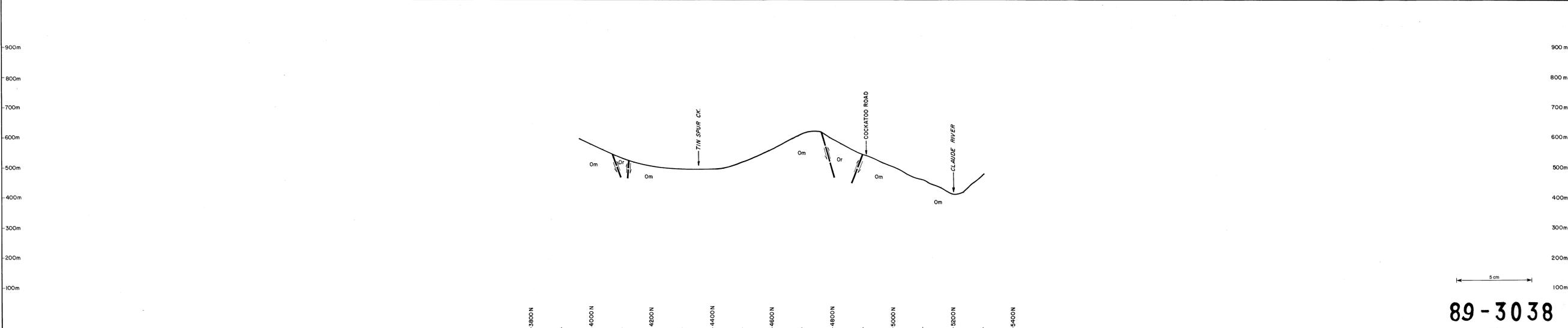
SOIL
GEOCHEMISTRY
(ppm)



MAGNETICS
(gammas)



TOPOGRAPHY
&
GEOLOGY
(A.S.L.)



8863

8863

5cm

89-3038

569353

LITHOLOGICAL REFERENCE

- TERTIARY: T₅ BASALTIC EXTRUSIVES & BRECCIA; T₁ SUB-BASALTIC UNLITHIFIED SILT SAND & GRAVEL
- LATE DEVONIAN: D₂ BIOTITE GRANITE, LOCAL LEUCOGRANITE ADAMELLITE PHASES ("DOLCATH GRANITE")
- ORDOVICIAN: O₂ LIMESTONE, CALCAREOUS (METASOMATISED) SANDSTONE

LATE CAMBRIAN TO EARLY ORDOVICIAN (DENISON GROUP)

- O₁ ORTHOQUARTZITE & SANDSTONE, LOCALLY BIOTURBATED MINOR SILICEOUS SLTSTONE
- O₂ PEBBLY-COBBLY SILICICLASTIC CONGLOMERATE
- CAMBRIAN? C₁ UNDIFFERENTIATED (UNMAPPED) FELSIC VOLCANICS

GEOLOGY LEGEND

- GEOLOGICAL BOUNDARY
- ~~~~~ TRACE OF UNCONFORMITY
- FAULT, INFERRED

GEOCHEMISTRY

- TIN - Sn
- COPPER - Cu
- LEAD - Pb
- ZINC - Zn
- GOLD - Au
- ARSENIC - As
- SILVER - Ag
- BISMUTH - Bi
- MAGNETICS

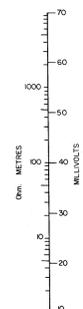
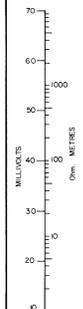
RGCEXPLORATION PTY. LIMITED

COMPILED	C.H.C.
DRAWN	M.D.W.
DATE	AUG. 1989
CHECKED	
REFERENCE	

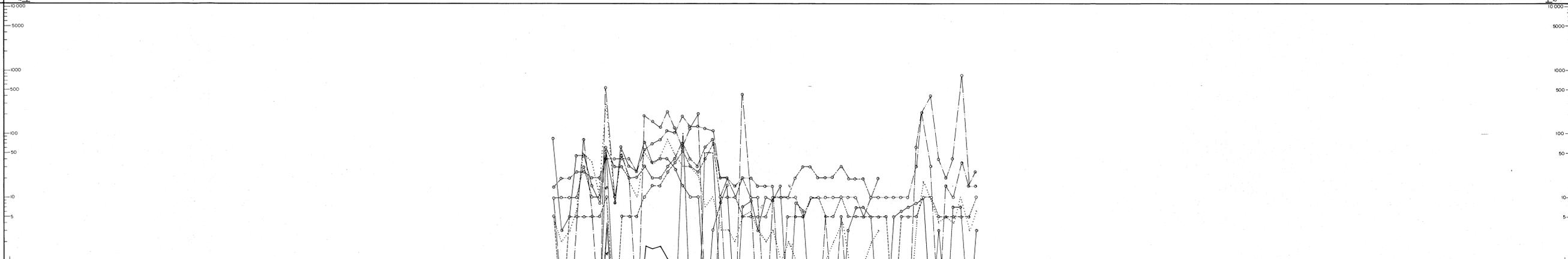
ROUND MOUNTAIN GRID
E.L. 8/88, E.L. 36/88
Line Profile
5800 E

S864

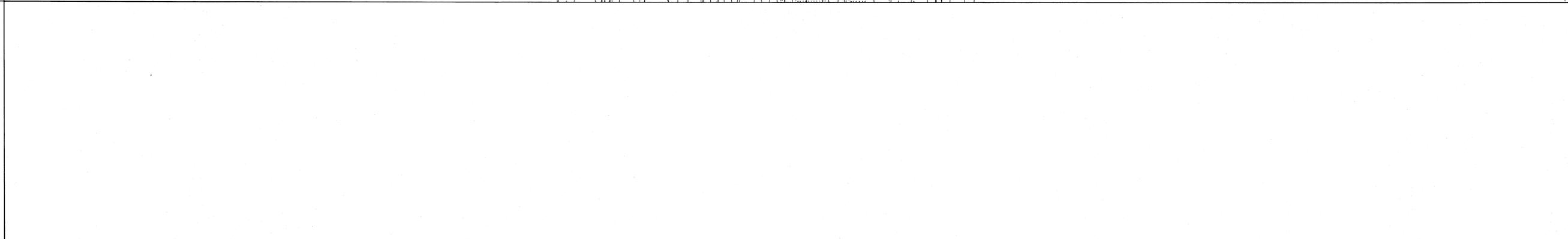
GRADIENT ARRAY
I.P.



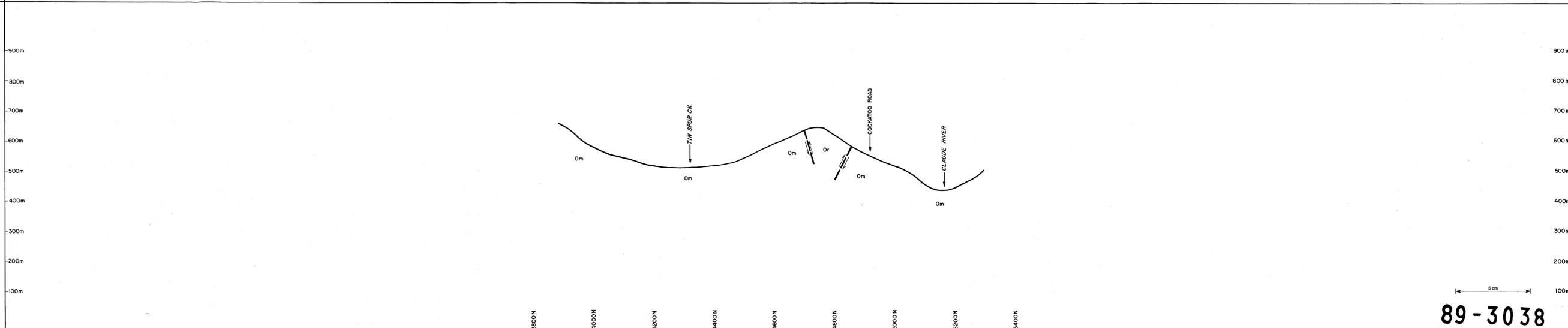
SOIL
GEOCHEMISTRY
(ppm)



MAGNETICS
(gammas)



TOPOGRAPHY
&
GEOLOGY
(A.S.L.)



4988

4988

89-3038

589354

LITHOLOGICAL REFERENCE

TERTIARY	Tb	BASALTIC EXTRUSIVES & BRECCIA	LATE CAMBRIAN TO EARLY ORDOVICIAN (DENISON GROUP)	Or	ORTHOQUARTZITE & SANDSTONE LOCALLY BIOTURBATED MINOR SILICEOUS SLTSTONE
	Ts	SUB-BASALTIC UNLITHIFIED SILT SAND & GRAVEL		Cr	PEBBLY-COBBLY SILICICLASTIC CONGLOMERATE
LATE DEVONIAN	Dg	BIOTITE GRANITE, LOCAL LEUCOGRANITE ADAMELITE PHASES ('DOLLOATH GRANITE')	CAMBRIAN?	Eu	UNDIFFERENTIATED (UNMAPED) FELSIC VOLCANICS
ORDOVICIAN	Og	LIMESTONE CALCAREOUS (METASOMATISED) SANDSTONE			

GEOLOGY LEGEND

—	GEOLOGICAL BOUNDARY	—	MAGNETICS
~~~~~	TRACE OF UNCONFORMITY		
---	FAULT, INFERRED		

