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EXPLORATION LICENCE 47/83

LYNCHFORD

TASMANIA

PROGRESS REPORT FOR YEAR

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1.0 Introduction

The Lynchford E.L. 47/83 covers an area of approximately 32 sq km and is located to the south of Queenstown (Plate Lyn 24).

The E.L. has been held by Aberfoyle Resources Limited since 28th April, 1988, under the terms of the Mount Read Volcanics joint venture with CRA Exploration Pty. Ltd.

This report outlines the work undertaken by Aberfoyle Resources since acquisition of the E.L..

## 2.0 Summary of Exploration Activity

1. The existing CRAE Specimen Creek grid was repegged and extended to cover all outcropping calc-alkaline volcanics on a spacing of 200m. Gridding was completed during November, 1988, with lines on a 200m spacing over an area of 4.5 sq km (Plate Lyn 10).
2. Geological mapping, petrographic studies and rock chip geochemistry were undertaken over the gridded area.
3. A soil sampling programme was undertaken over the grid on 25m spacings, with the area enclosed by ML 27M/82 excluded from the study.
4. A UTEM survey was conducted over the gridded area, with the exception of lines 3000 and 3200N which lie within ML 27M/82.
5. A programme of grab sampling was undertaken within the King River Head Race Tunnel from 6860-6030m.
6. A stream sediment survey was conducted south of the King River, with much of the survey within a previously unsampled portion of the S.W. Conservation Area.

## 3.0 Summary of Results

1. Geological mapping was undertaken over the gridded area. Mapping outlined a volcano-sedimentary sequence of andesites/basalts hosted within an interbedded mudstone, sandstone and dacitic to rhyolitic volcanoclastic sequence.
2. A number of zones of baryte mineralisation were located within the north eastern corner of the grid.
3. Mapping revealed alteration within the volcano-sedimentary sequence. There is extensive sericitic, carbonate alteration with lesser associated fuchsite and pyrite, and areas of carbonate alteration. This may indicate Hellyer style hangingwall alteration.
4. Mapping along 1400N revealed an extensively altered sequence with a markedly different geological character when compared with lines to the north. A possible fault between the western end of 1400N and the lines to the north is interpreted. Petrographic descriptions identified local strong hydrothermal alteration and the presence of a possible mylonitic unit.

5. Rock chip geochemistry detected slightly elevated base and precious metal values at a number of isolated locations. Probably of most interest were elevations in barium 0.4-0.6% within rhyolitic lapilli volcanoclastics in the northeast of the grid. This may represent Hellyer style hangingwall alteration.
6. A soil sampling programme was conducted over much of the Specimen Creek grid (Plate LYN 10). The programme successfully outlined the extent of the calc-alkaline volcanics. The sampling programme highlighted a Pb, As, Ba anomaly to the north of the Specimen Creek and a significant Ba, As anomaly in the NE of the grid. A number of further point to low broad, base metal anomalies were also noted.
7. A 36 kilometre UTEM survey involving three separate loops (Plate LYN 22) was conducted over much of the grid, with the exclusion of the area bounded by ML 27M/82. No conductive targets worthy of follow up were detected.
8. Sampling within the HEC King River power tunnel revealed a broad 150m zone between 6840-6690m from the eastern entrance and a 80m zone between 6480-6360m of slightly elevated zinc values of 100-140 ppm and 100-250 ppm respectively. Isolated Pb, Ag and Au spikes were noted. A grab sample from the development face taken by the HEC in July 1986 contained 18.3 g/t Au in association with extensive pyrite alteration.
9. Stream sediment sampling highlighted three potential anomalous zones for follow up work, with significant gold potential exhibited from creeks draining the southern portion of the E.L., ( samples 482405 and 482452). There are further elevated gold assays from creeks draining the ridge to the south of the King River. A possible slight base metal elevation is noted from creeks draining south from CRAE interpreted DIGHEM anomaly 39/303.5. (plate Lyn 22).

#### 4.0 Previous Exploration

##### 4.1 Early Prospecting Activity

Early prospecting highlighted a number of prospects, these were subsequently worked with limited success.

The King River Mining Company is possibly the most notable of these operating a vein style gold mine and sluicing operation to the south of Lynch Creek. (Montgomery, 1894).

Similar vein style mines were opened along the Specimen Creek and to the south of the King River along the Newall Creek. A number of other small pits and sluicing operations have been conducted within the E.L., (Twelvetrees, 1900).

Other commodities mined include minor carbonate hosted vein style Pb mineralisation from within the Gordon River Limestone. A small asbestos show is reported to the N.E. of the King River Gold Mine. (Taylor, 1955)

#### 4.2 Modern Exploration Activity

##### Picklands Mather Incorporated 1966-67

A stream sediment sampling project was conducted the north of the King River. A grid was established over the northern portion of the Aberfoyle Specimen Creek grid. Ground magnetic and "In-line Electromagnetics" surveys were conducted along with a soil sampling programme. No subsequent follow up work was carried out. (Smith, 1967).

##### Cyprus Mining Corporation 47/70 1971-72

C.M.C. also undertook a stream sediment survey over a similar area to Picklands Mather. Establishing a grid over northern margin of the E.L. Soil Geochemistry; Electromagnetic, Ground Magnetic and I.P. surveys were then conducted. Again no anomalies were located for follow up work. (C.M.C., 1972).

##### Renison Goldfields 9/66 1980-82

A further stream sediment survey was conducted over the north of the area. The northern portion of the E.L. was flown as part of a larger airborne Dighem survey. Two lines of I.P. were read over the King River Gold Mine. (Komyshan and Bishop, 1982).

##### CRAE 1983-85

CRAE interpreted fifteen subtle DIGHEM anomalies, six of these were subsequently followed up by ground reconnaissance and a programme of SE-88 GENIE-EM, no significant results were reported. (Clementson, 1986).

A grid was cut over a portion of the calc-alkaline volcanics and a soil geochemical survey was subsequently conducted (Funnell, 1988).

A -80 mesh and Cyanide Leach stream sediment survey was conducted over much of the E.L., though the survey was not extended south of 5329000 mN. (Funnell, 1988).

A sampling programme was initiated within the King River Power Tunnel and the HEC drilling was reviewed (Funnell, 1988).

## 5.0 Geology

### 5.1 Introduction

The Regional Geology is best summarised by the Department of Mines 1:50 000 scale Mount Lyell sheet, 1987. Recent mapping by Aberfoyle Resources Limited (this report) concentrates solely on the calc-alkaline volcanics to the central-north of the E.L..

#### Cambrian

The oldest rocks exposed in the area are those of the western sequence. Comprising a sequence of black mudstones and shales, fine grained sandstones, rhyolitic-dacitic lapilli volcanoclastics, quartz-feldspar porphyries and minor tholeiitic basalts.

The western sequence is flanked to the east by feldspar porphyries, dacitic lapilli volcanoclastics and minor mudstones and sandstones of the Central Volcanic Sequence.

The Lynch Creek Basalt (Corbett, 1979) a body of andesitic to basaltic composition of Late Middle to Upper Cambrian age dominates the north of the E.L. The body is considered to be a time equivalent to the Que-Hellyer volcanics (Crawford pers. comm.) and is discussed more fully in section 6.2.1.4.

Overlying the Lynch Creek Basalt along its western margin is a body of lapilli volcanoclastics described as the Lynch Creek tuff-agglomerate sequence and apparently lying conformably upon the mafic body (Corbett, 1979).

#### Ordovician

A sequence of grey siliceous sandstone (Pioneer Beds Correlate) and pink Conglomerate unconformably overly the Cambrian Volcano-sedimentary succession (Corbett, 1979). In turn grey-black impure limestone and mudstone (Gordon River Limestone) conformably overly the Ordovician sediments of the Upper Owen Conglomerate.

#### Siluro-Devonian

Resting conformably upon the Ordovician sediments to the south is a silurian succession of white fine to coarse quartz rich sandstone, (in places partially silicified and containing chromite layers) with minor interbedded mudstone. This is in turn overlain by a sequence of interbedded mudstone and sandstone with rare limestone and in places a unit of fine quartz sandstone occurs.

In the northwest of the E.L. an undifferentiated sequence of siltstone to fine grained quartz rich sandstone occurs.

The silurian sequence is conformably overlain by fine grained quartz sandstone with minor interbedded siltstone and mudstone of probable Devonian age.

## Quaternary

Lying unconformably upon the Palaeozoic sequence are pleistocene? glacial tills and outwash gravels, mainly localised along the Queen River valley. To the south of the area colluvial scree and talus covers much of the Palaeozoic succession.

Recent alluvial deposits line the Queen River and flank many of the smaller creeks and creek junctions throughout the E.L..

## 5.2 Specimen Creek Grid

The existing CRAE Specimen Creek grid was extended to cover the known outcrops of calc-alkaline volcanics. A programme of gridding (18 km); Geological mapping at 1:2500 scale (plates Lyn 8A, 8B and Lyn 9A, 9B); Geological sampling (87 rock chip analyses (Appendix II) and 32 petrographic descriptions [Appendix I]).

### 5.2.1 Cambrian

#### Mudstone/Sandstone (Mst/Ss)

Occurring throughout the mapped area is a mixed sequence of mudstone and siltstones, with lesser volumes of interbedded sandstone and variable volumes of dacitic-rhyolitic lapilli volcanoclastics.

The mudstone and siltstone is generally a grey-black unit varying according to the degree of weathering, in places with minor pyrite. Generally composed of finer grained quartz in a clay matrix, the latter on occasions recrystallised to sericite with minor detrital mica, (P482004, P482009).

In places a sandstone (Ss) or greywacke occurs. A unit containing abundant mica, quartz and lithic clasts (pelitic schist and chert), similar in appearance to the Animal Creek Greywacke and the Miners Ridge Sandstone (Crawford pers. comm.).

A further horizon of variably leached, white-grey to orange brown, mudstone overlies the lapilli volcanoclastic to the west of the mapped area. The mudstone is in turn overlain by a further horizon of quartz-phyric rhyolitic lapilli volcanoclastic.

#### Dacitic lapilli volcanoclastic (D.lv)

Occupying much of the eastern half of the grid is a unit dominated by dacitic and lesser rhyolitic ash-lapilli volcanoclastic with a minor interbedded sedimentary component.

The dacitic volcanoclastics (P482005, P482083) are commonly white-green-brown in colour and generally altered and weathered. They contain prominent feldspar phenocrysts (commonly replaced by quartz, albite and sericite). They have a devitrified groundmass of fine-grained quartz and albite, that has subsequently been sericitised. In places leucoxene, chlorite and epidote occur as a subordinate component.

Also prevalent within the unit are felsic crystal lithic volcanoclastics (P482023, P482025, P482067, P482072, P482098, P482106). They are white-grey with abundant feldspar and lesser quartz in a matrix of fine-grained feldspar and quartz with a minor lithic component and a sericitic overprint.

#### Rhyolitic lapilli volcanoclastics (R.lv)

The main occurrence of this unit is in the southwest corner of the grid. Rhyolitic lapilli volcanoclastic also occurs as a lesser constituent of the major zones of dacitic lapilli volcanoclastic in the east of the studied area.

As in P482007 the Rhyolitic lapilli volcanoclastic is a white-green unit with minor quartz phenocrysts in a felsic devitrified groundmass. In this sample there was evidence of hydrothermal alteration and associated Calcite replacement of feldspar.

#### Andesitic Basaltic lava and lava breccias (A.1,B.1)

A sizable body of mafic to intermediate volcanics dominate the mapped area. This is characterised by an orange-brown weathered soil profile, scattered float, subcrop and rare outcrop of deep grey-green basalts and andesites.

Within the mapped area five mafic bodies can be recognised, the main body being some 2km in length and 1km wide. There is a possible faulted contact to the south with a discordance between the sediments to the south of Specimen Creek and the volcanics to the North.

Unfortunately correlation between sporadic outcrop has proved to be somewhat difficult. Especially as petrographic studies have revealed a high degree of variability with the body, with andesitic and basaltic lavas, lava breccias, autobreccias recognised (P482006, P482012).

East of the main mafic body is a petrographic and geochemically similar, narrow, 50-200m wide and over 1km long north-south trending body, composed dominantly of basaltic lava and is dislocated to the north by a NW-SE trending normal fault. Similarly petrographic descriptions have recognised basaltic and andesitic lavas and a degree of autobrecciation within the unit (P482039, P482073, P482101 and P482102).

A 200m by 50m pod of green-brown variably weathered autobrecciated basaltic lava (P482104) occurs to the southwest of the mapped area.

A further 40m by 18m pod of highly sericitised basalt occurs at 2209E 1800N. This is an interesting unit as it has a marked Na depletion and has extensive quartz veining and iron staining throughout (P482105).

Within the southeast corner of the grid a pod of polymict lava breccia was identified. This is composed predominately of basaltic lava fragments with a minor dacitic lava fragments within a matrix of andesitic ash (P482131).

#### Polymict Basaltic Lapilli Volcaniclastics (Y.B/v)

A polymict andesitic lapilli volcaniclastic unit was identified to the south of the Specimen Creek fault. The polymict body is 600m by 120m and appears to be conformable with the surrounding sediments. A petrographic description (P482060) identified at least ten different lava fragments, the volcanic detritus all apparently derived from a local mixed mafic to intermediate source. Unfortunately outcrop is somewhat limited throughout the interpreted expanse of the body.

#### Dacitic lava (D.1)

A dacitic lava is mapped to the central north of the interpreted faulted southern contact of the main mafic body. The extent of the dacitic body is inferred from the lithogeochemical study of Ti/Zr ratio and accompanying rock chip sampling 482064 and 482070.

A further minor flow of dacitic lava was identified along the western margin of the main mafic body (P482003).

#### Breccia Volcaniclastic (bv)

In a number of locations along the western margin of the main andesitic unit there is strongly weathered and ferruginised silicic and haematitic epiclastic sediment or volcaniclastic breccia. (P482132).

