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Aberfoyle Resources Limited

EXPLORATION DIVISION

ACN 004 664 108

LYNCHFORD EL 47/83

TASMANIA

Located data tape held
3 transparencies held

Technical Progress Report

for the period

March 1993 - March 1994

Volume 1 of 1

0 - 3539.

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t of Mines (3/4)
ration - Canberra (4/4)

Internal Report No. Lynchford 7

3539.

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1.0 SUMMARY

The Lynchford exploration licence encompasses a mafic volcanic centre correlated geochemically with the Que-Hellyer volcanics, 50 kilometres to the north. Work completed during the 1993 to 1994 exploration programme comprised; detailed helimagnetics, geochemistry, structural investigations, ground checking of relevant exposures and compilation and re-interpretation of all existing datasets.

The results of the work programme include:

- Recognition of a structural framework developed largely from helimagnetic data

- Identification of two Cambrian syn-volcanic basin-bounding structures to the Lynchford sub-basin: the Specimen Creek Fault and Halls Fault inferred from facies discontinuities, facies thickness changes, topographic and magnetic datasets.

- Re-interpretation of Specimen Creek Alteration zone with geometry indicative of a structurally controlled dispersion halo and a mineralogy and style of alteration not indicative of either footwall or hangingwall alteration.

Two conceptual target areas are recommended for drilling, based upon interpretation of the Specimen Creek alteration zone as either footwall or hangingwall style alteration. Both targets have structural, lithological and geochemical ingredients.

Target 1: Footwall Model

Target zone proximal to the Specimen Creek Fault to test Lynchford Tuff - Lower Tyndall Group correlate and the stratigraphic contact between the Lynchford Tuff and altered mafic LCB.

Target 2: Hangingwall Model

Target zone proximal to the intersection of the Specimen Creek and Halls syn-depositional structures within the Lynchford sub-basinal area.

Regional stratigraphic correlations indicate that stratigraphy of the Lynchford Tuff to the Lynchford Tuff-LCB stratigraphic contact are prospective for Rosebery and Comstock style VHMS accumulations. For this reason the footwall model target zone has been prioritised for drilling.

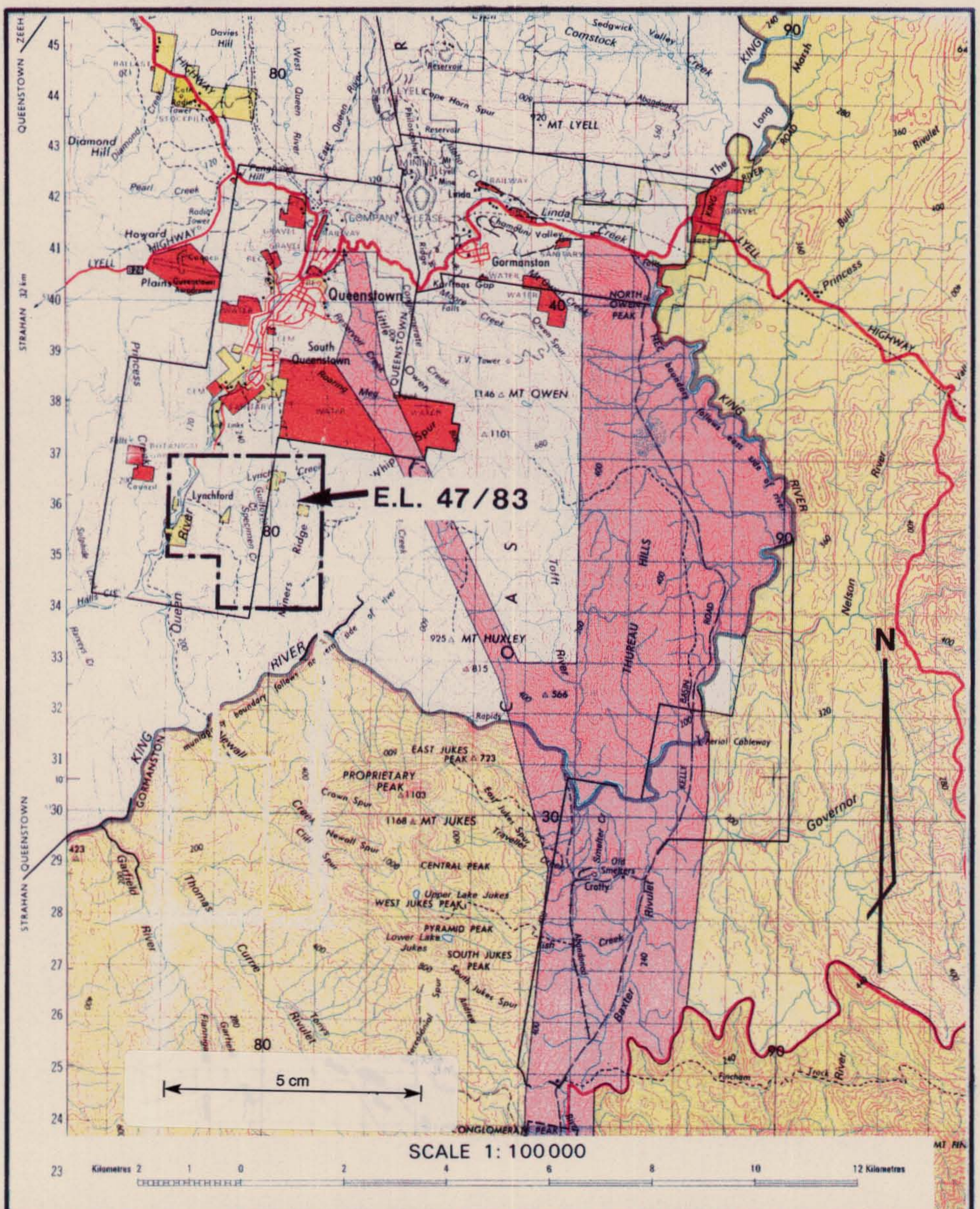
2.0 INTRODUCTION

E.L. 47/83 Lynchford was granted to CRA Exploration Pty. Ltd. (CRAE) on the 10th March 1985. The licence covered an area of approximately 32 square kilometres immediately south of Queenstown in western Tasmania.

From April 28th 1988, exploration has been conducted by Aberfoyle Resources Limited under terms of the Mount Read Volcanics joint venture with CRAE.

The first statutory relinquishment of the licence area was completed in March 1990 (Noonan, 1990). The licence area was reduced from approximately 32 to 16 square kilometres. A non-statutory partial relinquishment was also completed in May 1993, reducing the licence area from approximately 16 to 8 square kilometres (Wallace, 1993).

The following report documents exploration undertaken by Aberfoyle Resources Limited on the Lynchford E.L. (FIGURE 1) during the period March 1993 to February 1994. An area of 75 hectares covered by mining lease 27M/82 held by Paraclete Resources Pty. Ltd. is excluded from the exploration licence area.



Aberfoyle Resources Limited

EXPLORATION DIVISION

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REVISIONS			
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WESTERN TASMANIA

LYNCHFORD E.L. 47/83

LOCALITY PLAN

Compiled : J.M.S.
Drawn : J.M.S.
Traced :
Checked :

Location Code :

Scale : 1:100 000

Date : April 1993

Plate No. : LYN 47

1511

Figure 1

3. PREVIOUS EXPLORATION

Early prospecting on the Lynchford licence is recorded by a number of old workings including the King River and Lynch Creek South mines. The King River Mine was worked by the King River Mining Company as a sluicing operation on a vein style gold deposit (Montgomery, 1894). A similar vein style mine operated at Lynch Creek South (Twelvetrees, 1900) and a small asbestos pit existed north east of the King River Gold Mine (Taylor, 1955).

Modern exploration activities commenced between 1966 and 1967 by Picklands Mather Incorporated, who undertook a stream sediment and soil geochemistry programmes. Between 1971 and 1972, the Cyprus Mining Corporation conducted soil geochemistry, stream sediment programme, ground magnetics, EM and IP.

During 1980 to 1982, Renison Goldfields flew a Dighem survey and undertook limited follow up stream geochemistry. During the 1985 to 1988 period, CRAE established a grid at Specimen Creek to follow up re-interpreted Dighem anomalies. No significant anomalies were identified during the course of CRAEs' programme.

From 1988 to 1991, Aberfoyle Resources Limited conducted exploration programmes including mapping, whole rock geochemistry and soil geochemistry. From 1991 to 1993, no exploration was undertaken on the licence.

The present Lynchford exploration licence encompasses all of the Specimen Creek Prospect area. For consistency with previously reported data, all exploration undertaken at Lynchford in the 1993 to 1994 period is reported as the Specimen Creek Prospect.

4.0 SPECIMEN CREEK PROSPECT

4.1 Introduction

Work undertaken at Lynchford in 1993 to 1994 includes detailed helimagnetics, ground checking of relevant outcrops, limited geochemistry as well as compilation and re-interpretation of existing geological, geochemical and geophysical data.

4.2 Geology

Detailed mapping at Specimen Creek is reported by Noonan (1990). No detailed mapping was initiated during 1993 to 1994, with ground checking of relevant outcrops the exception. An updated geological interpretation is presented as Plate LYN 64 with cross sections on Plate LYN 65.

4.2.1 Petrology

A total of twelve samples were submitted to Dr. A. Crawford at the University of Tasmania for petrological investigation. Results of the investigation together with sample locations are attached in APPENDIX I.

Six samples of Lynch Creek Basalt (LCB) were taken from locations within and proximal to Lynch Creek. Of the samples, five are petrographically similar (624359-624361 and 624365-624366), showing a plagioclase, augite, sparsely olivine phyric vesiculated lava to breccia nature. Groundmass textures show devitrified textures relict of an original glassy groundmass.

Alteration in all samples examined is moderate to weak, reflected by alteration of the groundmass as a heterogeneous and impersistent meshwork of chlorite to chlorite-silica alteration. Augite phenocrysts remain relatively fresh, however olivine phenocrysts are strongly chloritised. No traces of FeTi oxide phenocrysts in LCB samples were observed.

Sample 624364 is a hollocrystalline augite, plagioclase phyric dolerite with abundant biotite and apatite. The dolerite sample is clearly intrusive containing equant subhedral FeTi oxide phenocrysts and an alteration assemblage of chlorite + albite + actinolite + leucoxene + sericite. Interpreted as a shallow intrusive equivalent to the LCB, an abundance of apatite and biotite indicates an affinity toward high-K basalt or shoshonite.

Two samples of Lynchford Tuff (624351 and 624363) show identical petrology. Both are volcanogenic sandstones that contain detritus including: LCB clasts, Anthony Road Andesite (ARA) type hornblende-phyric andesite clasts, plagioclase, broken quartz and FeTi oxide phenocrysts. A greenschist facies alteration grade overprints these Tyndall Group samples.

Samples 624368 and 624412 are andesite lava with an autobrecciated plagioclase, hornblende, augite, quartz, FeTi oxide phyric nature. Petrographically these samples are identical to the Anthony Road-Crown Hill andesites (ARA-type). Former FeTi oxide phenocrysts are frequent and altered to leucoxenitic material. Apatite microphenocrysts are also abundant, confirming mineralogic affinities with the enriched Suite II units of Crawford et al. (1992). Groundmass in the samples 624368 and 624412 was originally glassy, suggestive of a lava rather than an intrusive.

Minor chlorite and sericite alteration is apparent.

Sample 624411 is representative of that crystal rich unit at the Yolande River Sequence (YRS) stratigraphic top which forms the YRS/Lynchford Tuff boundary. Petrographically, 624411 is a low grade burial metamorphosed crystal vitric lithic tuff, derived from quartz, feldspar phyric felsic volcanics. No mafic phenocrysts are present and the sample contains distinctive tube pumice fragments.

4.3 Structure

A compilation map of all existing structural data was prepared (Plate LYN 63). Datasets comprise: Mines Department (Corbett, 1979), University of Tasmania (Dower, 1991) and Aberfoyle Resources structural data (Noonan, 1989).

A structural study of the Lynchford E.L. was undertaken in conjunction with Dr. R. Keele of the University of Tasmania. The study reviewed existing geological, structural and magnetic datasets. Ground checking of relevant exposures was undertaken with additional structural data included as a separate dataset on the structural compilation sheet (Plate LYN 63).

Results of the structural re-interpretation of the Lynchford area are presented in APPENDIX II. A discussion of these results is integrated with the geo-magnetic summary, documented in section 4.5.

4.4 Geochemistry

4.4.1 Whole Rock Geochemistry

Rock Chip Samples

Ten rock chip samples were submitted to Analabs for whole rock analysis. Elements analysed comprised: Cu, Pb, Zn, Ag, Ba, As, Al_2O_3, SiO_2, TiO_2, Fe_2O_3, MnO, CaO, K_2O, MgO, P_2O_5, S, Na_2O, Cr and Zr. Results and sample locations are included in APPENDIX III. All samples returned low base and precious metal values.

Sample 624368 is ARA-type lava with a low Ti/Zr ratio of 15, elevated SiO_2 levels of 61% and an elevated P_2O_5/TiO_2 ratio of 0.42. Sample 624368 fits well into Suite II of Crawford et al. (1992) in the Mount Read Volcanic suite classification.

LCB samples (624359-624361 and 624365-624366) show relatively low Ti/Zr ratios (25 to 31), variable P_2O_5/TiO_2 ratios (0.32 and 0.53) and Cr levels ranging from 33 ppm to 196 ppm. Variation in P_2O_5/TiO_2 ratios reflect compositional change from basaltic to andesitic end members within the LCB pile. Andesitic end members represented by relatively enriched P_2O_5/TiO_2 levels, low Ti/Zr ratios and low Cr levels. For example, andesite sample 624366 shows Ti/Zr of 31, P_2O_5/TiO_2 ratio of 0.52 and Cr levels of 33 ppm.

Samples 624364 is a doleritic LCB intrusive equivalent. It shows an elevated P_2O_5/TiO_2 ratio (0.49) and an extremely high Cr level (782 ppm).

Lynchford Tuff samples (624351 and 624363) show elevated Ti/Zr ratios (40 and 44 respectively). High proportions of Ti (5700 to 6000 ppm) likely reflect a concentration of detrital titanomagnetite as indicated petrographically. P_2O_5/TiO_2 ratios for both Lynchford Tuff samples are low at 0.129 and consistent with Tyndall Group Suite I classification (Crawford et al., 1992).

Pulp Samples

Sixty three pulp residues of rock chip samples collected by Noonan (1990) were submitted to Analabs for analysis of: Al_2O_3, SiO_2, TiO_2, Fe_2O_3, MnO, CaO, K_2O, MgO, P_2O_5, S, Na_2O. Sample locations are documented by Noonan (1990), with the majority of samples from within the main LCB lens. Results of pulp whole rock analyses are included as APPENDIX IV.

The aim was to geochemically evaluate the main LCB lens, in order to determine internal compositional variations such that an internal stratigraphic zonation may be defined.

Results of the geochemical investigation of immobile element distribution and zonation within the main LCB lens indicate a complex geochemical profile. Variations in P_2O_5/TiO_2 ratios (from 0.10 to 1.11), Ti/Zr ratios (from 2 to 41) and Cr levels (between 6 ppm and 1550 ppm) show a sporadic distribution. As a result it was not possible to assemble any geochemical stratigraphic indicators from the wide distribution of values. What is indicated however, is a complex geochemistry of the LCB. Complexities may include: fractionation effects, differing primary sources and likely structural modification of the lava pile.

4.4.2 Alteration Geochemistry

Soil geochemistry was completed over the Specimen Creek Grid by Aberfoyle Resources in 1989 (Noonan, 1989). The survey delineated a base metal anomalous alteration zone hosted by LCB: the Specimen Creek alteration zone. Alteration is bound in the south by the Specimen Creek Fault. Potential exists for the Specimen Creek Structure to have provided a conduit controlling hydrothermal fluid flow.

Costeaning, undertaken in 1990 (Noonan, 1990), indicates an alteration mineral assemblage of sericite, fuchsite, pyrite with minor haematite and baryte. The Specimen Creek alteration zone was previously interpreted as a footwall alteration zone. However re-interpretation suggests that the mineralogy does not preclude the alteration being hangingwall style.

The Specimen Creek alteration zone is thus considered enigmatic in nature with an alteration mineral assemblage that does not differentiate between footwall or hangingwall style alteration.

4.5 Research

An Honours research project on the geology, geochemistry and tectonic setting of the Miners Ridge Basalt (MRB) and Lynch Creek Basalt was undertaken at the University of Tasmania (Dower,1991). Dower (1991) interpreted the MRB to be an allochthonous block, geochemically distinct to that of any other volcanic unit within the MRV.

Dower concluded that the MRB represented an oceanic forearc

low-K tholeiite, which was associated with boninitic and ultramafic rocks, emplaced on a west facing forearc in a west dipping subduction terrain. Dower (1991) also inferred the LCB to have associations with LREE enriched shoshonitic rocks and thus geochemically correlated to the Que-Hellyer volcanics. The implication was made that LCB units are island arc andesites indicative of post collisional arc-continent volcanism.

4.6 Geophysics

193 line kilometres of helicopter borne magnetic and radiometric data was collected over the Lynchford - Specimen Creek area. The survey was flown by Geoterrex in March 1993, with a line spacing of 100 metres and east-west oriented reading lines. Magnetic and radiometric data was aimed to enhance and refine geological and lithological conceptual models and simultaneously provide a means by which a structural framework may be developed; and thus target areas delineated for drilling.

4.6.1 Helimagnetics

Magnetic intensities were measured using a Scintrex caesium vapour optical absorption magnetometer. The average sensor terrain clearance was 80 metres. Magnetic data supplied by Geoterrex includes total magnetic intensity contours (Plate LYN 55), residual magnetic profiles (Plate LYN 62) and flight path data (Plate LYN 60). Detailed specifications for the heliborne magnetic survey are supplied in APPENDIX V. In addition, a digital elevation model (Plate LYN 69B) was produced using GPS navigation data, corrected for terrain clearance, from the helimagnetic survey.

Magnetic - Lithological Inferences

Results of the magnetic survey indicate a large variation in magnetic intensity as a direct response to variable magnetite abundances within lithological units. Stratigraphy at Lynchford strikes north east, younging and steeply dipping west.

Shale, siltstone and sandstone lithologies show generally low to background total magnetic intensities; units include the YRS, Miners Ridge Shale (MRSh) and Miners Ridge Sandstone (MRS). LCB also shows a relatively poor magnetic response, but is slightly elevated against background sedimentation, as recorded by the YRS.

Lynchford Tuff or Lower Tyndall Group strata (Corbett, 1979) show distinctive high amplitude, short wavelength magnetic responses. The intensity of the magnetic response is likely resultant from abundant detrital titanomagnetite in volcanic sandstones/breccias (for example samples 624351 and 624363). Correspondingly high and variable magnetic susceptibilities (Appendix II) are observed. Resultantly LCB - Tyndall Group and YRS - Tyndall Group contacts are distinctive as marked magnetic contrasts.

Two concentrically shaped magnetic highs are recorded in southern portions of the Lynchford area. The nature of these magnetically elevated areas is indicative of a shallow source. Coincident outcrop to both magnetically intense areas show a ARA-type Suite II hornblende + plagioclase phyric nature. Abundant opaques as titanomagnetite and resultant high susceptibilities likely explain the magnetically anomalous zones.

The Lynchford Tuff is a debris flow unit with generally poor sorting and frequent LCB and ARA-type clasts. The nature of the Lynchford Tuff is indicative of a locally sourced and deposited mass flow deposit. A high concentration of detrital titanomagnetites may be sourced locally from FeTi enriched lavas; the ARA-type Suite II lavas.

Structural Implications

A structural investigation and re-interpretation of the Lynchford area, previously reported in section 4.3 and II, defined a structural framework for the area. Magnetic heliborne data proved essential in the identification of structural elements and as a means by which the structural framework was developed. Magnetically defined structural elements comprise:

Halls Fault

A north east trending magnetically broad zone with a constant gradient (refer Plates LYN 55 and LYN 62). The broad nature of the fault zone is indicative of a deep seated structure. No evidence of the structural corridor is observed at surface.

Miners Ridge Thrust Slice

The Miners Ridge Thrust Slice is bounded to the east by the Miners Ridge Thrust (MRT) and to the west by a Cambrian Normal Fault. The MRT, previously identified by Corbett (1979) and re-interpreted by Berry and Keele (1993), is a well defined structure; in outcrop and magnetically.

A north to north-north east trending structure, the MRT is defined as that magnetic transition zone between poorly magnetic MRS, MRSh units and relatively magnetically intense porphyries ascribed to the CVC. Berry and Keele (1993) indicated a Middle to Late Cambrian age to the structure. The Cambrian Normal Fault shows marked stratigraphic changes across it, however is only subtly detectable in total magnetic intensities. Stratigraphic differences include:

- eastern edge to LCB/YRS time related sequences
- west thickening of YRS stratigraphy

Guilfoyle Thrust

The Guilfoyle thrust is obscured in residual magnetic profiles and contours by interference from nearby sub-parallel HEC transmission lines. The thrust structure marks the sharp eastern geological and magnetic edge to the two concentric magnetically anomalous zones ascribed to ARA-type lavas. The structure may have formed a controlling structure to the extrusion of ARA-type lava body depo-centres.

Specimen Creek Structure

The Specimen Creek Fault is a sharp magnetic feature that divides LCB units to the north from YRS dominated stratigraphy to the south. The structure is apparently terminated against Halls Structure and shows a late movement via an offset of the Lynchford Tuff. The sharp magnetic expression of this structure may be the result of re-activation of an older structure.

Huxley Fault - Dextral Wrench

A dextral wrench structure, namely the Huxley fault, is a late stage structure and with very late stage re-activation. An offset of the Miners Ridge Thrust Slice at Miners Ridge and Lynchford Tuff strata is observed in magnetics. In outcrop two movements are indicated:

i) Early sinistral (D1)
ii) Late Dextral (D2)

Digital Elevation Model

A digital elevation model (DEM) was produced from GPS navigation data collected during airborne magnetic and radiometric surveys (Plate LYN 69B). Topographic lineaments likely reflect the surface expression of fault structures. The most pronounced of these features is Halls Fault, which forms a broad major north east trending topographic linear. Halls Fault divides lower northern areas from topographically elevated southern portions.

In addition, the DEM shows evidence of:

- Miners Ridge thrust slice as an elevated fault bounded block including the MRT and Cambrian Normal Fault
- Queen River Structure: a north south oriented linear topographic depression
- King River Structure: a north east trending linear topographic depression

- Specimen Creek Structure as a topographic linear to the intersection of Halls Fault
- Minor (late stage) north to north west lineaments bisecting magnetic highs associated with ARA-type lavas

4.6.2 Radiometrics

Radiometric data was collected simultaneous to heliborne magnetic data using a Nuclear Data gamma ray spectrometer, with windows measuring total count, potassium, uranium and thorium. Colour contoured radiometric data supplied by Geoterrex is included as Plates LYN 56 to 59 inclusive. Detailed specifications for the radiometric survey are included as APPENDIX V.

Radiometrics of the Lynchford - Specimen Creek area broadly depict geological units; particularly areas showing high Th and low K. These areas include intermediate to basic lavas such as the LCB and ARA-type units. The uranium count image indicates random U distribution. MRS is well depicted by areas of low Th and high K. Radiometrics also delineate structures along the King and Queen Rivers as radiometrically intense areas.

4.7 Specimen Creek Prospect Geo-Magnetic Summary

The Specimen Creek or Lynchford area forms a mafic to intermediate Cambrian volcanic centre with four discreet stratigraphic domains:

1. Central Volcanic Complex domain

Central Volcanic Complex (CVC) felsic volcanics/volcaniclastics and related porphyries to the east of Lynchford; from Whip Spur to Jukes Proprietary. CVC porphyries in the south eastern portion of the Lynchford E.L. are interpreted to be at least partially intrusive (Corbett, pers. com.).

2. Miners Ridge Thrust Slice

Miners Ridge Thrust Slice forms a discreet fault bounded package that includes MRB, MRS and MRSh, from oldest to youngest respectively. In accordance with the research of Dower (1991) the Miners Ridge Domain is interpreted to be a thrust slice of tholeiitic affinities, with the Miners Ridge thrust a late Cambrian thrust activated due to an east-west compressional event. The domain is interpreted to be unrelated to other litho-stratigraphic units in the region.

3. YRS/LCB Domain

Incorporates shales, siltstones and sandstones of the YRS, mafic LCB and breccias/sandstones of the Lynchford Tuff from oldest to youngest. Stratigraphic inferences indicates LCB to interfinger upper portions of the YRS. The YRS - Lynchford Tuff contact is interpreted to be conformable, whilst the LCB - Lynchford Tuff is

interpreted as an erosional unconformity.

This is supported by an abundance of LCB and mafic debris observed within the lower portions of the Lynchford Tuff. Petrology and field relations suggest that the Lynchford Tuff is a debris flow unit, locally derived from underlying volcanic units that include LCB and ARA-type lavas.

4. Eldon Group

Siluro-Devonian units of the Eldon Group comprise sandstones and mudstones of Florence Sandstone correlates and Bell Formation respectively. Spatially these units occur west of the Queen River structure.

Of these domains, only Domain 3 - the YRS/LCB domain is considered prospective for the discovery of a VHMS deposit.

Lynchford Sub-basin

The YRS/LCB domain is itself partitioned. That area bounded by Halls Structure to the east, the Specimen Creek Structure to the south and the Queen River structure to the west forms the Lynchford sub-basin.

The Lynchford sub-basin likely represents a localised volcanic depositional centre for extrusion of the LCB, developed during a Cambrian extensional period. Halls structure and the Specimen Creek Structure are interpreted as syn-volcanic basin bounding structures to the Lynchford sub-basin.

Development of the Lynchford sub-basin is thought to be the response of a Cambrian extensional event directed in a north-west - south east orientation. During this time, volcanic activity commenced, filling the subsided basin. Background sedimentation is recorded by YRS mudstones and sandstones and is ongoing distal to the main LCB extrusion area. Pooling of LCB and hydrothermal alteration against the Specimen Creek Fault resulted. Closely following volcanic activity, an erosional event is indicated by debris flow deposition of the Lynchford Tuff Lower Tyndall Group correlate and the abundant locally derived volcanic detritus within the unit.

A small north south elongate lens of LCB, hosted by YRS occurs east of Halls structure. Fault repetition of stratigraphy east of Halls structure is interpreted to be structural modification attributed to movement on the Guilfoyle Thrust structure.

6.0 CONCLUSIONS AND RECOMMENDATIONS

The Lynchford exploration licence, encompasses a mafic volcanic centre that is geochemically correlated to the Que-Hellyer volcanics 50 kilometres to the north. Two structures, the Specimen Creek Fault and Halls Fault, are inferred to be Cambrian syn-depositional basin bounding structures to the Lynchford Sub basin; inferred from facies discontinuities, facies thickness changes, topographic and magnetic datasets.