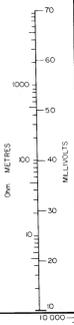
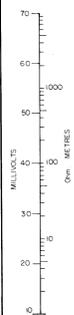
GEOCHEMISTRY

○—○	TIN - Sn
○—○	COPPER - Cu
○—○	LEAD - Pb
○—○	ZINC - Zn
○—○	GOLD - Au
○—○	ARSENIC - As
○—○	SILVER - Ag
○—○	BISMUTH - Bi

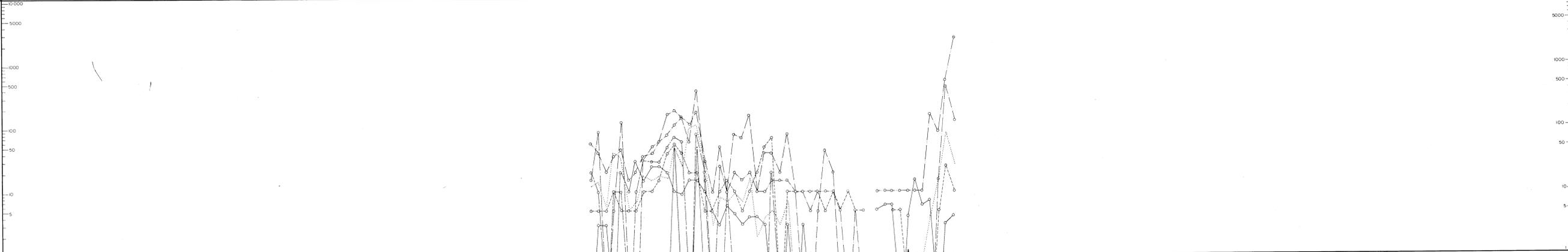
RGCEXPLORATION PTY. LIMITED

COMPLETED	C.H.C.	<b>ROUND MOUNTAIN GRID</b> E.L. 8/88, E.L. 36/88 Line Profile <b>6000 E</b>
DRAWN	M.D.W.	
DATE	AUG. 1989	
CHECKED		
1:25,000 REFERENCE		

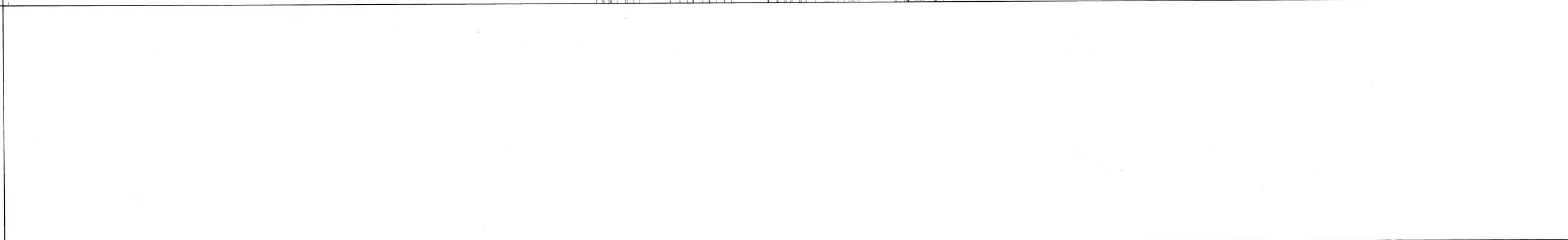
GRADIENT ARRAY  
I.P.



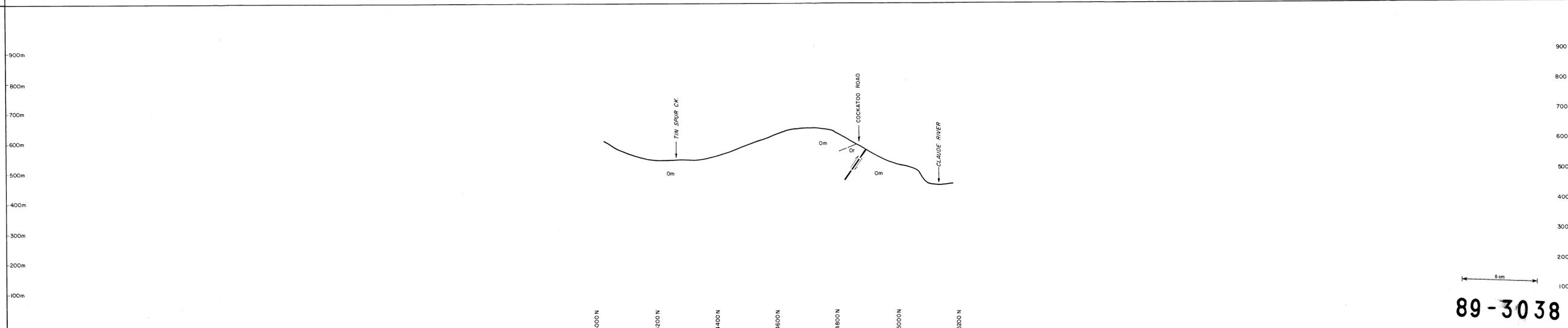
SOIL  
GEOCHEMISTRY  
(ppm)



MAGNETICS  
(gammas)



TOPOGRAPHY  
&  
GEOLOGY  
(A.S.L.)