#### Quartz-phyric Rhyolitic lapilli volcaniclastic (Rlv.Q)

In the north of the area a generally white-green quartz phyric rhyolitic to dacitic unit overlies the western sequence volcano-sedimentary succession, apparently wedging out against the northwestern margin of the mafic body. The rock is composed of volcanic quartz, feldspar phenocrysts in what is now a chlorite mottled recrystallised former vitric matrix. Scattered lava and pumice fragments occur throughout. Its mode of emplacement is a point of conjecture having either a pyroclastic or epiclastic origin.

To the west, a second horizon of white-grey to red-brown quartz phyric felsic rhyolitic volcanoclastic breccia occurs. Having a similar devitrified matrix of sericite, quartz and feldspar (P482134).

South of the main mafic body a possible stratigraphic correlate outcrops as a white-brown quartz phyric rhyolitic volcanoclastic. The unit is composed of volcanic quartz, sericitised feldspar and devitrified matrix of quartz and feldspar. Unlike the samples to the north in places it varies from almost ignimbritic in appearance, to being composed of glassy shards (P482130).

These complications make a realistic stratigraphic correlation between the units north and south of the main mafic body difficult.

#### Lapilli volcanoclastic (1.v)

This is a green-orange-brown unit outcropping along the western margin of the area. The unit rests in places upon the main mafic body or upon the volcanoclastic breccia. In places it is seemingly conformable upon the quartz-phyric rhyolitic lapilli volcanoclastic. It is the unit described by Corbett, 1979 as the Lynch Creek tuff and agglomerate sequence and by Crawford (pers. comm). as a volcanogenic greywacke. It is considered a correlate of the Comstock Tuff and as such lies within the Tyndal Group (Corbett, 1979).

The most distinct feature of the unit is its weathering to form an orange brown clay within which residual tors of deep green crystal rich volcanoclastic occur. In places generally where it is finer grained a crude banding develops with an alternation of pink (albite rich), and green (chlorite rich), layers.

The large tors are composed of angular to subrounded albitised plagioclase, with secondary albite halos often rimming other fragments. Abundant angular quartz lesser augite, hornblende and minor variably sized and subrounded basaltic-andesitic and rhyolitic volcanic fragments and in places some pelitic schist fragments occur. A matrix of leucoxene, chlorite and epidote encloses the grains.

Though in places interstitial to the tors, where weathering has been more severe a crudely banded deep red unit develops with a grey-white sericite flecking throughout.

#### 5.2.2 Quaternary

##### Pleistocene Conglomerate (Qc)

Overlying the Cambrian succession to the west are channel deposits and glacial tills of possible pleistocene? age.

### Recent Alluvium (Qal)

Recent alluvial deposits line many of the smaller creeks and creek junctions within the gridded area.

#### 5.2.3 Alteration

Extensive sericite and carbonate with lesser pyrite and fuchsite alteration (P482114) is evident along 2400N 1160-1350E, with possibly further minor weathered sericite, fuchsite alteration observed to the north along the Lynch Creek walking track. The presence of albite in association with sericite, carbonate and pyrite is indicative of hangingwall style alteration.

A minor outcrop with fuchsite altered pumicous basaltic fragments within a basaltic lapilli volcanoclastic is observed at 3290N 1715E (P482032).

Carbonate alteration is evident at 3800N 2203E with extensive calcite veining and alteration of the groundmass of an autobrecciated andesitic lava. Along line 1400N at 1190E an extensively sericitised and carbonated rhyolitic lava was located. Local strong hydrothermal alteration, possibly associated with fault movements in the area, are interpreted from the petrography of P482007.

Further chlorite and sericite is seen preferentially replacing phenocrysts throughout the mafic volcanics, with the alteration generally more intense towards the north.

#### 5.2.4 Mineralisation

Within the gridded area mineralisation recognised is limited to historical quartz vein hosted gold occurrences at the King River Gold Mine and the Specimen Creek Mine workings. Limited accounts of production and the nature of mineralisation are recorded in the literature.

The other major mineralising event is the occurrence of baryte pods throughout the eastern and north-eastern portion of the gridded area. The baryte appears to have developed subparallel to a NW-SE structural trend. Baryte veining may have developed during the movement on the main NW-SE fault across the NE corner of the E.L.

#### 5.2.5 Structure

Structual features are recorded on the 1:2500 geological map.

### Bedding

Throughout the mapped area outcrop was limited, though ridge and creek exposures of interbedded mudstone, siltstone and sandstone sequence do indicate the general strike and dip. The sequence is generally westerly facing and striking north-south. Unfortunately no flow banding was observed within the limited outcrops of mafic volcanics located.

### Cleavage

A strong cleavage development was observed throughout the volcano-sedimentary sequence, with a generally near vertical to easterly facing NW-SE trending cleavage developed. Variations in the cleavage facing are common and to the southwest of the area strike varies markedly.

### Faulting

The major structure observed was the NW-SE trending normal fault that dislocates the eastern mafic body. The cleavage development and extensive baryte and quartz veining may be associated with this tectonic event.

A further fault is inferred along the southern margin of the main mafic body. Northerly striking sediments and volcanoclastics are truncated against the southern margin of the body, with the structure characterised by a geomorphic depression along which Specimen Creek drains.

A minor fault is inferred to dislocate sediments and rhyolitic lapilli volcanoclastics in the southwest of gridded area. From petrographic descriptions P482008 and P482007 there is a suggestion of strong fault development and hydrothermal alteration associated with a major shearing event in this area.

### Folding

Minor slump folds were recognised within the mudstone and siltstone sequences and were best exposed on road surfaces.

### 5.3 King River Power Tunnel

Extensive underground development and associated surficial road works and line cutting were conducted to the south of the King River Gorge by the HEC.

The area is planned to be the focus of exploration work over the coming year.

Reconnaissance mapping during a grab sampling programme revealed a sequence dominated by pristine to intensely altered quartz, feldspar phyrlic micaceous rhyolitic lavas. There are minor interbedded black shales and in places minor to extensive white quartz veining.

The abundance of quartz feldspar and mica and the extent of alteration varies throughout the observed sequence.

Alteration observed was dominately sericite, carbonate and chlorite with lesser scattered pyritic alteration.

At the time of reporting detailed petrographic descriptions and a subsequent geological compilation were still pending.

### 5.4 Regional Programme

A geological compilation at 1:10000 scale covering the licence is planned (plate Lyn 23), pending the completion of regional line cutting programme and the subsequent regional mapping programme.

To date only two petrographic samples P482120 and P482121 (Appendix I) have been taken to the south of the Mount Jukes Road (plate Lyn 20). On the basis of the petrographic description, the narrow belt of volcanoclastics (mapped as feldspar phyrlic pyroclastics, (Ckvr by Dept. of Mines, 1987) may belong to the Tyndal Group rather than the Central Sequence.

Reconnaissance mapping of creeks to the north of the Mount Jukes Road has revealed many isolated outcrops which together indicate a complex volcano-sedimentary sequence. Mapping has identified andesitic lavas, dacitic lavas, lava breccias and lapilli volcanoclastics and interbedded siltstones and black shales. The area definitely warrants further detailed and systematic mapping.

The three samples submitted for petrographic description P482123, P482126 and P482129, attest to the complexity of volcano-sedimentary sequence.

Sample P482123 was of interest as the petrographic description supported by the geochemistry classes this sample as an andesitic lava. Of most interest is the recognition of hangingwall style carbonate (calcite), sericite alteration within this sample. Sample P482126 was classified as a rhyolitic lava or shallow rhyolitic intrusive. Whilst P482129 was identified as a dacitic lava breccia.

## 6.0 Geochemistry

### 6.1 Geochemistry of the Specimen Creek Grid

#### Rock Chip Geochemistry

As an aid to geological mapping of the grid 109 rock chip samples were taken and submitted for assay. The detailed results and sample locations are included as Appendix II and plates Lyn 11A, 11B and Lyn 12A, 12B.

Rock chip sampling failed to reveal any marked anomalous values. Samples 482067 and 482085 exhibited elevations in barium ranging between 0.4-0.6% barium. A further elevation noted along the north-eastern flank of the eastern basaltic body. The barium enrichment is possibly associated with the episode of NW-SE fault development.

An elevation in barium values was also noted from rock chip samples 482036, 482038, 482100, (1160E, 1172E, 1178E; 2400N) from the zone of hangingwall style alteration to the north of Specimen Creek. There is a slight accompanying elevation in gold. This rock chip anomaly is coincident with a larger soil geochemical halo, discussed more fully, in the section on soil geochemistry.

A very slight elevation in copper and gold was noted from samples 482017, 482043 taken from an area of possible hydrothermal alteration described in P482007 along line 1400N.

#### Soil Geochemistry

Soil sampling on a 25m spacing was completed using a power auger, to ensure that a consistent C horizon sample was obtained. The 553 samples taken were submitted for Cu, Pb, Zn, Ag, As, Ba, Cr, Zr, Ti, analysis. Detailed results and location sheets are included as Appendix V.

The survey was used both as an aid to geological mapping as well as targeting possible anomalous base metal zones.

The three elements chrome, zircon and titanium were submitted as an aid to lithogeochemical mapping, with chrome highlighting the areas of dominately basaltic composition, Ti/Zr ratio highlighting zones of basic to felsic lava in addition to highlighting the margins of the mafic body. The high Ti content of the orange, brown, green lapilli volcanoclastic (Lynch Creek tuff, Corbett, 1979) is an extremely useful aid to the determination of the extent of this unit.

The copper distribution has proved to be an excellent determinant of the lithological extent of the mafic volcanics. As an aid to highlighting potential zones of anomalous base metal mineralisation, it has been less helpful. A number of spot highs were recorded notably at 1800N 1725-1775E within the toe of the polymict basaltic lapilli volcanoclastic (205-230 ppm). A moderate elevation is observed on 2600N 1800-1875E east of the Specimen Creek workings (215-245 ppm). There are a number of spikes in excess 300 ppm at 2800N 2450E and 3600N 2325E.

The zinc results were generally low, with only minor elevations recorded. Spot highs were noted within the toe of the polymict basaltic unit at 1800N 1725-1775E (120-130 ppm) and east of the Specimen Creek workings at 2600N 1775-1875E (125-230 ppm). A minor elevation is noted coincident with the zone of intense hangingwall style alteration, values of 95-155 ppm at 2600N 1425-1525E and 110-210 ppm at 2400N 1275-1500E.

The lead results were generally low, though possible anomalous zones can be identified. An elevation is noted coincident with the zone of intense alteration, along 2400N between 1100E-1500E (50-80 ppm) and along 2600N between 1100-1300E and 1425-1475E (50-1000 ppm), and (50-120 ppm), respectively.

Within the southeast corner of the grid elevation in lead is noted on 1600N between 2200-2400E (40-535 ppm), and on 1400N between 2375-2600E (50-100 ppm). A number of isolated spikes occur throughout the grid at 1800N 2225E (470 ppm), 2000N 2100E (870 ppm), 3000N 1425E (320 ppm), and 3000N 2350E (200 ppm). A number of lesser spot highs with values ranging between 100-200 ppm.

The barium results were a clearer in their definition of anomalous zones. A broad zone was recognised as coincident with the area of intense alteration. Values ranged between 540-1800 ppm on 2600N 1100E-1300E and between 660-3050 ppm, on 2400N 1050-1525E.

A further anomalous zone was noted on 2200N 1625-1725E (650-2000 ppm), and extending north to 2400N 1625-1750E (960-1600 ppm), and to 2600N 1650E-1850E (650-1700 ppm).

An intense zone open to the north occurs within the NE of the grid. On 3200N 2350E (1900 ppm), 3400N 2375-2400E (1000 ppm), 3600N 2300-2350E (760-1750 ppm), and on 3800N 2150-2350E (280-5500 ppm).

A number of other barium spikes were noted on line 1800N with values ranging between 1050-1750 ppm, such as at 1800N 1875-1950E and 1800N 2100-2125E.

The arsenic results appear to mirror barium with anomalous zones coincident with barium highs. Elevated arsenic values are noted at 2400N 1125-1525E of 18-53 ppm and 2600N 1100-1325E of 18-75 ppm, coincident with the zone of intense alteration. A marked arsenic anomaly is observed in the northeast of the grid coincident with the barium high recorded there. Values of 47-140 ppm are noted on 3400N 2375-2450E, 3600N 2275-2425E (28-300 ppm), and 3800N 2150-2350E (22-810 ppm). A number of spot highs are also noted throughout the surveyed area. At 1800N 2500E (51 ppm), 2000N 1675E (50 ppm), 2000N 1775-1900E (10-54 ppm), 2000N 2100E (56 ppm), 2200N 1875E (51 ppm) 3200N 2350E (105 ppm), and 3400N 1475E (65 ppm).

## 6.2 Geochemistry of the King River Power Tunnel

### Rock Chip Geochemistry

An initial grab sampling programme undertaken by CRAE during 1987 failed to indicate any significant zones of mineralisation, though slight elevations in zinc were noted.

A preliminary grab sampling programme was undertaken during March, 1989 (51 samples) to highlight possible anomalous zones and areas in which channel sampling should be concentrated. Results of sampling are tabulated in appendix IV and plate Lyn 17, Lyn 18.

The grab sampling programme replicated CRAE sampling results with a slight elevation in zinc values (90-250 ppm), noted between 6690-6840m into the main Head Race Tunnel. Further elevations in zinc values were noted between 6360-6450m at (90-110 ppm).

A number of additional Pb and Zn spikes were noted at 6030m, 6240m, 6220m (plate Lyn 18) these are possibly attributable to Devonian style vein mineralisation or to black shales.