Previous geochemical studies delineated an elongate base metal anomalous alteration zone hosted by LCB and bounded by the Specimen Creek structure. The geometry of the Specimen Creek alteration zone is indicative of a structurally controlled dispersion halo, with the Specimen Creek Structure acting as a conduit controlling hydrothermal fluid dispersion. The mineralogy and style of hydrothermal alteration is not indicative of either footwall or hangingwall alteration.

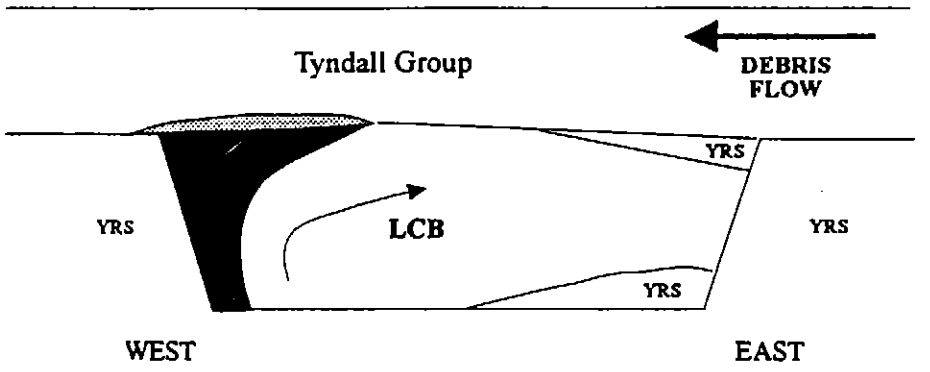
Two conceptual target areas are postulated based upon interpretation of the Specimen Creek alteration zone as either footwall or hangingwall style. Both targets show structural, lithological and geochemical merit and are shown in Figures 2 and 3 respectively.

Target 1 : The footwall alteration model target proximal to the Specimen Creek Fault at the stratigraphic contact between the Lynchford Tuff and Tyndall Group correlates underlying altered LCB.

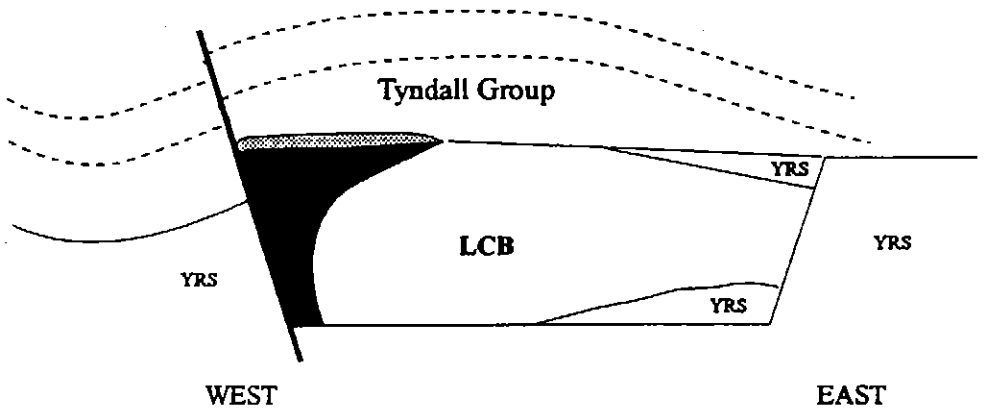
Target 2: A hangingwall alteration model target proximal to the intersection of the Specimen Creek and Halls syn-depositional structures.

LYNCHFORD - FOOTWALL INTERPRETATION

1) Cambrian extension



2) Cambrian compression



3) Devonian compression

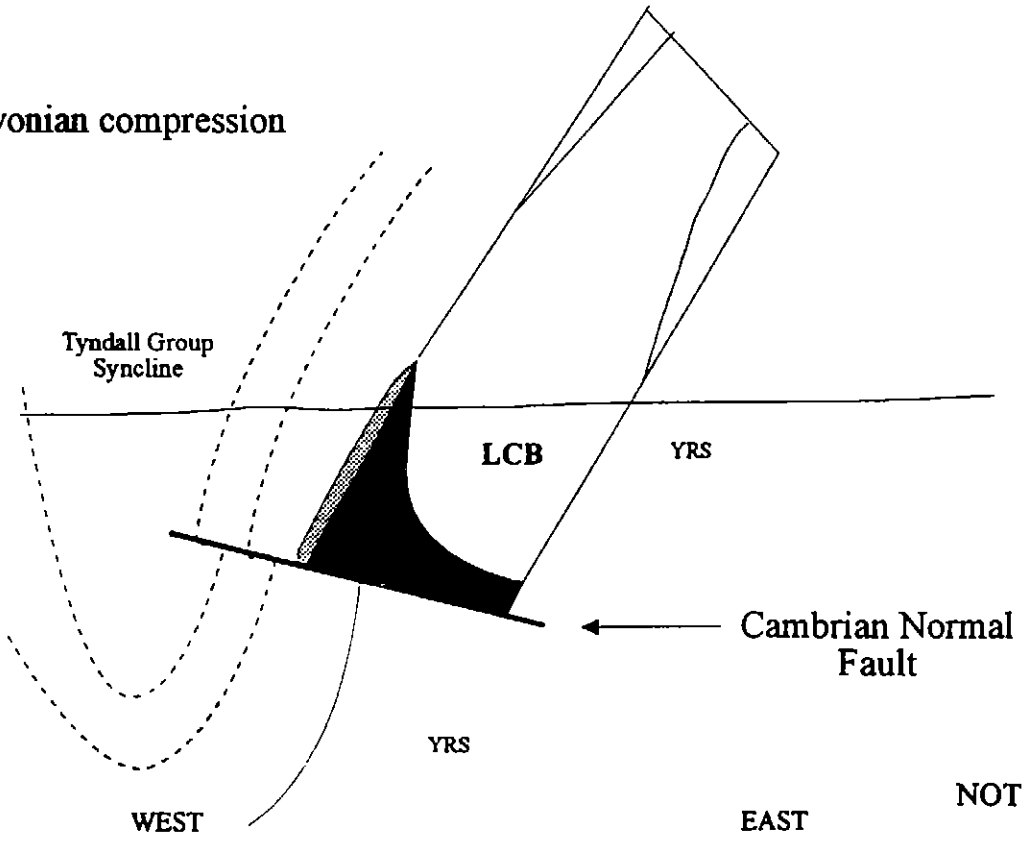


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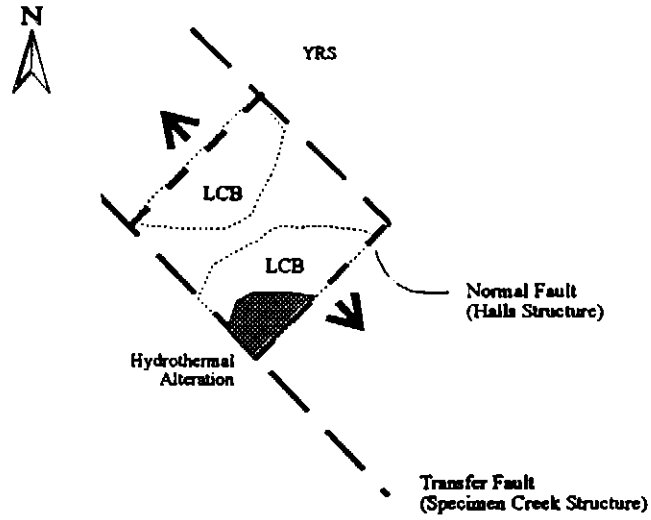
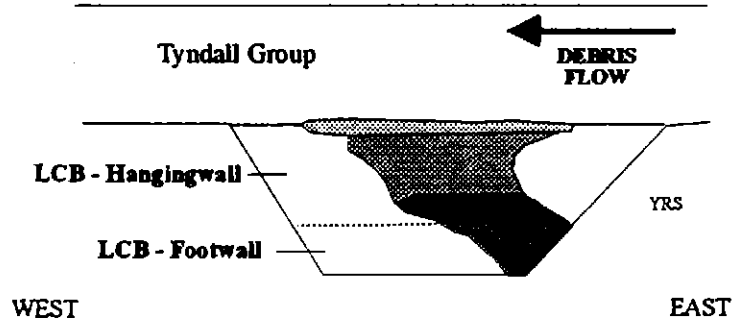
Figure 2

Lynchford Basin - Hangingwall interpretation

Cambrian NW Extension Geometry (Plan)



Specimen Creek Transfer Section - Cambrian Extension



Specimen Creek Transfer Section - Devonian Compression

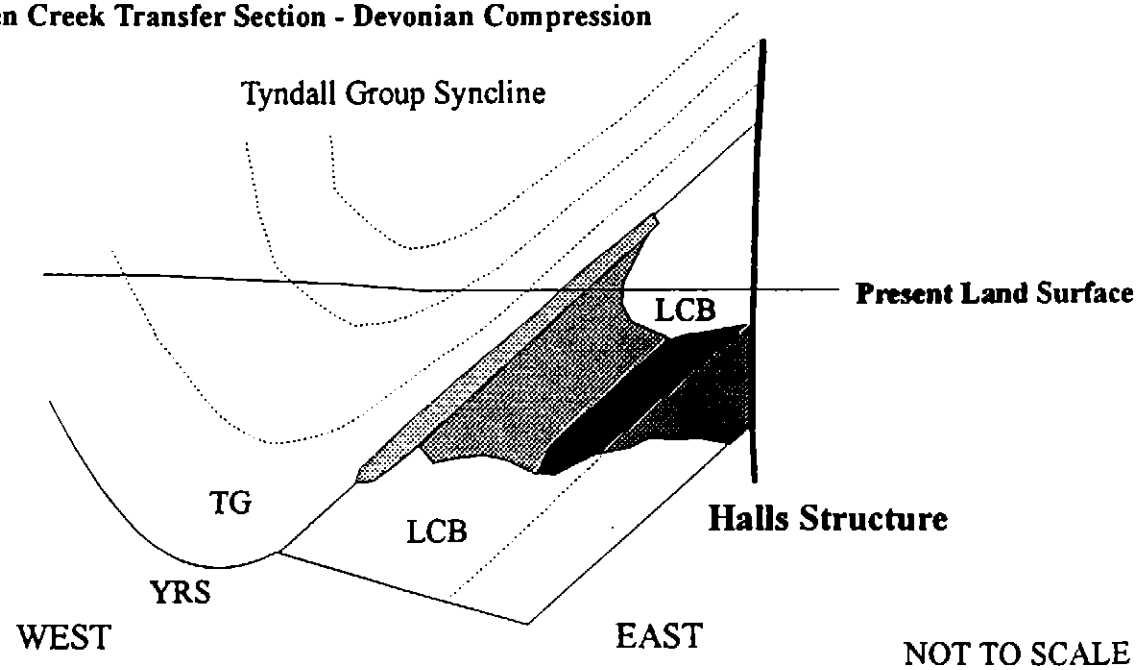


Figure 3

The Lynchford Tuff is a Lower Tyndall Group equivalent unit localised to the Lynchford sub-basin. Regional stratigraphic correlations indicate that the Lynchford Tuff and the Lynchford Tuff-LCB contact are prospective for Rosebery and Comstock style VHMS accumulations. For this reason the footwall model target zone has been prioritised for drilling.

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APPENDIX I

LYNCHFORD

- Sample 624411

This sample represents that crystal rich unit which lies at the stratigraphic top of the YRS and forms the YRS/Tyndall Group boundary at Lynchford. Present are light green lithics that appear feldspar phyric (possible Andesite origin) and in other cases appear finely laminated (possible mudstone?) in a cream feldspar/quartz crystal rich matrix. Also present are black chloritic lenses (pumice?). If lithics include Andesitic material then the timing of the LCB needs to be rethought.

- Sample 624412

Is a poorly exposed feldspar-hornblende phyric andesitic intrusive breccia (autobreccia?) from southern portions of out Lynchford EL. I am particularly interested in knowing how you think it compares to ARA. This Andesite appears to intrude YRS, which are the most likely source for cherty lithics present. Can you please identify the lithics caught up in the breccia as well as any magnetic constituents. The relationship of this andesite with the LCB is not evident as this unit appears to intrude YRS south of the specimen Creek Fault where LCB does not outcrop.

SAMPLE NUMBER: 624411

LOCATION: Lynchford: Magnetic Susc: 0.01

SUMMARY:

This is a low-grade burial metamorphosed crystal vitric lithic tuff derived entirely from quartz+feldspar-phyric felsic volcanics.

HAND SPECIMEN:

This is a very pale cream coloured felsic tuff with occasional dark shaley clasts(?), quartz phenocrysts and altered plagioclase phenocrysts.

THIN SECTION:

This sample is petrographically fairly simple, being composed of about 3-5 modal% of broken quartz phenocrysts and somewhat less broken albitized plagioclase phenocrysts in a recrystallized groundmass that was undoubtedly glassy originally. The quart phenocryst fragments are often angular, or with one or two resorbed margins, and are rarely larger than 0.5mm across. The albite phenocrysts are similarly sized, and show slight to moderate sericite speckling. There were no (NO!!!) mafic phenocrysts in this sample, nor any phenocrysts or microphenocrysts of FeTi oxides, which explains the uniquely low magnetic signature of this sample. A few well-formed zircon crystals are notable.

The groundmass/matrix of this rock is a rather heterogeneous textured quartzo-feldspathic intergrowth after glass, although no former shard textures are preserved. Rapid changes in the crystallinity and grainsize of the groundmass quartzo-feldspathic aggregates suggest that there were plenty of formerly glassy lithic clasts in this tuff, and that they devitrified and recrystallized together with the vitric ash matrix. One or two quite distinctive tube pumice fragments are obvious. Very minor yellowish sericite streaks the groundmass.

This is a crystal vitric lithic tuff derived entirely from felsic quartz+plagioclase-phyric volcanics. There is absolutely no trace of any andesitic component in this sample, and the metamorphic assemblage is typical of regional low-grade burial metamorphic degradation.

SAMPLE NUMBER: 624412

LOCATION: Lynchford: Magnetic Susc: 0.20

SUMMARY:

This is an autobrecciated plagioclase+hornblende +augite+quartz+FeTi oxide-phyric andesitic lava with a low-grade burial metamorphic alteration assemblage. It is clearly correlated petrographically with the Anthony Rd- Crown Hill hornblende andesites.

HAND SPECIMEN:

This is an unusual andesitic rock with a dark grey apparently sparsely porphyritic part of the rock under the weathering skin, grading into a more 'typical' hornblende andesite deeper into the rock.

THIN SECTION:

This sample shows a brecciated texture in thin section, but it is clearly a plagioclase+hornblende+quartz+augite+FeTi oxide-phyric andesitic lava. Several breccia fragments are obvious, but are of the same lithology as the remainder of the rock. The darker domain of the rock beneath the weathering skin is more brecciated and more altered. The plagioclase phenocrysts make up around 15 modal% of the rock, and are mainly less than 2mm long; all are totally replaced by almost isotropic very fine-grained sericite. Hornblende phenocrysts only constitute around 5 modal% of the rock, and are less than 2mm long, with pale yellow to pale khaki pleochroism and small inclusions of plagioclase crystals. These are commonly granulated and stretched out along fractures, forming pleochroic seams of hornblende up to at least 6mm long. I presume these unusual but obvious dark seams are what you identified in hand specimen as cherty lithic fragments. Augite phenocrysts are small (<0.8mm long), equant and fresh, and also make up probably 3-5 modal% of this rock. Quartz phenocrysts are small, resorbed and make up <1 modal% of the rock. Former FeTi oxide phenocrysts are not abundant, and are entirely altered to semi-isotropic messy brown leucoxene.

The groundmass of this rock is messy, fine-grained and very heterogeneous in grainsize and mineralogy. The key feature of the variable groundmass texture is that it clearly shows that this rock has been brecciated. I suggest that this brecciation was primary, but has been enhanced and overprinted by later deformation that granulated hornblende phenocrysts in some high-strain zones. The alteration is of regional low-grade style, and this rock is unambiguously correlated with the typical hornblende-phyric Anthony Rd - Leech Hill- Crown Hill andesites.

939034

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ABERFOYLE

12 May 1993

Dr Tony Crawford
University of Tasmania
Geology Department
GPO Box 252C
HOBART TAS 7001

Dear Tony

Please find an accompanying ten samples, all the way from downtown Lynchford. A number of the samples are Lynch Creek Basalts from areas previously unsampled by Danny. Also included is a feldspar phyric lava (624367), a feldspar horneblende phyric andesite (624368) and a rather oddball sample - 624364. I am particularly interested to know if any of these may be LCB correlates (intrusive equivalents ?). The Fd Hb phyric andesite looks similar in appearance to ARA's at Newton Creek and am interested to hear what you think. As yet I have no geochemistry on any of the samples.

624351 and 624363 are volcaniclastics from the Tyndall Group to the west of Lynchford. Is there much of a mafic component (LCB indicators ?) to these rocks.

Could you please prepare thin sections and descriptions of the samples. I look forward to hearing from you.

Yours faithfully

Robina Sharpe
GEOLOGIST

LYNCHFORD

12-05-93 | 1 OF 1

379100	5337000	624351	
379130	5336560	624359	Cu, Pb, Zn, Ba, As, Ag + WRA
379170	5336250	624360	Tyndall Grp
379070	5336280	624361	A – 1/bv
379900	5337880	624363	A ÷ bv
377800	5334900	624364	A – 1
379090	5336390	624365	Tyndall GTP
379040	5336350	624366	B/A ÷ 1/bv
379450	5333800	624367	B/A
379400	5333550	624368	B/A
			FP A – 1
			FdHbPh A – 1

OPERATOR COMPUTER CHECK

930033

SAMPLE NUMBER: 624351

LOCATION: Tyndall Gp west of Lynchford

SUMMARY:

This is a volcanogenic sandstone essentially identical to sample 624363, with detritus from the Lynchford Basalts, Anthony Rd - type hornblende-phyric andesites, and plagioclase and quartz phenocrysts from more felsic volcanics. It shows a greenschist facies alteration grade.

HAND SPECIMEN:

This is a medium to coarse grained volcanogenic sandstone of average grainsize around 1mm, but many lithic clasts of felsic lava(?) from 5mm to 1cm across, and some matrix areas that are extensively chloritized. It is essentially identical to 624363 above.

THIN SECTION:

This sample is basically identical to 624363 in thin section. It is dominated by detrital plagioclase phenocrysts (slightly more sericitized than in 363), carries abundant detrital augite phenocrysts that often have fringes of actinolite, abundant altered FeTi oxide phenocrysts, common broken quartz phenocrysts, and several lithic clasts of plagioclase+ hornblende+augite+quartz-phyric Anthony Rd-type andesitic lava. It contains the same strongly chlorite-altered streaks and matrix patches as 363, but also contains granular epidote crystals in the chlorite, and messy very fine-grained epidote in some areas of groundmass.

This is another volcanogenic sediment derived from Lynchford Basalts plus more felsic volcanics, with a clearly input from Group 2 hornblende andesites as well. Again, the metamorphic grade is clearly low greenschist facies, which is higher grade than the Lynchford Basalts themselves, and may have some significance.

SAMPLE NUMBER: 624359

LOCATION: Lynchford

SUMMARY:

This is a slightly vesicular plagioclase+augite+sparsely olivine-phyric evolved basaltic to basaltic andesite lava correlated with the Lynchford Basalt.

HAND SPECIMEN:

This is a slightly weathered grey, strongly plagioclase-phyric basalt or andesite lava.

THIN SECTION:

This sample is a strongly porphyritic, vesicular basaltic lava with around 20 modal% of altered plagioclase phenocrysts, 3-5 modal% of mainly large augite phenocrysts, and <1 modal% of altered former olivine phenocrysts. Plagioclase phenocrysts are mainly small rather stubby prismatic crystals less than 1mm long, and are albitized, and strongly sericite-altered. Augite phenocrysts are fresh, except for occasional chlorite along fractures in broken crystals. They occur as large equant subhedral crystals to about 2mm across, that are often cracked and slightly disaggregated. A number of distinctive olivine crystal shapes to about 1mm long are present, but are now composed of either green chlorite, or very fine-grained silica, or both. Interestingly, there are no sign of the former presence of FeTi oxide phenocrysts or microphenocrysts in this sample.

The groundmass of this sample was glassy, and has devitrified to a dirty brown, almost isotropic mixture of indeterminate composition. Irregular lobate to ovoid vesicles make up around 5 modal% of the rock, and are filled by partially oxidized green to reddish brown chlorite, with rims of silica. Less commonly, they are filled with chalcedonic silica. Similar material fills anastomosing and bifurcating narrow veinlets that transect the sample.

This is an evolved basalt to basaltic andesite lava with a low-grade burial metamorphic alteration assemblage. It is definitely (typically, in fact) a Lynchford-type basalt, and can be confidently assigned as a correlate of the Lynchford Basalt.

SAMPLE NUMBER: 624360

LOCATION: Lynchford

SUMMARY:

This sample is almost identical to the previous sample (624359) in that it is a plagioclase+augite+sparsely olivine-phyric evolved basaltic to basaltic andesite lava correlated with Lynchford Basalt.

HAND SPECIMEN:

This is a dark grey quite strongly porphyritic basaltic to andesitic lava with a variably altered groundmass.

THIN SECTION:

This sample is petrographically very similar to the preceding sample 624359. It is a strongly plagioclase-phyric basaltic andesite to evolved basaltic lava with subordinate but quite large fresh augite phenocrysts, and occasional small chlorite+silica-altered olivine phenocrysts. Plagioclase phenocrysts are on average a little bit larger than in 359, and are also slightly less strongly overprinted by sericite. Augite phenocrysts are up to 3mm across, and as for 359, are fractured but quite fresh. They are probably slightly more abundant in this sample than in 359.

The major difference between this lava and 359 is that it lacks vesicles, and shows a more variably altered groundmass. The groundmass of this sample was also glassy, and has altered to a similar messy ultra fine-grained, near isotropic material as 359. However, in this sample it is far more variable in its response to alteration. In some areas of the slide, the groundmass is lighter coloured and contains tiny blebs of secondary quartz or albite, and in other places it is laced by seams and streaks of green chlorite.

This rock is basically a non-vesicular version of 624359, being a plagioclase+augite+sparsely olivine-phyric evolved basaltic lava with a weak regional burial metamorphic alteration.

SAMPLE NUMBER: 624361

LOCATION: Lynchford

SUMMARY:

This is a weakly hydrothermally altered (chloritized) plagioclase+augite+sparsely olivine-phyric evolved basaltic lava essentially identical originally to the previous two samples, and clearly correlated with the Lynchford Basalt.

HAND SPECIMEN:

This is a grey quite strongly plagioclase-phyric basaltic to andesitic lava very similar to the previous two, except that it contains a few fragments of very fine-grained lava

THIN SECTION:

This sample is basically very similar petrographically to the previous two except for the following significant differences:

1: Alteration of the formerly glassy, devitrified groundmass is far stronger than in the preceding two samples, being characterized by a heterogeneous and impersistent meshwork of chlorite that is sometimes Fe-strained due to surficial weathering. Despite the strong chlorite alteration of the groundmass, augite phenocrysts are still fresh, and essentially identical to those in 259 and 260 above.

2: A number of distinctive angular fragments of quenched basaltic lava are clearly xenolithic in this rock. They have almost isotropic groundmasses and are quite plagioclase-phyric, and I suggest that they are simply fragments of the chilled, glassy uppermost margin of this flow which were broken and recycled back into the flow during convective overturn accompanying eruption.

The extent and intensity of chloritic alteration of the groundmass of this sample is more reminiscent of hydrothermal alteration than regional burial degradation of glassy basaltic lavas.

SAMPLE NUMBER: 624363

LOCATION: Tyndall Gp west of Lynchford

SUMMARY:

This is a volcanogenic sandstone derived from andesitic to felsic volcanics, with a major mafic component (abundant augite phenocryst debris) probably derived from the Lynchford Basalts.

HAND SPECIMEN:

This is a medium to coarse grained volcanogenic sandstone of average grainsize around 1mm, but many lithic clasts of felsic lava(?) from 5mm to 1cm across.

THIN SECTION:

This sample is a beautifully preserved framework-supported volcanogenic sandstone dominated by detrital, blocky 1mm-sized albitized plagioclase phenocrysts from felsic to andesitic lavas; these are lightly sericite-altered and occasionally contain fresh augite inclusions, suggesting andesitic sources. Fresh, often still euhedral augite phenocrysts are quite common, making up around 5-8 modal% of the rock, and a single olive hornblende phenocryst is also present. Quartz phenocrysts are not uncommon (~2-3 modal%) and are often reacted and contain small chloritized melt inclusions; the latter distinguish phenocrystal quartz from coarse secondary quartz occurring with chlorite in matrix areas. Any field of view contains 3-5 altered FeTi oxide phenocrysts, and small detrital apatite microphenocrysts are also not uncommon. Lithic clasts make up ~3-5 modal% of this rock, and are mainly formerly glassy sparsely plagioclase-phyric felsic lavas, although one excellent plagioclase+augite-phyric andesite clast 3mm across is also present.

The matrix of this sandstone mainly consists of very fine-grained quartzo-feldspathic material that is probably recrystallized vitric ash, although no diagnostic shard textures are preserved. In places, the matrix is strongly chloritized. Occasional actinolite fringes on the detrital augite grains indicate that the metamorphic grade was low-greenschist facies of regional burial metamorphic alteration. This is generally slightly higher grade than the Lynchford Basalts themselves, so this point might be interesting structurally (or it might not be!).

The detrital augite phenocrysts in this sample are identical to those in the Lynchford Basalts, and it would be hard to suggest an alternative source for them. The single hornblende phenocryst is basically identical to those in the Anthony Rd Crown Hill hornblende andesites, and significantly, those in sample 624368. Detrital plagioclase phenocrysts are more typical of the blocky phenocrysts in more felsic lavas of the Mount Read Volcanics.

SAMPLE NUMBER: 624364

LOCATION: Lynchford

SUMMARY:

This is a holocrystalline augite+plagioclase-phyric dolerite with common biotite and apatite, almost certainly related to the Lynchford Basalts. It shows a low greenschist facies burial metamorphic assemblage.

HAND SPECIMEN:

This is either a quite coarse grained basaltic lava or a doleritic intrusive.

THIN SECTION:

This sample is clearly a doleritic intrusive with phenocrysts of both plagioclase and augite. The latter make up about 5 modal% of this rock, and are fresh, sometimes with ophitically enclosed, elongate, narrow plagioclase laths. Occasional crystals have fringes of colourless actinolite, indicating low greenschist facies conditions of metamorphism. Plagioclase phenocrysts are approximately equally abundant as the augite phenocrysts, and are slightly sericitized rather elongate albite crystals to about 2mm long. Equant subhedral FeTi oxide phenocrysts are not uncommon, and are altered to leucoxenitic material. One or two pseudomorphs after a mafic precursor are now composed of chlorite with black magnetite rims, and were probably originally olivine. A significant component of this dolerite is the quite common red-brown biotite that occurs as mainly small crystals <0.2mm long, but occasional longer crystals (to 2mm) are also present. Also important are abundant small apatite prisms that occur throughout the holocrystalline groundmass of this rock.