8865

8865

89-3038

569355

LITHOLOGICAL REFERENCE

TERTIARY	Ts	BASALTIC EXTRUSIVES & BRECCIA
	Ts	SUB-BASALTIC, UNLITHIFIED SILT SAND & GRAVEL
LATE DEVONIAN	Dg	BIOTITE GRANITE, LOCAL LEUCOGRANITE ADAMELUTE PHASES ('DOLCATH GRANITE')
ORDOVICIAN	Og	LIMESTONE, CALCAREOUS (METASOMATISED) SANDSTONE

LATE CAMBRIAN TO EARLY ORDOVICIAN (DENISON GROUP)

Or	ORTHOQUARTZITE & SANDSTONE LOCALLY BIOTURBATED MNGR SILICEOUS SLTSTONE
Or	PEBBLY-COBBLY SILICICLASTIC CONGLOMERATE
Eu	UNDIFFERENTIATED (UNMAPPED) FELSIC VOLCANICS

GEOLOGY LEGEND

—	GEOLOGICAL BOUNDARY
~~~~~	TRACE OF UNCONFORMITY
---	FAULT, INFERRED

GEOCHEMISTRY

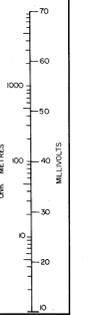
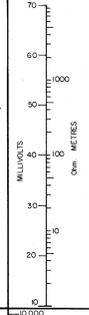
○—○	TIN—Sn	—	MAGNETICS
○—○	COPPER—Cu		
○—○	LEAD—Pb		
○—○	ZINC—Zn		
○—○	GOLD—Au		
○—○	ARSENIC—As		
○—○	SILVER—Ag		
○—○	BISMUTH—Bi		

RGC EXPLORATION PTY. LIMITED

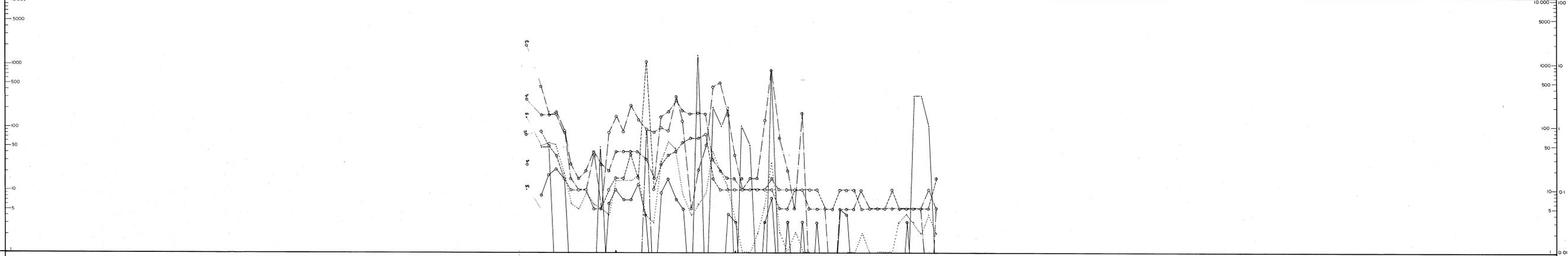
COMPILED	C.H.C.
DRAWN	M.G.W.
DATE	AUG 1989
CHECKED	
25,000 REFERENCE	

ROUND MOUNTAIN GRID
E.L. 8/88, E.L. 36/88
Line Profile
6200 E

GRADIENT ARRAY
I.P.

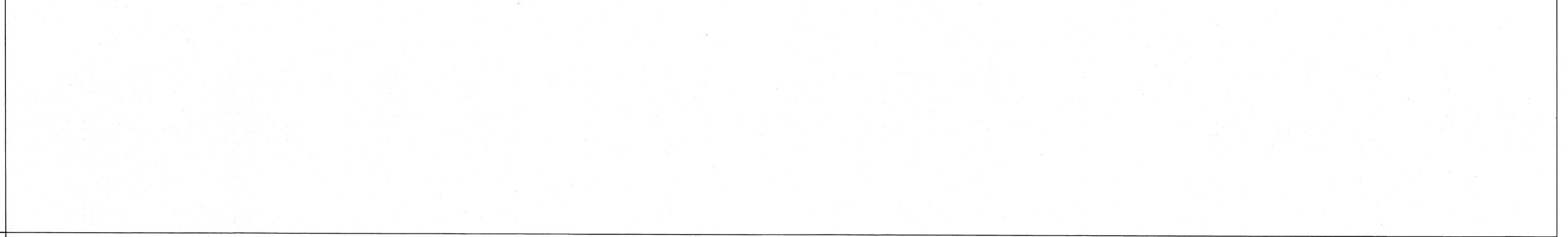


SOIL
GEOCHEMISTRY
(ppm)

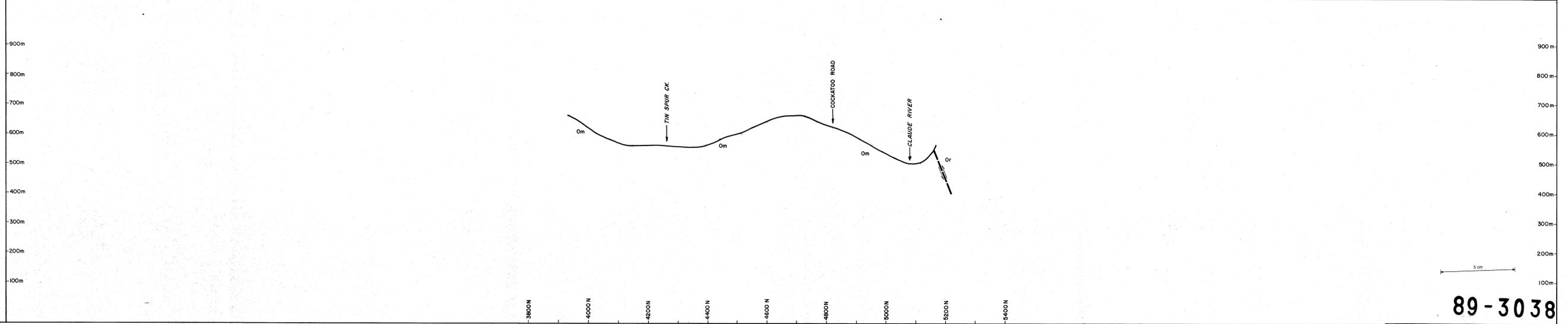


Au Ag SCALE

MAGNETICS
(gammas)



TOPOGRAPHY
&
GEOLOGY
(A.S.L.)



9988

9988

LITHOLOGICAL REFERENCE

- TERTIARY: T1 BASALTIC EXTRUSIVES & BRECCIA; T2 SUB-BASALTIC UNLITHIFIED SILT SAND & GRAVEL
- LATE DEVONIAN: D1 BIOTITE GRANITE LOCAL LEUCOGRAHITE ADAMELUTE PHASES ('DOLCOATH GRANITE');
- ORDOVICIAN: O1 LIMESTONE CALCAREOUS (METASOMATISED) SANDSTONE

LATE CAMBRIAN TO EARLY ORDOVICIAN (DENISON GROUP)

- C1 ORTHOQUARTZITE & SANDSTONE LOCALLY BIOTURBATED MINOR SILICEOUS SLTSTONE
- C2 PEBBLY-COBBLY SILICICLASTIC CONGLOMERATE
- C3 UNDIFFERENTIATED (UNMAPPED) FELSIC VOLCANICS

GEOLOGY LEGEND

- GEOLOGICAL BOUNDARY
- ~~~~~ TRACE OF UNCONFORMITY
- - - - - FAULT, INFERRED

GEOCHEMISTRY

- TIN - Sn
- COPPER - Cu
- LEAD - Pb
- ZINC - Zn
- GOLD - Au
- ARSENIC - As
- SILVER - Ag
- BISMUTH - Bi

MAGNETICS

RGCEXPLORATION PTY. LIMITED

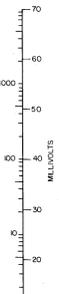
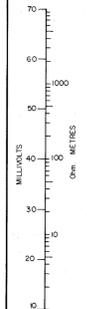
ROUND MOUNTAIN GRID
E.L. 8/88, E.L. 36/88
Line Profile
6400 E

COMPILED	C.H.C.
DRAWN	M.O.W.
DATE	AUG. 1989
CHECKED	
1:25,000 REFERENCE	

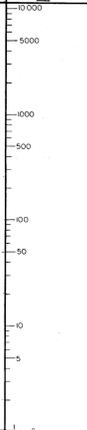
BASE PLAN No. OVERLAY PLAN No. SCALE 1:5000

569356

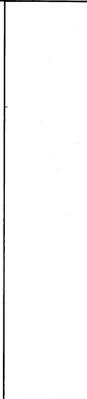
GRADIENT ARRAY
I.P.