A number of precious metal determinations were made, with follow up sampling required at 6840m where a 1.97 g/t Au value was recorded. This elevated Au value is attributable to a vein quartz association. Other values of interest were 0.018 ppm Au noted at 6274m in association with some pyrite. Elevations in Ag were noted at 6030m, attributed to an elevation in Pb and possible Devonian style vein mineralisation. A 4.5 g/t Ag value at 6180m and 1.5 g/t Ag at 80m into the surge tunnel, warrant follow up sampling.

The highlight of the sampling programme was a pyritically altered dacitic porphyry sample taken by Dougall Gray, a former Engineer with the HEC. The sample was taken at a development face 30m into the access tunnel in July, 1986. Upon assaying this sample, returned 18.3 g/t Au and 4.5 g/t Ag and 920 ppm As. Follow up inspection to date, has failed to repeat this assay.

### 6.3 Regional Geochemical Programme

#### Stream Sediment Survey

A -72 mesh and Bulk Cyanide Leach stream sediment survey was carried out to cover the previously unsampled southern portion of the E.L. located within the S.W. Conservation Area. Results and location of the survey are included here as Appendix VI and plate Lyn 15 and Lyn 16.

Base metal determinations were not particularly exciting, with copper values ranging from 5-70 ppm, lead values from 5-85 ppm and zinc values 15-150 ppm.

The two samples showing the greatest base metal elevation were 482422 and 482423. Both samples were taken from creeks draining southwards into the King River. CRAE followed up DIGHEM anomaly 39/303.5 towards the northern ends of these creeks (Plate Lyn 22). Above background values of Cu 45 and 70 ppm, Pb 45 and 60 ppm, Zn 105 and 150 ppm were obtained here and this warrants further investigation.

The only other elevated base metal value was detected within the Newall Creek with a zinc value of 145 ppm (482437). Sampling with in upstream tributaries 482421, 482420, 482418 and 482416 only recorded minor zinc values ranging from 60-95 ppm. This suggests that the 145 ppm Zn is attributable to upstream workings along the Newall Creek. Alternatively this is due to drainage from the region of the HEC surge tunnel development. No suitable sample site could be found within the creek draining the HEC surge tunnel.

A very minor base metal elevation was noted within samples 482434 and 482441 taken from a creek draining northwards into the King River. Above background values of 30-45 ppm Cu, 85 ppm Pb and 70-85 ppm Zn, in a creek that drains a region of anomalous rock chip samples south of the King River warrants further investigation (samples 482434, 482441).

Undoubtedly the most promising stream sediment analyses were the gold values. The best results were obtained from sampling at the southern margin of the E.L. A creek draining westward into the Thomas Currie Rivulet returned a -72 mesh value of 0.246 g/t Au (482405). A BCL sample 482452 from a creek draining east along the southern margin of the E.L. also returned encouraging values of 3350 ppt, although accompanying -72 mesh values were below detection limit. Together these results suggest a possible Au anomaly along the southern margin of the E.L.

Reconnaissance mapping in the area revealed outcrops of interbedded mudstone and siltstone within the creeks and glacial scree covering the higher slopes. Further mapping and follow up sampling is required.

Other highly encouraging results were obtained from a stream system draining north into the King River. Samples 482431 and 482432 48 ppb Au and 22 ppb Au respectively. Further sampling and mapping are required.

An elevation in Au (2300 ppt) in a BCL sample from the Newall Creek is attributed to alluvial gold workings. The possibility that the anomaly may be attributed to drainage from the area of the King River Power Development should not be totally excluded. Upstream sampling of the tributaries of the Newall Creek failed to identify any further anomalous values.

A further anomaly was recorded within a southwesterly draining tributary of the Newall Creek. The creek which drains the area to the south and east of Harris Reward Gold workings recorded a BCL value of 2950 ppt Au and -72 mesh result of 0.008 ppm. Follow up sampling is warranted, though possible contamination effects of mining and the HEC work should not be ignored.

#### Rock Chip Geochemistry

Only limited rock chip sampling has been undertaken outside the Specimen Creek grid with nine samples submitted for assay during reconnaissance mapping of streams. Results of assays and sample location sites are included herewith as Appendix III and plate Lyn 20 and Lyn 21. Of these nine samples two samples proved to be encouraging. Sample P482123 (379904E 5332040N) returned anomalous 780 ppm Zn and an associated 2 ppm Ag and 1200 ppm Ba. The rock is an andesitic lava. Carbonate (calcite)- sericite alteration observed in this sample is similar to Hellyer style hangingwall alteration. A sample of gossanous float near 379827E 5332083N returned highly anomalous Pb 1450 ppm, Zn 490 ppm, Ag 4 ppm and As 800 ppm. Further encouragement can be found in the fact that anomalous stream sediment values for Au were recorded from the same creek system. This area should definitely be targeted for follow up work.

A further four samples obtained from a creek to the east had background Cu and Pb values, but exhibit a slight elevation in Ag 0.5-1.0 ppm with Zn reporting 20-105 ppm.

A dacitic lapilli volcanoclastic having 0.01 ppm Au is slightly above detection limit. Ba values of 530-1150 ppm are slightly anomalous.

A further three samples were taken from the southern end of the E.L. Sample 482125 (379850E 5330730N) though stockworked by haematite was not anomalous. Samples P482120 and P482121 (380180E 5329020N and 380375E 5328130N) are barren dacitic lapilli volcanoclastics.

## 7.0 Geophysics

A 36 km UTEM survey was conducted over the Specimen Creek grid. Three separate loops 1, 2 and 3 (plate Lyn 22) were laid over the grid. The lines (plate Lyn 22) were read both inside and outside the loop, in a search for flat lying to vertical conductors.

Lines 3200N and 3000N were excluded from the survey as they lay within the ground covered by ML 27M/82. Line 4000N was excluded as it was inadvertently cut on an adjoining E.L.

The survey failed to detect any conductive bodies worthy of follow up. With any responses detected being explained by lithological variations or surficial weathering features.

The profiles compiled from the survey are included here in Appendix VII.

## 8.0 Conclusions and Recommendations

Exploration to date within the E.L. has been concentrated on three levels:

- i) to undertake a detailed examination of the prospective suite of calc-alkaline volcanics.
- ii) A review of the Central sequence volcanics, concentrating on the excellent exposure offered by the HEC King River Diversion Tunnel.
- iii) A regional programme aimed at highlighting other prospective areas within the E.L.

### A) Specimen Creek Grid:

Despite the negative UTEM results, the assessment of the suite of calc-alkaline volcanics covered by the Specimen Creek grid should be continued.

Rock chip sampling has failed to return any highly anomalous base or precious metal values, but has proved to be an excellent aid to geological mapping. The elevated barium values within rock chip samples and the pods and veins of baryte mapped over the northeast of the grid are encouraging. The promising petrographic results and elevated barium values over the zone of possible hangingwall style alteration to the north of Specimen Creek supports this interpretation.

The soil sampling programme highlighted a number of mildly anomalous zones. A zone of elevated Pb, Ba and As was recognised coincident with the area of intense alteration mapped to the north of Specimen Creek. The other encouraging zone was a coincident Ba, As anomaly centred over and flanking the basaltic unit within the northeast of the grid. A minor elevation in zinc, copper and barium was noted towards the toe of the polymict basaltic unit to the south of the Specimen Creek Fault. A potentially anomalous barium high from 2200-2600N 1625-1750E straddles the Specimen Creek Fault and an interpreted dacitic unit. A low key Pb anomaly was noted within the southeast corner of the grid, occurring along the eastern end of lines 1400 and 1600N, with values within the range of 40-535 ppm.

Potential for base metal mineralisation at depth, exists within the zone of hangingwall style alteration recognised to the north of Specimen Creek. The Ba, As anomaly within the northeast of the grid is open to the north and should not be ignored.

Further work on the grid should include:

1. Soil sampling along 1400N to cover the zone of possible hydrothermal alteration.

2. A costeaning programme is recommended to examine the contact relationship between baryte pods and the host rock. The western contact of the andesite should be costeaned to examine the zone of silica, haematite alteration. The zone of intense hangingwall style alteration and anomalous Ba,As zone should be exposed.
3. The planned magnetics survey over the grid should be completed.
4. Soil sampling should be closed to 12.5m spacings over the area of intense hangingwall style alteration and the anomalous Ba, As zone. With consideration given to closing the grid to 100m spaced lines in these areas.

B) King River Diversion Tunnel:

The results of the reconnaissance grab sampling programme have been encouraging particularly with respect to precious metals, a programme of follow up work should include:

1. As a priority, channel sampling of anomalous zones and an extension of the sampling programme to the east.
2. Access should be gained to the western end of the head-race tunnel to establish possible along strike extension of the pyritically altered gold bearing zone.
3. The HEC drill core should be located and examined.
4. Existing HEC cut lines over the area should be mapped for evidence of an alteration zone.
5. A grid should be established over the area and a soil sampling programme undertaken.

C) Regional Exploration:

Work to date has highlighted two encouraging areas for follow up exploration:

The area between the King River and the Mount Jukes Road has returned promising rock chip and stream sediment sampling results. This area should be the target of detailed exploration.

The other encouraging area is the region of anomalous stream sediment results from near the southern margin of the E.L. This area should be targeted for further stream sediment sampling and further reconnaissance mapping.

Further regional exploration should include:

1. Geological mapping of regional lines and roads within the E.L.

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2. Further stream sediment sampling in areas of anomalous precious and base metal values.
3. Follow up anomalous rock chip sampling to the south of the King River. Examine the area around the potential hangingwall style alteration within an andesitic lava (P482123).
4. Where possible gain access to and make an assessment of historical underground workings within the E.L.

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## 9.0 References

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APPENDIX I.

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**PETROGRAPHIC REPORT**

**Rocks from Lynchford EL**

**For Aberfoyle Exploration Ltd. 2/11/88**

**by**

**Anthony J. Crawford**

**Geology Department**

**University of Tasmania**

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**SAMPLE NUMBER: 482004**

**GENERAL LOCATION: LYNCHFORD E.L.**

**SUMMARY: Mudstone**

**HAND SPECIMEN: Very fine-grained cream coloured siltstone or mudstone with a weak cleavage.**

**THIN SECTION: Very fine-grained bedded sediment with mottled appearance in thin section. Dark stylolitic solution cleavage is visible, due to concentration of less soluble oxides along cleavage planes. Some small detrital quartz grains are present; these have scalloped, resorbed and reacted edges. Also evident are abundant tiny detrital muscovite flakes. Former clay component has recrystallized as sericite, which forms a very wispy mesh throughout the rock, except for tiny lensoidal and drawn out areas of recrystallized quartz-feldspar mosaic. The mottled appearance is due to areas of more yellowish sericite resulting from Fe-staining adjacent to Fe-oxide-rich cleavage planes.**

**COMMENT: The abundant detrital muscovite is the only feature of this rock which suggests that it is probably largely derived from the Precambrian schists and gneisses of the Rocky Cape Group. At this small grainsize, it is difficult to tell if there is a tuffaceous component, but I don't think there is. What is there looks very 'unvolcanic' to me.**

**SAMPLE NUMBER:** 482005

**GENERAL LOCATION:** LYNCHFORD E.L.

**SUMMARY:** Strongly altered (sericitized) plagioclase-phyric dacite or dacitic crystal tuff.

**HAND SPECIMEN:** Buff coloured, strongly sericitized felsic lava (?) with altered feldspar phenocrysts.

**THIN SECTION:** This rock is dominated by 10-15 modal % of blocky euhedra of former plagioclase phenocrysts which are now totally replaced by a dense intergrowth of very fine-grained sericite, quartz and albite. An even finer-grained assemblage of the same material forms the groundmass, which was probably originally quite glassy. The groundmass is slightly foliated, and streaked and veined by white sericite and subordinate pale green chlorite with minor leucoxene and epidote. The overall obliteration of primary textures renders it impossible to judge whether this rock was formerly a lava or a crystal tuff.

**SAMPLE NUMBER: 482006**

**GENERAL LOCATION: LYNCHFORD E.L.**

**SUMMARY: Formerly plagioclase- + olivine-phyric basaltic lava.**

**HAND SPECIMEN: Grey-green fine-grained lava with visible altered phenocrysts, and cut by veinlets of almost black chlorite.**

**THIN SECTION: Originally a basaltic lava with about 20 modal % of plagioclase phenocrysts and ~2% of olivine phenocrysts. Plagioclase phenocrysts, to 1mm long, are notably less blocky and more prismatic than in the more felsic lavas; they are totally replaced by white sericite in which are embedded some small areas and blebs of yellow-gold pleochroic pumpellyite. Former euhedral olivine phenocrysts, which sometimes occur in multi-crystal clusters, are replaced by a colourless, very low-birefringent chlorite or serpentine group mineral. The apparent absence of (former) augite phenocrysts in this basalt is an unusual feature; although a few of the pseudomorphed mafic phenocrysts here identified as having been olivine might conceivably have been augite originally, the crystal shapes of the most euhedral pseudomorphs and the uniformity of the replacement chlorite or serpentine suggest that most were olivine. The groundmass is quite dark, and was formerly vitrophyric; it has devitrified to a fine-grained intergrowth of quartz, albite, chlorite, epidote, leucoxene and pumpellyite.**

**COMMENT: This basalt is unlike some others I have seen from Lynchford, which are usually quite full of euhedral augite phenocrysts. However it is certainly closer to the Western Belt basalts than the most mafic lavas (andesites) in the Central Volcanic Complex. We will analyze it if you like. The metamorphic grade is clearly prehnite-pumpellyite facies, unlike the andesites described above (482001 and 2), in which actinolite is present. Is this useful in regional mapping?**

**SAMPLE NUMBER: 482007**

**GENERAL LOCATION: LYNCHFORD E.L.**

**SUMMARY:** A highly sericitized and carbonated plagioclase- and quartz phyric rhyolitic lava or crystal tuff.

**HAND SPECIMEN:** Extremely altered, slightly foliated former felsic lava or tuff with feldspar phenocrysts.

**THIN SECTION:** This is a very difficult rock to determine. It contains a few partially resorbed quartz phenocrysts whose margins are scalloped on a fine scale due to regrowth during alteration and recrystallization (devitrification) of the felsic formerly glassy groundmass. More abundant are ghost-relics of former feldspar phenocrysts which are now replaced by either calcite, or by a heterogeneous mixture of brown, almost isotropic material which may be a dense intergrowth of Fe-stained sericite, very fine-grained calcite and minor epidote. The former groundmass is extensively replaced by carbonate (calcite) and sericite, and has a weak foliation.