The alteration assemblage is chlorite-albite-actinolite-leucoxene-sericite, typical of the lowest part of the greenschist facies of burial metamorphism. This is a dolerite that I suggest is almost certainly a shallow intrusive equivalent of the typical Lynchford Basalts, such as the three described above. The abundance of apatite and the presence of biotite all indicate affinities trending towards high-K basalt or shoshonite, which are well documented within this sequence at Lynchford.

SAMPLE NUMBER: 624365

LOCATION: Lynchford

SUMMARY:

This is a plagioclase+augite-phyric mafic andesite correlated with the Lynchford Basalt; it shows weak chloritic hydrothermal alteration.

HAND SPECIMEN:

This is an altered plagioclase+augite-phyric basaltic to andesitic lava very similar in hand specimen to 624361.

THIN SECTION:

This sample is a quite strongly altered basaltic to andesitic lava petrographically very similar to 624361. About 10-15 modal% of the sample was originally made up of generally quite small plagioclase phenocrysts (<1mm long) that are now replaced by dense dirty sericite. Less abundant, making up possibly about 2 modal% of this rock, are fractured but fresh augite phenocrysts to about 2mm maximum length, often with an alteration rim of colourless prehnite. As in sample 361, a number of lithic fragments of quenched plagioclase-phyric lava are present in this sample, and are probably derived from flowtop crusts reincorporated into the lava flow during eruption and flow.

The groundmass of this lava is very heterogeneous both in primary texture (largely obliterated) and in alteration style and intensity. Over most of the slide, the groundmass appears to have been glassy, and to be replaced by strong chlorite-silica alteration. Chlorite occurs as an interlocking meshwork of almost vermiform nature through an exceptionally fine-grained silica matrix in which are set abundant blebs of brown leucoxene (which take up the Ti released from the glass during alteration). In other parts of the slide, the groundmass has an almost microvesicular texture. Sericite forms discontinuous anastomosing networks through parts of the groundmass.

This sample was a mafic andesite probably a bit more evolved, but otherwise very similar to sample 624361. It is certainly a correlate of the Lynchford Basalts, and has suffered mild chloritic hydrothermal alteration.

SAMPLE NUMBER: 624366

LOCATION: Lynchford

SUMMARY:

This is a plagioclase+augite-phyric mafic andesitic lava correlated with the Lynchford Basalt, and it shows a weak burial metamorphic alteration assemblage.

HAND SPECIMEN:

This is a mid-grey fine-grained, plagioclase+augite-phyric andesitic lava.

THIN SECTION:

This sample is a rather distinctive, formerly glassy plagioclase + augite-phyric mafic andesite lava. Plagioclase phenocrysts as prismatic laths mainly from 0.5-1mm long are abundant, probably making up around 15 modal% of the rock. These are totally replaced by dense sericite. Augite phenocrysts make up around 2-4 modal% of the rock, are fresh subhedra usually <1mm across often intergrown with the plagioclase, and they commonly occur in clots of 3 or 4 crystals. Fresh augite also occurs as very small equant microphenocrysts in the dark altered groundmass. A few small chloritized and oxidized former olivine phenocrysts are also present, but I am surprised that there are no traces of FeTi oxide phenocrysts.

The groundmass of this sample was largely glassy, but contained abundant tiny plagioclase microlites and occasional groundmass augite microlites. The glassy part of the groundmass has devitrified and altered to a dark, near isotropic, ultra fine-grained quartzo-feldspathic material in which are set tiny brown leucoxene blebs and very fine-grained disseminated chlorite.

This is another lava that can be easily correlated with the Lynchford Basalt; it is a plagioclase+augite-phyric mafic andesitic lava with a low grade burial metamorphic alteration assemblage.

SAMPLE NUMBER: 624367

LOCATION: Lynchford

SUMMARY:

This is a hydrothermally (sericite)-altered plagioclase-phyric andesitic lava similar to many Que Footwall and CVC andesites.

HAND SPECIMEN:

This is a mottled pale grey very strongly sericite-altered plagioclase-phyric andesitic lava.

THIN SECTION:

This sample is intensely sericite-calcite altered, and all trace of the primary mineralogy (except small apatite prisms) is destroyed. However, despite strong textural modification, it is still possible to discern abundant former plagioclase phenocryst sites (making up possibly 20 modal% of the rock) up to 2mm across that are now totally made up of very fine-grained sericite overprinting albite. Unlike the samples described above from the Lynchford Basalt, there are no convincing former augite phenocryst sites in this section, although the intense alteration makes that judgement rather uncertain. FeTi oxide microphenocrysts are leucoxenitized, and small apatite microphenocrysts occur in both the altered groundmass and in the altered former plagioclase phenocrysts.

The groundmass of this sample was probably glassy, and had recrystallized to a very fine-grained quartzo-feldspathic intergrowth before being very strongly overprinted by fine-grained messy sericite and subordinate fine-grained chlorite. The intensity of this alteration is far greater than noted in the other Lynchford Basalts described above, and is almost certainly of local hydrothermal origin.

This is a plagioclase-phyric andesitic lava with strong hydrothermal sericite alteration. In the apparent absence of augite phenocrysts, it is closer to typical CVC-type andesites, or Que Footwall Andesites than the other typical Lynchford Basalts. It would be interesting to know whether this rock comes from the base of the succession, below the other Lynchford Basalts described above, and for Danny Noonan a few years ago.

SAMPLE NUMBER: 624368

LOCATION: Lynchford

SUMMARY:

This is a well-preserved plagioclase+hornblende+augite +FeTi oxide-phyric andesitic lava with a low-grade burial metamorphic assemblage. It is correlated with similar rocks at Crown Hill and on the Anthony Rad.

HAND SPECIMEN:

This is a grey quite strongly plagioclase+hornblende-phyric andesitic lava or shallow intrusive.

THIN SECTION:

This sample is well-preserved strongly porphyritic andesite lava in which approximately subequal amounts of plagioclase and hornblende phenocrysts each constitute about 10-15 modal% of the rock. Much less abundant (~1-2 modal%) are fresh small augite phenocrysts. Plagioclase phenocrysts are up to 3mm long, but are mainly stubby prisms from 0.5-1.5mm long that are totally replaced by very fine-grained almost isotropic alteration products that include chlorite and probably sericite, and perhaps very fine-grained epidote. Hornblende phenocrysts are also up to about 3mm long, and are mainly well-formed prismatic crystals that show strong very pale brown to olive/khaki pleochroism. Many include small plagioclase laths and apatite crystals. A number of hornblende crystals however, show strong marginal reaction and dissolution. Augite phenocrysts and microphenocrysts are quite common, fresh, and typically occur as stubby equant crystals. Former FeTi phenocrysts were relatively common, and are always altered to translucent brown leucoxenitic material. Apatite microphenocrysts are surprisingly common in this rock, indicating affinities with the more enriched Group 2 hornblende andesites that we recognize within the Mount Read Volcanics.

The groundmass of this rock was originally glassy, suggesting to me that this was a lava rather than an intrusive rock. Devitrified glass has recrystallized to a fine-grained quartzo-feldspathic intergrowth with weak sericite and chlorite mottling and occasional anhedral small patches of secondary quartz. Pale green chlorite also occurs as irregular streaks and fracture fillings.

This is a well-preserved Group 2 hornblende andesite, correlated with the Anthony Road - Crown Hill andesites. Its relationships with the Lynchford Basalt would be important, if you can establish this.

APPENDIX II

939047

ABERFOYLE

MEMORANDUM

Date:	10 May 1993	**Ref:**	
To:	D B Wallace	**From:**	Robina Sharpe
At:	Burnie	**At:**	Burnie
Copies:	Richard Keel, SR		

Subject: **STRUCTURAL STUDY OF LYNCHFORD EL**

RICHARD KEEL & ROBINA SHARPE

Objective: To identify Cambrian structures which may have localised hydrothermal fluids and develop a structural framework for the Lynchford area.

Procedure: A structural investigation of the Lynchford licence was held over three days at Queenstown. Existing stratigraphic and structural dataset compilation maps, integrated with recently obtained magnetic intensity data provided a foundation for the study.

Conclusions:

Stratigraphic Domains

Sub-division of stratigraphic units into 4 domains on the basis that each domain forms a package of likely co-related but discreet stratigraphic time events at Lynchford.

1. CVC Domain

   Incorporates CVC felsic volcanics/volcaniclastics and related porphyries to the east of Lynchford from Whip Spur to Jukes Proprietary. Contact between CVC porphyries and YRS sediments is interpreted to be intrusive (Corbett pers. comm.).

2. Miners Ridge Domain

   Miners Ridge Domain forms a discrete fault bounded package of MRB, siltstone/mudstones and MRS, from oldest to youngest respectively.

3. YRS/LCB Domain

Stratigraphic relationships between YRS mudstones/crystal volcaniclastics are not entirely clear, however LCB apparently interfingers upper portions of YRS. Domain 3 also incorporates Tyndall Group volcaniclastics which rest in an erosional unconformity on both LCB and YRS.

4. Eldon Group Domain

Domain 4 is separated from Pioneer Beds by a major structure along the Queen River. The Eldon Groups forms an extensive unit west of the Queen River.

Structure

1. Late Cambrian Folds

Identified with a north-south trend and an open style (wavelength of several kilometres), three folds from east to west are recognised. These are:

i. Syncline in CVC at Jukes Proprietary
ii. Miners Ridge Anticline
iii. Syncline in Tyndall volcanics west of LCB

Cambrian folds were significantly tightened during Devonian deformation (D1) and subsequently transected by Devonian cleavage (likely D2 cleavage). Little direct evidence for a Cambrian anticlinal structure proximal to LCBs' was observed, with no indication in YRS sediments to suggest such.

2. Late Cambrian Thrusts

Two Cambrian Thrusts are present:

i. Miners Ridge Thrust: Sits at the base of the sequence and forms the boundary to Domain 2 whereby MRB, siltstones/mudstone and MRS form a discrete stratigraphic package. The Miners Ridge thrust structure has been interpreted elsewhere to have formed a conduit for observed large porphyry bodies of CVC Domain 1 affinity.

ii. Guilfoyle Thrust: Results in repetition of the LCB/YRS Domain 3, west of the main LCB body.

3. Cambrian Normal Fault

A Cambrian Normal Fault separates Domains 2 and 3 and is situated between the Miners Ridge Thrust and Guilfoyle Thrust. Exposure of this Normal Fault shows reverse fibres indicating an east transport and the juxtaposition of younger stratigraphy on older; resultantly, this Normal Fault is interpreted to be a growth fault. Marked stratigraphic differences across it include:

i. Eastern edge to LCB/YRS time related sequences of Domain 3
ii. West thickening of YRS stratigraphy
iii. Comparatively thicker Tyndall Group to the west of Lynchford than that observed near Jukes Proprietary.

4. Devonian D1 - East West Compression

D1 is associated with the tightening of pre-existing Late Cambrian folds. No development of folds is ascribed to D1, however reverse movement on faults may have occurred. A northwest trending sinistral wrench is indicated by the curvature of stratigraphic units into the structure. D1 is transitional to:

5. Devonian D2 - North South Compression

i. Dextral wrench movement (D2) on the abovementioned northwest sinistral wrench (D1) with a displacement of the order of 400 m resultant. A number of likely splays associated with this dextral wrench were identified in both structural and magnetic data sets. An intensely developed sub-parallel cleavage dominates proximal structures.

ii. Two folding styles:

a) East-west folds in Gordon Group Limestone and Silurian Eldon Group sediments.

b) Northwest-southeast folding in YRS with smaller amplitudes and wavelengths and an axial planar cleavage.

Interference of east-west and northwest trending folds is observed south of Specimen Creek where YRS approximates 800 m in thickness. Such interference zones may have exposed deeper portions of YRS stratigraphy and in outcrop coincides with a feldspar phyric rhyolitic lava.

iii. Quartz veining parallel to north-northwest is likely associated with Devonian hydrothermal fluids, thought to be related to Au mineralisation.

SPECIMEN CREEK STRUCTURE

Placement of the Specimen Creek Structure into one or more of the five discussed events is, at this stage, not possible. A number of considerations include:

i) Specimen Creek Structure as a high angle reverse fault (top block north) equivalent to observed south dipping, north directed thrusts in CVC at Whip Spur to the east. In this occurrence, Specimen Creek structure development would be due to a north-south compression event and thus likely of Devonian D2 origin.

ii) Specimen Creek structure as a Cambrian transfer fault, due to northwest-southeast extension, acting as a control on the distribution of LCB.

The Specimen Creek Fault was not observed in the field and no cleavage associated with it identified. Locally intense cleavage development in LCB proximal to Lynch Creek and the King River Mine shows a northwest direction sub-parallel to the dextral wrench. Cleavage is thus ascribed to D1/D2, having the effect of locally transposing LCB.

GENERAL COMMENTS

- Ordovician sedimentation at Lynchford is confined to Pioneer Beds, which disconformably overly Tyndall Group. Pioneer Beds, indicative of basal Owen Conglomerate, are relatively thin. The absence of thick Ordovician Sediments indicates the area to have been topographic high (broad regional amplitude Cambrian anticline ?) at the time of deposition. Closer examination of the Pioneer Bed disconformity may be important in deciphering sea floor topography at the end of the Cambrian.

- Tyndall Group sediments and volcaniclastics (namely Lynchford Tuff/ Comstock Tuff correlate) overly YRS/LCB in an erosional unconformity. Tyndall Group volcaniclastics show a significant magnetic contrast (magnetic susceptibilities 6.6 to 38.0). Siliciclastics of the Upper Tyndall Group are not present. Contact between LCB and Tyndall Group is not exposed, however a haematite-silica unit is interpreted to form the boundary. McPhie & Allen (1991) regionally correlated the base of the Tyndall Group to form a marker horizon time equivalent to Southwell Sub-Group marked by a distinctive quartz phyric unit.

- Two high amplitude magnetic anomalies occur in the south of the Lynchford EL within YRS. The source of these two anomalies has not been identified due to dense vegetation over the sites. YRS sediments show low magnetic susceptibilities of the order 0.10 to 0.20. Corresponding to both anomalies are small bodies of a feldspar-hornblende andesite (LCB correlate ?) along the Transmission Access Road. Magnetic susceptibilities of the massive andesite lava range between 0.42 to 0.25 and consequently it would appear an unlikely source to magnetic anomalies.

Robina Sharpe

LYNCHFORD EL 47/83

MAGNETIC SUSCEPTIBILITIES

Co-ordinates:

380230mE	**5337500mN**	**Average**
YRS	0.18, 0.07, 0.07, 0.02, 0.02	0.07
YRS crystal marker	0.03, 0.02, 0.01, 0.04, 0.01, 0.04	0.02
Tyndall Group	7.03, 6.64, 11.2	8.29

Lynch Creek intersection with the Huxley Track

LCB	0.28, 0.37, 0.33, 0.35	0.33
YRS	0.14, 0.10, 0.14	0.13

Co-ordinates:

381040mE 5336130mN

MRB	0.50, 0.46, 0.50, 0.35, 0.61	0.48
Porphyry	0.02, 0.01, 0.05, 0.04, 0.05	0.03
MRS	0.0	0.00

Co-ordinates:

379900mE	**5337880mN**	
Tyndall Group	26.8, 36.3, 29.7, 38.0	32.7

Co-ordinates:

379260mE 5337940mN

Tyndall Group Siltstone	0.20, 0.18, 0.18	0.19

Co-ordinates:

377500mE	**5334500mN**	
Eastern Sequence	0.10, 0.13, 0.09	0.11

Co-ordinates:

377800mE	**5334900mN**	
Basaltic-Andesticic LCB	0.30, 0.25	0.28

Co-ordinates:		Average
Crystal unit	0.02	0.02
Dacitic-lava	0.13, 0.16	0.15
Co-ordinates:		
Silica haematite breccia (Variable)	1.84, 0.54, 0.03	0.80
Costean at the King River Mine		
LCB	0.38, 0.47, 0.28, 0.36, 0.33, 0.38, 0.45, 0.34, 0.46, 0.33	0.38
Mudstone on Lynch Creek walking track		
Volcanic Mudstone	0.22, 0.20, 0.16, 0.18	0.19
MRB along Transmission Line		
MRB	0.52, 0.72, 0.63, 0.93	0.7
Transmission Track		
Feldspar phyric Andesite lava	0.26, 0.3, 0.18	0.25
Transmission Track		
Feldspar hornblende phyric Andesite	0.42, 0.36, 0.22, 0.24, 0.34	0.32

STRUCTURAL DATA

Location 1 Faults in crystal tuff at base of Tyndall Group.
65/196, pitch 15° E, sinistral ?
80/198, pitch 80E Dip Slip reverse

Quartz vein: 50/010
55/313

Location 2 Mines Ridge/Porphyry Contact (Miners Ridge ?)
Fault 80/200, pitch 75-80W South block down
Pitch 0° dextral

Ft/Sz 78/038 dextral
Ft/Sg 72/250, pitch 10-55 dextral to reverse

Location 3 Asbestiform ? in Tyndall Group
50/324

Location 5 Lynchford HEC camp.
perpendicular to cooling joint prisms ie: bedding
50°/080°

Location 7 Fence line to King River Au Mine.
Small fault sinistral duplacement 55/246
Small fault South block up 65/246

Location 8 C-Plane (or ? surfaces) in coarse grained LCB off main road
55/252, 75/248, 90/252

Location 9 Miners Ridge Basalt or Cambrian ? fault.
Reverse fault 45/290, pitch 75°S, reverse calcite fibres
90/045, pitch 85SE, South West bock up

APPENDIX III

Aberfoyle Exploration — GEOCHEMICAL SAMPLE LEDGER

PROJECT: LYNCHFORD

BOS SIEVE SIZE CODE - MESH NUMBER
A - 200 G - 80 M - 30
B - 150 H - 60 N - 20
C - 100 I - 40 T - TOTAL

SAMPLE TYPE CODE
[ ] OXIDIZED PRODUCTS O
[X] FRESH ROCK R
[ ] STREAM SEDIMENTS S
[ ] WEATHERED BEDROCK W
[ ] SURFACE TRANSPORTED T
[ ] RESIDUAL SOIL E
[ ] MINE DUMP M

CARD PUNCH: YES [ ] NO [ ] PRINT: YES [ ] NO [ ] VERIFY

DATE: 12-05-93

SHEET: 1 OF 1

EASTINGS	NORTHINGS	SAMPLE NUMBER	DEPTH in CMS	SIZE FRACTION	Sample Type	METAL VALUES PPM	GEOLOGICAL LOG
379100	5337000	624351	DUPLICATE No.			Cu, Pb, Zn, Ag, As, Ag	Tyndall Grp
	New Numb.	565704					
379130	5336560	624359				+ WRA	A - 1/bv
379170	5336250	624360					A - bv
379070	5336280	624361					A - 1
379900	5337880	624363					Tyndall Grp
377800	5334900	624364					B/A - 1/bv
379090	5336390	624365					B/A
379040	5336350	624366					B/A
379450	5333800	624367					FP A - 1
379400	5333550	624368					FdHbPh A - 1.

OPERATOR COMPUTER CHECK PLOTTER DATE

939036

939057

ANALABS

A Division of Inchcape Inspection and Testing Services Australia Pty. Ltd.
A.C.N. 004 591 864

Phone (004) 316837 | 14 Thirkell St. COOEE TAS 7320 | Fax (004) 318890

ANALYTICAL REPORT No. 100560.60.09492

THIS REPORT MUST BE READ IN CONJUNCTION WITH THE ACCOMPANYING ANALYTICAL DATA

INVOICE TO:
Aberfoyle Resources Limited
Exploration Division
P.O. Box 952
BURNIE TAS 7320

ORDER No.	PROJECT
4425	

DATE RECEIVED	RESULTS REQUIRED
12/05/93	ASAP

No. OF PAGES OF RESULTS	DATE REPORTED	No. OF COPIES	TOTAL No. OF SAMPLES
3	20/08/93	1	10

SAMPLE NUMBERS	SAMPLE DESCRIPTION	ELEMENT/METHOD
565704,624359/361,363/368	RC Prep : GP033	Cu,Pb,Zn,Ag/GA101 Ba,AsCr,Zr/GX401 Whole Rock Analysis/OX408

RESULTS TO
Mr R de Bomford
Aberfoyle Resources Limited
Exploration Division
P.O. Box 952
BURNIE TAS 7320

RESULTS TO

RESULTS TO

REMARKS

ADVISED BY RICHARD DE BOMFORD ON 19.8.1993 THAT SAMPLE NO. 624351 SHOULD HAVE BEEN SAMPLE NO. 565704.

AUTHORISED OFFICER

939058

ANALABS

A Division of Inchcape Testing Services (Australia) Pty. Ltd.
A.C.N. 004 591 664

ANALYTICAL DATA

WAS 624351

SAMPLE PREFIX	REPORT No.	REPORT DATE	CLIENT ORDER No.	PAGE
	100560.60.09492	20/08/93	4425	1 OF 3

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Ba	As	Cr	Zr	Al2O3
1	565704	22	10	58	<2	607	7	44	141	14.51
2	624359	182	12	96	<2	1339	8	196	127	21.13
3	624360	131	18	82	<2	1202	3	73	140	17.73
4	624361	219	<5	100	<2	1129	8	53	147	20.59
5	624363	20	<5	54	<2	440	4	17	136	14.95
6	624364	7	<5	44	<2	246	4	782	100	11.84
7	624365	177	13	98	<2	900	8	90	126	16.71
8	624366	173	<5	76	<2	1277	3	33	131	19.67
9	624367	16	<5	54	<2	795	<2	15	237	16.36
10	624368	13	<5	68	<2	1589	5	39	179	15.94
11										
12										
13										
14										
15										
16										
18										
19										
20										
21										
22										
23	DETECTION	4	5	4	2	10	2	5	5	0.01
24	UNITS	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%
25	METHOD	GA101	GA101	GA101	GA101	GX401	GX401	GX401	GX401	GX408

Results in ppm unless otherwise specified
T = element present; but concentration too low to measure
X = element concentration is below detection limit
– = element not determined

AUTHORISED OFFICER _____

939059

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A Division of Inchcape Testing Services (Australia) Pty. Ltd.
A.C.N. 004 591 664

ANALYTICAL DATA

SAMPLE PREFIX	REPORT No.	REPORT DATE	CLIENT ORDER No.	PAGE
	100560.60.09492	20/08/93	4425	2 OF 3

TUBE No.	SAMPLE No.	SiO2	TiO2	Fe2O3	MnO	CaO	K2O	MgO	P2O5	S
1	565704	55.80	0.95	10.46	0.20	4.30	1.88	4.77	0.123	0.080
2	624359	46.70	0.60	10.93	0.17	4.77	1.33	4.20	0.189	0.024
3	624360	51.80	0.59	9.43	0.16	6.36	0.94	4.89	0.215	0.006
4	624361	44.30	0.66	13.87	0.18	5.76	1.62	5.32	0.351	0.010
5	624363	56.80	0.99	9.61	0.16	4.77	1.36	3.54	0.128	0.065
6	624364	51.30	0.48	7.46	0.13	5.59	0.56	14.23	0.236	0.012
7	624365	49.70	0.60	12.05	0.16	2.52	1.47	8.56	0.247	0.008
8	624366	49.10	0.68	9.81	0.17	7.44	2.38	3.84	0.350	0.028
9	624367	68.40	0.58	5.47	0.04	0.16	3.22	1.09	0.123	0.016
10	624368	61.30	0.46	5.97	0.08	4.58	0.95	3.95	0.194	0.028
11										
12										
13										
14										
15										
16										
18										
19										
20										
21										
22										
23	DETECTION	0.01	0.01	0.01	0.01	0.01	0.01	0.05	0.005	0.005
24	UNITS	%	%	%	%	%	%	%	%	%
25	METHOD	OX408	OX408	OX408	OX408	OX408	OX408	OX408	OX408	OX408

Results in ppm unless otherwise specified
T = element present; but concentration too low to measure
X = element concentration is below detection limit
– = element not determined

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A.C.N. 004 591 664

ANALYTICAL DATA

SAMPLE PREFIX	REPORT No.	REPORT DATE	CLIENT ORDER No.	PAGE
	100560.60.09492	20/08/93	4425	3 OF 3

TUBE No.	SAMPLE No.	Na2O	LOI	TOTAL						
1	565704	4.31	2.52	99.90						
2	624359	3.34	6.26	99.63						
3	624360	3.92	3.92	99.99						
4	624361	1.96	5.40	100.04						
5	624363	5.24	1.99	99.60						
6	624364	3.94	4.05	99.83						
7	624365	1.04	6.61	99.70						
8	624366	3.35	3.11	99.93						
9	624367	0.68	3.59	99.73						
10	624368	4.02	2.47	99.94						
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
23	DETECTION	0.05	0.01	0.01						
24	UNITS	%	%	%						
25	METHOD	OX408	OX408	OX408						

Results in ppm unless otherwise specified
T = element present; but concentration too low to measure
X = element concentration is below detection limit
– = element not determined

AUTHORISED OFFICER

APPENDIX IV

939062

ANALABS

A Division of Inchcape Inspection and Testing Services Australia Pty. Ltd.
A.C.N. 004 591 564

Phone (004) 316837 | 14 Thirkell St. DEVONPORT TAS 7320 | Fax (004) 318890

ANALYTICAL REPORT No. 100560.60.09434

THIS REPORT MUST BE READ IN CONJUNCTION WITH THE ACCOMPANYING ANALYTICAL DATA

INVOICE TO: Aberfoyle Resources Limited
Exploration Division
P.O. Box 952
BURNIE TAS 7320

ORDER No.	PROJECT
4410	

DATE RECEIVED	RESULTS REQUIRED
14/04/93	ASAP

No. OF PAGES OF RESULTS	DATE REPORTED	No. OF COPIES	TOTAL No. OF SAMPLES
6	05/05/93	1	63

SAMPLE NUMBERS	SAMPLE DESCRIPTION	ELEMENT/METHOD
482001/482596	PU Prep : GP031	WHOLE ROCK ANALYSIS/DX408 S/OM613

RESULTS TO: Mr R de Bomford
Aberfoyle Resources Limited
Exploration Division
P.O. Box 952
BURNIE TAS 7320

RESULTS TO:

RESULTS TO:

REMARKS

LYNCHFORD (DSW) PULPS REANALYSED BY RAS FOR WHOLE ROCK.