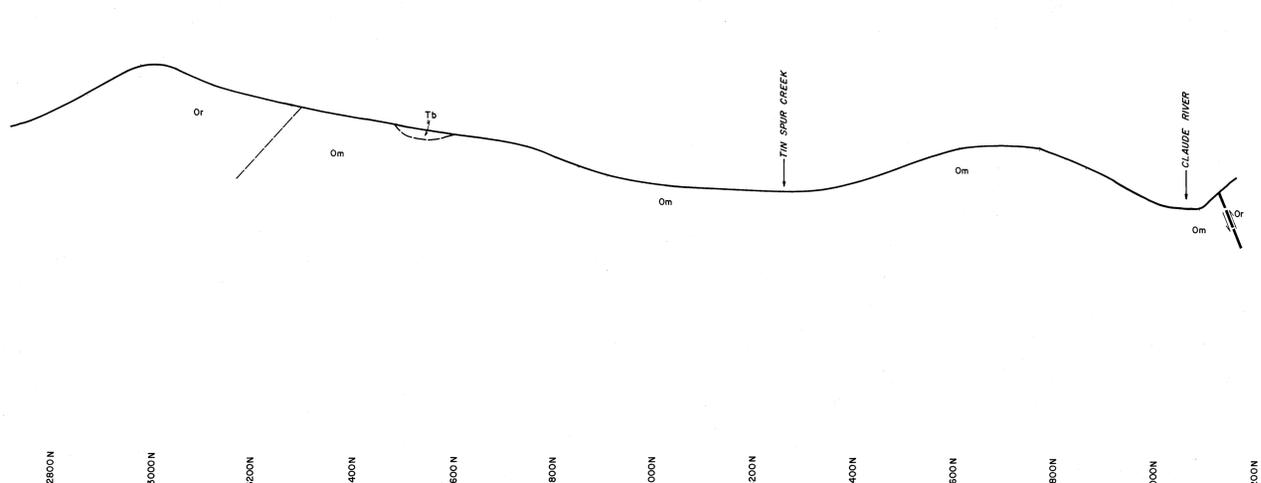
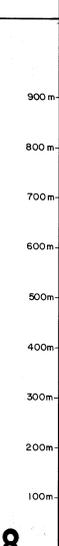
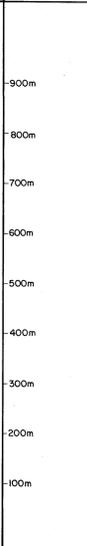
SOIL
GEOCHEMISTRY
(ppm)



MAGNETICS
(gammas)



TOPOGRAPHY
&
GEOLOGY
(A.S.L.)



8867

8867

89-3038

589357

LITHOLOGICAL REFERENCE

- TERTIARY: Ts BASALTIC EXTRUSIVES & BRECCIA; Ts SUB-BASALTIC, UNLITHIFIED SILT SAND & GRAVEL
- LATE DEVONIAN: Ds BIOTITE GRANITE, LOCAL LEUCOGRANITE, ADAMELUTE PHASES ("DOLOMITH GRANITE")
- ORDOVICIAN: Os LIMESTONE, CALCAREOUS (METASOMATISED) SANDSTONE

LATE CAMBRIAN TO EARLY ORDOVICIAN (DENISON GROUP)

- Om ORTHOQUARTZITE & SANDSTONE, LOCALLY BIOTURBATED, MNDR SILICEOUS SLTSTONE
- Or PEBBLY-COBBLY SILTICLASTIC CONGLOMERATE
- Ev UNDIFFERENTIATED (UNMAPPED) FELSIC VOLCANICS

GEOLOGY LEGEND

- Geological boundary
- Trace of unconformity
- Fault, inferred
- Thrust fault, inferred
- Teeth on downthrown block
- Trend of bedding
- Fold axis with indication of plunge

GEOCHEMISTRY

- TIN - Sn
- COPPER - Cu
- LEAD - Pb
- ZINC - Zn
- GOLD - Au
- ARSENIC - As
- SILVER - Ag
- BISMUTH - Bi
- MAGNETICS

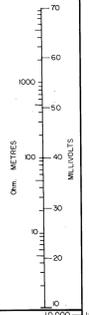
RGC EXPLORATION PTY. LIMITED

ROUND MOUNTAIN GRID
E.L. 8/88, E.L. 36/88
Line Profile
6600 E

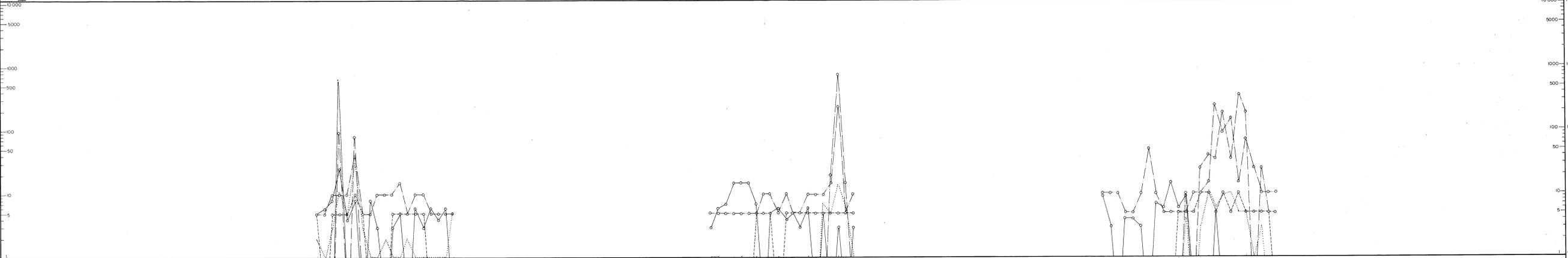
COMPILED	C.H.C.
DRAWN	M.O.W.
DATE	AUG 1989
CHECKED	
25,000 REFERENCE	

SCALE 1:5000

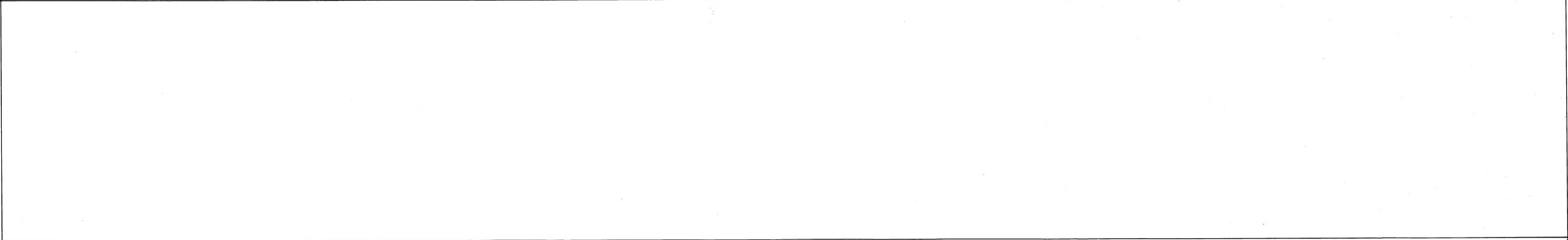
GRADIENT ARRAY
I.P.