**COMMENT:** The intensity, style and mineralogy of the alteration present in this rock are considerably different from normal regional alteration/metamorphism of felsic volcanics from this region, and point to local strong hydrothermal alteration. Worth further checking?

0.33

SAMPLE NUMBER: 482008

GENERAL LOCATION: LYNCHFORD E.L.

SUMMARY: Very strongly foliated intermediate lava.

HAND SPECIMEN: Almost a mylonite; grey very strongly foliated metavolcanic(?) with visible phenocrysts of altered feldspar.

THIN SECTION: Strong slaty cleavage in this rock. Abundant (30-40 modal %) blocky former plagioclase phenocrysts have been stretched and sometimes rotated in the cleavage, and all have been totally sericitized. During cleavage development, these feldspar phenocrysts have often been mechanically aggregated, with foliation wrapping around the aggregates. Occasional smaller more prismatic euhedra have been replaced by secondary quartz and minor chlorite, and have shapes suggestive of former augite phenocrysts. The dark, strongly foliated groundmass is dominated by lensoidal domains of very pale green chlorite with striking ink-blue anomalous interference colours, and domains of very fine-grained recrystallized quartz and albite with minor leucoxene; both domains contain abundant Fe(Ti?) oxide dust.

COMMENT: The abundance of chlorite and the likely former presence of augite (albeit sparse) suggest an intermediate or basaltic precursor for this rock. The strong foliation is indicative of recrystallization in a high strain zone, which in the Mount Read Volcanics is almost certainly likely to be a significant fault zone. Can you check this out?

031

SAMPLE NUMBER: 482009

GENERAL LOCATION: LYNCHFORD E.L.

SUMMARY: Mudstone

HAND SPECIMEN: Weakly cleaved, light grey uniform mudstone.

THIN SECTION: This sample is virtually identical to 482004. If any difference at all exists, it is that this sample has somewhat less detrital quartz than 482004, and a generally finer meshwork of sericite through the rock. Again, I see no evidence of a tuffaceous component in this boring rock.

**SAMPLE NUMBER: 482010**

**GENERAL LOCATION: LYNCHFORD E.L.**

**SUMMARY: Strongly sericitized dacitic crystal tuff.**

**HAND SPECIMEN: Mottled cream and grey-green strongly altered felsic lava or tuff(?) with abundant sericitized feldspar phenocrysts.**

**THIN SECTION: About 30 modal % of totally sericitized albitized plagioclase phenocrysts to about 2mm long. No quartz or former mafic phenocrysts, but quite abundant microphenocrysts of FeTi oxide. The groundmass is so texturally heterogeneous as to suggest that the rock may have been a fragmental pyroclastic (tuff?); it is composed of variable proportions of quartz, albite, sericite, chlorite and leucoxene.**

030  
SAMPLE NUMBER: 482011

GENERAL LOCATION: LYNCHFORD E.L.

SUMMARY: Poorly sorted micaceous greywacke

HAND SPECIMEN: Dull grey, fine-grained, quite porous sandstone lacking visible bedding.

THIN SECTION: Detrital immature sediment composed of framework grains to 0.5mm dominated by angular quartz and minor K feldspar (?). Some quartz grains are compound, with typical triple-point metamorphic textures and undulose extinction. Detrital muscovite flakes are abundant, and some chlorite-pseudomorphed biotite flakes are present. A few rounded small grains of pleochroic green tourmaline are also evident. In thin section, the bedding is defined by muscovite flakes and sericite, which has presumably grown from recrystallized clays. The sericite is often yellowish, due to staining from the abundant tiny trails and dust grains of Fe oxides.

COMMENT: This sandstone is certainly derived locally, from the Precambrian metamorphics to the east (I guess); there is no sign of any volcanic component. Is this possibly the Miners Ridge Sandstone as defined by Keith Corbett. If so, can you determine where it is in the sequence with respect to the Mount Read -type volcanics?

007

**SAMPLE NUMBER:** 482012

**GENERAL LOCATION:** LYNCHFORD E.L.

**SUMMARY:** Basaltic breccia

**HAND SPECIMEN:** Dense, dark grey, non-vesicular autobrecciated basalt with fragments up to 1.5 cm long in which pyroxene phenocrysts and patches of calcite are visible.

**THIN SECTION:** Basaltic breccia with fragments to 1cm in thin section. Textural differences in the various fragments are due to different cooling rates of the groundmass. Fresh euhedral clinopyroxene (augite) phenocrysts to 3mm long are slightly zoned at their rims, and some are cut by narrow veins of chlorite and prehnite. Plagioclase occurs as euhedral prismatic phenocrysts, microphenocrysts and groundmass microlites; all are albitized, and show one of the two following styles of alteration.

1. Sparse to intense flecking by sericite
2. Development of minimal sericite, but common patches and blebs of apple green to tan pleochroic pumpellite.

The largely crystalline groundmass of most fragments consists of albitized plagioclase laths and microlites, with a broad pilotaxitic (flow) texture, less abundant stubby prisms of augite, abundant tiny spherical blebs of leucoxene after FeTi oxide grains. Fragments from the quenched flow margin have a darker finer-grained groundmass in which plagioclase laths are embedded in a devitrified matrix now composed of granular quartz and albite. Some local concentrations of hematite and yellow epidote have developed between fragments, and fractures and tension gashes are filled by a zoned assemblage of clean albite at the vein margins, followed inward by fans and sheaves of prehnite, then green chlorite and minor pumpellyite occur in the vein centres.

**COMMENT:** I think that this is a typical Western Volcanic Sequence basalt (breccia).

**PETROGRAPHIC REPORT**

**Rocks from Lynchford EL**

**For Aberfoyle Exploration Ltd. 7/12/88**

**by**

**Anthony J. Crawford  
Geology Department  
University of Tasmania**

**SAMPLE: 482023**

**SUMMARY:**

This is a thoroughly sericitized reworked vitric crystal tuff with a small lithic fragment component including flattened pumice fragments and pelitic schist and detrital muscovite of probable Precambrian derivation.

**HAND SPECIMEN:**

On a freshly cut surface, this sample is a grey-green speckled crystal tuff or epiclastic sediment composed of abundant feldspar crystals to 0.5mm long in a dense dark matrix.

**THIN SECTION DESCRIPTION:**

This rock in thin section is composed dominantly of angular quartz crystal fragments and totally sericitized feldspar crystals less than 1mm long. Many quartz crystal fragments contain devitrified melt inclusions. Lithic fragments are not abundant and include some probable flattened pumice fragments and several quartz-mica schist fragments of clear Precambrian derivation.

The groundmass of this sample is thoroughly sericitized, obliterating any former primary texture. However, an important though volumetrically minor groundmass component is common detrital muscovite probably derived from Precambrian pelitic metamorphics. Occasional patches of pale green chlorite are present in the groundmass, which probably contained a high proportion of vitric ash prior to sericitization.

The presence of plentiful detrital muscovite and schist fragments of probable Precambrian origin suggest that this sample is a reworked vitric crystal tuff with a minor lithic component.

**SAMPLE: 482025**

**SUMMARY:**

This sample was probably a felsic crystal lithic tuff with a vitric ash groundmass, and crystal debris dominated by quartz and plagioclase. It has suffered fairly thorough but uneven groundmass recrystallization which involved quartz phenocryst margins, and slight deformation, also evident in quartz phenocryst subgrain recrystallization.

**HAND SPECIMEN:**

On a freshly-cut surface, this sample is a weathered cream to grey crystal tuff dominated by clayey former feldspar crystals mainly less than 1 mm long.

**THIN SECTION DESCRIPTION:**

In thin section, this sample is seen to be a felsic crystal lithic tuff. The dominant feature of the sample is large subhedral feldspar crystals and large (to ~1 mm) angular quartz grains. The latter sometimes show crystal faces and altered rounded melt inclusions, attesting to their volcanic origin; however, most quartz grains have suffered some deformation and subgrain recrystallization, and have reacted extensively with adjacent quartz-feldspar groundmass to produce scalloped grain boundaries. Feldspar crystals are blocky euhedra of albitized plagioclase that are almost entirely sericitized. Sparse lithic fragments are very fine-grained felsic lava or tuff.

The groundmass of this sample is exceptionally heterogeneous and has been fairly thoroughly recrystallized, with coarser and finer areas, all composed of quartz, albite sericite and minor green chlorite. It is difficult to tell, given the extensive recrystallization of quartz and albite in the groundmass, whether the matrix of this rock was formerly a vitric ash, in which case the rock is a crystal lithic tuff, or whether the matrix was transported silty ash and felsic volcanic detritus, in which case the rock is an epiclastic tuffaceous sediment. I lean towards the former.

**SAMPLE: 482034**

**SUMMARY:**

This sample is probably an extensively sericitized and recrystallized fine-grained vitric tuff.

**HAND SPECIMEN:**

On a freshly-cut surface, this sample is a fractured and weathered fine-grained buff to olive coloured tuff or epiclastic sediment, with a prominent oxidation rind.

**THIN SECTION DESCRIPTION:**

This sample is extensively sericitized, to the extent that any primary texture has been totally destroyed. The only primary feature remains is about 1-2 modal% of quartz grains which are less than 0.1mm across. These are mainly polycrystalline and may represent either recrystallized angular fragments of quartz crystals deposited in this rock, or else small areas of quartz recrystallization from the very fine-grained quartz-albite matrix. The rock is densely pervaded by slightly Fe-stained sericite, which defines a weak cleavage. Other fine-grained groundmass constituents are epidote, leucoxene and minor pale green chlorite.

This sample may have been a fine-grained dacitic to rhyolitic vitric tuff, or an epiclastic siltstone derived by reworking a vitric ash-rich felsic volcanic terrain.

**SAMPLE NUMBER: 482032**

**SUMMARY:**

This rock is an excellent rhyolitic ignimbrite, composed of flattened slightly vesicular pumice fragments in a devitrified glassy groundmass that shows a weak foliation.

**HAND SPECIMEN:**

This is a massive pink sparsely quartz-phyric rhyolitic ignimbrite containing well-defined deep green flattened pumice fragments to about 1 cm long ; it has a weak fracture cleavage.

**THIN SECTION DESCRIPTION:**

This rock shows an excellent ignimbritic texture in thin section, defined by flattened pumice fragments up to about 12mm long in a devitrified formerly glassy marix containing abundant flattened glass shards and formerly vitric ash that shows an almost fluidal texture. Pumice fragments constitute around 25-30 modal% of this distinctive sample. They were sparsely vesicular glass and are now composed of an intergrowth of pale green chlorite (with cleavage orientated parallel to long axis of flattened fragments) that shows unusually high birefringence, and is often quite coarsely-crystalline for chlorite. Embedded in the chlorite are small (<0.05mm across) fluffy spheres of secondary quartz.

The groundmass of this ignimbrite is darker brown than the pumice fragments, due to a greater concentration of Fe oxide dust, and contains much less chlorite than the fragments. The groundmass shows a slight foliation that could be a post-solidification fracture cleavage or could even be a primary compaction cleavage. Scattered abundantly through the groundmass are tiny almost spherical quartz 'eyes' composed of multicrystalline secondary quartz aggregates; these have grown from the devitrified glass, and chlorite-sericite defining the 'cleavage' wraps around the quartz 'eyes', suggesting perhaps that the foliation is, in fact, a deformation-related cleavage.

**SUMMARY:**

This sample was probably a plagioclase-phyric glassy dacitic lava which underwent devitrification and extensive sericitization.

**HAND SPECIMEN:**

This sample is a weathered pale grey, fine-grained sparsely-phyric felsic lava or crystal tuff with a few visible phenocrysts or crystal fragments of clayey feldspars.

**THIN SECTION DESCRIPTION:**

In this sample, it is evident that this sample has been extensively sericitized. Large blocky sericitized feldspar phenocrysts (to 2mm long) and microphenocrysts are aligned in a matrix composed of fine-grained quartz and albite that has been thoroughly riddled by a mesh of yellowish sericite and minor leucoxene and green chlorite. Angular voids are lined by well-crystallized sheaves of very strongly pleochroic green chlorite.

A characteristic feature of the groundmass of this rock is the extensive development of blebs of secondary quartz from 0.1 to 0.3mm growing from and in the groundmass. At first glance, these give the impression of being crystal fragments; however, careful examination shows that many of these quartz blebs are polycrystalline and are clearly growing from the groundmass.

The extensive sericitization of this sample and the obliteration of the primary groundmass texture make it hard to determine its original mode of origin. I am inclined towards the conclusion that this sample was originally a plagioclase-phyric dacitic lava with a glassy groundmass which devitrified, partially recrystallized and then was sericitized.

**SAMPLE: 482039**

**SUMMARY:**

This is a highly feldspar-phyric mafic andesite or basalt with a few modal% of large augite phenocrysts in a devitrified vitrophyric groundmass.

**HAND SPECIMEN:**

On a freshly cut surface this sample is a dark grey green highly feldspar-phyric andesite or basalt with sparse large augite phenocrysts to 2mm long.

**THIN SECTION DESCRIPTION**

This sample in thin section is seen to be highly phyric, with more than 25 modal% of large totally sericitized feldspar phenocrysts and approximately 3 modal% of large clean augite phenocrysts in a formerly glassy to vitrophyric groundmass. The augite phenocrysts are somewhat rounded euhedra which show occasional simple twinning and are quite fresh. Feldspar phenocrysts are large prismatic to blocky subhedra which show total replacement by quite coarse-grained sericite.