AUTHORISED OFFICER

939063

ANALABS

A Division of Inchcape Testing Services (Australia) Pty. Ltd.
A.C.N. 004 591 684

ANALYTICAL DATA

SAMPLE PREFIX	REPORT No.	REPORT DATE	CLIENT ORDER No.	PAGE
	100560.60.09434	05/05/93	4410	1 OF 6

TUBE No.	SAMPLE No.	Al2O3	SiO2	TiO2	Fe2O3	MnO	CaO	K2O	MgO	P2O5
1	482001	16.78	59.40	0.80	7.99	0.14	1.52	2.09	3.24	0.103
2	482002	16.55	51.00	0.51	10.23	0.19	2.21	1.10	8.35	0.206
3	482003	15.99	63.20	0.51	6.34	0.08	1.04	1.67	2.71	0.320
4	482006	21.11	43.50	0.75	12.44	0.09	3.80	1.42	6.77	0.290
5	482011	9.27	75.10	0.80	5.76	0.03	0.02	1.63	3.47	0.098
6	482012	18.14	50.40	0.64	9.69	0.10	7.31	0.49	3.82	0.347
7	482013	17.23	53.20	1.05	10.93	0.17	3.16	1.54	4.23	0.109
8	482019	12.08	77.60	0.27	2.17	0.02	0.02	2.65	0.68	0.026
9	482020	21.78	48.10	0.84	8.12	0.10	0.27	1.91	4.88	0.604
10	482021	13.71	75.70	0.39	0.85	0.01	0.05	0.67	0.08	0.080
11	482022	24.73	51.30	0.96	5.07	0.02	0.03	8.03	2.27	0.640
12	482026	11.60	75.60	0.32	3.70	0.04	0.15	3.77	1.01	0.090
13	482027	13.83	71.90	0.37	4.73	0.05	0.01	3.51	1.74	0.020
14	482028	13.02	77.30	0.16	0.78	0.02	0.06	3.49	0.19	0.023
15	482030	18.50	50.70	0.67	10.83	0.12	3.69	2.45	3.91	0.313
16	482031	0.42	97.60	0.01	1.58	0.03	0.02	0.10	<0.05	0.011
	482032	15.17	75.80	0.47	1.33	0.02	0.07	4.50	0.22	0.148
18	482034	20.73	57.90	0.81	7.82	0.04	0.26	5.87	0.98	0.391
19	482035	0.16	92.90	0.01	6.09	0.01	<0.01	0.03	<0.05	0.011
20	482036	16.40	62.70	0.61	6.26	0.02	0.18	5.69	1.29	0.234
21	482038	13.96	70.70	0.59	4.70	0.05	0.14	1.93	1.46	0.242
22	482039	16.75	50.20	0.50	11.29	0.15	4.00	2.58	7.47	0.129
23	482040	16.48	55.40	1.01	10.24	0.18	2.10	2.69	5.04	0.110
24	482043	19.80	52.90	0.78	11.84	0.01	0.02	6.36	1.48	0.457
25	482045	0.55	96.80	<0.01	2.19	0.05	0.01	0.13	<0.05	0.022

Results in ppm unless otherwise specified
T = element present; but concentration too low to measure
X = element concentration is below detection limit
– = element not determined

AUTHORISED OFFICER

939064

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A Division of Inchcape Testing Services (Australia) Pty. Ltd.
A.C.N. 004 591 664

ANALYTICAL DATA

SAMPLE PREFIX	REPORT No.	REPORT DATE	CLIENT ORDER No.	PAGE
	100560.60.09434	05/05/93	4410	2 OF 6

TUBE No.	SAMPLE No.	Al2O3	SiO2	TiO2	Fe2O3	MnO	CaO	K2O	MgO	P2O5
1	482046	25.17	49.40	0.86	9.86	0.02	0.02	7.15	0.79	0.207
2	482047	10.29	68.60	0.33	7.91	0.18	2.86	0.98	2.79	0.285
3	482049	25.68	48.80	0.71	8.95	0.89	0.08	3.72	0.51	0.198
4	482051	18.45	44.00	0.72	13.17	0.15	0.24	3.53	10.91	0.491
5	482053	20.47	53.80	0.67	11.02	0.07	0.02	5.33	1.30	0.187
6	482054	12.12	62.80	0.32	7.15	0.12	4.65	1.93	4.78	0.133
7	482055	17.48	53.20	1.13	12.70	0.07	0.06	1.46	2.64	0.190
8	482056	21.19	46.00	0.77	12.44	0.15	3.62	1.62	3.89	0.325
9	482060	17.79	49.50	0.68	11.56	0.14	4.00	2.27	5.11	0.539
10	482061	9.76	71.20	0.88	6.44	0.03	0.02	1.05	5.01	0.037
11	482062	25.01	42.30	0.71	10.42	0.09	0.03	3.08	5.18	0.162
12	482063	20.17	50.60	0.77	11.47	0.15	0.13	1.55	3.74	0.405
13	482064	20.48	51.70	0.91	11.03	0.05	0.18	4.32	0.92	0.774
14	482065	16.37	50.90	0.58	10.77	0.15	6.36	1.74	5.71	0.221
15	482066	0.33	92.30	0.01	6.52	0.01	0.03	0.05	<0.05	0.009
16	482068	4.13	11.60	0.27	64.34	0.03	0.02	0.14	<0.05	0.129
	482070	20.87	48.80	0.92	13.73	0.08	0.30	4.03	0.72	0.845
18	482071	14.29	66.70	0.44	5.75	0.07	2.66	3.19	2.07	0.084
19	482073	15.02	49.30	0.52	11.87	0.15	5.55	1.54	8.43	0.311
20	482074	17.47	50.10	0.79	9.58	0.12	7.62	1.26	4.55	0.879
21	482077	14.06	50.50	0.54	11.25	0.15	6.90	1.37	8.19	0.376
22	482078	17.91	64.10	0.69	3.96	0.04	0.23	1.11	1.19	0.202
23	482079	22.06	49.20	0.84	9.61	0.16	1.08	3.61	4.40	0.545
24	482080	16.46	49.80	0.53	13.23	0.16	4.17	1.57	6.20	0.284
25	482081	18.81	52.70	0.54	8.06	0.10	2.25	0.38	2.08	0.453

Results in ppm unless otherwise specified
T = element present; but concentration too low to measure
X = element concentration is below detection limit
– = element not determined

AUTHORISED OFFICER

939065

ANALABS

A Division of Inchcape Testing Services (Australia) Pty. Ltd.
A.C.N. 004 591 664

ANALYTICAL DATA

SAMPLE PREFIX	REPORT No.	REPORT DATE	CLIENT ORDER No.	PAGE
	100560.60.09434	05/05/93	4410	3 OF 6

TUBE No.	SAMPLE No.	Al2O3	SiO2	TiO2	Fe2O3	MnO	CaO	K2O	MgO	P2O5
1	482084	15.46	45.10	0.91	12.60	0.12	0.84	1.00	9.44	0.373
2	482085	26.06	49.80	0.83	5.94	0.02	0.05	6.44	1.70	0.194
3	482087	18.97	48.10	0.61	11.29	0.12	2.53	1.03	7.61	0.235
4	482088	14.04	71.90	0.54	2.75	0.03	1.87	0.13	0.26	0.221
5	482092	13.32	73.40	0.42	2.91	0.04	0.05	2.21	0.96	0.043
6	482093	0.63	91.50	<0.01	6.23	0.01	0.01	0.02	<0.01	0.021
7	482097	14.76	70.70	0.53	2.36	0.04	1.99	0.12	0.08	0.414
8	482099	14.98	50.50	0.67	12.26	0.14	4.32	1.76	6.93	0.459
9	482592	18.69	50.00	0.64	17.54	0.02	0.01	6.09	1.25	0.077
10	482593	17.72	42.20	0.72	26.08	0.02	0.01	5.82	1.35	0.072
11	482594	24.31	53.50	0.76	6.99	0.20	0.03	3.63	0.97	0.171
12	482595	14.07	67.20	0.44	8.69	0.52	0.05	3.98	0.58	0.252
13	482596	15.25	29.00	0.62	30.11	0.02	0.01	5.21	1.19	0.062
14										
15										
16										
17										
18										
19										
20										
21										
22										
23	DETECTION	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.05	0.005
24	UNITS	%	%	%	%	%	%	%	%	%
25	METHOD	OX408	OX408	OX408	OX408	OX408	OX408	OX408	OX408	OX408

Results in ppm unless otherwise specified
T = element present; but concentration too low to measure
X = element concentration is below detection limit
- = element not determined

AUTHORISED OFFICER

939066

ANALABS

A Division of Inchcape Testing Services (Australia) Pty. Ltd.
A.C.N. 004 591 864

ANALYTICAL DATA

SAMPLE PREFIX	REPORT No.	REPORT DATE	CLIENT ORDER No.	PAGE
	100560.60.09434	05/05/93	4410	4 OF 6

TUBE No.	SAMPLE No.	S	S	Na2O	LOI	TOTAL				
1	482001	0.026	-	5.31	2.90	100.33				
2	482002	0.016	-	3.96	5.75	100.07				
3	482003	0.011	-	5.03	3.10	99.99				
4	482006	0.016	-	2.76	7.40	100.35				
5	482011	<0.005	-	0.67	3.13	99.98				
6	482012	0.702	0.750	5.21	3.47	100.34				
7	482013	0.014	-	4.82	3.50	99.97				
8	482019	<0.005	-	1.74	2.61	99.92				
9	482020	0.041	-	4.59	8.97	100.26				
10	482021	<0.005	-	5.79	2.52	99.85				
11	482022	0.014	-	0.11	6.42	99.60				
12	482026	<0.005	-	3.06	0.89	100.23				
13	482027	0.010	-	0.11	4.05	100.37				
14	482028	0.010	-	3.15	2.11	100.33				
15	482030	0.140	0.140	4.92	3.74	99.98				
16	482031	0.017	-	<0.05	0.20	99.99				
	482032	0.022	-	0.23	2.39	100.37				
18	482034	0.021	-	0.19	4.68	99.67				
19	482035	0.017	-	<0.05	0.37	99.61				
20	482036	2.640	3.150	0.37	5.64	102.01				
21	482038	0.043	-	2.02	3.89	99.72				
22	482039	0.026	-	1.72	5.28	100.11				
23	482040	0.060	0.060	3.21	3.55	100.07				
24	482043	0.036	-	0.14	6.44	100.30				
25	482045	<0.005	-	<0.05	0.34	100.13				

Results in ppm unless otherwise specified
T = element present; but concentration too low to measure
X = element concentration is below detection limit
- = element not determined

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939067

ANALABS

A Division of Inchcape Testing Services (Australia) Pty. Ltd.
A.C.N. 004 591 664

ANALYTICAL DATA

SAMPLE PREFIX	REPORT No.	REPORT DATE	CLIENT ORDER No.	PAGE
	100560.60.09434	05/05/93	4410	5 OF 6

TUBE No.	SAMPLE No.	S	S	Na2O	LOI	TOTAL				
1	482046	0.028	-	0.31	5.88	99.74				
2	482047	0.026	-	0.38	5.24	99.82				
3	482049	0.040	-	0.26	9.91	99.72				
4	482051	0.016	-	0.50	8.08	100.26				
5	482053	0.027	-	0.17	6.73	99.84				
6	482054	0.009	-	2.86	2.87	99.76				
7	482055	0.016	-	1.24	9.60	99.79				
8	482056	0.012	-	3.84	6.42	100.30				
9	482060	0.009	-	3.92	4.69	100.20				
10	482061	0.007	-	0.43	4.83	99.69				
11	482062	0.012	-	0.22	12.90	100.07				
12	482063	0.024	-	4.88	5.97	99.87				
13	482064	0.037	-	2.42	7.40	100.18				
14	482065	0.008	-	3.42	3.77	100.00				
15	482066	<0.005	-	<0.05	0.23	99.57				
16	482068	0.530	0.540	0.20	18.44	99.87				
17	482070	0.021	-	1.25	8.17	99.69				
18	482071	0.041	-	2.23	2.41	99.92				
19	482073	0.008	-	2.41	5.05	100.14				
20	482074	0.108	0.110	4.54	2.99	99.96				
21	482077	0.006	-	2.13	4.69	100.14				
22	482078	0.018	-	6.41	4.01	99.87				
23	482079	0.020	-	1.61	6.86	100.00				
24	482080	0.023	-	3.57	3.80	99.79				
25	482081	0.044	-	5.87	8.44	99.73				

Results in ppm unless otherwise specified
T = element present; but concentration too low to measure
X = element concentration is below detection limit
- = element not determined

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939068

ANALABS

A Division of Inchcape Testing Services (Australia) Pty. Ltd.
A.C.N. 004 591 664

ANALYTICAL DATA

SAMPLE PREFIX	REPORT No.	REPORT DATE	CLIENT ORDER No.	PAGE
	100560.60.09434	05/05/93	4410	6 OF 6

TUBE No.	SAMPLE No.	S	S	Na2O	LOI	TOTAL				
1	482084	0.015	-	0.24	13.58	99.64				
2	482085	0.029	-	0.26	8.61	99.89				
3	482087	0.015	-	0.97	8.46	99.93				
4	482088	0.025	-	5.84	2.62	100.18				
5	482092	0.010	-	2.85	3.49	99.72				
6	482093	<0.005	-	<0.05	1.21	99.66				
7	482097	0.012	-	6.75	1.85	99.61				
8	482099	<0.005	-	3.14	4.67	99.83				
9	482592	0.040	-	0.34	5.15	99.87				
10	482593	0.100	0.100	0.21	5.75	100.08				
11	482594	0.050	-	0.12	9.44	100.20				
12	482595	0.012	0.015	0.05	4.08	99.92				
13	482596	6.447	23.600	0.13	18.79	106.85				
14										
15										
16										
18										
19										
20										
21										
22										
23	DETECTION	0.005	0.005	0.05	0.01	0.01				
24	UNITS	%	%	%	%	%				
25	METHOD	OX408	OM613	OX408	OX408	OX408				

Results in ppm unless otherwise specified
T = element present; but concentration too low to measure
X = element concentration is below detection limit
- = element not determined

AUTHORISED OFFICER

APPENDIX V

MACKINTOSH 51

Logistics report for an heliborne magnetic and radiometric survey over MacIntosh, Anthony Basin & Lynchford areas Western Tasmania for Aberfoyle Resources Limited

Job No 3-445

May 1993

Geoterrex Pty Ltd
7-9 George Place
Artarmon NSW 2064

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INTRODUCTION

From 1-25 March 1993, Geoterrex Pty Ltd conducted an heliborne magnetometer and spectrometer survey over three areas on the Franklin and Sophia 1:100,000 sheets in Tasmania (See Appendix D) for Aberfoyle Resources Ltd. This report summarises the logistics, survey parameters, calibration procedures and processing details of the survey.

A total of 1,620 line kilometres were flown over three areas for Aberfoyle Resources:

1) **MacKintosh:** 1,087 line kilometres

2) **Anthony Basin:** 340 line kilometres

3) **Lynchford:** 193 line kilometres

A line spacing of 100 metres was used. Both magnetic and radiometric data was collected by helicopter. Preliminary in-field processing was undertaken with final processing at Geoterrex's processing centre in Sydney.

The bases of operations were Que River Mine and Queenstown, Tasmania.

PART 1
Survey operations summary

Type of survey:	Magnetic and radiometric	
Base of operations:	**Area 1:**	Que River Mine
	Area 2/3:	Queenstown
Aircraft:	Aerospatiale Squirrel 350B	
Survey Area(s) Name:	**Area 1:**	Mackintosh
	Area 2:	Anthony Basin
	Area 3:	Lynchford
Approximate Survey Size:	**Area 1:**	1,087 Line Kilometres
	Area 2:	*340 Line Kilometres*
	Area 3:	193 Line Kilometres
Flight Line Direction:	**Area 1:**	112° AMG
	Area 2:	90° AMG
	Area 3:	90° AMG
Line Spacing:	100 Metres	
Tie Line Direction:	Orthogonal to traverse lines	
Tie Line Spacing:	1,000 Metres	
Minimum Line Length:	3 Kilometres	
Minimum In-fill Line Length:	3 Kilometres	
Navigation:	DGPS	
Nominal sensor terrain clearance:	80 metres, above tree canopy	
Nominal aircraft speed:	40 metres per second	

Field Personnel:

Pilot:	D Wood
Navigator:	J Sparkman
Electronics Technician:	D Lyus
Project Manager and Data Compiler:	T Donnollan

Table 1: Survey Progress

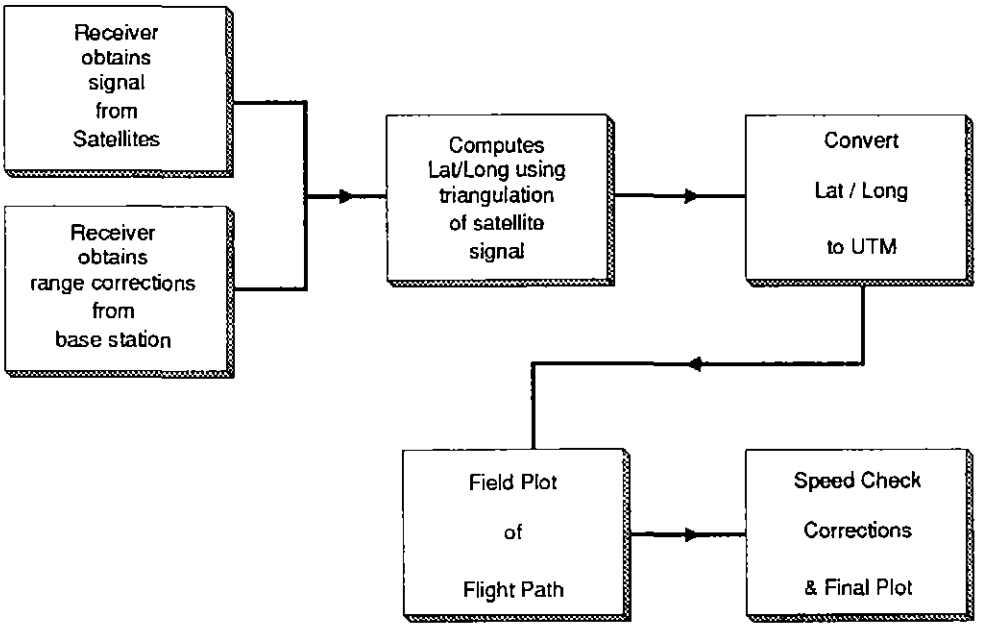
Date	Flight	Production/ shared days	Progress
26-28 February	-	-	System installation
1 March	-	x	Move to Que River Mine
2 March	-	-	Weather day
3 March	-	x	Installed DGPS beacon
4 March	1	P Area 1	Tie lines
5 March	2	P Area 1	Traverse lines
6 March	3	P Area 1	Traverse lines
7 March	4	P Area 1	Traverse lines
8 March	5/6	x Area 1	Flight 5 lag test
9-20 March	Flights for another survey		
21 March	7	x Area 2	
22 March	8	x Area 2	
23 March	-	-	Weather day
24 March	9	P Area 2 & 3	
25 March	10	x Area 3	

Total number of days:

Production (P):	5
Shared (x):	6
TOTAL:	**11**

PART 2
Flight path recovery

DGPS Navigation System Procedures



The DGPS receiver mounted in the aircraft determines which satellites are in operation and receives a signal from them. The base station transmits range corrections to the aircraft receiver, which it applies as it uses 3D triangulation of the satellite response to calculate its position in real time as well as providing the pilots with steering information. The DGPS information is stored digitally as Latitudes and Longitudes (Lat / Longs) and later converted to Universal Transverse Mercator (UTM) co-ordinates.

The DGPS data is read into the field computer and plotted on a daily basis to ensure data quality control and to determine any necessary reflights.

PART 3
Equipment and specifications

3.1) MAGNETOMETER

Model: Scintrex cesium vapour optical absorption magnetometer

Mounting: Towed Bird

Sample interval: 0.1 seconds

Sensitivity: 0.05 nT

Average noise: The average noise for the survey data is calculated from the fourth difference monitor using the equation:
(Fourth difference noise envelope)/16 = Average Data Noise

System parallax: The system parallax was determined in a test flight (see Section 4 and Appendix A)

3.2) GAMMA RAY SPECTROMETER

Model: Nuclear Data ADC/ND-560

Detectors: 4 Harshaw all viewing 2 pi NaI(Tl) crystals, totalling 16.8 litres. Crystals, photomultiplier tubes and preamplifiers are all mounted in temperature controlled, insulated compartments.

Sample interval: 1 second

Number of channels: 256

Synchronisation: The spectrometer sample is allocated to the time recorded at the end of the sample interval.

Window definitions:

Total Count	-	Channel 68 to 255
Potassium	-	Channel 116 to 133
Uranium	-	Channel 141 to 158
Thorium	-	Channel 206 to 240
Cosmic	-	Channel 0

Nominal window MeV Ranges:

Total Count	-	0.4 to 3.0 MeV	
Potassium	-	1.35 to 1.57 MeV	(K40, 1.46 MeV)
Uranium	-	1.63 to 1.89 MeV	(Bi214, 1.76 MeV)
Thorium	-	2.42 to 2.82 MeV	(Tl208, 2.615 MeV)
Cosmic	-	3.0 - 6.0 MeV	

* NOTE Due to crystal problems the Macintosh area was flown using a detector crystal volume of 12.6 litres. The other two area were flown with a full crystal volume.

3.3) GROUND MAGNETOMETER BASE STATION

Sensor:	Proton Precession
Magnetometer:	Geometrics G856
Sample interval:	5 seconds
Sensitivity:	0.1 nT
Full scale deflection:	50 nT

The base station was used to monitor the diurnal field. The sensor was placed in a suitable position which minimises the effects of high magnetic gradients and man-made interference.

3.4) ALTIMETERS

Radar altimeter

Model:	Sperry Stars AA100 radio altimeter system
Sample interval:	1.0 second
Accuracy:	+/- 1.5% (+/- 1m at 60m)
Synchronisation:	The average of the output of the altimeter over each second is calculated and assigned to the time recorded at the end of each sample.

Barometric altimeter

Model:	Rosemount 840F pressure altimeter
Sample interval:	1.0 second
Sensitivity:	5 mv per foot

3.5) TRACKING CAMERA

Model: Sony DXC101P Video Camera with a Panasonic video recovery system

The tracking camera is equipped with a 4 mm wide-angle lens. The video tape is synchronised with the geophysical record by a digital fiducial display that increments every second. These fiducials are recorded on the video tape and displayed on the bottom left of the video screen. Times are recorded from the digital information provided by the MADACS system.

3.6) POSITIONING/NAVIGATION SYSTEM

Model:	2 Sercel NR103 mobile DGPS receiver and antennae mounted in aircraft and equipped with pilot steering indicator
Reference station:	1 Sercel NDS100 portable differential station UHF and DGPS antennae
Base station:	DGPS base station with lap top data logger

3.7) DATA ACQUISITION SYSTEM

Model: Geoterrex Pty Ltd MADACS

The MADACS is a computer based software system that is used to control and command the operations of all the ancillary equipment. This includes the magnetometer, spectrometer, camera, altimeter, tape drive and analogue chart recorder. The system has the following features.

Communication system

The MADACS uses a lap top operating as a terminal for operator-system communication. Recorded spectrum are monitored via an oscilloscope trace during acquisition.

Software system

Program: MS8

The key feature of this system is that all data collection, verification, buffering, and recording is software-controlled. Therefore, the acquisition system may be economically altered to fit almost any requirement. Critical parameters are automatically monitored during flight, with visual and aural alarms provided for the operator.

Survey parameters are displayed during flight in their correct physical units, simplifying operator analysis. The survey program operates on a request-response basis, with the system pre-empting the operator and rejecting all illegal responses.

Tape Drive

Model: Kennedy 800

The tape drive has a feature which allows checking of the recording process as many times as the particular application permits.

Precision Clock

The system is controlled by a precision clock which allows data to be collected at any multiple of 0.1 seconds. Time is digitally recorded as a six-figure number called a "fiducial". A fiducial number equals the real time in tenths of seconds after midnight, for example, 000000 corresponds to midnight and 360000 corresponds to 10.00am. Fiducials are generated on digital tape, video or film and analogue charts at ten second intervals. The fiducial numbers are calculated from the clock time by the computer.

Computer

Model: Interdata 6/16 mini-computer.

Multiple buffers permit recording, processing and acquisition of data to be carried out simultaneously with no dead time. The computer has the following interfaces:

- **Digital Input/Output Bus** This bus is capable of recording from, writing to, testing and controlling 16 external digital devices.
- **ADC / DAC.** This interface is a caesium analogue to digital converter and a digital to analogue converter.
- **Magnetic Tape Controller** This interface/controller is capable of handling four 9-track NRZI tape transports. Tapes are written in an IBM compatible binary format with full parity, cyclic redundancy and longitudinal check characteristics.
- **Magnetometer Interface** This interface converts the signal from the high sensitivity caesium vapour magnetometer into a format acceptable to the MADACS.
- **Camera Controller** The interface allows the MADACS to control and monitor all aspects of the tracking camera's operation and can synchronise timing and navigation data to the video tape.
- **Operator's Console** This interface provides communication between the operator and the system. While on line during survey, all parameters are continuously displayed on the monitor unless the system senses an abnormal condition in which case a diagnostic message and the time sensed are displayed. The message remains until acknowledged by the operator.

Recorded Digital Data

Each second:
Flight number
Time
Radar Altitude
Barometric Altitude
Positioning data
Spectrometer windows
256 channels of radiometric data
Live time

Each 0.1 seconds: Total magnetic field

Tape formats are documented in Appendix B.

3.8) ANALOGUE CHART RECORDER

Model: RMS GR33 Thermal Dot Matrix Printer
Chart speed: 10 cm/minute; time increases from left to right
Chart width: 30 cm
Event marks: 10 second marks are recorded on both sides of the chart with the associated fiducial numbers being printed at the base of the chart.

Channels recorded & full-scale values:

Total magnetic field:	
Fine scale:	100 nT
Coarse scale:	1000 nT
Magnetic field fourth difference:	+/-20 nT
Terrain clearance:	200 metres
Total Count:	2000 counts/sec
Potassium Count:	250 counts/sec
Uranium Count:	100 counts/sec
Thorium Count:	100 counts/sec
Cosmic Count:	500 counts/sec

All fields increase in value towards the top of the chart.

Zero Positions: These zero positions are annotated on the analogue sample. The zero position of each radiometric channel is calibrated automatically at the start of each line. Between lines each trace resides in its mid-range position.

Synchronisation: No lags occur between traces, other than that which occurs between the magnetic field and its fourth difference.

Compton Effect Corrections: The analogue radiometric channels have been Compton corrected using:

Alpha (Thorium into Uranium)	-	0.443
Beta (Thorium into Potassium)	-	0.424
Gamma (Uranium into Potassium)	-	0.695

The radiometric data recorded on the field tapes has not been corrected.

Cosmic Background correction: The analogue radiometric channels have been corrected in real time, for aircraft and cosmic background using the equations set out in Section 4.

An annotated sample analogue record is shown in Figure 1.