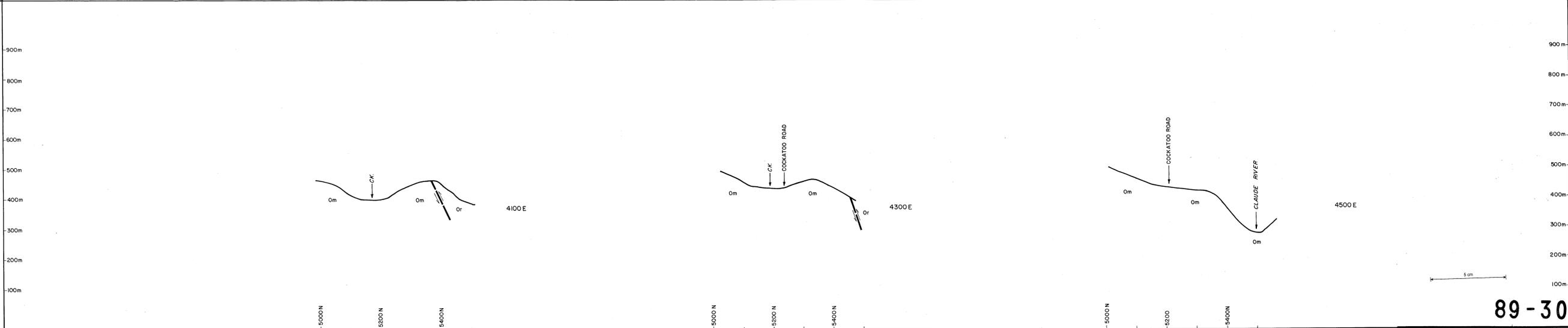
SOIL
GEOCHEMISTRY
(ppm)



MAGNETICS
(gammas)



TOPOGRAPHY
&
GEOLOGY
(A.S.L.)



8988

8988

569358

89-3038

LITHOLOGICAL REFERENCE

- TERTIARY: T1 BASALTIC EXTRUSIVES & BRECCIA; T2 SUB-BASALTIC UNLITHIFIED SILT SAND & GRAVEL
- LATE DEVONIAN: D1 BIOTITE GRANITE, LOCAL LEUCOGORANITE, ADAMILLITE PHASES ('DOLCOUTH GRANITE')
- ORDOVICIAN: O1 LIMESTONE, CALCAREOUS (METASOMATISED) SANDSTONE

- LATE CAMBRIAN TO EARLY ORDOVICIAN (EDENSON GROUP): O1 ORTHOQUARTZITE & SANDSTONE, LOCALLY BIOTURBATED MNDR SILICEOUS SLTSTONE; O2 PEBBLY-COBBLY SILICICLASTIC CONGLOMERATE
- CAMBRIAN?: C1 UNDIFFERENTIATED (UNMAPPED) FELSIC VOLCANICS

GEOLOGY LEGEND

- GEOLOGICAL BOUNDARY
- ~~~~~ TRACE OF UNCONFORMITY
- FAULT, INFERRED

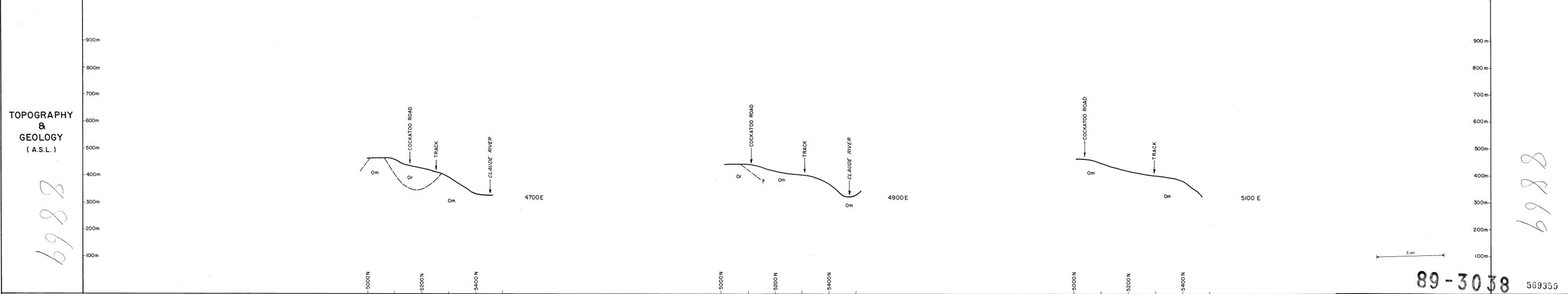
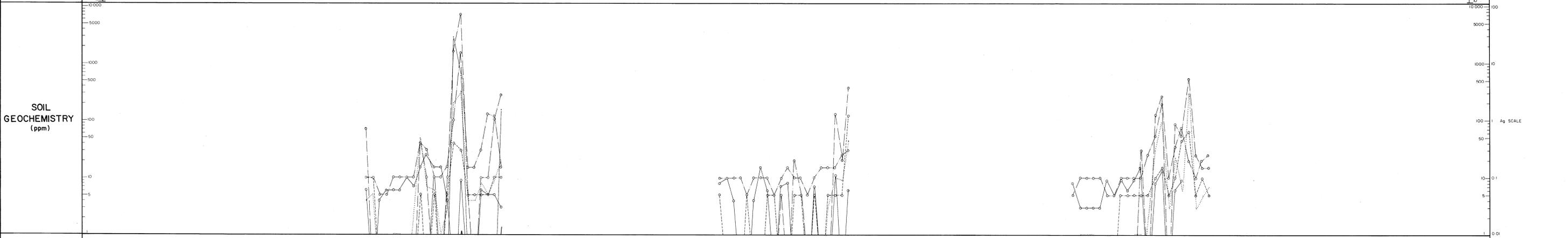
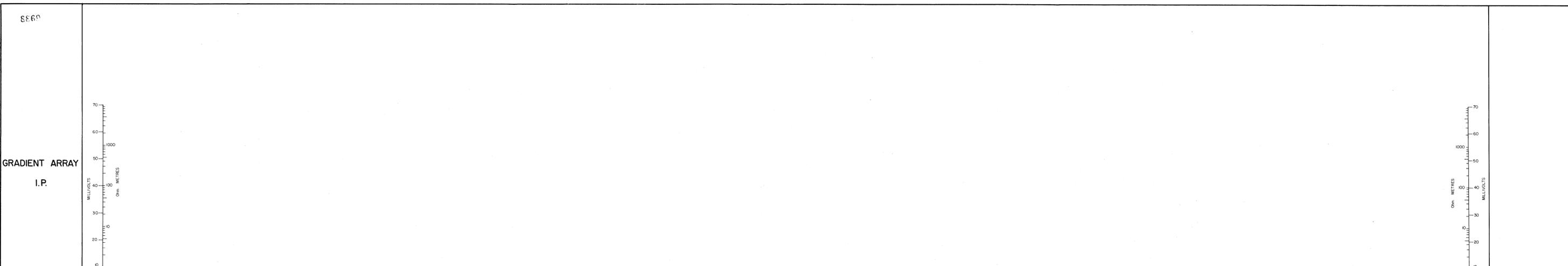
GEOCHEMISTRY

- TIN - Sn
- COPPER - Cu
- LEAD - Pb
- ZINC - Zn
- GOLD - Au
- ARSENIC - As
- SILVER - Ag
- BISMUTH - Bi

MAGNETICS

RGCEXPLORATION PTY. LIMITED

COMPLETED	C.H.C.	ROUND MOUNTAIN GRID E.L. 8/88, E.L. 36/88 Line Profile 4100 E 4300 E 4500 E
DRAWN	M.D.W.	
DATE	AUG. 1989	
CHECKED		
25,000 REFERENCE		



LITHOLOGICAL REFERENCE

TERTIARY	Ts	SUB-BASALTIC, UNLITHIFIED SILT SAND & GRAVEL
LATE DEVONIAN	Ds	BIOTITE GRANITE, LOCAL LEUCOGNANITE ADAMELLITE PHASES ("DOLCOATH GRANITE")
ORDOVICIAN	Bg	LIMESTONE CALCAREOUS (METASOMATISED) SANDSTONE
LATE CAMBRIAN TO EARLY ORDOVICIAN (DENISON GROUP)	Or	ORTHOQUARTZITE & SANDSTONE LOCALLY BIOTURBATED MINOR SILICEOUS SLTSTONE
	Or	PEBBLY-COBBLY SILICICLASTIC CONGLOMERATE
CAMBRIAN?	Ev	UNDIFFERENTIATED (UNMAPPED) FELSIC VOLCANICS

GEOLOGY LEGEND

—	GEOLOGICAL BOUNDARY
~~~~~	TRACE OF UNCONFORMITY
---	FAULT, INFERRED
○—○	TIN - Sn
○—○	COPPER - Cu
○—○	LEAD - Pb
○—○	ZINC - Zn
○—○	GOLD - Au
○—○	ARSENIC - As
○—○	SILVER - Ag
○—○	BISMUTH - Bi
—	MAGNETICS