The groundmass is quite dark and very fine-grained, but contains equidimensional spots of quartz and albite crystallizing from the vitrophyric matrix. A few lithic fragments with a similar phenocryst mineralogy, but even finer-grained, darker groundmass than the remainder of the rock probably represent crusts of the same flow, as described for samples 482030 and 482071. All three samples are quite similar.

**SAMPLE: 482060**

**SUMMARY:**

This is a polymict volcanogenic sandstone to fine conglomerate composed of mafic and andesitic lava fragments to 1cm across.

**HAND SPECIMEN:**

This sample on a freshly cut surface is a coarse, polymict volcanogenic sediment with lava fragments to from 0.1 to 1cm across in a dark groundmass rich in crystal and lithic fragments.

**THIN SECTION DESCRIPTION:**

This interesting sample is composed of at least ten different types of lava fragments and abundant coarse crystal debris in a modally minor matrix component. Pressure solution has forced lava fragments together, possibly eliminating or recrystallizing the subordinate matrix, so that adjacent lava fragments have quite intimately sutured grain boundaries. The majority of lava fragments are basaltic or andesitic. Most contain elongate prismatic phenocrysts of sericitized plagioclase and large (to 4mm) euhedra of fresh augite. Former olivine phenocrysts, now replaced by quartz and chlorite or serpentine, are present in a few fragments. Most of these samples have dark vitrophyric groundmasses composed of albitized plagioclase and fresh acicular augite microlites in a microcrystalline devitrified glassy matrix. One distinctive lithic fragment is a very well-preserved hornblende andesite, with small (<0.5mm) prismatic olive green to brown pleochroic hornblende phenocrysts and larger stout to elongate sericitized plagioclase phenocrysts in a devitrified glassy groundmass. This lithic fragment is strikingly similar to the hornblende andesite lavas and shallow intrusives into the Central Volcanic Sequence in the Crown Hill area further north. Another distinctive type of rock fragment, fairly abundant in this rock, is a highly vesicular basaltic glassy lapilli tuff in which vesicles were filled by quartz and chlorite, and all glass has been replaced by green chlorite, which in some samples has oxidized to a red-orange clay mineral. There is an apparent complete absence of detritus derived from felsic volcanism in this sample, which is dominated instead by material locally derived from a mixed mafic and intermediate volcanic source.

**SAMPLE: 482067**

**SUMMARY:**

This sample is a feldspar+quartz-phyric rhyolitic crystal lithic tuff with a few flattened pumice fragments and a recrystallized, formerly vitric groundmass.

**HAND SPECIMEN:**

On a freshly-cut surface, this sample is a dark grey mottled crystal lithic tuff, with sparse dark lithic fragments to at least 0.5cm and abundant feldspar phenocrysts.

**THIN SECTION DESCRIPTION:**

This sample is a crystal-rich tuff or epiclastic dominated by crystal fragments of quartz and feldspar to about 1mm across. Both quartz and feldspar crystals have suffered deformation and subgrain recrystallization, which makes many of the feldspar crystals appear as crystal aggregates. Several large FeTi oxide phenocrysts have altered entirely to leucoxene margins surrounding quartz or quartz and chlorite interiors. A number of elongate, wavy lithic fragments now composed of recrystallized quartz, albite, sericite and chlorite were probably flattened pumice fragments.

The groundmass of this sample is extensively recrystallized and sericitized, and it contains large areas of yellow-green chlorite. The original texture of the groundmass is obliterated, but the overall appearance of this sample in both thin section and hand specimen is reminiscent of less altered crystal lithic tuffs from the same area.

**SAMPLE: 482072**

**SUMMARY:**

**This rock is an extensively sericitized lithic crystal tuff composed largely of devitrified flattened rhyolitic pumice fragments.**

**HAND SPECIMEN:**

On a freshly-cut surface, this sample is a dark grey sericitized lithic tuff with dark lithic fragments to around 5mm long maximum.

**THIN SECTION DESCRIPTION:**

In thin section, the extent of sericitization of this sample is immediately obvious. The dominant component of the rock was probably flattened pumice fragments containing sparse large feldspar phenocrysts to 3mm and more abundant smaller feldspar crystals are almost completely sericitized. Other lithic fragments include some more rounded aphyric rhyolitic lava fragments with almost holocrystalline recrystallized glassy groundmasses. Crystal fragments of sericitized feldspar and minor volcanic quartz are quite common.

The poorly-defined groundmass of this sample is probably composed largely of devitrified and recrystallized rhyolitic vitric ash and pumice. Extensive meshworks and veinlets and patches of sericite pervade the groundmass, and numerous small pyrite cubes are localized in several flattened pumice fragments.

**SAMPLE: 482073**

**SUMMARY:**

This is a strongly augite-phyric foliated metabasalt very reminiscent of those around Hellyer.

**HAND SPECIMEN:**

This sample is a dark grey foliated basalt with prominent dark green phenocrysts of augite.

**THIN SECTION DESCRIPTION:**

This basaltic lava is dominated by around 15 modal% of large (to 3mm) augite phenocrysts in a foliated dark, flow-textured slightly vesicular groundmass. Augite phenocrysts are large fresh euhedra, and are frequently aggregated together in polycrystalline clots of clinopyroxenite which both the groundmass and the foliation wrap around. Totally sericitized plagioclase phenocrysts and microphenocrysts, mainly less than 0.5mm long, make up about 5 modal% of this rock.

The groundmass was formerly vitrophyric, but now consists of microlites of sericitized feldspar and augite in a very dark devitrified glass matrix. It is transected on a very fine-scale by sericite defining the weak cleavage. Small vesicles are filled by quartz and green chlorite, and other groundmass constituents include fine-grained epidote and tiny granules of leucoxene.

This basalt is also very similar to the more mafic crystal-rich basalts from the Hellyer area and is likely to be broadly comagmatic with those other basalts and mafic andesites described in this report (482071, 031 and 039).

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**SAMPLE:482083**

**SUMMARY:**

This sample is a fine-grained vitric tuff or reworked vitric tuff.

**HAND SPECIMEN:**

This is a mottled, structureless pale grey and white very fine-grained tuff or tuffaceous siltstone.

**THIN SECTION DESCRIPTION:**

In thin section, this rock consists of much less than 1 modal% of angular volcanic quartz and albite fragments, less than 0.1mm long set in a very fine-grained quartz-albite groundmass. The rock has a very feint foliation defined by wavy sericite laminae. The rather dense quartz-albite groundmass looks more like a devitrification-recrystallization product of vitric ash rather than a detrital component of a siltstone. The rock is probably a vitric tuff or fine-grained rewrked vitric tuff.

**SAMPLE: 482098**

**SUMMARY:**

This is a fairly coarse-grained, weathered lithic crystal tuff with abundant fragments of rhyolitic and dacitic lava and tuff, and quartz and feldspar crystal fragments.

**HAND SPECIMEN:**

On a freshly-cut crystal surface, this sample is a weathered polymict lithic crystal tuff with abundant diverse fine-grained lava and cherty fragments to 1cm long.

**THIN SECTION DESCRIPTION:**

In thin section, the polymict nature of this sample is obvious, with probably 50-60 modal% of the rock being composed of a variety of andesitic to rhyolitic lithic fragments. Abundant crystal detritus, dominated by slightly rounded volcanic quartz and blocky feldspar phenocrysts constitutes around 20-25 modal% of the rock, and the remainder is interstitial devitrified silty vitric ash. Rock fragments vary from formerly glassy rhyolites with feldspar and quartz phenocrysts, through aphyric devitrified glassy rhyolites or vitric tuffs, to dacitic lavas with small phenocrysts of sericitized feldspar in a vitrophyric groundmass containing sericitized feldspar microlites and minor leucoxene granules in a very fine-grained quartz-sericite matrix. Numerous anastomosing veinlets of matted sericite traverse the rock and are frequently stained deep red.

The main question concerning the original nature of this rock is whether it represents a lithic crystal tuff, or whether it is an epiclastic sediment derived from a felsic volcanic-dominated terrain. Although this is difficult question to answer in a rock as altered as this, I lean towards the former possibility, that this was a lithic tuff. Whatever is the correct case, the implications are essentially identical.

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621052

PETROGRAPHIC REPORT  
for  
ABERFOYLE RESOURCES (EXPLORATION DIVN.)

ROCKS FROM LYNCHFORD AREA

ANTHONY J. CRAWFORD  
GEOLOGY DEPARTMENT  
UNIVERSITY of TASMANIA

ATTN. D.Noonan

**SAMPLE: 482101**

621053

**LOCATION: Lynchford area 380102E 5336834N****SUMMARY:**

This is a slightly carbonate-altered and autobrecciated feldspar+augite-phyric andesite lava.

**HAND SPECIMEN:**

This is a mid-grey feldspar phyric intermediate lava showing mild autobrecciation and calcite veining.

**DESCRIPTION:**

This is a slightly autobrecciated plagioclase+augite-phyric andesitic lava with a jigsaw fit to adjacent angular fragments, all of which are the same petrographically, and are therefore thought to be derived from a single lava flow. Feldspar phenocrysts are euhedral prisms to around 1mm long maximum size, which are entirely albitized but flecked with secondary calcite, sericite and minor epidote. These constitute around 20 modal% of this rock, and commonly occur in glomeroporphyritic clots. Augite phenocrysts constituted about 2 modal% of this sample; these are partially chloritized euhedra also never more than about 1mm long.

The fairly uniform groundmass of this sample is microcrystalline to vitrophyric, with microlites of albitized feldspar in a darker very fine-grained indeterminate groundmass from which small patches and areas of secondary quartz are growing. Small spherical bodies of leucoxene after FeTi oxides are also abundant in the groundmass, while tiny epidote grains and green chlorite patches are subordinate.

Calcite alteration is abundant in this rock. It occurs as both irregular narrow veinlets traversing the rock, and as dispersed tiny patches and larger blebs and pools throughout the groundmass.

This is clearly an andesitic lava rather less mafic (ie. more evolved) than many of the lavas I have seen in the Western Volcanic Sequence in the Lynchford area, but quite reasonable for a fractionation product of the more typical mafic lavas. We can analyze this sample to check this. I can find no barite in this sample.

**SAMPLE: 482102**

**LOCATION: Lynchford area 380236E 5336875N**

**SUMMARY:**

This is a sparsely olivine+plagioclase-phyric (meta)basaltic lava.

**HAND SPECIMEN:**

This sample is a weathered and rather porous mafic or intermediate lava with sparse plagioclase phenocrysts and dark angular areas and streaks of chloritized glass (?) or mafic phenocrysts in a very uniform grey groundmass.

**DESCRIPTION:**

This is a texturally well-preserved basaltic or andesitic lava containing fairly sparse phenocrysts of plagioclase and a chloritized mafic phase. The plagioclase phenocrysts are albitized and partly sericitized euhedra or slightly rounded euhedra which constitute much less than 1 modal% of the rock. Even less abundant are pseudomorphed crystals of a mafic phenocryst phase now replaced by yellowish chlorite or serpentine. Although the latter crystals are not well preserved, several features, including shapes of crystals, possible chromite inclusions in one crystal, and the unusual mesh-serpentine-like texture of the replacing phase all suggest that these mafic phenocrysts were olivine, rather than augite.

The groundmass of this sample is relatively uniform, and composed of microphenocrysts and microlites of albitized plagioclase in a formerly glassy matrix containing chloritized sheaves of quenched pyroxenes and some well-developed perlitic cracks in a microcrystalline albite-quartz-chlorite-sericite matrix. Small very irregular grains and tiny patches of FeTi oxides are not altered.

**SAMPLE: 482104**

**LOCATION: Lynchford area 378262E 5335206N**

**SUMMARY: This sample is an autobrecciated basaltic to basaltic andesite lava containing augite and plagioclase phenocrysts, and a subordinate population of quenched andesitic lithic fragments unrelated to this lava.**

**HAND SPECIMEN: This is a dark grey-green mafic to intermediate volcanic breccia with several populations of angular lithic fragments to around 1cm across in a dense crystal-rich matrix.**

**DESCRIPTION:**

This sample is composed dominantly of lithic clasts derived from two separate volcanic sources. The dominant clast type is represented by highly vesicular and formerly very glassy basaltic or basaltic andesite fragments characterized by an abundance of subhedral augite phenocrysts and more abundant augite crystal fragments to about 2mm long. These constitute around 5-10 modal% of the rock and are fresh, often show simple twinning and frequently occur in multiple crystal clots; crystal rims are occasionally replaced by palest green actinolite, indication low greenschist facies of metamorphism. In these same fragments, tabular prismatic feldspar phenocrysts (also 5-10 modal%) rarely larger than 1mm are totally replaced by relatively coarse-grained sericite. The formerly glassy groundmass hosting the augite and plagioclase phenocrysts is highly vesicular and variable in texture, mainly due to thorough recrystallization of the groundmass glass. Areas of pale green chlorite with strong anomalous blue interference colours are streaked through a chlorite-poor, albite-, sericite and quartz-rich fine-grained groundmass in which tiny plagioclase (now albite) microlites are sometimes discernible; these latter areas are dotted by tiny spherical bodies of leucoxene after former groundmass FeTi oxides. Abundant vesicles are mainly chlorite-filled, although some are lined by secondary albite and quartz and then chlorite-filled.

The less abundant lithic clast variety is made up of 10-15 modal% of small euhedral prismatic plagioclase phenocrysts, now totally sericitized, in a sparsely vesicular dense isotropic groundmass composed of submicroscopic-sized products of the devitrification of andesitic glass.