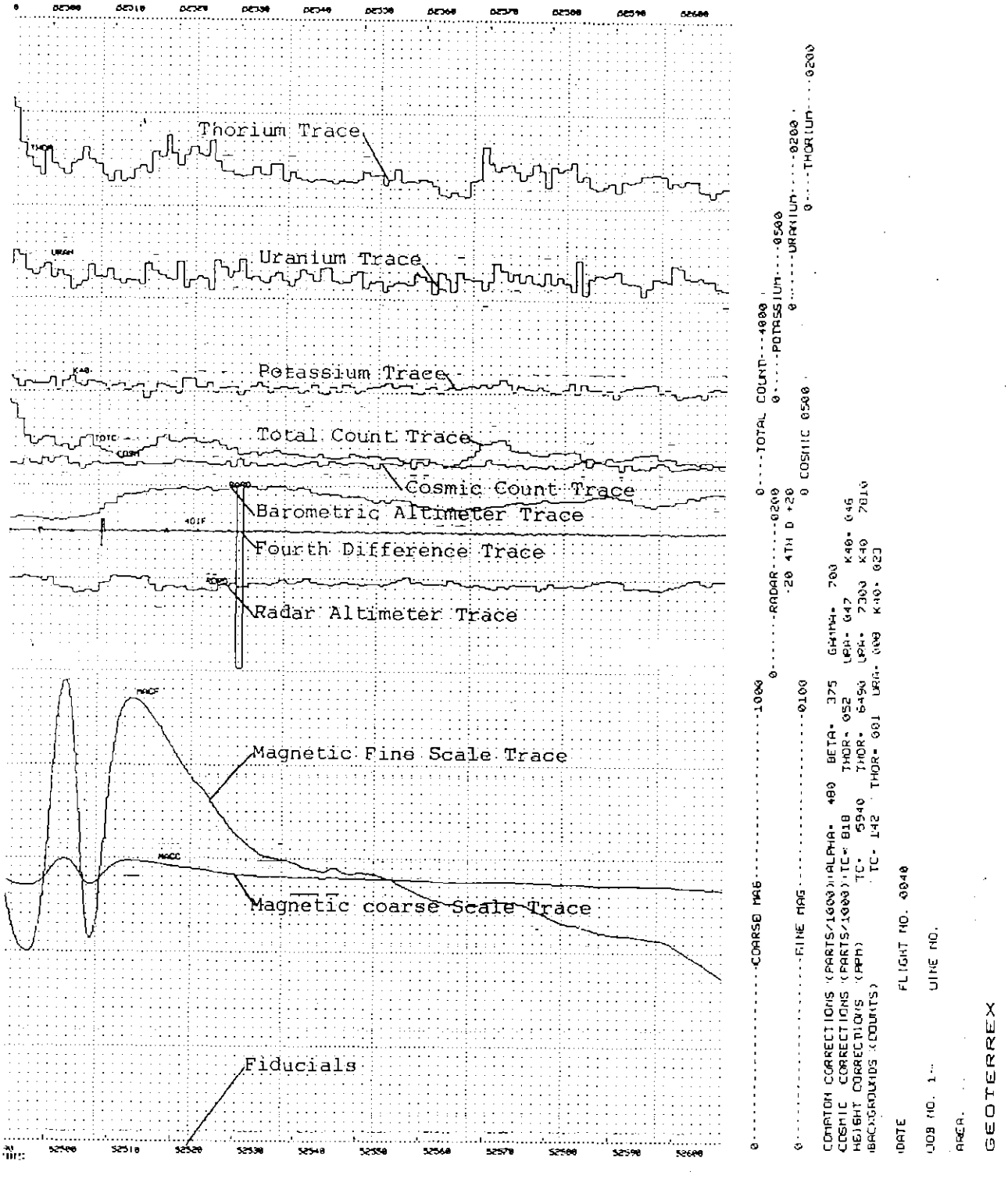


Figure 1 Sample analogue record

PART 4
Calibration procedures and results

4.1) MAGNETOMETER

The following calibration tests were carried out on the magnetometer.

Parallax (also referred to as 'Lag Test')

This test was carried out on 8 March 1993. The aircraft was flown in opposite directions over a sharp magnetic anomaly with the tracking camera and magnetometer operating. The video system records the fiducial (time and X-Y position) of the body which was the source of the sharp magnetic anomaly. When this was compared to the fiducial (time and X-Y position) of the sharp magnetic anomaly recorded on the digital tape a difference of 1.0 seconds was found. Therefore a parallax correction of this magnitude and sense was applied to the magnetic data only.

4.2) SPECTROMETER

The following checks and determinations were carried out for the radiometric data.

Pre and Post-flight Source Check Procedures

- Pre and post-flight U and Th source checks with samples in a standard position relative to the crystals and the aircraft in a standard parking position - recorded for 100 seconds.
- Pre and post-flight test line recorded at survey altitude.

The results of the pre and post-flight uranium and thorium source checks can be found in Appendix A. A sample of the spectra plotted with each uranium and thorium source check is presented in Appendix A, Figure A1.

Compton Stripping Coefficients

These coefficients have been recently determined and adjusted from 23 source checks conducted during the survey in June 1992.

They are:	**Alpha**	-	0.421 +/- 0.015
	Beta	-	0.411 +/- 0.024
	Gamma	-	0.678 +/- 0.038
	Delta	-	0.036 +/- 0.017

Background Determination

This test was carried out on 26 March 1993 to determine the relationship between cosmic events (energies greater than 3.0 MeV) and counts recorded in other channels. The test was flown overland with the spectrometer system correctly calibrated as for survey work. Data was recorded at 2000 foot intervals from 2000 feet to 10000 feet ASL.

The best fit linear equations for these tests are:

Th	background	=	0.056 x Cosmic + 0.88
U	background	=	0.049 x Cosmic + 5.36
K	background	=	0.052 x Cosmic + 9.26
TC	background	=	0.825 x Cosmic + 84.84

where: **cosmic** = counts of energies greater than 3.0 MeV stored in channel 0.
 # background = counts to be subtracted from window #.

Graphs of these equations are presented in Appendix A (Figure A2).

Height Attenuation Coefficients

Since no height attenuation calibrations were required for the temporary helicopter installation, those used for Geoterrex's permanent fixed wing spectrometer system were used. They were determined using the following procedure:

a) An area with "homogeneous" radioactivity, high count rates and relatively flat terrain was selected.

b) An easily repeatable line was flown over this area at eight different altitudes: 200 feet, 250 feet, 300 feet, 400 feet, 500 feet, 600 feet, 700 feet and 800 feet. The spectrometer was correctly calibrated for this test flight.

c) Sections of each line sharing the most constant terrain clearance and count rate were selected for data processing.

d) The altitude data for each line section was corrected using the altitude calibrations recorded on the same flight, and averaged.

e) The radiometric data for each line section was background corrected using a height correction for alpha. The resultant data was averaged.

f) The resulting count rates in each channel were plotted and attenuation coefficients suitable for an air temperature of 21°C were determined.

Graphs of the results can be found in Appendix A (Figures A3).

The coefficients are:	Total count	0.00630 per metre
	Potassium count	0.00768 per metre
	Uranium count	0.00595 per metre
	Thorium count	0.00643 per metre

During all spectrometer tests the data used is the window data recorded on field tapes. The widths of these windows are specified in Section 3.2.

Resolution

The resolution of the spectrometer is defined as the full width of the Thorium peak at its half peak height position, expressed as a percentage of the peak MeV value. The spectrometer resolution was checked before during and after the survey. The results give an average of 5.63%. Appendix A (Figure A4) is a copy of a sample source check.

4.3) ALTIMETER

The Sperry radio altimeter is a high quality instrument whose output is factory calibrated. It is fitted with a test function which checks the calibration of a terrain clearance of 100 feet and altitudes which are multiples of 100 feet. Calibration of the recorded terrain clearance, both analogue and digital, with respect to the altimeter reading is carried out using a potentiometer to vary the reading while recording the altimeter's output.

The results of an altimeter calibration carried out in March 1993 are presented in Table 2. A graph of the results is presented in Figure 3. Regression analysis provides a line of best fit for values less than 500' and another for values greater than 500'. These have been included on the graph, and the equations are:

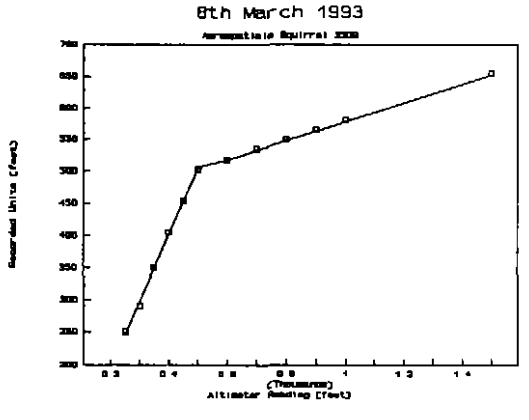
< 500' Recorded Units = 1.04 * Altimeter Reading - 13.4
> 500' Recorded Units = 0.15 * Altimeter Reading + 428

Barometric altitude was also recorded to provide an absolute measure of aircraft altitude rather than aircraft terrain clearance which is measured by the radio altimeter.

Table 2: Altimeter calibration results

Indicated Alt (feet)	**Recorded Radar Alt** (feet)
250	250
300	290
350	350
400	405
450	455
500	503
600	518
700	535
800	550
900	565
1000	580
1500	655

Figure 3: Altimeter calibrations



PART 5
Data processing

5.1) FIELD TAPES

These are recorded in binary format and are compacted and reformatted in binary code. The following information is transferred to a file as the Compacted Field Tape (CFT).

- flight path
- magnetic reading (0.1 nT)
- radiometric data (256 channels)
- radar altimeter (feet)
- barometric altimeter (feet)
- fiducial (time in tenth seconds after midnight)
- DGPS co-ordinates

All channels are checked and edited for single reading spikes and recording gaps, any single reading spikes are removed manually.

5.2) DATA TAPES

Located Data Tape

A levelled located data tape, containing all traverse line, tie line and calibration line data, was recorded in 9-track ASCII code at a density of 6250 bpi in a format described in Appendix B.

Gridded data tape

Gridded data in ER Mapper format with accompanying header files was provided for processed radiometric channels potassium, thorium, uranium and total count and for levelled magnetic data. These files were provided on QIC 150 megabyte cartridge.

5.3) FLIGHT PATH

Processing of the flight path consisted of generating a speed report of the DGPS flight path that was checked for erroneous points by comparing the average aircraft speed between adjacent fixes (being real time values in seconds) and the average speed for the entire line. Significant speed changes over short intervals were noted and the DGPS data was checked for errors and corrected where necessary.

The following convention is used for line number: 101/2N

where the number preceding the decimal is the line number (eg. 101)
the number following the decimal is the part number (eg. the line was the second flight along that line)
the letter represents the flight direction (eg flown to the north)

Lines 101 - 152 are traverse lines for Lynchford. Lines 701 - 704 are tie lines for Lynchford
Lines 201 - 292 are traverse lines for Anthony Basin. Lines 711 - 714 are tie lines for Anthony Basin
Lines 301 - 505 are traverse lines for Macintosh. Lines 721 - 732 are tie lines for Macintosh

5.4) MAGNETIC DATA

a) Corrections

Levelling

The aeromagnetic data is levelled by diurnal subtraction. The base station data is edited and checked for level shifts. This data is then synchronised to the airborne data for subtraction.

International Geomagnetic Reference Field

The International Geomagnetic Reference Field known as IGRF (1990) is subtracted from the data and a datum of 2000 nanoteslas is then added to ensure that there are no negative magnetic values before contouring.

b) Product Specifications

Gridding and Contouring

Grid mesh size:	25 x 25 metres			
Grid filter:	None			
Contour maps:	Horizontal scale	-	1:10,000	
	Contour interval	-	**Area 1:**	2, 20, 200 nT
			Area 2:	2, 20, 200 nT
			Area 3:	2, 20, 200 nT
Stacked magnetic profile maps:	Horizontal scale	-	1:10,000	
	Vertical scales	-	**Area 1:**	5,50 nT/cm*
			Area 2:	50 nT/cm
			Area 3:	50 nT/cm

* The three northern sheets plotted with a vertical scale of 5 nT/cm
The three southern sheets plotted with a vertical scale of 50 nT/cm

5.5) RADIOMETRIC DATA

a) Corrections

The radiometric data was corrected for:

i) Spectrometer dead time

"Dead time" is the fraction of 1 second when the spectrometer is actually counting the energy levels and not registering the incoming counts. A typical "dead time" is 15 msecs in a 1 second sample period.

ii) Cosmic effect and aircraft background

Through test flying outlined in Section 4, Geoterrex Pty Ltd has established the coefficients for the linear relationship between the incoming cosmic counts (energies greater than 3 MeV) and their contribution to the background in each window.

iii) Changes in ambient air temperatures

The effects of changing air temperature are incorporated in the notion of a temperature corrected altitude that will be used in other calculations. The field operator records the outside temperature at regular intervals throughout each flight while at survey altitudes.

iv) Compton scattering

After testing the Compton stripping coefficients determined from the calibration procedures outlined in Section 4, new values were chosen to minimise over compensation for the actual interchannel relationships on each survey line which were found to be less than the ideal relationship measured on the ground during calibration. The values used were:

Alpha	-	0.421
Beta	-	0.411
Gamma	-	0.678
Delta	-	0.036

It should be noted that alpha coefficient is height dependent under the linear relation:

true alpha = ground + 0.02 + 0.00025 x height

v) Height attenuation

To minimise the possibility of over correcting the data for height variations, an altitude tapering function was applied. The data was attenuated to approximately the mean survey terrain clearance minus one standard deviation (110 metres). Tapering began at 175 metres and finished at 200 metres, so for altitudes greater than 200 metres the data was corrected as if it had been collected at 200 metres.

Attenuation constants:

Total count	-	0.00630
Potassium	-	0.00768
Uranium	-	0.00595
Thorium	-	0.00643
Alpha	-	0.00076

b) Production specifications

Gridding and contouring

Grid mesh size: 25 x 25 metres
Grid filter: None
Full colour map for each radiometric channel
Map scale: **Area 1:** 25,000
Area 2: 25,000
Area 3: 10,000

PART 6
Items delivered

- Logistics Report

- Final Flight Path Maps on film at 1:10,000 scale
  Final Residual Magnetic Contour Maps on film at 1:10,000 scale
  Final Residual Magnetic Profile Maps on film at 1:10,000 scale
  Laminated radiometric colour maps for each channel at appropriate scale

- Binders containing Analogue Charts
  Diurnal charts

- Located Data Tape
  Gridded Data in ER Mapper Format on QIC 150 Mb cartridge

- Flight Logs and Index
  Mileage listing
  Recovered Line Listing
  Tracking videos

APPENDIX A: SPECTROMETER CALIBRATION DATA

Flight		Pre Flight		Post Flight	
		U Source	Th Source	U Source	TH Source
1	U count	8374	7295	8211	6735
	Th count	412	16059	304	15956
	K count	6115	7144	5772	7913
	Total count	89414	206206	88502	206468
2	U count	8715	7021	8224	6723
	Th count	392	16222	203	15949
	K count	6124	7692	6124	7861
	Total count	88942	206891	89292	205350
3	U count	8369	7425	8477	6927
	Th count	348	16070	344	15927
	K count	6071	7211	6278	7663
	Total count	88300	205838	89090	206174
4	U count	8636	7187	8500	7093
	Th count	486	16162	450	15941
	K count	6190	7408	6243	7485
	Total count	89618	205940	89404	206762
8	U count	10755	8800	10741	9248
	Th count	528	20006	316	19927
	K count	7755	9564	7594	9197
	Total count	110265	254740	111763	255522
9	U count	11051	9031	11008	9388
	Th count	248	19905	423	19227
	K count	7822	9336	7593	8885
	Total count	112759	254150	111954	255755

FIGURE A1(i) - SAMPLE SOURCE CHECK - URANIUM SOURCE

FIGURE A1(ii) - SOURCE CHECK - THORIUM SOURCE

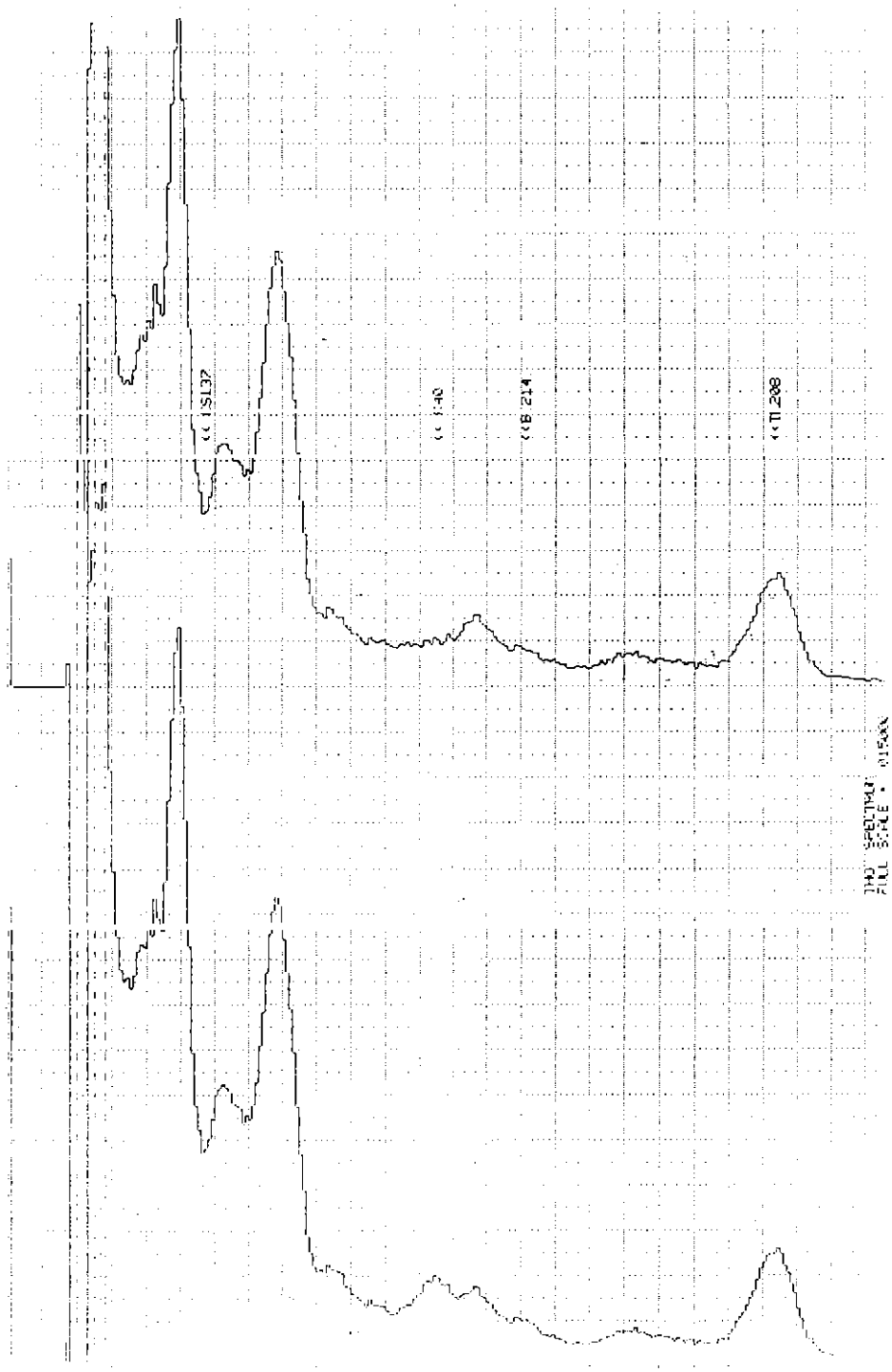


FIGURE A2 COSMIC BACKGROUND TESTS

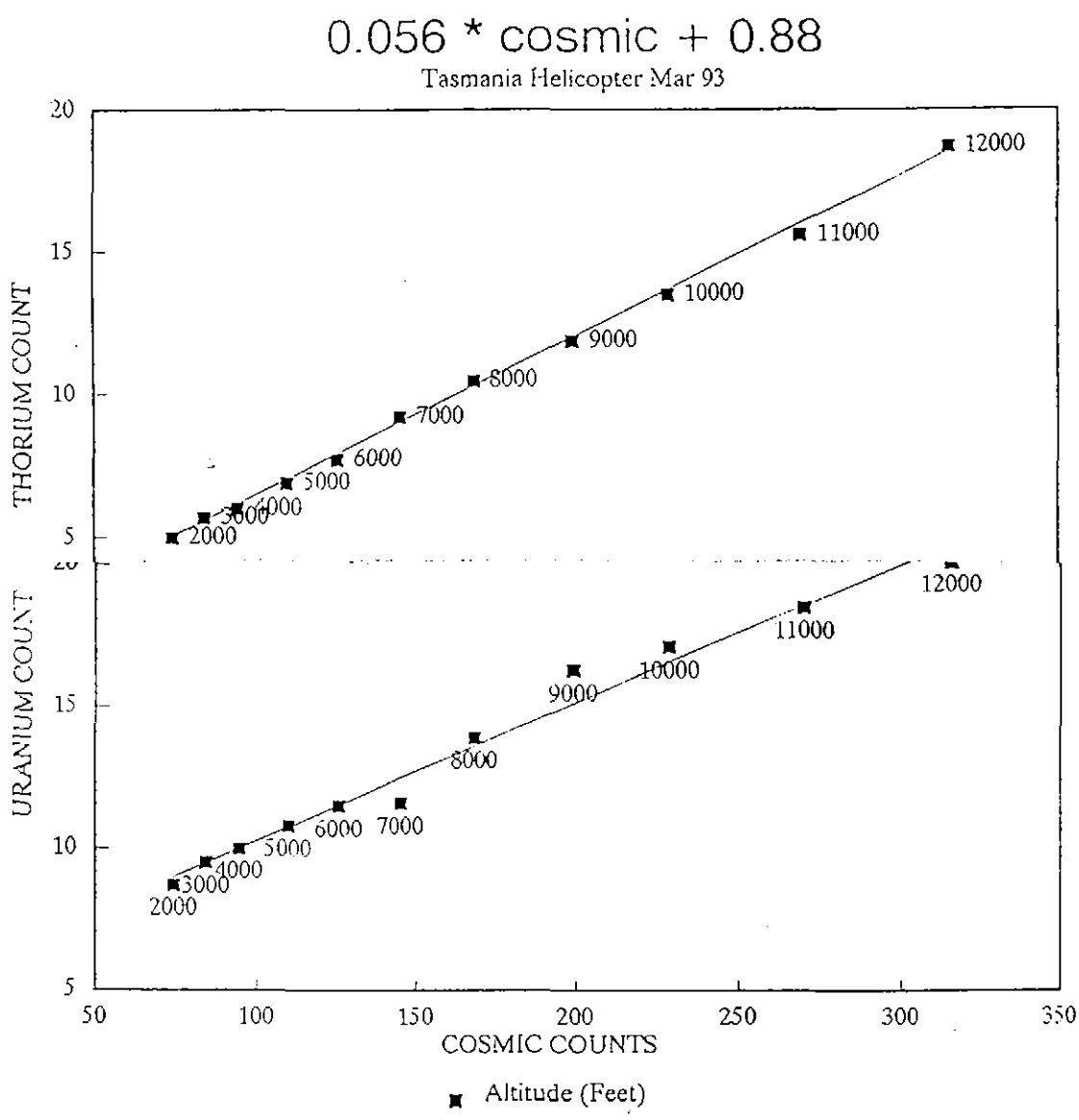
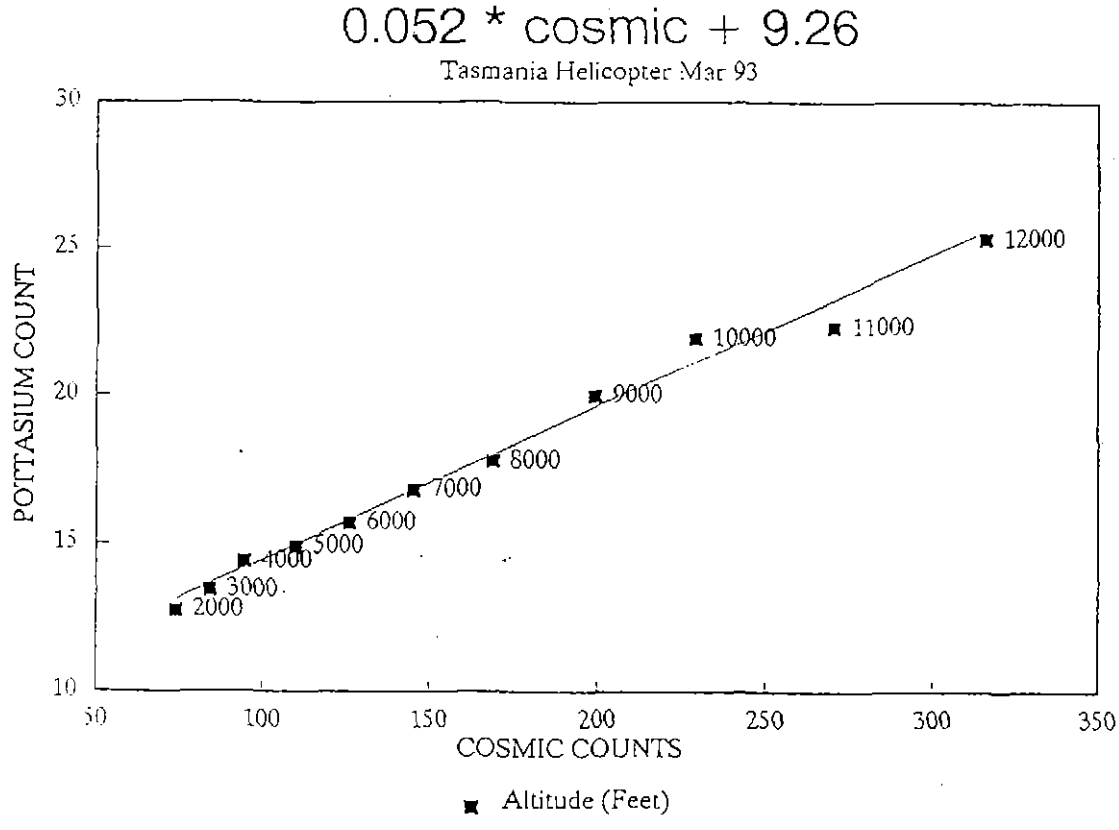