89-3038 569350

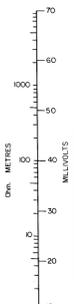
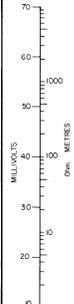
**RGC EXPLORATION PTY. LIMITED**

COMPILED	C.H.C.
DRAWN	M.O.W.
DATE	AUG. 1989
CHECKED	
25,000 REFERENCE	

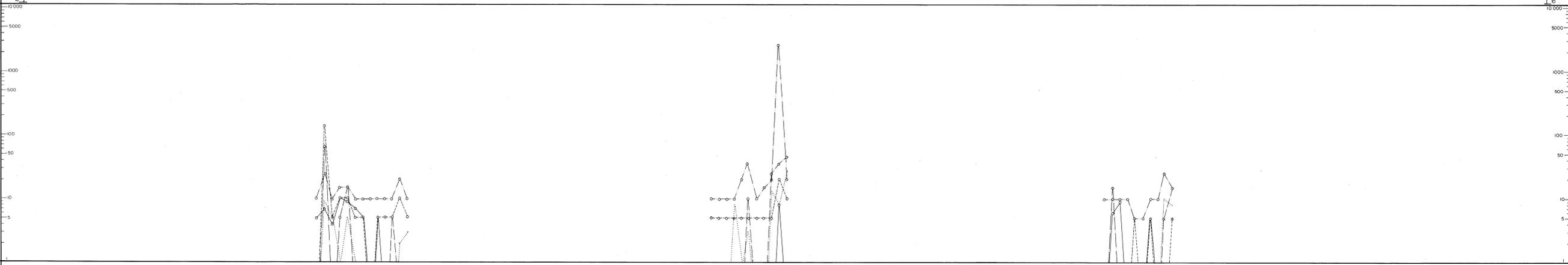
**ROUND MOUNTAIN GRID**  
E.L. 8/88, E.L. 36/88  
Line Profile  
4700 E 4900 E 5100 E

BASE PLAN No. _____ SCALE 1:5000 0 25m 50m 75m 100m FIG. 28  
OVERLAY PLAN No. _____

GRADIENT ARRAY  
I.P.



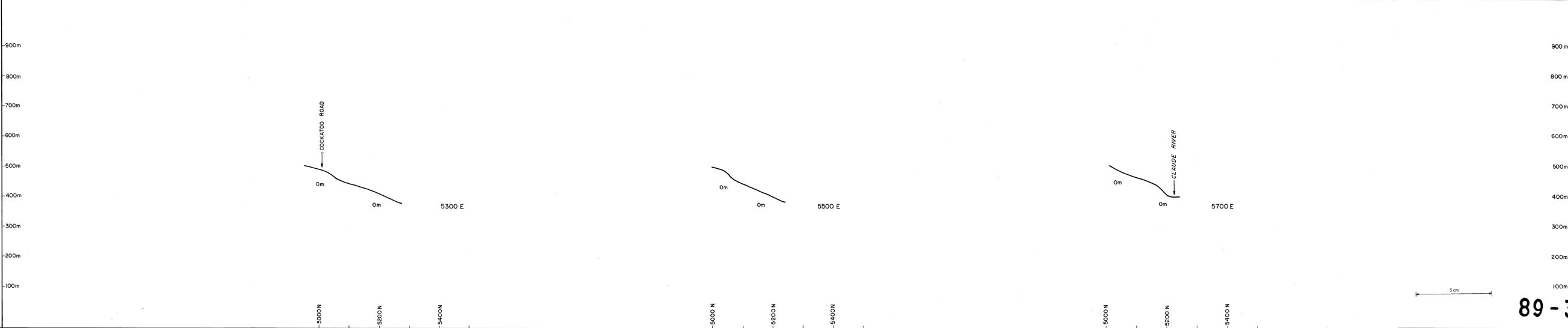
SOIL  
GEOCHEMISTRY  
(ppm)



MAGNETICS  
(gammas)



TOPOGRAPHY  
&  
GEOLOGY  
(A.S.L.)



8870

8870

569360

89-3038

LITHOLOGICAL REFERENCE

- TERTIARY
  - Ts BASALTIC EXTRUSIVES & BRECCIA
  - Ts SUB-BASALTIC, UNLITHIFIED SILT SAND & GRAVEL
- LATE DEVONIAN
  - Dg BIOTITE GRANITE, LOCAL LEUCOGRANITE, ADAMELLITE PHASES ("DOLLOATH GRANITE")
- ORDOVICIAN
  - Dg LIMESTONE, CALCAREOUS (METASOMATISED) SANDSTONE
- LATE CAMBRIAN TO EARLY ORDOVICIAN (= DENISON GROUP)
  - Om ORTHOQUARTZITE & SANDSTONE, LOCALLY BIOTURBATED, MINOR SILICEOUS SLTSTONE
  - Or PEBBLY-COBBLY SILICICLASTIC CONGLOMERATE
  - Cam? UNDIFFERENTIATED (UNMAPPED) FELSIC VOLCANICS

GEOLOGY LEGEND

- GEOLOGICAL BOUNDARY
- TRACE OF UNCONFORMITY
- FAULT, INFERRED

GEOCHEMISTRY

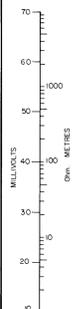
- TIN - Sn
- COPPER - Cu
- LEAD - Pb
- ZINC - Zn
- GOLD - Au
- ARSENIC - As
- SILVER - Ag
- BISMUTH - Bi
- MAGNETICS

RGC EXPLORATION PTY. LIMITED

COMPILED	C.H.C.	<b>ROUND MOUNTAIN GRID</b> E.L. 8/88, E.L. 36/88 Line Profile 5300 E 5500 E 5700 E
DRAWN	M.O.W.	
DATE	AUG 1989	
CHECKED		
REFERENCE		

BASE PLAN No. OVERLAY PLAN No. SCALE 1:5000

GRADIENT ARRAY  
I.P.