This rock is probably an autobrecciated basaltic to andesitic lava of the lithology represented by the more abundant fragment type. Vesiculation (due to rapid explosive eruption in shallow water?) and overturning accompanying eruption may have led to mechanical mixing of quenched glassy flow tops into more slowly cooled internal parts of the flow, which autobrecciated as it erupted and cooled. The subordinate clast population is not a product of the same eruption (viz. lack of any mafic phenocrysts), but may have been parts of a pre-existing flow incorporated into this lava breccia during explosive eruption. The large augite phenocrysts in the main fragment population are strongly reminiscent of the main Lynch Creek (and Hellyer-type) basalts.

058

621057

**SAMPLE: 482105**

**LOCATION: Lynchford area 379345 5335055N**

**SUMMARY: This rock is a highly sericitized mafic-crystal-rich (meta)basalt similar in terms of the abundant former augite ( $\pm$  olivine) phenocrysts to many Western Volcanic Sequence and Hellyer basalts. The total absence of albite suggests strong Na depletion, and suggests further examination of the area from which this sample was taken is warranted.**

**HAND SPECIMEN: This is a speckled grey-green porphyritic mafic lava with a highly altered groundmass and abundant chloritized mafic phenocryst to 7mm long.**

**DESCRIPTION:**

This formerly porphyritic mafic lava has been thoroughly sericitized, with the complete obliteration of the groundmass texture. Former mafic phenocrysts are entirely replaced by pale green chlorite which shows very deep blue anomalous interference colours. Most have euhedral shapes suggestive of augite precursors, although one or two were rather more 'olivine-shaped'. Most phenocrysts are 1-3mm long, and they constitute at least 10 modal% of the rock.

The groundmass may originally have been highly glassy. It has been totally sericitized, and small pools of secondary quartz and green chlorite are abundant in the sericite. There is no clear evidence of secondary albite in this sample.

**COMMENT**

The absence of the usually ubiquitous albite (either secondary in the groundmass or replacing primary calcic plagioclase phenocrysts) is unusual, and suggests a very low  $\text{Na}_2\text{O}$  content in this rock. Local depletion of  $\text{Na}_2\text{O}$  to values as low as 0.1% is a characteristic feature of hydrothermal alteration around VMS in lava piles such as the MRV. Also, the extensive sericitization is anomalous. The area around this sample deserves some attention.

**SAMPLE: 482106**

**LOCATION: 379601E 5335052N Lynchford area**

**SUMMARY:** This rock is a slightly foliated felsic lithic crystal tuff containing an abnormal concentration of secondary Fe-oxide/hydroxide minerals replacing both phenocryst phases and groundmass. There is no obvious evidence that these oxides are replacing former sulphides.

**HAND SPECIMEN:** This is a cream-grey weathered and slightly sheared lithic tuff with fragments rarely larger than 1cm long, and abundant Fe-oxide replaced feldspar phenocrysts and chlorite patches.

**DESCRIPTION:**

This is a weathered and sheared fragmental volcanic rock composed of fragments of felsic to intermediate lava and crystal tuff in a foliated, altered and extensively recrystallized groundmass. All lava fragments were feldspar-phyric and had vitrophyric to glassy groundmasses. Feldspar phenocrysts are blocky, slightly rounded crystals or crystal fragments to about 2mm long and are either albitized or albitized and partly to totally sericitized. A significant percentage of the former feldspar phenocrysts are partially replaced by a reddish opaque oxide phase, probably hematite. Almost all feldspar phenocrysts have a concentration of chlorite and sericite along their margins, representing regions in which groundmass recrystallization led to selective dissolution of albite (both in the groundmass and the phenocryst edges) and concentration of chlorite-sericite. Several almost rounded and highly embayed quartz phenocrysts are present in at least two lithic fragments, attesting to a rhyolitic to rhyodacitic nature of the lithic clasts. No mafic phenocrysts or relics thereof are present.

The groundmass of this sample is highly variable, reflecting in part the fragmental nature of the rock, and also the local variation in the intensity of the foliation. The foliation is rather widely spaced, but occurs as a series of sub-parallel zones of intense schistosity characterized by abundant Fe-stained orange-brown sericite and minor chlorite through which cut meandering veinlets of hematite or limonite. Between such local deformation zones, the groundmass of the lithic fragments is generally unfoliated,

and is typically a very fine-grained, recrystallized mixture of albite, quartz and sericite with abundant green chlorite forming an open meshwork. Several fragments have relic groundmass textures strongly suggestive of flattened pumice fragments, and at least one fragment appears to have preserved shapes (ghost outlines) of former glass shards.

The secondary mineralogy of this sample suggests a prehnite-pumpellite to low greenschist facies of burial metamorphism. The sample contains considerably more secondary Fe minerals and sericite than 'normally' seen in dacitic to rhyolitic lithic and crystal tuffs in the Mount Read Volcanics (MRV). Whether this is due to the fact that this sample is fairly strongly weathered, or alternatively, is due to a pre-weathering alteration event, cannot be judged from this section alone.

059



621060

**PETROGRAPHIC REPORT**

**Rocks from Lynchford EL**

**For Aberfoyle Resources Ltd. 3/4/89**

**Attn. Danny Noonan**

**by**

**Anthony J. Crawford  
Geology Department  
University of Tasmania**

**SAMPLE NUMBER: 482114**

**SUMMARY:**

This is an intensely sericitized and carbonated former feldspar-phyric felsic lava or tuff with a weak fracture cleavage.

**HAND SPECIMEN:**

This is a mid-grey feldspar-phyric felsic or intermediate lava with a weak fracture cleavage. Several tiny bright green spots of fuchsite (?) are notable.

**THIN SECTION DESCRIPTION:**

Thin section examination shows this sample to be a difficult rock to diagnose. It is now a foliated very fine-grained intergrowth of sericite, minor carbonate, quartz and albite, with abundant equidimensional tiny granules of an oxide or sulphide phase scattered throughout the rock. Rare former feldspar phenocrysts to about 1 mm across are defined by ghost outlines of sericite-dominated areas in which the Fe-oxide 'dust' is considerably less abundant. Small almost rounded areas of secondary quartz intergrowths are probably secondary features. The weak cleavage is defined by intense sericite development. No sign of the tiny bright green fuchsite(?) spots notable in hand specimen could be found in thin section.

I think that this sample was probably a feldspar-phyric glassy dacite lava that has undergone intense localized sericite-carbonate alteration. Without polished thin section examination, it cannot be determined with certainty whether the abundant tiny opaques in this sample are sulphides or oxides.

**SAMPLE: 482120**

**LOCATION: 380180E 5329020N**

**SUMMARY:**

This is an altered, formerly glassy and devitrified felsic vitric-crystal tuff containing sparse sericitized plagioclase phenocrysts. Several features noted below suggest to me that it more likely to be a Tyndall or Dundas Gp. correlate than a Central Volcanic Complex tuff.

**HAND SPECIMEN:**

This is a highly altered cream to pink and maroon coloured felsic tuff(?) containing altered diffuse small (<1cm) lava fragments.

**THIN SECTION DESCRIPTION:**

This is a felsic vitric crystal tuff containing common but not abundant crystals of plagioclase (almost totally sericitized albite) and less common partly resorbed quartz phenocrysts in an extensively sericitized and recrystallized formerly rhyolitic glassy ash matrix. The groundmass of the tuff has devitrified and recrystallized to a fine-grained mosaic intergrowth of quartz and albite that is riddled by a fine mesh of sericite. In places the sericite coalesces into dense felted masses. Very narrow veinlets (<.05mm wide) of secondary quartz anastomose across the sample and are probably sites of fracturing and local leaching of the sample during deformation. Sparse former FeTi oxide microphenocrysts have altered to an Fe oxide dust and chlorite, leaving only relic outlines defined by the Fe oxide dust.

Several lithic fragments composed of devitrified and recrystallized felsic volcanic lithologies are present, and stand out from the remainder of the rock in thin section by their slightly coarser-grained devitrification products (quartz-albite).

Zircon crystals are notable by their abundance. This latter observation, and the presence of quartz phenocrysts remind me more of a Tyndall or Southwell Subgroup (Dundas Gp correlate) tuff than those in the Central Volcanic Complex.

**SAMPLE: 482121**

**LOCATION: 380375E 5328130N**

**SUMMARY:**

This is a former felsic lithic tuff or lava breccia which has been thoroughly sericitized, with the almost total obliteration of original texture of the sample. It is likely to be from the same sequence as 482120, although I think they are better equated with the Dundas-Tyndall sequences than the Central Volcanic Complex felsic tuffs.

**HAND SPECIMEN:**

On a freshly-cut surface, this sample is seen to be a pale grey lava breccia with angular fine-grained purple and cream coloured felsic lava fragments in a highly altered sericitic matrix.

**THIN SECTION DESCRIPTION:**

In thin section, this sample is seen to be a very altered felsic volcanic with a weak fracture cleavage defined by sericite, which permeates the sample to the extent that the former texture of the sample is almost obliterated. Lithic fragments are less obvious in thin section than in hand specimen, and in the former their presence is only indicated by ghost margin outlines of former fragments, which have otherwise devitrified and recrystallized to a sericite-quartz-albite mosaic identical to the remainder of the rock.

This sample contains a number of relatively large well-formed zircons, and is similar to 482120 in this respect. Both samples may well be from the same sequence of sericitized felsic pyroclastic rocks which I personally think are more like the Dundas-Tyndall Gp. tuffs.

**SAMPLE NUMBER: 482123**

**SUMMARY:**

This is an extensively sericitized and carbonated former andesitic lava or tuff with a weak fracture cleavage defined by the sericite.

**HAND SPECIMEN:**

This is a dark grey fine-grained sparsely feldspar-phyric lava or tuff of probably andesitic derivation.

**THIN SECTION DESCRIPTION:**

In thin section, this sample is seen to be an extensively carbonated and sericitized feldspar-phyric felsic or andesitic lava or tuff. Former feldspar phenocrysts are blocky, slightly rounded euhedra to about 2mm long that are totally replaced by very fine-grained slightly Fe-stained sericite; these make up around 10-15 modal % of the rock. Sparse large mafic phenocrysts to about 1mm long have been replaced by chlorite and sericite, and these minerals have weathered to a rusty clay material. The texture of the groundmass has been totally obliterated by weak cleavage development and an intense sericite-calcite overprinting. Tiny former FeTi oxide grains scattered throughout the matrix are altered to leucoxene and sericite/clay, and their abundance suggests an andesitic rather than dacitic or rhyolitic precursor. The intensity of carbonate alteration in this sample is far greater than normally encountered in regionally altered Mount Read Volcanics, and imply local hydrothermal alteration.

**SAMPLE NUMBER: 482126**

**SUMMARY:**

This is a virtually aphyric rhyodacitic to rhyolitic rock, with a formerly almost holocrystalline groundmass. It represents either the centre of a thick flow or a shallow intrusive.

**HAND SPECIMEN:**

This is a pink highly altered felsic lava or tuff with meandering fractures defined by lighter pink sericite(?) and dark spots representing altered former mafic(?) phenocrysts.

**THIN SECTION DESCRIPTION:**

This rock is a sparsely feldspar-phyric rhyodacitic to rhyolitic lava or shallow intrusive. It consists of about 1 modal% of subhedral feldspar phenocrysts to about 2mm across that have been replaced by greenish and Fe-stained sericite. These crystals are the dark grains obvious in hand specimen. Microphenocrysts of FeTi oxides have broken down to leucoxene and chlorite.

The groundmass of this sample was not formerly glassy, but was composed of tiny microlites and laths of feldspar (now albitized) set in a ragged quartz-albite intergrowth that contains minor chlorite and sericite flecking. This texture is more typical of the centres of thick flows of felsic lava, or else of shallow dykes and sills, than of typical felsic lava flows.

The rock is cut by numerous narrow sericite-lined fractures, and much of the sericite is Fe-stained to greenish and brownish shades.

**SAMPLE NUMBER: 482129**

**SUMMARY:**

This rock is a chloritized felsic (dacitic) lithic crystal tuff-breccia containing a diverse population of mainly dacitic clasts in a devitrified and chloritized vitric ash matrix.

**HAND SPECIMEN:**

This is a mottled green and pink felsic lithic tuff-breccia containing brick red angular, fine-grained felsic lava fragments up to 1 cm long in a chlorite-rich grey-green matrix.

**THIN SECTION DESCRIPTION:**

In thin section, this sample is seen to be a fairly well-preserved lava breccia composed of clasts of vitric, vitrophyric and holocrystalline feldspar-phyric dacitic lavas in a groundmass composed essentially of dacitic ash. Clearly defined lithic fragments include:

1. holocrystalline dacitic rocks composed of interlocking albitized feldspar laths with minor interstitial quartz; these are probably derived from shallow intrusive dacitic plugs,
2. very fine-grained aphyric dacitic lavas composed of trachytic textured, tiny albitized plagioclase microlites in isotropic devitrified glass, and
3. formerly glassy dacite lavas containing blocky feldspar phenocrysts,
4. felsic tuff fragments containing a major component of broken albite crystals that often occur massed together in crystal clots.

The groundmass/matrix of this sample is probably a devitrified dacitic ash; it contains abundant (albitized) feldspar phenocrysts and crystal fragments. Devitrification and subsequent recrystallization of the former glass has produced a variety of textures and grainsizes in the secondary quartz-albite intergrowths replacing glass, and green slightly pleochroic chlorite is abundantly scattered throughout the groundmass. Chlorite also occurs as a fracture filling along veinlets and cracks and fractures that wrap around lithic fragments.

**SAMPLE NUMBER: 482130**

**SUMMARY:**

This is a rhyolitic vitric crystal tuff.

**HAND SPECIMEN:**

This rock is a porous light grey quartz-phyric rhyolitic lava or tuff.

**THIN SECTION DESCRIPTION:**

In thin section, this sample is clearly a quartz-phyric rhyolitic vitric crystal tuff. Crystal fragments are dominantly angular to slightly rounded volcanic quartz grains to about 1mm maximum diameter, and make up around 10 modal% of the sample. Former feldspar phenocrysts also to about 1mm diameter are totally sericitized, and sericite has largely altered to messy near-isotropic clayey material. It is difficult to determine what percentage of this sample the feldspar phenocrysts originally constituted.