FIGURE A2 COSMIC BACKGROUND TESTS



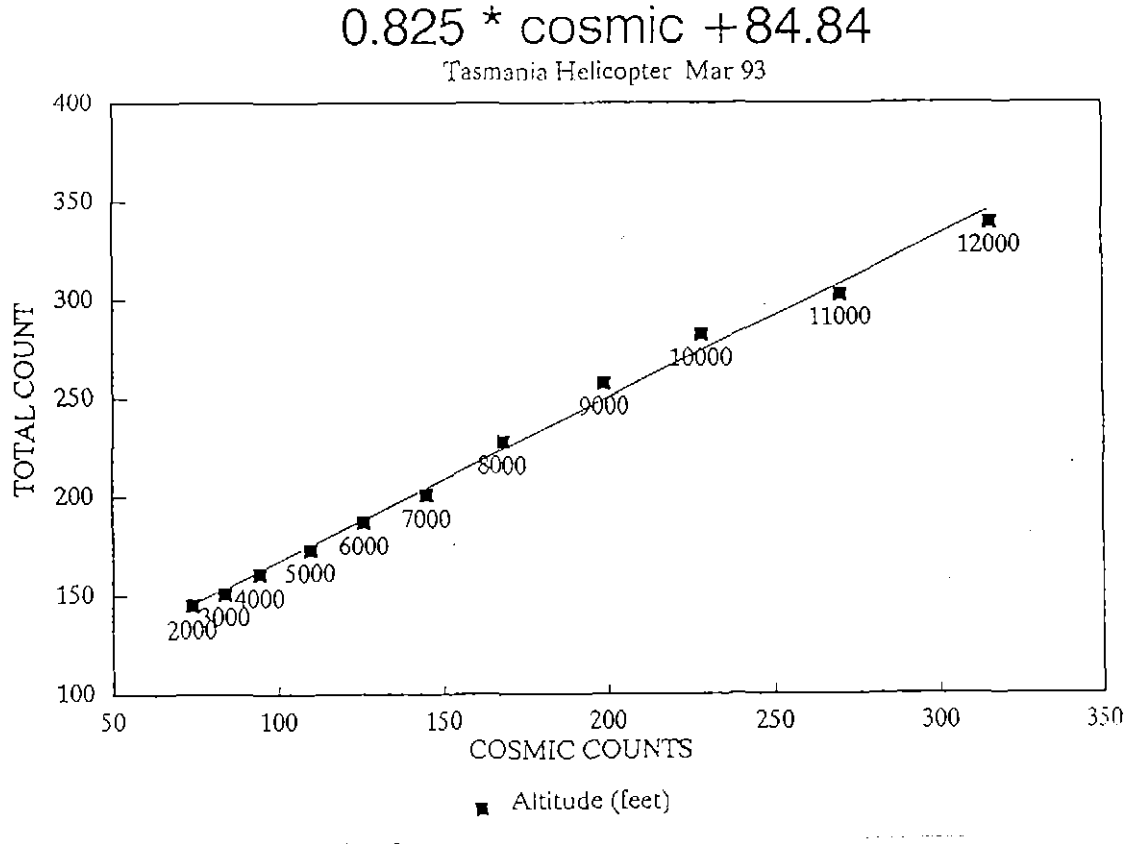
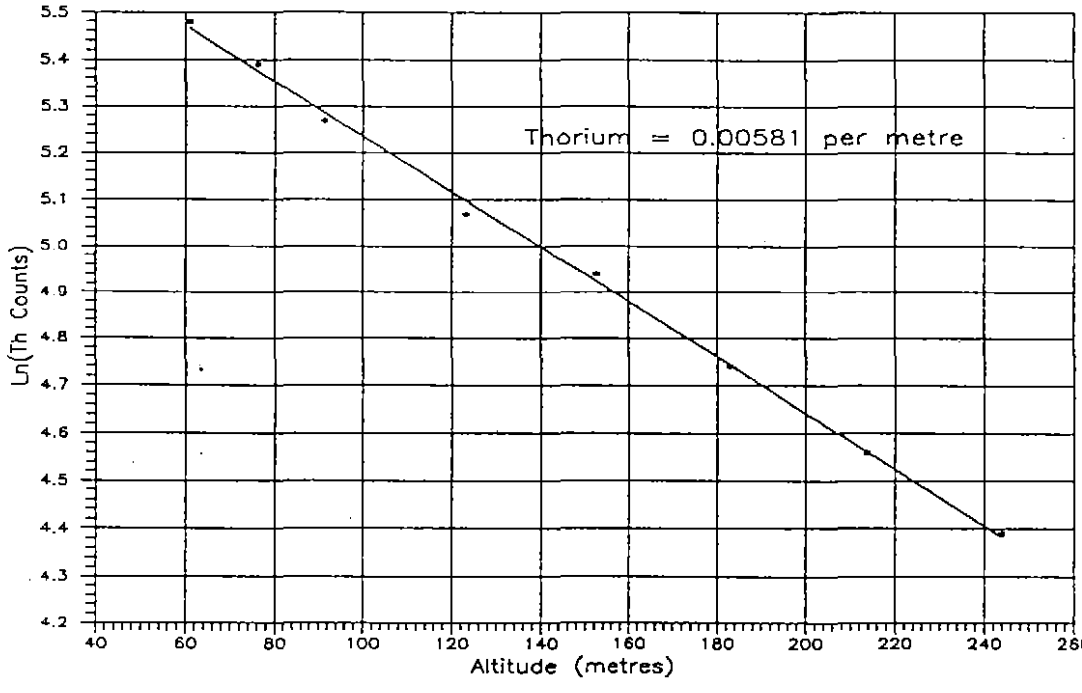


FIGURE A3: HEIGHT ATTENUATION TESTS



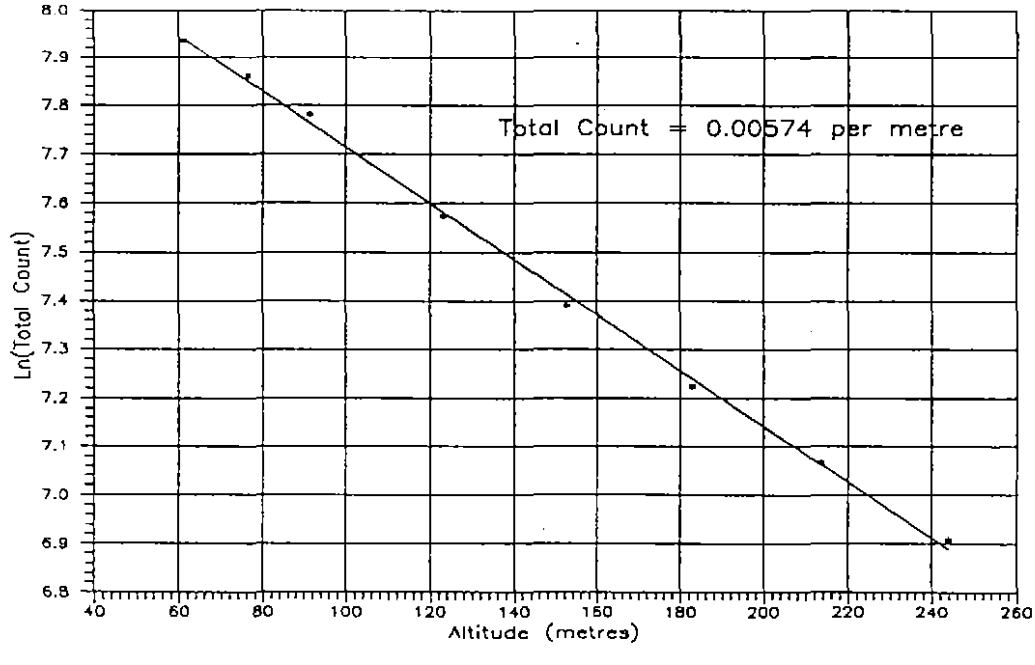
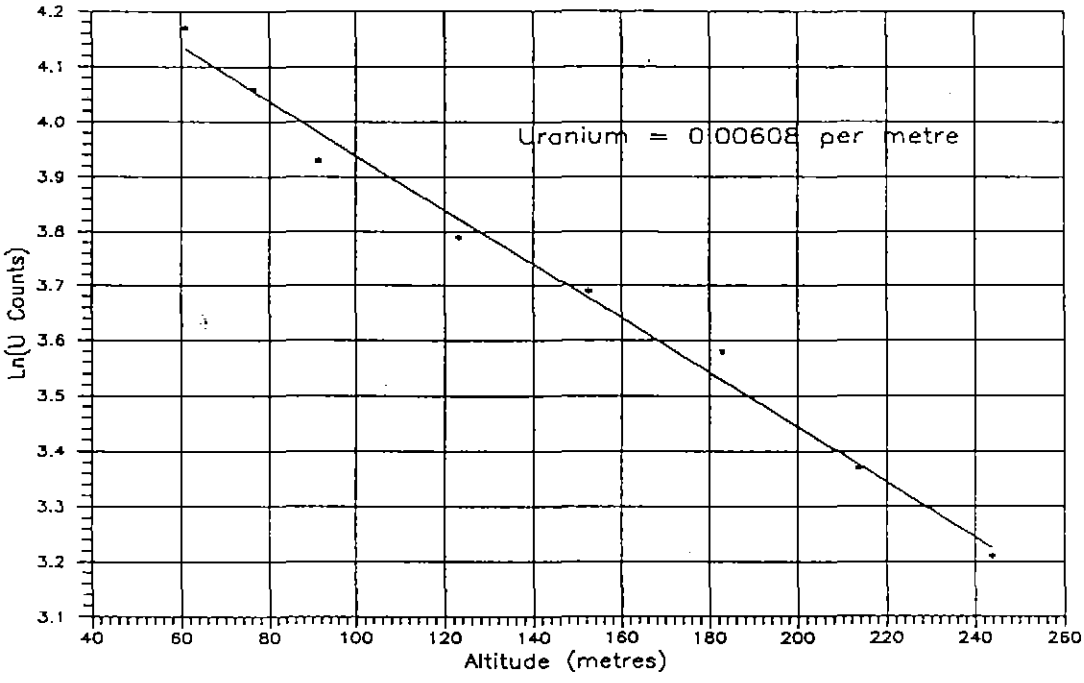


FIGURE A3: HEIGHT ATTENUATION TESTS



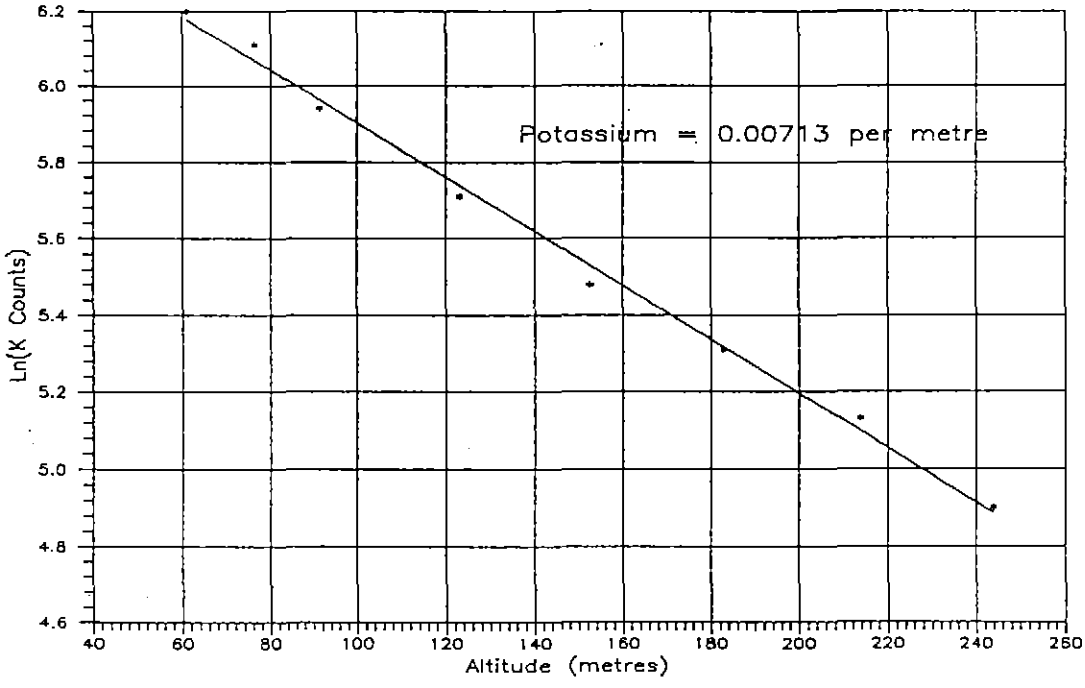
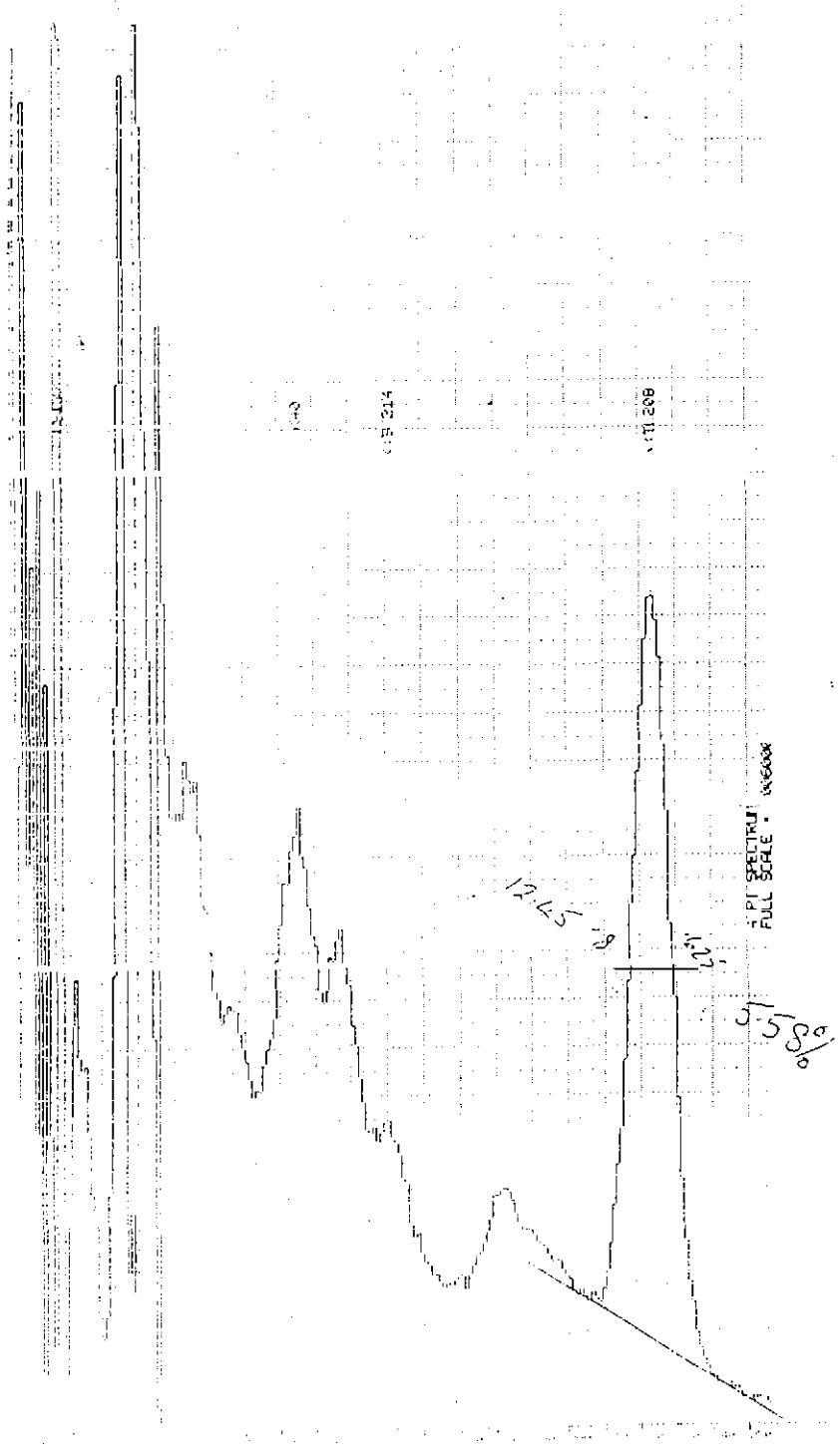


FIGURE A4 (i) - SPECTROMETER RESOLUTION CHECK

March 1993



APPENDIX B: MAGNETIC DATA TAPE FORMATS

TABLE B1: LOCATED DATA TAPE FORMAT

Column	Located Data Tape Format Description
1 - 8	Flight
9 - 16	Line
17 - 24	Fiducial
25 - 32	Eastings
33 - 40	Northings
41 - 48	Date (DDMMYY)
49 - 56	Levelled Magnetic Value
57 - 64	Raw Magnetic Value
65 - 72	Diurnal
73 - 80	Uncorrected Total Count
81 - 88	Uncorrected Potassium Count
89 - 96	Uncorrected Uranium Count
103 - 104	Uncorrected Thorium Count
105 - 112	Cosmic Count
113 - 120	Corrected Total Count
121 - 128	Corrected Potassium Count
129 - 136	Corrected Uranium Count
137 - 144	Corrected Thorium Count
145 - 152	Radar Altimeter
153 - 160	GPS ASL

Record Length	160 Bytes
Block Size	10240 Bytes
Density	6250 Bpi
Recording Mode	ASCII

APPENDIX C: RMS THERMAL PAPER STORAGE INSTRUCTIONS

PAPER STORAGE AND HANDLING, RMS 2030 THERMAL PAPER

STORAGE:

Ambient Temperature:	Less than 25°C
Relative Humidity:	Less than 65%
Storage Location:	In darkness before and after exposure.

Under these conditions, the paper should retain its characteristics and the printed images will remain legible for at least 5 years, although in the case of blue image paper, there may be some slight fading.

TO ELIMINATE PREMATURE PAPER DEVELOPMENT:

- Colour development begins at temperatures between 70 to 100°C, and reaches saturation density between 80 and 120°C. Premature development of the paper may occur at lower temperatures, and particularly if the humidity is greater than 65%.
  eg. If the paper is stored for 24 hours at a temperature of 60°C, some development may occur. Or if the paper is stored for 24 hours at a temperature of 45°C when the relative humidity is 90%, development may also occur.

- Avoid use of solvent-type adhesives. Adhesives containing volatile organic solvents such as alcohol, ester, ketone, etc causes colour formation and therefore rubber-type adhesives etc should not be used. Starch, PVA and CMC type adhesives are recommended.

- Frictional heat generated by rubbing a finger nail or sharp object over the surface will cause images to develop.

- Thermal paper will develop colour if brought into contact with freshly processed Diazo copying paper.

TO ELIMINATE PAPER FADING:

- Thermal paper will turn yellow, and blue printed images will tend to fade if exposed to direct sunlight or to fluorescent lighting for long periods. File exposed paper in the dark immediately after exposure. Do not store paper near windows.

- Prolonged contact with PVC film containing plasticisers such as ester phthalate will reduce the image forming ability of the paper and cause printed images to fade. We recommend that files made of polyethylene, polypropylene, polyester, etc be used.

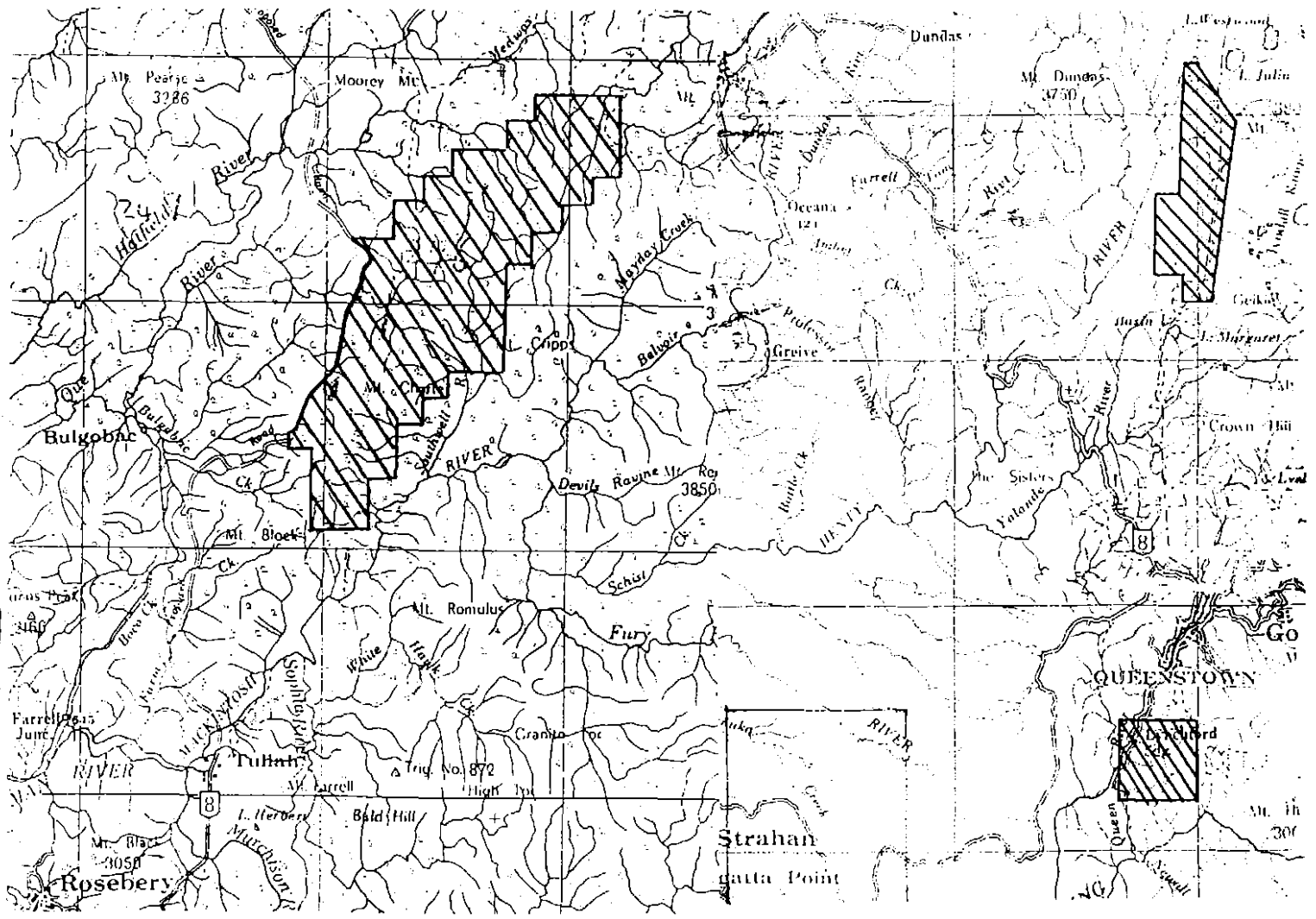
- Self-adhesive cellophane tapes containing an alcohol type plasticiser will cause the image to fade. Double-sided adhesive tape is recommended for use instead of paste.

- Handling thermal paper with dirty or sweaty fingers might cause images to fade.

- Do not store developed paper with the sensitised surfaces touching as images might be transferred from one sheet to another.

APPENDIX D: LOCATION MAP

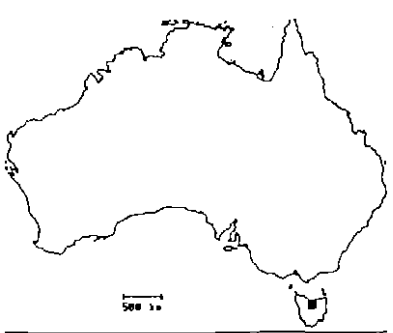
LOCATION MAP Scale: 1:250,000



BERNIE 1:250,000

QUEENSTOWN 1:250,000

5 cm



377 000 mE
378 000 mE
379 000 mE
380 000 mE
381 000 mE
382 000 mE
383 000 mE
5 338 000 mN
5 337 000 mN
5 336 000 mN
5 335 000 mN
5 334 000 mN
5 333 000 mN

SEWERAGE TREATMENT WORKS
BOTANICAL GARDEN RESERVE
LYNCHFORD ROAD
PRINCESS CREEK
LYNCH CREEK
King River
SPECIMEN CREEK
GUILFOYLE CREEK
DIORITE CREEK
Lynchford (Cu)
QUEEN RIVER
Abandoned Mt Lyell Railway
JUKES ROAD
KING RIVER
Mount Ellen

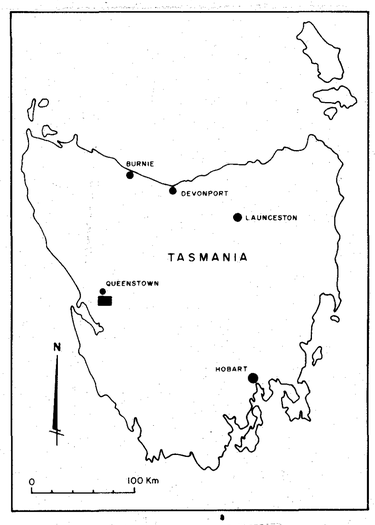
GN MN
12°

LEGEND

- Fault
- Anticline
- Syncline
- Fold plunge

Strike & Dip of bedding:

- 50 Facing known
- 50 Facing unknown
- 85 Overturned
- Vertical
- 83 Strike & Dip of cleavage
- Vertical cleavage
- 186/85 Aberfoyle data
- 65 Mines Dept. data (Corbett, 1978)
- 85 Brendan Dower (1990 Hons.)