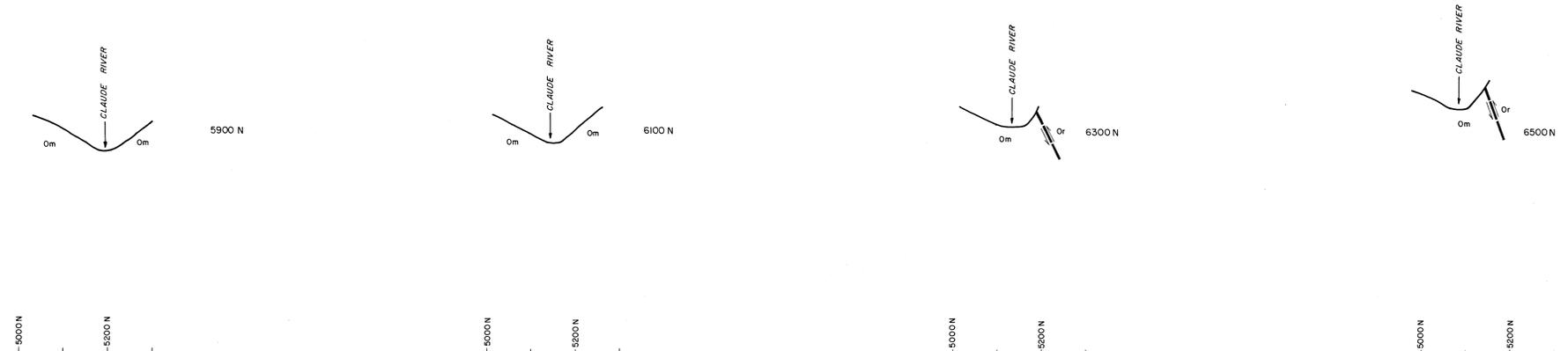
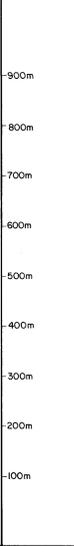
SOIL  
GEOCHEMISTRY  
(ppm)



MAGNETICS  
(gammas)



TOPOGRAPHY  
&  
GEOLOGY  
(A.S.L.)



8871

8871

589361

89-3038

LITHOLOGICAL REFERENCE

- TERTIARY
  - Tb BASALTIC EXTRUSIVES & BRECCIA
  - Ts SUB-BASALTIC, UNLITHIFIED SILT SAND & GRAVEL
- LATE DEVONIAN
  - Dg BIOTITE GRANITE, LOCAL LEUCOGNANITE ADAMELLITE PHASES ("DOLCATH GRANITE")
- ORDOVICIAN
  - Bg LIMESTONE, CALCAREOUS (METASOMATISED) SANDSTONE

- LATE CAMBRIAN TO EARLY ORDOVICIAN (DENISON GROUP)
  - Om ORTHOQUARTZITE & SANDSTONE LOCALLY BIOTURBATED MINOR SILICEOUS SLTSTONE
  - Or PEBBLY-COBBLY SILICICLASTIC CONGLOMERATE
- CAMBRIAN?
  - Eu UNDIFFERENTIATED (UNMAPPED) FELSIC VOLCANICS

GEOLOGY LEGEND

- GEOLOGICAL BOUNDARY
- TRACE OF UNCONFORMITY
- FAULT, INFERRED

GEOCHEMISTRY

- TIN - Sn
- COPPER - Cu
- LEAD - Pb
- ZINC - Zn
- GOLD - Au
- ARSENIC - As
- SILVER - Ag
- BISMUTH - Bi

MAGNETICS

RGCE EXPLORATION PTY. LIMITED

COMPILED	C.H.C.
DRAWN	M.O.W.
DATE	AUG. 1988
CHECKED	
REFERENCE	25,000

ROUND MOUNTAIN GRID  
E.L. 8/88, E.L. 36/88  
Line Profile  
5900 E 6100 E 6300 E  
6500 E



5 cm

GRID CONVERGENCE 0.6'

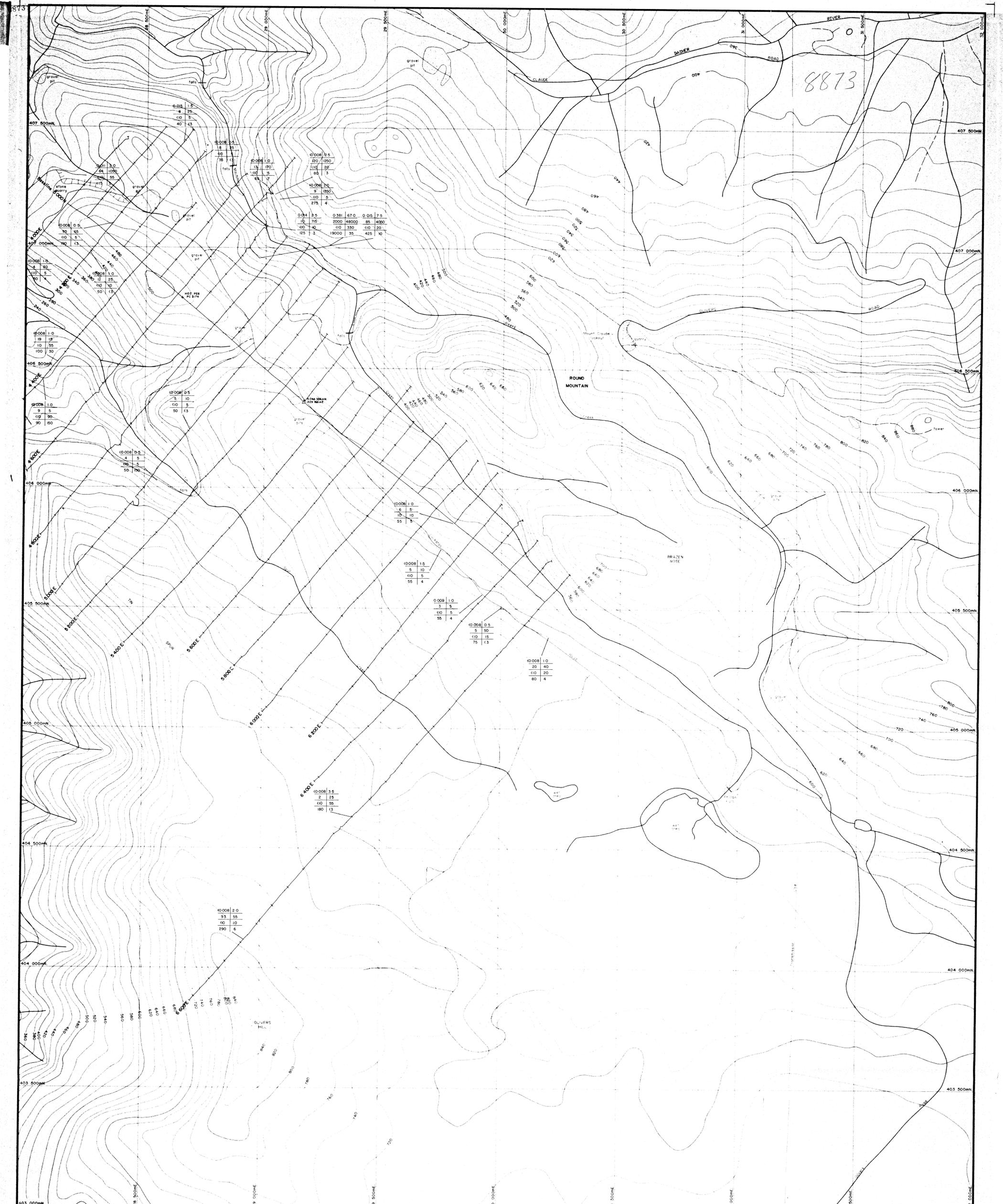
GRID MAGNETIC 12.5'