The groundmass of this sample is distinctive in having a texture varying from fluidal (almost ignimbritic), to being clearly composed of glassy shards, curved glassy fragments and vitric ash. Former glass has devitrified to fine-grained quartz and albite intergrowths, and this is meshed by fine-grained wispy sericite trails and veinlets. This sample contains minimal calcite and chlorite.

**SAMPLE NUMBER: 482131**

**SUMMARY:**

This is a relatively coarse-grained lava breccia composed of olivine+augite+plagioclase-phyric basaltic lava fragments in a porous andesitic ash matrix.

**HAND SPECIMEN:**

This is a weathered dark grey lava breccia with fragments to at least 2cm long of light and dark grey porphyritic andesite lava.

**THIN SECTION DESCRIPTION:**

This is a coarse-grained lava breccia composed in this thin section of diverse andesitic to basaltic lava fragments in a groundmass probably of andesitic ash. The lava fragments are mainly augite+plagioclase-phyric andesites with vitrophyric groundmasses dominated by tiny albitized plagioclase laths in almost isotropic devitrified glass. The augite phenocrysts are up to 1mm long and are generally fractured, with chlorite lining fractures. Former mafic phenocrysts now composed of serpentine or very low birefringent chlorite have typical olivine shapes, and make up only two or three modal percent of the fragments. Plagioclase phenocrysts are totally sericitized elongate prisms to 0.5mm long. At least one small fragment is composed of an intergrowth of quartz and albite, and almost certainly was a former glassy rhyolitic or dacitic lava fragment.

The groundmass/matrix of this sample is more heterogeneous in texture than the basaltic-andesitic lava fragments, and contains more sericitized feldspar crystals than the lava fragments.. It is quite dark coloured in places, and almost schistose where it pinches out between adjacent lava fragments. This suggests that the groundmass was a porous andesitic ash which preferentially deformed as lava fragments were compacted together.

This sample was derived from a mixed mafic-intermediate volcanic source, probably that now represented by the Lynchford basalts and andesites.

**SAMPLE NUMBER: 482132**

**SUMMARY:**

This is a highly weathered, ferruginized and silicified former coarse-grained epiclastic sediment or tuff-breccia.

**HAND SPECIMEN:**

This is a strongly weathered and ferruginized coarse epiclastic sediment with altered clasts of light pink felsic lava or tuff up to 1cm across set in a dark red-brown ferruginized matrix. Very poorly developed bedding is defined by varying modal abundances of clasts to matrix throughout the hand specimen.

**THIN SECTION DESCRIPTION**

This rock is very strongly altered and composed of angular lithic fragments varying from fine sand to up to 1cm across set in a very fine-grained and heterogeneous matrix. The latter is composed almost exclusively of quartz and hematite dust. All angular fragments are monomineralic quartz intergrowths, composed of fine- to relatively coarse-grained polygonal quartz with intimately sutured grain boundaries. In many of these silicified clasts, the quartz has a pale orange-red colour, presumably due to incorporation of the abundant Fe oxide dust in the growing secondary silica. There is exceptional variation in the grain size and texture of secondary silica, both in the groundmass and in fragments.

The ultimate protolith of this sample is very difficult to determine. The fragmental texture has probably been preserved from a former coarse epiclastic sediment or tuff-breccia. However, the sample has clearly suffered intense surficial weathering that involved extensive silicification and ferruginization.

**SAMPLE NUMBER: 482134**

**SUMMARY:**

This rock is a relatively coarse-grained quartz+feldspar-phyric rhyolitic tuff-breccia.

**HAND SPECIMEN:**

This is a weathered, highly altered and oxidized reddish felsic lava breccia or coarse quartz-phyric tuff, with a weak fracture cleavage.

**THIN SECTION DESCRIPTION:**

This is a strongly altered quartz-phyric felsic rhyolitic tuff breccia with around 10-15 modal% of angular and broken quartz phenocrysts. A much smaller percentage of smaller albitized plagioclase phenocrysts are almost totally replaced by very fine-grained sericite aggregates, and are often slightly sheared and streaked out into the cleavage. Elongate darker areas of the rock, to about 2mm long are probably flattened vesicular pumice fragments that have devitrified and recrystallized to variably-textured quartz-albite-Fe oxide dust assemblages. Other lithic fragments include small (<1mm) grains of devitrified rhyolitic glass containing occasional quartz phenocrysts; these are now composed of an equigranular, fine-grained mosaic of quartz and albite. Occasional FeTi oxide phenocrysts have broken down to magnetite and leucoxene-chlorite-sericite concentrations.

The groundmass of this sample is a very fine-grained quartz-albite-sericite intergrowth with a slightly fluidal texture in places. It is transected by a weak fracture cleavage defined by sericite trains and streaks along anastomosing subparallel fractures and networks of cracks; the sericite along fractures is often stained red-brown. There is no calcite in this sample.

I think that this sample is a slightly sheared quartz-phyric coarse-grained tuff-breccia of rhyolitic composition.

078

621071

APPENDIX 2.

071

621072

# ANALABS

A division of MacDonald Hamilton & Co. Pty. Ltd.

Phone (09) 458 7999

52 Murray Road, Welshpool, W.A. 6106  
FAX: 004 31 8890

Telex AA92560

**ANALYTICAL REPORT No. 23.3.08.05846**

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

Aberfoyle Resources Exp. Division  
P.O. Box 952  
Burnie  
Tasmania 7320

ORDER No.	PROJECT
5068	
DATE RECEIVED	RESULTS REQUIRED
17/11/88	ASAP

No. OF PAGES OF RESULTS	DATE REPORTED	No. OF COPIES	TOTAL No. OF SAMPLES
8	08/12/88	1	82

STATE OF SAMPLES	REFER BELOW	SAMPLE NUMBERS	PRE-TREATMENT						ANALYSIS			
			DRY	CRUSH	SPLIT	PUL-VERSE	SIEVE	OTHER SEE REMARKS	NONE	REFER TO ANALYSIS SECTION	PREPARATION	METHOD
		482019/100	RC	Prep: 009,011,012,013,016						Cu,Pb,Zn,Ag/101,As/114		
		482019/100	RC							Ba,Cr,Zr,Ti,Y/401		
		Various	RC							Au,AuChk/309		
		482019/100	RC							Ti,Ba/408		

RESULTS

TO

R. de Bomford  
Aberfoyle Resources Exp. Division  
P.O. Box 952  
Burnie  
Tasmania 7320

RESULTS

TO

REMARKS

STATE OF SAMPLES	ANALYSIS — PREPARATION	ANALYSIS — METHOD
whole core	perchloric acid A1	atomic absorption AAS
split core	hydrochloric acid A2	x-ray fluorescence XRF
cutting	nitric acid A3	spectrophotometry SPEC
rock	aqua regia A4	colorimetry COL
oil	nitric-perchloric A5	chromatography CHR
slip	HF mixture A6	titration TTN
water	HF under pressure A7	other chemicals means CHEM
tissue	fusion A8	miscellaneous MISC
stream sediment		fluorescence FLUOR
heavy mineral		inductively coupled plasma ICP

AUTHORISED OFFICER



# ANALABS

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## ANALYTICAL DATA

SAMPLE PREFIX

REPORT NUMBER

REPORT DATE

CLIENT ORDER No.

PAGE

23.3.08.05735

25/10/88

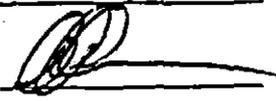
4854

2 OF 2

TUBE No.	SAMPLE No.	Ti	Y						
1									
2									
3									
4	482004	1730	39						
5	482005	2480	42						
6	482006	4930	24						
7	482007	1740	42						
8	482008	4510	39						
9	482009	2240	37						
10	482010	3140	35						
11	482011	5000	32						
12	482012	3240	26						
13									
14	482013	5490	38						
15	482016	3370	32						
16	482017	2650	33						
17	482018	1720	32						
18									
19									
20									
21									
22									
23	DETECTION	10	3						
24	UNITS	PPM	PPM						
25	METHOD	401	401						

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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# ANALABS

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## ANALYTICAL DATA

SAMPLE PREFIX

REPORT NUMBER

REPORT DATE

CLIENT ORDER No.

PAGE

23.3.08.05735

25/10/88

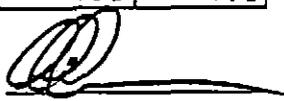
4854

1 OF 2

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Au	Ba	As	Cr	Zr
1										
2										
3										
4	482004	55	70	20	<0.5	-	540	<1	<5	310
5	482005	5	25	20	<0.5	-	1030	<1	<5	245
6	482006	85	50	145	<0.5	0.010	1150	4	10	136
7	482007	15	15	30	<0.5	0.010	625	1	<5	273
8	482008	80	55	160	<0.5	-	1120	2	37	185
9	482009	5	20	35	<0.5	-	1640	1	<5	190
10	482010	10	20	65	<0.5	-	976	1	<5	224
11	482011	15	15	60	<0.5	-	323	3	16	215
12	482012	130	40	110	<0.5	<0.008	390	17	6	133
13										
14	482015	120	55	105	<0.5	0.010	680	<1	65	390
15	482016	20	95	90	<0.5	-	1170	8	<5	217
16	482017	75	20	45	<0.5	0.010	600	34	8	226
17	482018	10	15	40	<0.5	<0.008	529	5	5	240
18										
19										
20										
21										
22										
23	DETECTION	5	5	5	0.5	0.008	10	1	5	5
24	UNITS	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM
25	METHOD	101	101	101	101	309	401	114	401	401

Results in ppm unless otherwise specified  
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# ANALABS

A division of MacDonald Hamilton & Co. Pty. Ltd.  
52 Murray Road, Welshpool, W.A. 6106  
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Phone (09) 458 7999

Telex AA92560

ANALYTICAL REPORT No. **23.3.08.05735**

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

Aberfoyle Resources Exp. Division  
P.O. Box 952  
Burnie  
Tasmania 7320

ORDER No.	PROJECT
4854	
DATE RECEIVED	RESULTS REQUIRED
21/09/88	ASAP

No. OF PAGES OF RESULTS	DATE REPORTED	No. OF COPIES	TOTAL No. OF SAMPLES
2	25/10/88	1	17

STATE OF SAMPLES	SAMPLE NUMBERS	PRE-TREATMENT							ANALYSIS			
		DRY	CRUSH	SPLIT	PUL-VERISE	SIEVE	OTHER SEE REMARKS	NONE	REFER TO ANALYSIS SECTION	PREPARATION	METHOD	
REFER BELOW	482001/13, 482015/18	RC	Prep: 099, 011, 012, 013, 016							Cu, Pb, Zn, Ag/101, As/114		
	482001/13, 482015/18	RC								Ba, Cr, Zr, Ti, Y/401		
	Various	RC								Au/309		

RESULTS TO

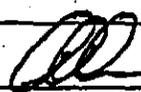
R. de Bomford  
Aberfoyle Resources Exp. Division  
P.O. Box 952  
Burnie  
Tasmania 7320

RESULTS TO

REMARKS

*LYNCHFORD  
Rock chips*

STATE OF SAMPLES	ANALYSIS — PREPARATION	ANALYSIS — METHOD
hole core	perchloric acid A1	atomic absorption AAS
split core	hydrochloric acid A2	x-ray fluorescence XRF
cutting	nitric acid A3	spectrophotometry SPEC
rock	aqua regia A4	colorimetry COL
oil	nitric-perchloric A5	chromatography CHR
slip	HF mixture A6	titration TTN
water	HF under pressure A7	other chemicals means CHEM
tissue	fusion A8	miscellaneous MISC
stream sediment		fluorescence FLUOR
heavy mineral		inductively coupled plasma ICP

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## ANALYTICAL DATA

SAMPLE PREFIX

REPORT NUMBER

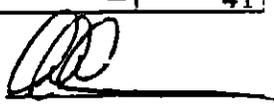
REPORT DATE

CLIENT ORDER No.