5 cm
0 500 1000 metres

94 - 3539

939101

Aberfoyle Resources Limited
EXPLORATION DIVISION

REVISIONS			
Init.	Date	Init.	Date

NORTH WEST TASMANIA

LYNCHFORD EL47/83

STRUCTURAL DATA SET COMPILATION

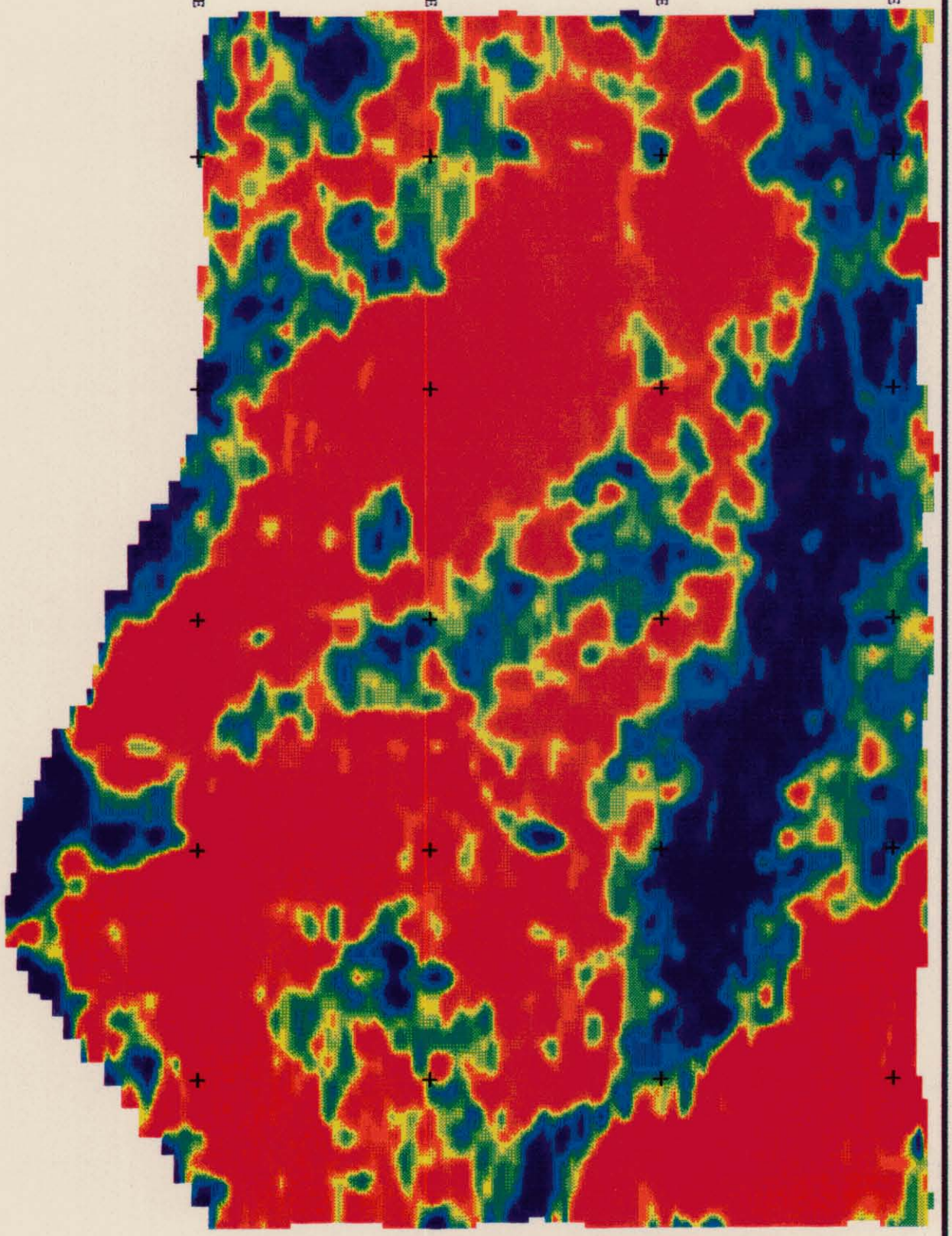
Location Code : K55/3

Scale : 1:10 000

Date : August 1993

Compiled : RAS
Drawn : RAS
Traced : MAR
Checked : RAS
Plate No : LYN 63

939102



94-3539

5 cm

ABERFOYLE RESOURCES LIMITED
EXPLORATION DIVISION

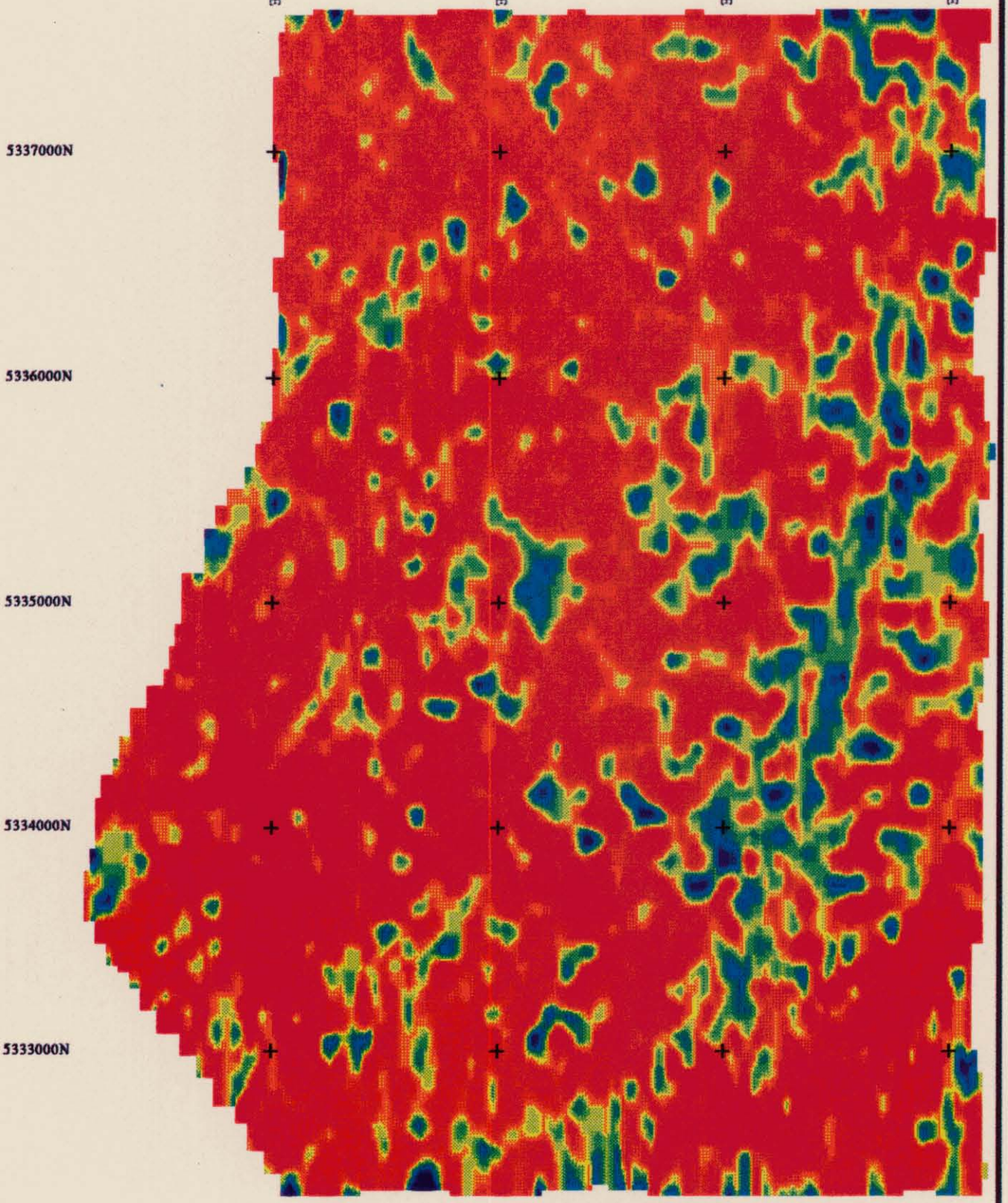
REVISIONS					
Init.	Date	Init.	Date		
Projection: TMAMG					
Datum: AGD66					
Zone Code:					

TASMANIA
EL 47/83 Lynchford
Lynchford
Histogram equalised Radiometrics - Th
Algorithm: LYN58

Scale: 1:25000 | Date: Feb 94

Compiled: RAS, RHL
Printed: IX-730
Traced:
Checked: RAS
Plate No. LYN56B

939103



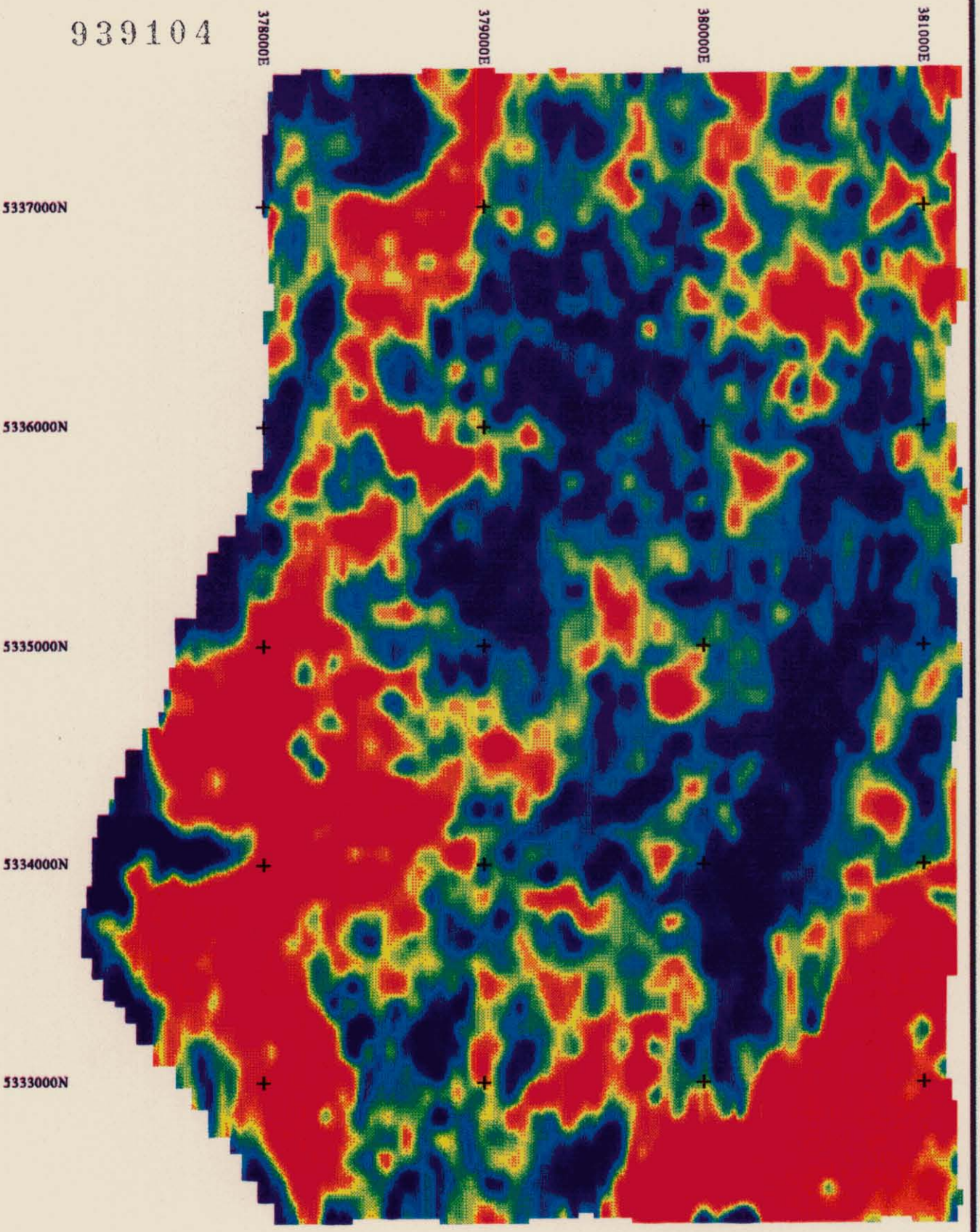
ABERFOYLE RESOURCES LIMITED
EXPLORATION DIVISION

REVISIONS				TASMANIA	Compiled: RAS, RHL
Init.	Date	Init.	Date	EL 47/83 Lynchford	Printed: JX-730
				Lynchford	Traced:
				Histogram equalised Radiometrics - U	Checked: RAS
Map Projection: TMAMG				Algorithm: LYN58	
Datum: AGD66				Scale: 1:25000 / Date: Feb 94	Plate No. LYN57B

94-3539

5 cm

939104



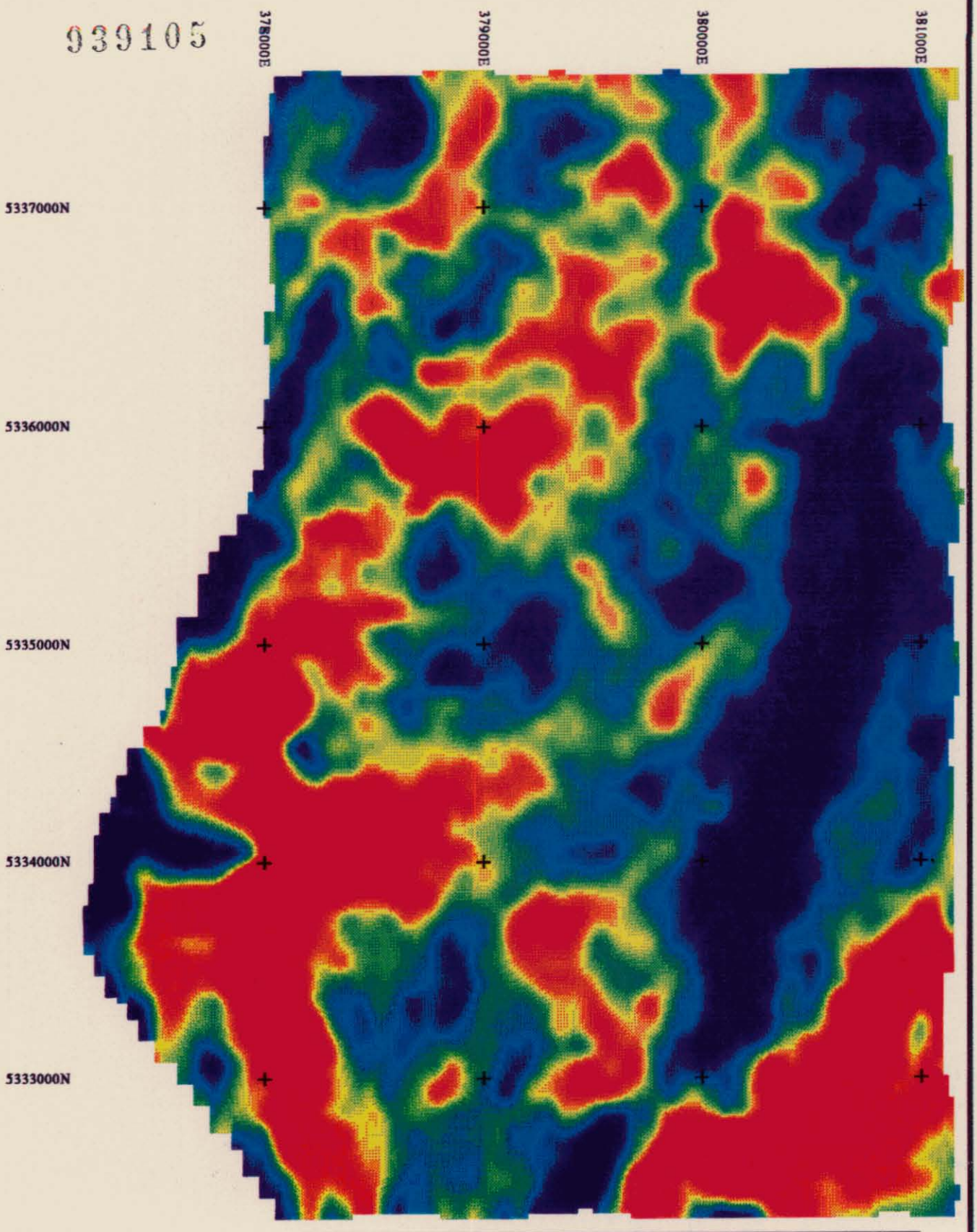
ABERFOYLE RESOURCES LIMITED
EXPLORATION DIVISION

REVISIONS	TASMANIA	Compiled: RAS, RYL
Job / Date / Job / Date	EL 47/93 Lynchford	Plotted: HP-750
	Lynchford	Traced:
Map Projection: TM AMG	**Histogram equalised Radiometrics - K**	Checked: RAS
Geodetic Datum: AG 1966	Algorithm: LYK.SE	
Location Code:	Scale: 1:25000 / Date: Feb 94	Plate No. **LYN58B**

94-3539

5 cm

939105



ABERFOYLE RESOURCES LIMITED
EXPLORATION DIVISION

REVISIONS			
Init.	Date	Init.	Date

Map Projection: TMAMG
Geodetic Datum: AGD66
Location Code:

TASMANIA
EL 47/83 Lynchford
Lynchford
Histogram equalised Radiometrics - TC
Algorithm: LYN58

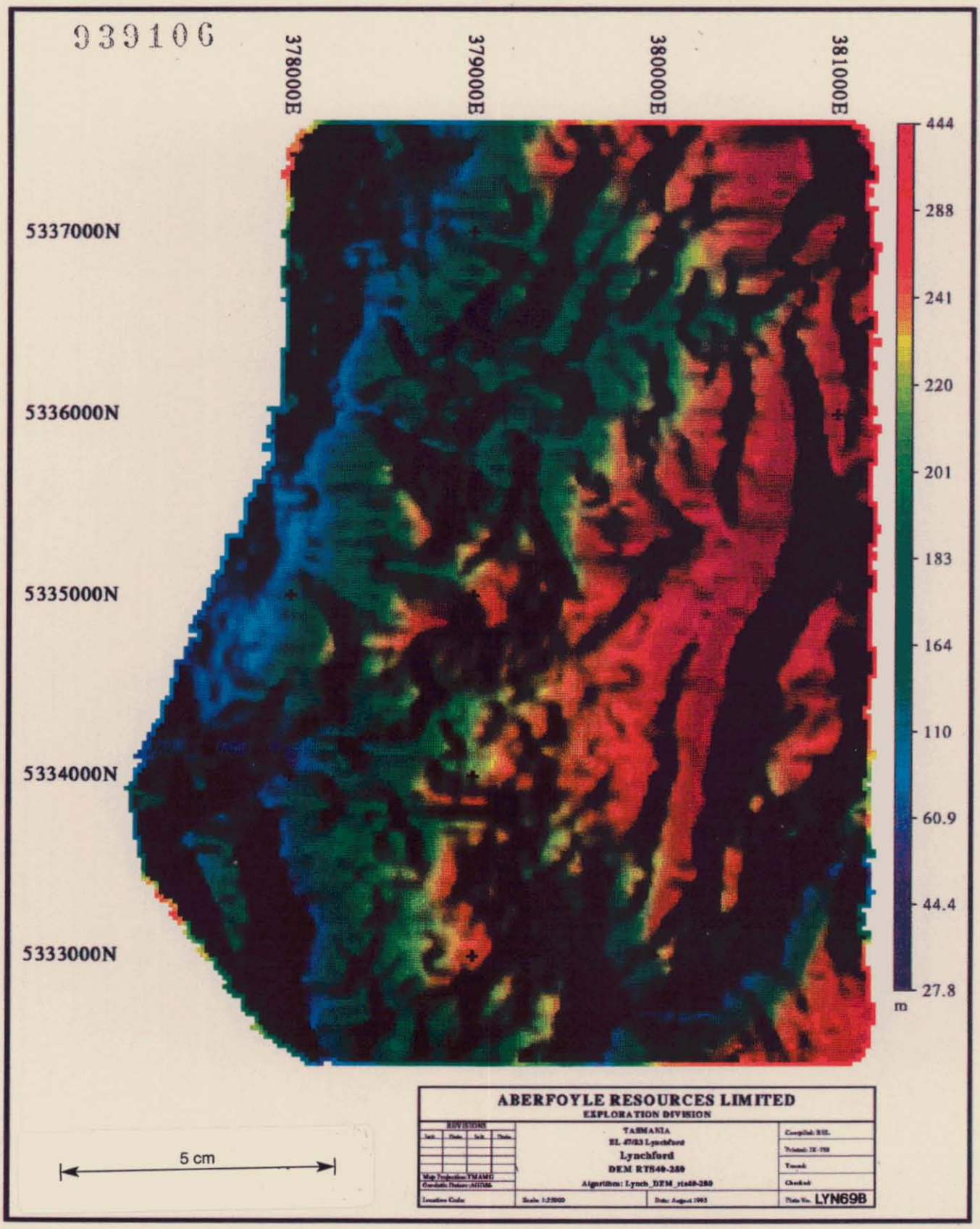
Scale: 1:25000
Date: Feb 94

Compiled: RAS, RHL
Printed: IX-730
Traced:
Checked: RAS
Plate No. LYN59B

94-3539

5 cm

939106

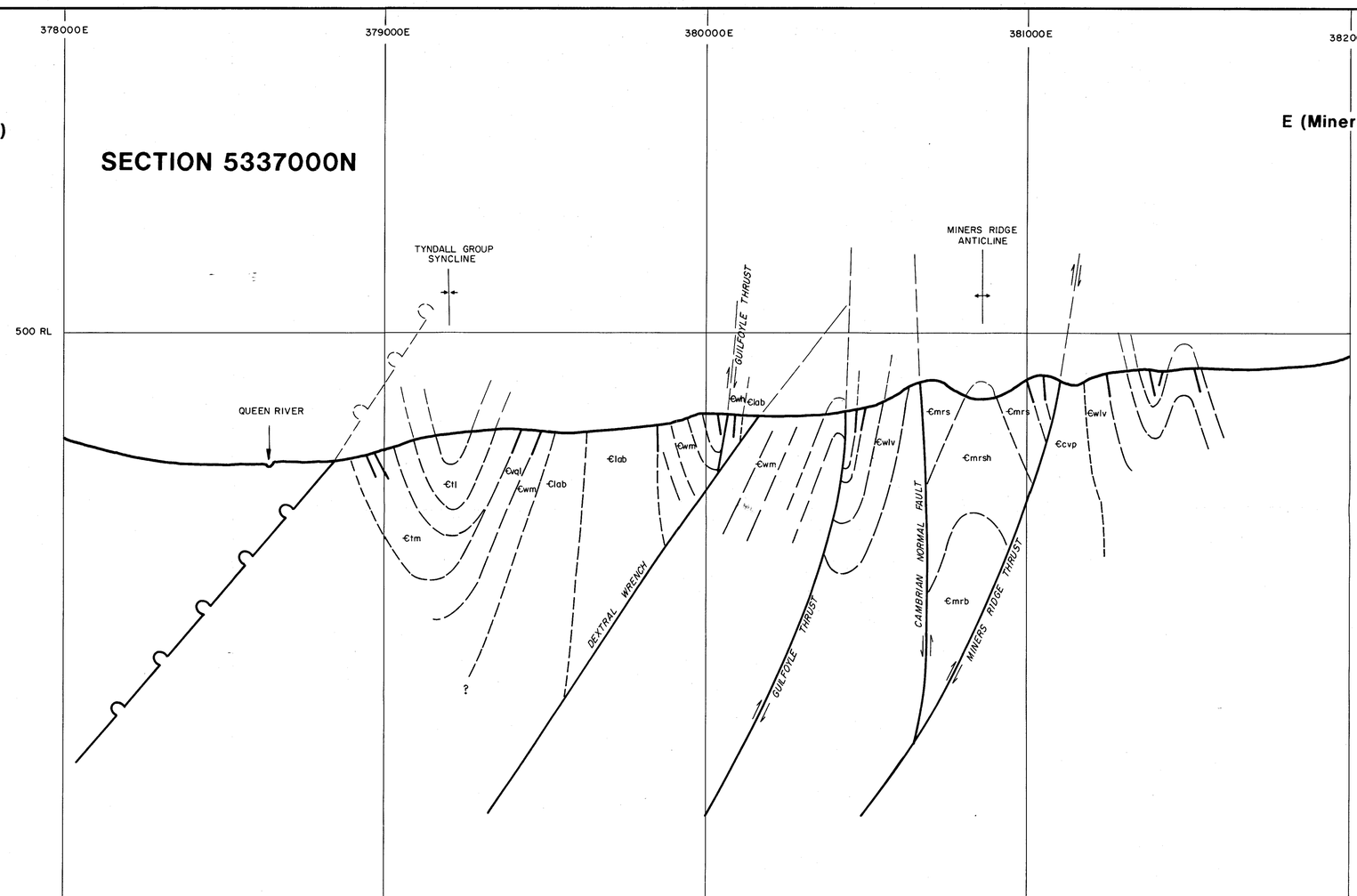


94-3539

W (Queen River)

SECTION 5337000N

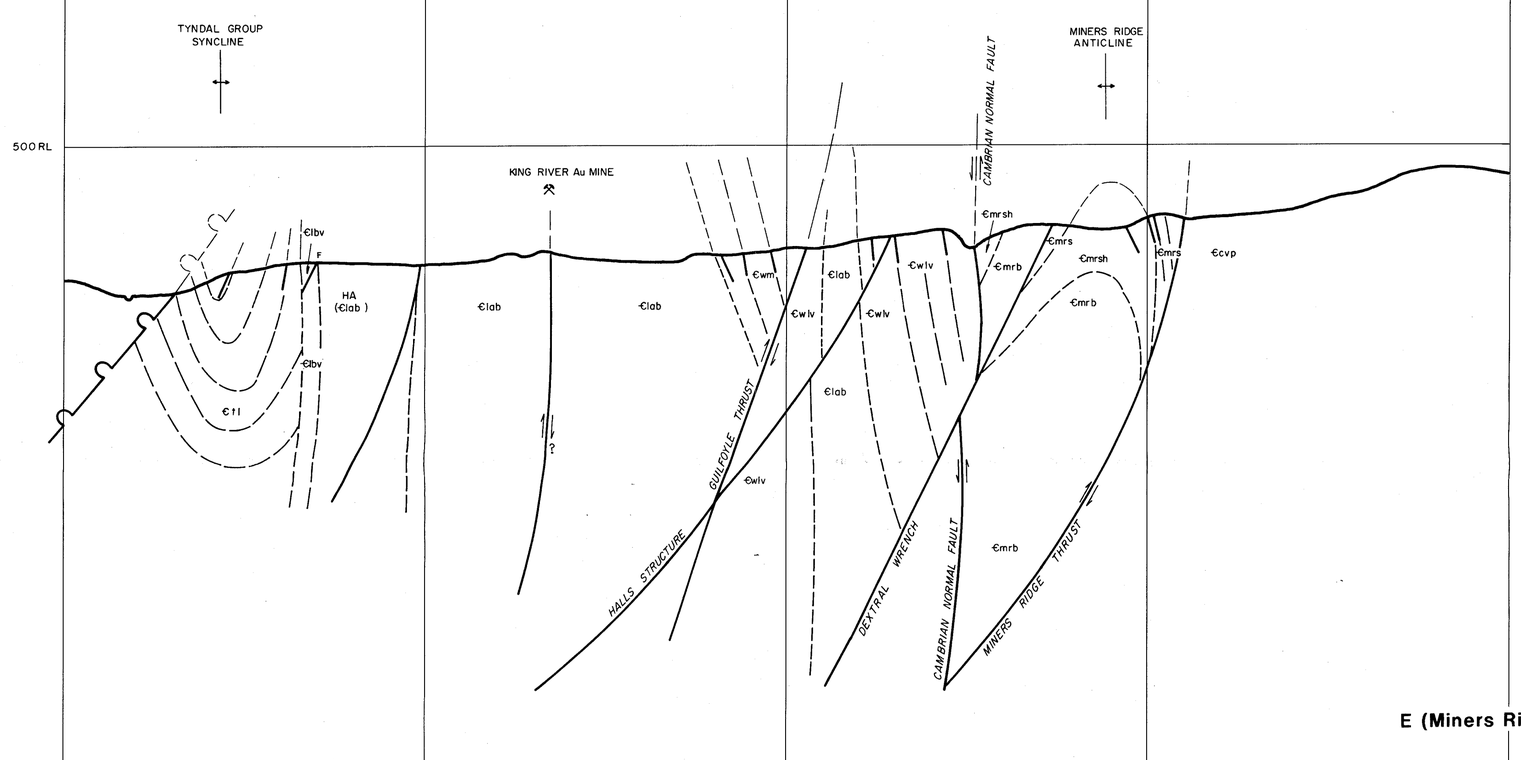
E (Miners Ridge)



W (Queen River)