8872

589362

89-3038 * SPECIMEN SAMPLE

<b>RGC EXPLORATION PTY. LIMITED</b>	
<b>ROUND MOUNTAIN</b>	
<b>E.L. 8/88</b>	
<b>ROCK CHIP SAMPLE LOCATIONS</b>	
COMPILED:	
DRAWN:	
DATE:	
CHECKED:	
25,000 REFERENCE:	
BASE PLAN No.	OVERLAY PLAN No.
50	0 50 100 250
SCALE: 1 : 5000	
FIGURE No.	31



NOTE:  
 Au Ag  
 Bi Cu  
 Zn Sn  
 Order of assay values

8873  
 569363  
 50m  
 GRID CONVERGENCE 0.6'  
 GRID MAGNETIC 12.5'

89-3038

RGC EXPLORATION PTY. LIMITED <small>(INC. IN N.S.W.)</small>	
ROUND MOUNTAIN	
E.L. 8/88	
ROCK CHIP ASSAYS	
COMPILED	
DRAWN	
DATE	
CHECKED	
25,000 REFERENCE	
BASE PLAN No.	OVERLAY PLAN No.
SCALE: 1:5000	
FIGURE No. 32	

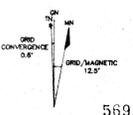




**GEOLOGICAL REFERENCE**

- TERTIARY Tb Basaltic extrusives
- LATE CAMBRIAN TO EARLY ORDOVICIAN Om Orthoquartzite and sandstone locally striatulated minor siliceous siltstone
- CAMBRIAN Cu Undifferentiated (unmapped) felsic volcanics
- Cg Biotite hornblende granodiorite/adamellite (Dove granite)

- Geological boundary
- Trace of unconformity
- Strike/dip of bedding



569365

**89-3038**

**RGC EXPLORATION PTY. LIMITED**

COMPILED:	C H C
DRAWN:	M O W
DATE:	SEPT. 89
ORDERED:	
1:25,000 REFERENCE	CETHANA 1:25,000

**FIVE MILE RISE**  
EL. 8/88

**GEOLOGY INTERPRETATION**

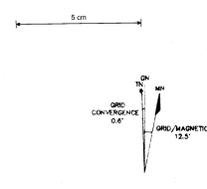
SCALE: 1:5,000





Au Ag  
 As Pb  
 Bi Cu  
 Zn Sn  
 W Mo

ORDER OF ASSAY VALUES



8877

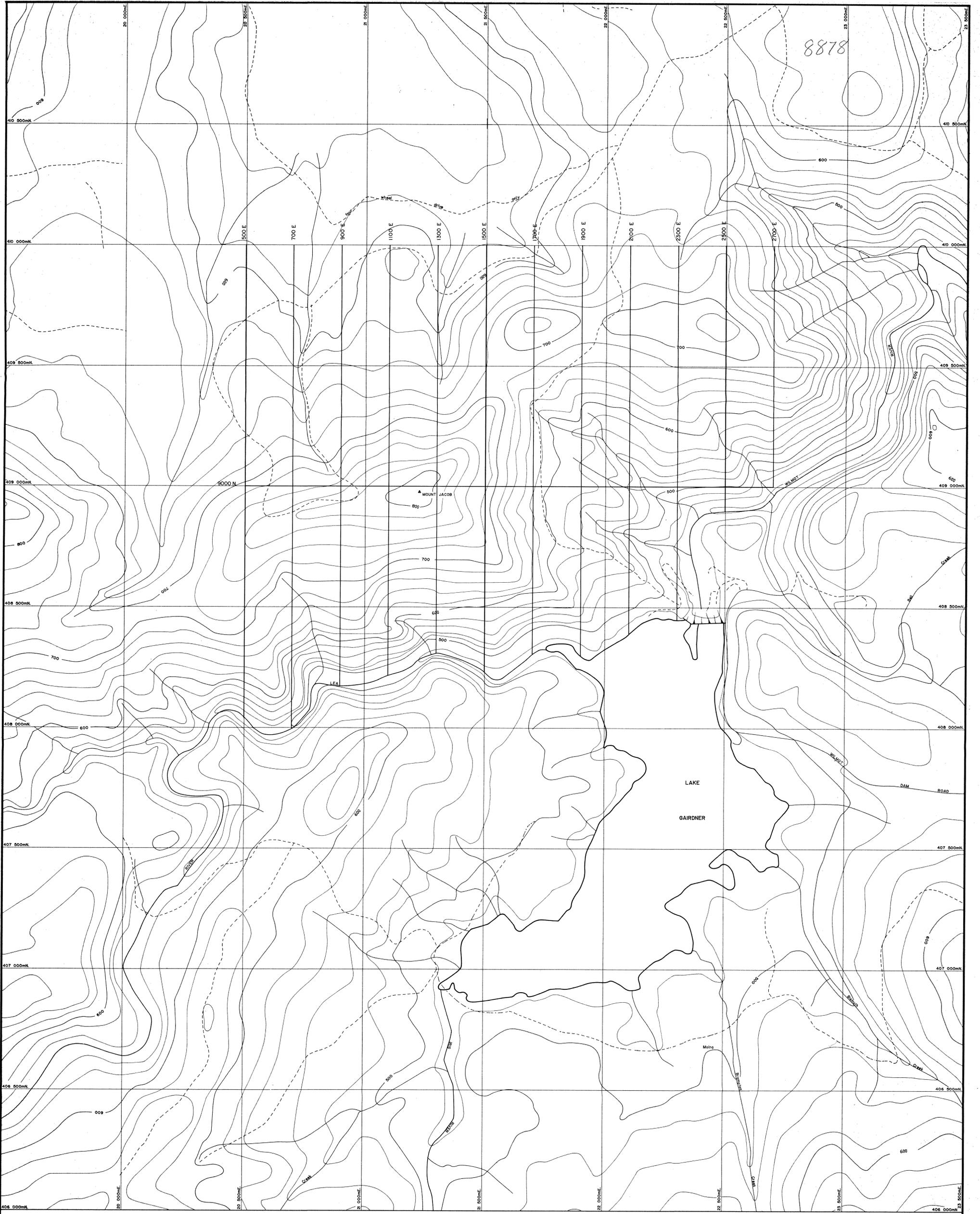
569367

89-3038

RGX EXPLORATION PTY. LIMITED

PROJECTED: CHC	<b>FIVE MILE RISE</b> EL 8/88 ROCK CHIP ASSAYS
DRAWN: M.O.W	
DATE: SEPT 89	
ON: OCT 89	
PROJECT NO: 89-3038	SCALE: 1:5,000
OVERLAY PLAN NO:	36

8877



8878

8878

GRID CONVERGENCE 0.6"  
GRID/MAGNETIC 12.3"

569368

5 cm

89-3038

<b>RGC EXPLORATION PTY. LIMITED</b> <small>(INC. IN N.Z.)</small>	
COMPLETED:	T.O.D.S.
DATE:	
CHECKED:	
1:25,000 REFERENCE: <small>LOWLANDS PLANT CLEARCUT</small>	
BASE PLAN No.	OVERLAY PLAN No.
SCALE: 1 : 5,000	
FIGURE No. 37	

**MOUNT JACOB SHEET**  
PROPOSED GRID