SECTION 5336200N

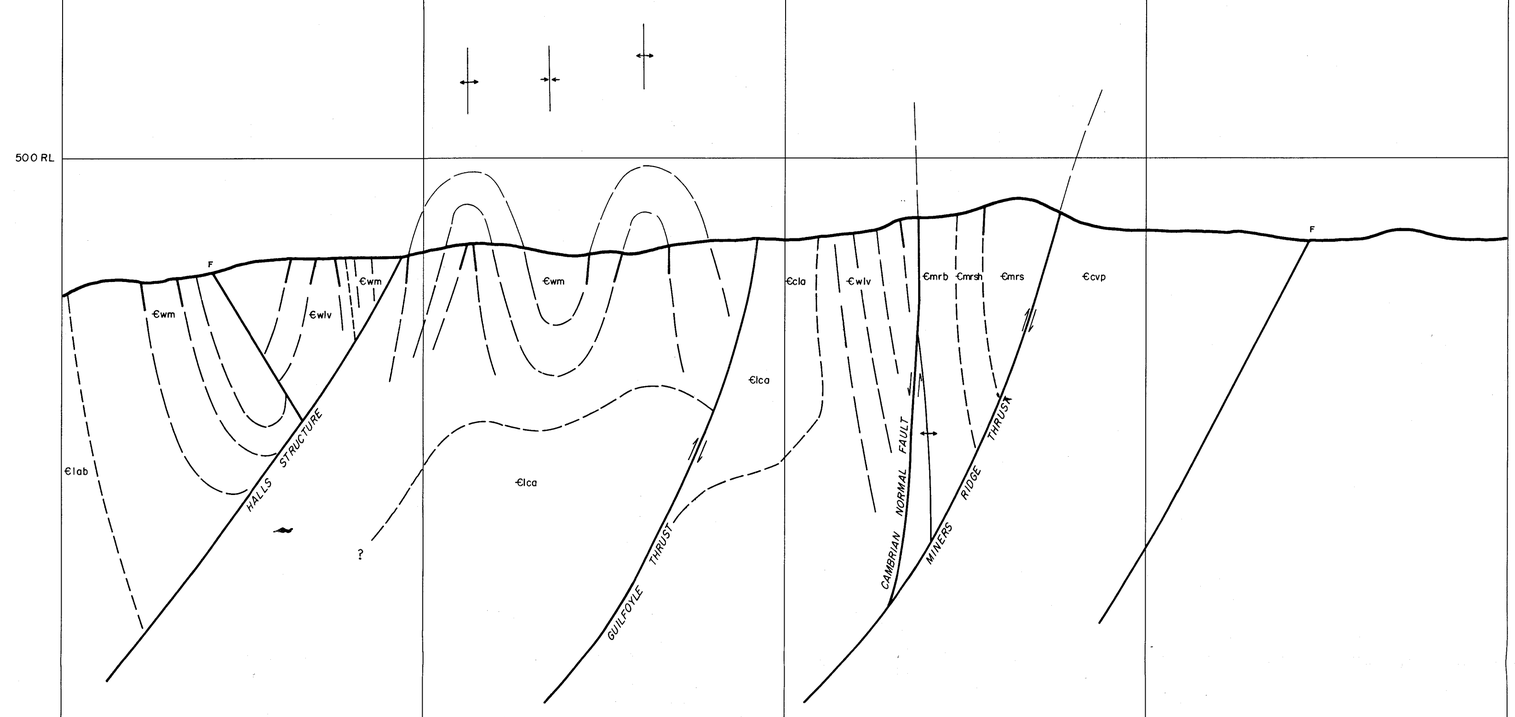
E (Miners Ridge)



W (Queen River)

SECTION 5335000N

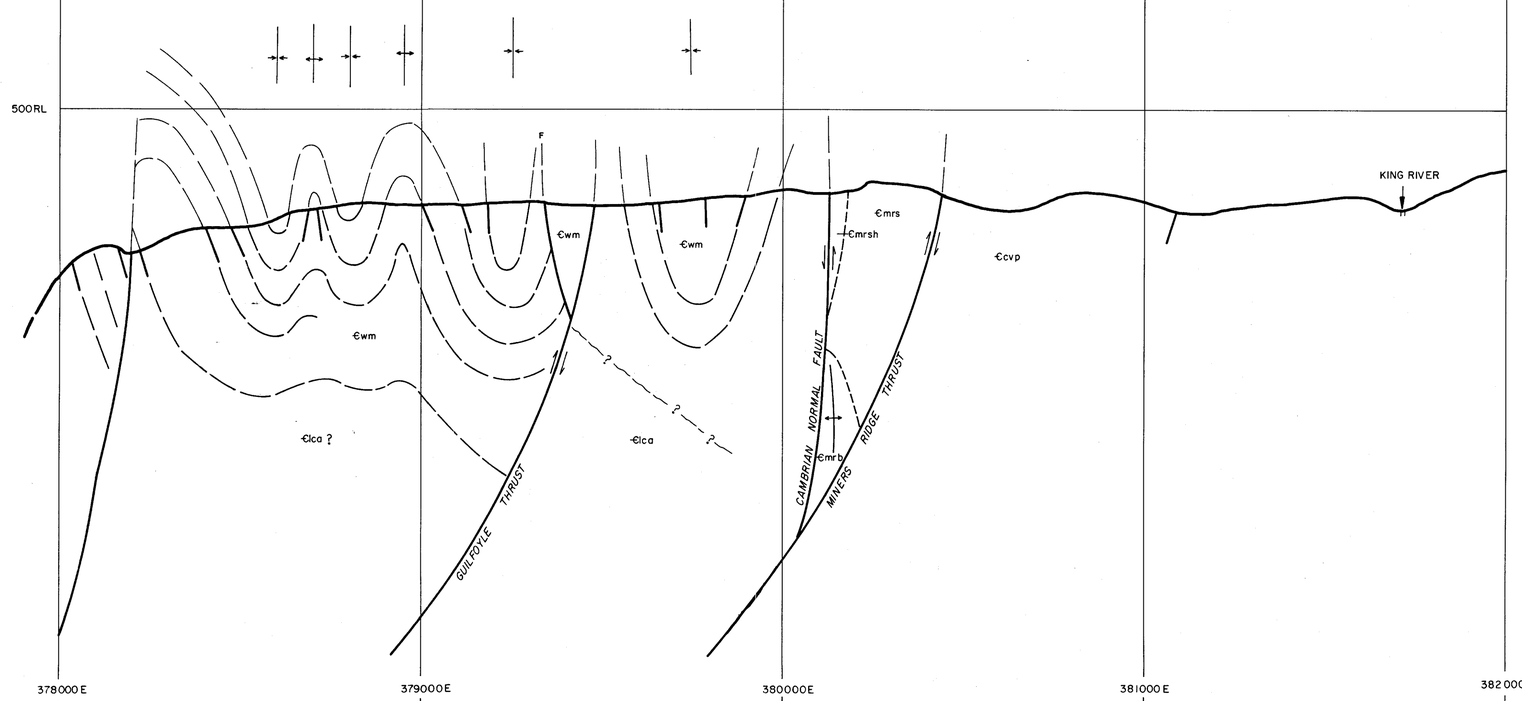
E (Miners Ridge/King River)



W (Queen River)

SECTION 5334000N

E (Miners Ridge/King River)



REFER PLATE LYF 64 FOR LEGEND

5 cm

0 500 1000 metres

939107 94-3539

Aberfoyle Resources Limited
EXPLORATION DIVISION

REVISIONS			
Init.	Date	Init.	Date
RSjms	9·9·93		

NORTH WEST TASMANIA

LYNCHFORD E.L.47/83

INTERPRETIVE CROSS SECTIONS

Location Code :

Scale : 1 : 10000

Date : AUGUST 1993

Compiled : RS
Drawn : RS
Traced : RJE
Checked :
Plate No : LYF 65

317 000 mE
378 000 mE
380 000 mE
381 000 mE
382 000 mE
383 000 mE
5 338 000 mN
5 337 000 mN
5 336 000 mN
5 335 000 mN
5 334 000 mN
5 333 000 mN

SEWERAGE TREATMENT WORKS
SILURO – DEVONIAN BELL FORMATION & FLORENCE SANDSTONE CORRELATES
BOTANICAL GARDEN RESERVE
DEXTRAL WRENCH
MINERS RIDGE THRUST
MINERS RIDGE ANTICLINE
LYNCH CREEK SOUTH
KING RIVER MINE
127M/82 75ha OCEANA TAS P/L
SPECIMEN CREEK FAULT
GUILFOYLE THRUST
CAMBRIAN NORMAL FAULT
HALLS STRUCTURE
QUEEN RIVER STRUCTURE
DIDARTE
KING RIVER
E.L. 47/83 LYNCHFORD
Abandoned Mt Lyell Railway
MOUNT JUKES ROAD
LYNCHFORD ROAD
PRINCESS
QUEEN RIVER
SPECIMEN CREEK
LYNCH CREEK
GUILFOYLE CREEK

TYNDALL GROUP

- €tm 69 — Sandstone and Mudstone
- €tl 26 — Quartz lithic rich lapilli volcaniclastic: with andesitic hornblende fragments (ARA correlate) and pyroxene rich fragments (LCB correlate)

QUE - HELLYER EQUIVALENTS

- €lbv 65 — Quartz haematite Breccia Volcaniclastic
- €lyb 42 — Polymict basaltic lapilli volcaniclastic
- €lca 48 — Feldspar hornblende phyric lava/breccia, correlate to Crown Hill-Anthony Road Andesites.
- €lab 46 / €ldl 43 — Lynch Creek Basalt lavas and breccias with minor dacitic lavas indicated.
- HA 6 — Highly Sericite altered andesite/basalt.

YOLANDE RIVER SEQUENCE

- €wql 41 — Quartz rich tuff, medium to coarse with shale/pumiceous clasts
- €wlv 51 — Fine grained vitric tuff and shale with interbedded tuffaceous greywacke and crystal tuff.
- €wm 68 — Interbedded shale, slate and sandstones.

CENTRAL VOLCANIC COMPLEX

- €cvp 20 — Intrusive and extrusive quartz feldspar porphyry
- €cv 10 — Undifferentiated rhyolite/dacite lavas/volcaniclastics
- €qfpp 56 — Feldspar quartz pyroxene porphyry

MINERS RIDGE GROUP

- €mrsh 36 — Black shale, siltstone, sandstones associated with Miners Ridge Sandstone/Basalt.
- €mrs 32 — Quartz rich sandstone (Miners Ridge Sandstone).
- €mrb 49 — Miners Ridge Basalt: Tholeiitic basalt.

Geological Boundary
Fault (with movement indicated)
Thrust Fault
Normal Fault
Unconformity
Cambrian Syncline, anticline
Devonian Syncline, Anticline

● ROCK CHIP SAMPLES

5 cm

0 500 1000 metres

939108 94-3539

Aberfoyle Resources Limited
EXPLORATION DIVISION

REVISIONS			
Init.	Date	Init.	Date
RS jms	4·9·93		

Location Code: K55/3

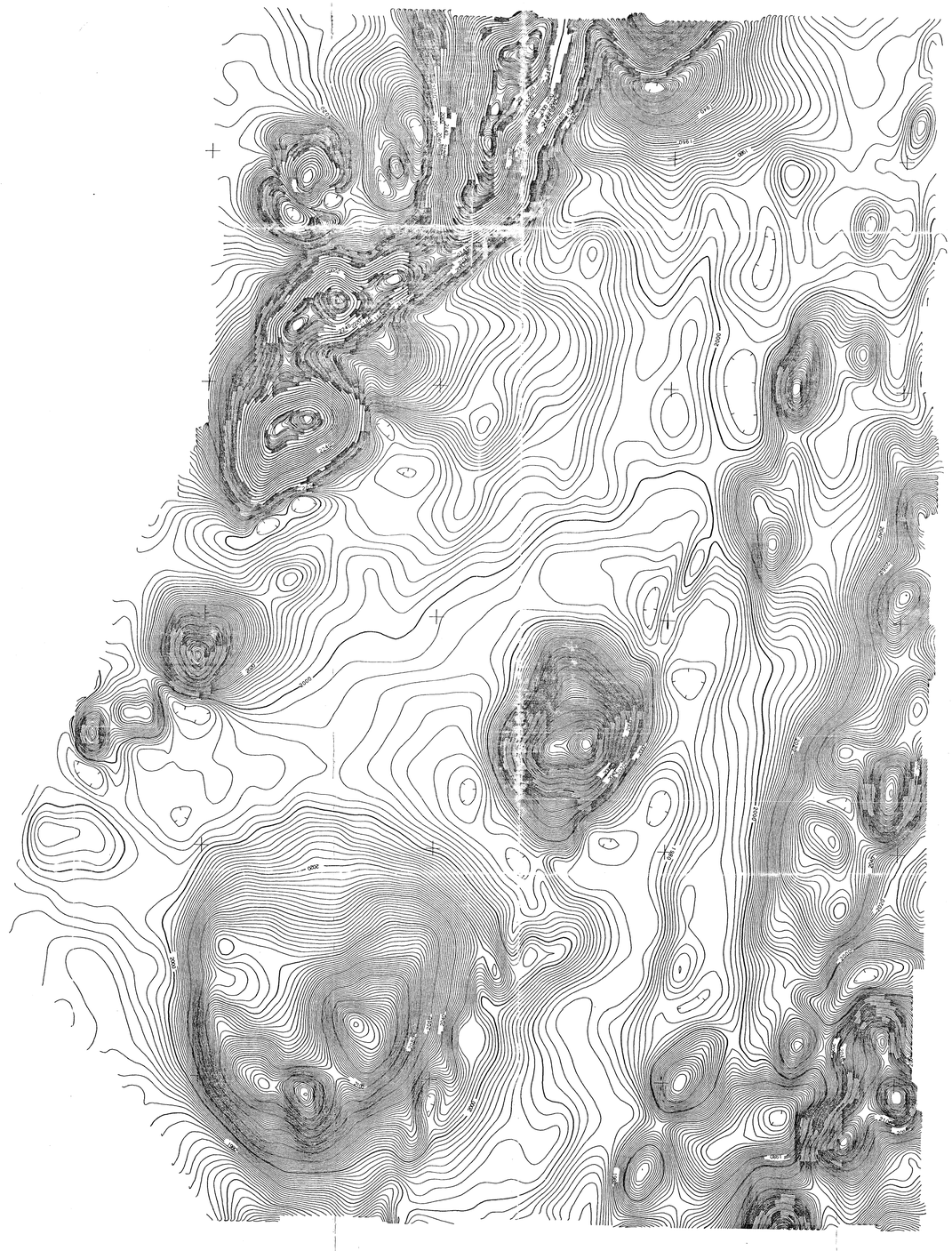
NORTH WEST TASMANIA
LYNCHFORD E.L. 47/83
SPECIMEN CREEK AREA
INTERPRETIVE GEOLOGY

Scale: 1:10 000 | Date: SEPTEMBER 1993

Compiled: R.S.
Drawn: J.M.S.
Traced:
Checked: R.S.
Plate No: LYN 66

376000E 377000E 378000E 379000E 380000E 381000E 382000E

42°06'00"S
42°07'00"S
42°08'00"S
42°09'00"S
42°09'30"S



5338000N
5337000N
5336000N
5335000N
5334000N
5333000N
5332000N

145°30'00"E 145°31'00"E 145°32'00"E 145°33'00"E 145°34'00"E 145°35'00"E

AIRBORNE SURVEY SPECIFICATIONS

MAGNETOMETER :	SCINTREX cesium vapour optical absorbtion mounted on a bird
	Sensitivity : 0.05 nT
RECORDING INTERVAL :	0.1 sec
SPECTROMETER :	Nuclear Data 256 channel ADC
	Volume : 16.8 litres
TOTAL COUNT WINDOW :	0.4 - 3.00 MeV
POTASSIUM WINDOW :	1.35 - 1.57 MeV
URANIUM WINDOW :	1.63 - 1.89 MeV
THORIUM WINDOW :	2.42 - 2.82 MeV
RECORDING INTERVAL :	1.0 sec
DATA RECORDING :	Geoterrex MADACS acquisition system
	Digital to magnetic tape
NOMINAL TERRAIN CLEARANCE :	spectrometer in aircraft at 115 m
	magnetometer mounted on a towed bird
NOMINAL LINE SPACING :	Traverse lines 100 m
	Tie lines 1.0 km
FLIGHT PATH NAVIGATION :	SERCEL NR103 GPS and SERCEL NDS100
	UHF DGPS navigation system
FLIGHT PATH RECORD :	real time from UHF DGPS system
	corrected for selected availability

RESIDUAL MAGNETIC CONTOURS

Grid notation refers to Australian Map Grid Zone 55

Magnetics :	Diurnals removed
IGRF :	1990 model (updated for secular variation to March 1993) removed, datum 2000 nT added
Total Field :	62368 nT (at 420730S, 1453200E)
Inclination :	72 degrees S
Declination :	13.3 degrees E
Grid mesh size :	25 x 25 metres
Grid filter :	None
Contour interval :	2, 20 and 200 nT

94 - 3539

TN GN MN

Grid Convergence = 0.96°
Declination = 13.30°

SCALE 1:10000

200 0 200 400 600 800 m

5 cm

JOB NO : 3-445
Surveyed by GEOTERREX PTY LTD : March 1993
Compiled by GEOTERREX PTY LTD, SYDNEY
Processed by GEOTERREX PTY LTD, SYDNEY

939109

ABERFOYLE RESOURCES LTD

LYNCHFORD
RESIDUAL MAGNETIC CONTOURS
BURNIE SK55-3
SHEET 1 OF 1

DRAWING NO: LYN 55 | DATE : 27-APR-1993

376000E 377000E 378000E 379000E 380000E 381000E 382000E

42°06'00"S
42°07'00"S
42°08'00"S
42°09'00"S
42°09'30"S

145°30'00"E 145°31'00"E 145°32'00"E 145°33'00"E 145°34'00"E 145°35'00"E

5338000N 5337000N 5336000N 5335000N 5334000N 5333000N 5332000N

< 701/1 < 702/1 < 703/1 < 704/1

151/1 > 150/1 > 149/1 > 147/2 > 144/2 > 141/1 > 140/1 > 139/1 > 138/1 > 137/1 > 131/1 > 130/1 > 129/1 > 128/1 > 127/1 > 121/1 > 120/1 > 119/1 > 118/1 > 117/1 > 111/1 > 110/1 > 109/1 > 108/1 > 107/1 > 106/2 >

< 152/1 < 148/2 < 146/1 < 145/1 < 143/2 < 142/1 < 136/1 < 135/1 < 134/1 < 133/1 < 132/1 < 126/1 < 125/1 < 124/1 < 123/1 < 122/1 < 116/1 < 115/1 < 114/1 < 113/1 < 112/1 < 105/1 < 104/1 < 103/1 < 102/1 < 101/1

AIRBORNE SURVEY SPECIFICATIONS

MAGNETOMETER :	SCINTREX cesium vapour optical absorbtion mounted on a bird
	Sensitivity : 0.05 nT
RECORDING INTERVAL :	0.1 sec
SPECTROMETER :	Nuclear Data 256 channel ADC
	Volume : 16.8 litres
TOTAL COUNT WINDOW :	0.4 - 3.00 MeV
POTASSIUM WINDOW :	1.35 - 1.57 MeV
URANIUM WINDOW :	1.63 - 1.89 MeV
THORIUM WINDOW :	2.42 - 2.82 MeV
RECORDING INTERVAL :	1.0 sec
DATA RECORDING :	Geoterrex MADACS acquisition system Digital to magnetic tape
NOMINAL TERRAIN CLEARANCE :	spectrometer in aircraft at 115 m magnetometer mounted on a towed bird
NOMINAL LINE SPACING :	Traverse lines 100 m Tie lines 1.0 km
FLIGHT PATH NAVIGATION :	SERCEL NR103 GPS and SERCEL NDS100 UHF DGPS navigations system
FLIGHT PATH RECORD :	real time from UHF DGPS system corrected for selected availability

FLIGHT PATH

Grid notation refers to Australian Map Grid Zone 55
Navigation fix 32768

94-3539
PRELIMINARY COPY

Grid Convergence = 0.98°
Declination = 13.30°

SCALE 1:10000

200 0 200 400 600 800 m

5 cm

JOB NO : 3-445
Surveyed by GEOTERREX PTY LTD : March 1993
Compiled by GEOTERREX PTY LTD. SYDNEY
Processed by GEOTERREX PTY LTD. SYDNEY

939110

ABERFOYLE RESOURCES LTD

LYNCHFORD
FLIGHT PATH
BURNIE SK55-3
SHEET 1 OF 1

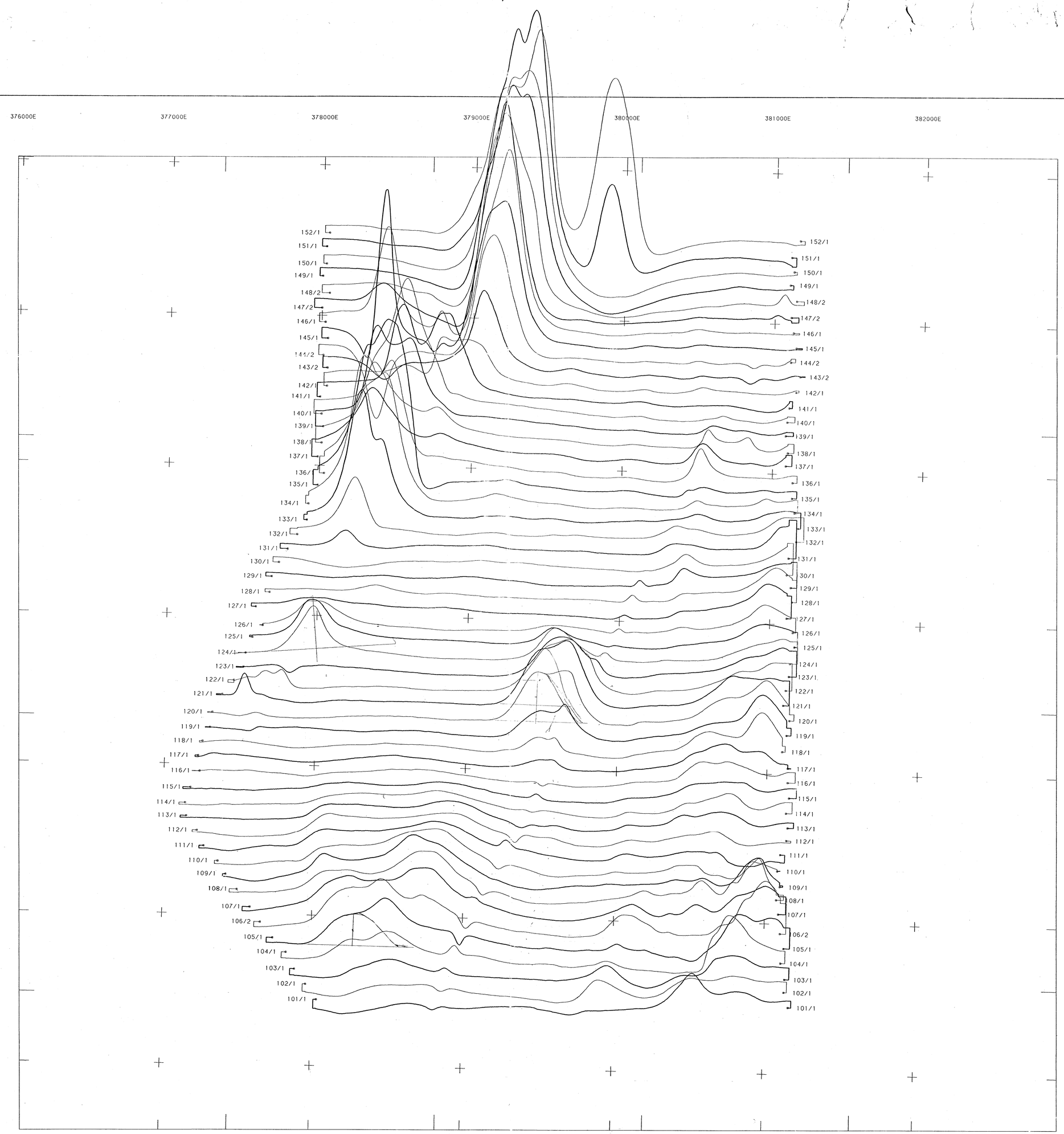
DRAWING NO: LYN 60 | DATE : 27-APR-1993

376000E 377000E 378000E 379000E 380000E 381000E 382000E

42°06'00"S
42°07'00"S
42°08'00"S
42°09'00"S
42°09'30"S

5338000N
5337000N
5336000N
5335000N
5334000N
5333000N
5332000N

145°30'00"E 145°31'00"E 145°32'00"E 145°33'00"E 145°34'00"E 145°35'00"E



AIRBORNE SURVEY SPECIFICATIONS

MAGNETOMETER :	SCINTREX caesium vapour optical absorption mounted on a bird
Sensitivity :	0.05 nT
RECORDING INTERVAL :	0.1 sec
SPECTROMETER :	Nuclear Data 256 channel ADC
Volume :	16.8 litres
TOTAL COUNT WINDOW :	0.4 - 3.00 MeV
POTASSIUM WINDOW :	1.35 - 1.57 MeV
URANIUM WINDOW :	1.63 - 1.89 MeV
THORIUM WINDOW :	2.42 - 2.82 MeV
RECORDING INTERVAL :	1.0 sec
DATA RECORDING :	Geoterrex MADACS acquisition system Digital to magnetic tape
NOMINAL TERRAIN CLEARANCE :	spectrometer in aircraft at 115 m magnetometer mounted on a towed bird
NOMINAL LINE SPACING :	Traverse lines 100 m Tie lines 1.0 km
FLIGHT PATH NAVIGATION :	SERCEL NR103 GPS and SERCEL NDS100 UHF DGPS navigation system
FLIGHT PATH RECORD :	real time from UHF DGPS system corrected for selected availability

RESIDUAL MAGNETIC PROFILES

Grid notation refers to Australian Map Grid Zone 55

Magnetics :	Diurnal removed
IGRF :	1990 model (updated for secular variation to March 1993) removed, datum 2000 nT added
Total Field :	62368 nT (at 420730S, 1453200E)
Inclination :	72 degrees S
Declination :	13.3 degrees E
Vertical Scale :	20 nT/cm
Base Value :	2000 nT

96-3539

Grid Convergence = 0.98°
Declination = 13.30°

SCALE 1:10000

200 0 200 400 600 800 m

5 cm

JOB NO : 3-445
Surveyed by GEOTERREX PTY LTD : March 1993
Compiled by GEOTERREX PTY LTD. SYDNEY
Processed by GEOTERREX PTY LTD. SYDNEY

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ABERFOYLE RESOURCES LTD

LYNCHFORD
RESIDUAL MAGNETIC PROFILES
BURNIE SK55-3
SHEET 1 OF 1

DRAWING NO: LYN62 | DATE : 30-APR-1993