PAGE

		23.3.08.05846				08/12/88		5068		1 OF 8	
TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Au	AuChk	Ba	Ba	As	
1											
2											
3											
4											
5	482023	20	10	70	<0.5	-	-	920	-	6	
6											
7	482025	10	25	25	<0.5	<0.008	-	700	-	3	
8	482026	5	10	45	<0.5	<0.008	-	1200	-	5	
9	482027	<5	15	60	<0.5	-	-	1100	-	4	
10											
11											
12											
13											
14											
15											
16	482034	40	15	35	<0.5	0.009	-	780	-	12	
17	482035	<5	10	10	<0.5	<0.008	-	10	-	3	
18	482036	50	40	15	1.5	0.021	-	1300	-	52	
19											
20	482038	20	15	130	<0.5	<0.008	-	1000	-	8	
21	482039	105	5	11	<0.5	-	-	690	-	5	
22											
23	482041	<5	10	25	<0.5	-	-	1400	-	3	
24	482042	<5	<5	200	<0.5	-	-	30	-	2	
25	482043	100	55	35	<0.5	0.011	-	1700	-	41	

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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# ANALABS

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## ANALYTICAL DATA

SAMPLE PREFIX      REPORT NUMBER      REPORT DATE      CLIENT ORDER No.      PAGE

		23.3.08.05846				08/12/88		5068		2 OF 8	
TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Au	AuChk	Ba	Ba	As	

7	482050	5	<5	90	<0.5	-	-	340	-	36
8										
9	482052	10	10	10	<0.5	<0.008	-	-	0.31	12
10	482053	170	10	110	<0.5	<0.008	-	1250	-	15
11										
12										
13	482056	140	10	145	<0.5	-	-	1200	-	5
14	482057	5	5	30	<0.5	0.018	-	280	-	6
15	482058	45	20	70	<0.5	-	-	1900	-	5
16	482059	<5	25	15	<0.5	0.011	-	800	-	3
17	482060	140	10	115	<0.5	-	-	1150	-	6
18	482061	20	10	90	<0.5	-	-	140	-	12
19	482062	175	20	210	<0.5	-	-	990	-	13
20	482063	65	<5	145	<0.5	-	-	860	-	8
21	482064	150	15	110	<0.5	0.021	-	1000	-	10
22	482065	105	20	95	<0.5	-	-	790	-	3
23	482066	<5	<5	15	<0.5	<0.008	-	15	-	20
24	482067	15	<5	120	<0.5	-	-	-	0.46	13
25	482068	165	55	70	<0.5	0.022	-	200	-	1060

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

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077

621078

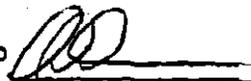
**ANALABS**

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**ANALYTICAL DATA**

SAMPLE PREFIX		REPORT NUMBER				REPORT DATE		CLIENT ORDER No.		PAGE	
		23.3.08.05846				08/12/88		5068		3 OF 8	
TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Au	AuChk	Ba	Ba	As	
1	482069	15	<5	20	<0.5	-	-	320	-	11	
2	482070	185	10	160	<0.5	0.009	-	1000	-	16	
3											
4	482072	10	20	45	<0.5	-	-	740	-	12	
5	482073	135	15	110	<0.5	-	-	1000	-	4	
6											
7	482075	10	5	25	<0.5	<0.008	-	320	-	4	
8	482076	5	10	110	<0.5	-	-	720	-	6	
9											
10											
11	482079	100	25	135	<0.5	<0.008	-	1100	-	5	
12											
13											
14	482082	85	5	185	<0.5	-	-	1350	-	5	
15	482083	5	20	15	<0.5	<0.008	-	570	-	4	
16	482084	130	20	350	<0.5	-	-	600	-	7	
17											
18	482086	10	15	30	<0.5	-	-	830	-	5	
19	482087	85	15	135	<0.5	-	-	110	-	3	
20	482088	15	20	40	<0.5	<0.008	-	20	-	4	
21	482089	165	20	95	<0.5	-	-	560	-	14	
22	482090	50	10	55	<0.5	-	-	580	-	4	
23	482091	15	20	65	<0.5	-	-	1000	-	5	
24	482092	15	25	40	<0.5	0.009	-	990	-	4	
25	482093	15	10	15	<0.5	0.011	-	15	-	15	

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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078

# ANALABS

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## ANALYTICAL DATA

SAMPLE PREFIX		REPORT NUMBER				REPORT DATE		CLIENT ORDER No.		PAGE	
		23.3.08.05846				08/12/88		5068		4 OF 8	
TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Au	AuChk	Ba	Ba	As	
1	482094	10	30	45	<0.5	-	-	1050	-	3	
2											
3	482096	135	10	70	<0.5	-	-	750	-	3	
4											
5	482098	25	25	60	<0.5	-	-	1600	-	25	
6											
7	482100	120	70	60	<0.5	0.008	-	2050	-	19	
8											
9											
10											
11											
12											
13											
14											
15											
16											
17											
18											
19											
20											
21											
22											
23	DETECTION	5	5	5	0.5	0.008	0.008	10	0.01	1	
24	UNITS	FPM	PPM	PPM	PPM	PPM	PPM	PPM	%	PPM	
25	METHOD	101	101	101	101	309	309	401	403	114	

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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079

621080

## ANALABS

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## ANALYTICAL DATA

SAMPLE PREFIX

REPORT NUMBER

REPORT DATE

CLIENT ORDER No.

PAGE

SAMPLE PREFIX		REPORT NUMBER				REPORT DATE		CLIENT ORDER No.		PAGE	
		23.3.08.05846				08/12/88		5068		5 OF 8	
TUBE No.	SAMPLE No.	Cr	Zr	Ti	Ti	Y					
1											
2											
3											
4											
5	482023	110	210	4250	-	30					
6	482024	15	260	3500	-	160					
7	482025	70	190	3450	-	25					
8											
9	482027	15	290	1900	-	35					
10											
11											
12											
13											
14											
15											
16	482034	35	210	4200	-	25					
17	482035	150	<5	75	-	<5					
18	482036	60	180	3400	-	15					
19											
20	482038	20	110	3800	-	15					
21	482039	140	75	2950	-	30					
22											
23	482041	5	330	1950	-	45					
24	482042	35	<5	400	-	<5					
25	482043	100	220	4300	-	10					

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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080

# ANALABS

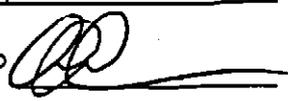
A Division of Macdonald Hamilton & Co. Pty. Ltd.

## ANALYTICAL DATA

SAMPLE PREFIX                      REPORT NUMBER                      REPORT DATE                      CLIENT ORDER No.                      PAGE

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TUBE No.	SAMPLE No.	Cr	Zr	Ti	Ti	Y			
1									
2									
3									
4									
5									
6									
7	482050	5	250	1450	-	30			
8									
9	482052	20	150	1850	-	20			
10	482053	290	130	3950	-	15			
11									
12									
13	482056	60	170	4900	-	30			
14	482057	20	210	1500	-	35			
15	482058	10	530	3500	-	45			
16	482059	6	370	2100	-	40			
17	482060	110	180	4100	-	35			
18	482061	860	230	5450	-	25			
19	482062	490	180	4600	-	40			
20	482063	50	190	4900	-	20			
21	482064	280	360	5150	-	40			
22	482065	80	95	3150	-	25			
23	482066	120	5	100	-	<5			
24	482067	35	280	3250	-	40			
25	482068	120	60	2500	-	6			

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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081

621082

## ANALABS

A Division of Macdonald Hamilton &amp; Co. Pty. Ltd.

## ANALYTICAL DATA

SAMPLE PREFIX

REPORT NUMBER

REPORT DATE

CLIENT ORDER No.

PAGE

23.3.08.05846

08/12/88

5068

7 OF 8

TUBE No.	SAMPLE No.	Cr	Zr	Ti	Ti	Y			
1	482069	20	180	1150	-	25			
2	482070	160	320	5800	-	40			
3									
4	482072	8	320	1950	-	35			
5	482073	280	110	3250	-	40			
6									
7	482075	9	300	1800	-	35			
8	482076	7	230	3200	-	35			
9									
10									
11	482079	25	250	4000	-	30			
12									
13									
14	482082	500	100	3100	-	20			
15	482083	10	180	1200	-	35			
16	482084	1300	390	6500	-	40			
17									
18	482086	25	140	1800	-	20			
19	482087	25	170	1100	-	30			
20	482088	<5	250	840	-	30			
21	482089	75	110	3400	-	35			
22	482090	30	270	1500	-	35			
23	482091	15	240	2250	-	40			
24	482092	25	280	2200	-	30			
25	482093	40	<5	55	-	<5			

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


# ANALABS

A Division of Macdonald Hamilton & Co. Pty. Ltd.

## ANALYTICAL DATA

SAMPLE PREFIX

REPORT NUMBER

REPORT DATE

CLIENT ORDER No.

PAGE

		23.3.08.05B46				08/12/88	5068		8 OF 8	
TUBE No.	SAMPLE No.	Cr	Zr	Ti	Ti	Y				
1	482094	<5	330	1800	-	50				
2										
3	482096	80	120	2400	-	30				
4										
5	482098	70	130	1700	-	30				
6										
7	482100	95	160	3000	-	20				
8										
9										
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
23	DETECTION	5	5	50	0.01	5				
24	UNITS	PPM	PPM	PPM	%	PPM				
25	METHOD	401	401	401	408	401				

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



# ANALABS

A Division of Macdonald Hamilton & Co. Pty. Ltd.

## ANALYTICAL DATA

SAMPLE PREFIX      REPORT NUMBER      REPORT DATE      CLIENT ORDER No.      PAGE

23.3.08.05952

06/02/89

5372

1 OF 2

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Au	Ba	As	Cr	Zr
1	482101	140	50	85	1.0	0.011	320	5	110	70
2	482102	145	<5	125	1.0	<0.008	1850	9	240	230
3	482104	130	30	95	<0.5	<0.008	840	3	75	140
4	482105	45	20	160	0.5	<0.008	1650	33	460	230
5	482106	10	5	90	<0.5	<0.008	740	2	<5	300
6	482107	70	<5	90	0.5	<0.008	2700	3	130	100
7	482108	125	10	120	0.5	0.008	2600	2	900	140
8	482109	5	<5	20	<0.5	<0.008	240	2	15	220
9	482110	20	15	65	<0.5	<0.008	1300	6	15	230
10	482111	15	5	115	<0.5	<0.008	890	5	15	230
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
23	DETECTION	5	5	5	0.5	0.006	10	1	5	5
24	UNITS	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM
25	METHOD	101	101	101	101	309	401	114	401	401

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

# ANALABS

A Division of MacDonald Hamilton & Co. Pty. Ltd.  
52 Murray Road, Welshpool, W.A. 6106  
Phone (09) 458 7999

Telex AA92560

**ANALYTICAL REPORT No.** 23.3.08.05952

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

Aberfoyle Resources Exp. Division  
P.O. Box 952  
Burnie  
Tasmania 7320

ORDER No. 5372 PROJECT  
DATE RECEIVED 20/01/89 RESULTS REQUIRED ASAP

No. OF PAGES OF RESULTS: 2    DATE REPORTED: 06/02/89    No. OF COPIES: 1    TOTAL No. OF SAMPLES: 10

STATE OF SAMPLES	SAMPLE NUMBERS	PRE-TREATMENT							ANALYSIS			
		DRY	CRUSH	SPLIT	PULVERISE	SIEVE	OTHER SEE REMARKS	NONE	REFER TO ANALYSE SECTION	PREPARATION	METHOD	
	482101/02, 482104/11	RC	Prep: 008, 011, 012, 013, 016							Cu, Pb, Zn, Ag/101, As/114		
	482101/02, 482104/11	RC								Ba, Cr, Fe, Ti, Y/401, Au, AuChk/309		

**RESULTS TO**  
R. de Bomford  
Aberfoyle Resources Exp. Division  
P.O. Box 952  
Burnie  
Tasmania 7320

**RESULTS TO**

**REMARKS**

STATE OF SAMPLES	ANALYSIS — PREPARATION	ANALYSIS — METHOD
whole core	perchloric acid A1	atomic absorption AAS
split core	hydrochloric acid A2	x-ray fluorescence XRF
cutting	nitric acid A3	spectrophotometry SPEC
rock	aqua regia A4	colorimetry COL
soil	nitric-perchloric A5	chromatography CHR
pulp	HF mixture A6	titration TTN
water	HF under pressure A7	other chemical means CHEM
sludge	fusion A8	miscellaneous MISC
stream sediment		fluorescence FLUOR
heavy mineral		inductively coupled plasma ICP

AUTHORISED OFFICER 

# ANALABS

A Division of Macdonald Hamilton & Co. Pty. Ltd.

## ANALYTICAL DATA

SAMPLE PREFIX

REPORT NUMBER

REPORT DATE

CLIENT ORDER No.

PAGE

23.3.08.05952

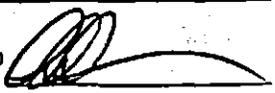
06/02/89

5372

2 OF 2

TUBE No.	SAMPLE No.	T1	Y1							
1	482101	1600	15							
2	482102	4700	35							
3	482104	3000	25							
4	482105	5200	35							
5	482106	1850	45							
6	482107	3650	15							
7	482108	3350	20							
8	482109	1300	35							
9	482110	2450	25							
10	482111	2600	25							
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
23	DETECTION	50	5							
24	UNITS	PPM	PPM							
25	METHOD	401	401							

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 

086

DJN

# ANALABS

A division of MacDonal Hamilton & Co. Pty. Ltd.

52 Murray Road, Welshpool, W.A. 6106

Fax: 004 31 8990

Phone (09) 458 7999

Telex AA92560

ANALYTICAL REPORT No. 23.3.08.06154

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

Aberfoyle Resources Exp. Division  
P.O. Box 952  
Burnie  
Tasmania 7320

ORDER No.	PROJECT
7513	
DATE RECEIVED	RESULTS REQUIRED
27/04/89	ASAP

No. OF PAGES OF RESULTS	DATE REPORTED	No. OF COPIES	TOTAL No. OF SAMPLES
2	19/05/89	1	2

SAMPLE NUMBERS	PRE-TREATMENT							ANALYSIS		
	DRY	CRUSH	SPLIT	PLU-VERSE	SIEVE	OTHER SEE REMARKS	NONE	REFER TO ANALYSIS SECTION	PREPARATION	METHOD
482133/34	RC					Prep: 005,009,012,017,016			Fe, Pb, Zn, Ag/101, As/114	
482133/34	RC								Ca, Cr, Ir, Ti/401	
482133	RC								Au/309	
482133/34	RC								Fe/406	

RESULTS

TO

Aberfoyle Resources Exp. Division  
P.O. Box 952  
Burnie  
Tasmania 7320

REMARKS

*L/N.  
Rock CMPS.*

RESULTS

TO

STATE OF SAMPLES	ANALYSIS — PREPARATION				ANALYSIS — METHOD		
core core ing k k at issue ream sediment ed mineral	WC SC CU Ro SO PU WA TI SS HM	perchloric acid hydrochloric acid nitric acid aqua regia nitric-perchloric HF mixture HF under pressure fusion	A1 A2 A3 A4 A5 A6 A7 A8	cold acid specific sulphide other mixed acids alkaline attack volatilization ignition pressed powder (XRF) glass fusion (XRF)	CA SS Ma AA VO IG PP GF	atomic absorption x-ray fluorescence spectrophotometry colorimetry chromatography titration other chemicals means miscellaneous fluorescence inductively coupled plasma	AAS XRF SPEC COL CHR TTN CHEM MISC FLUOR ICP

AUTHORISED OFFICER



087

021088

## ANALABS

A Division of Macdonald Hamilton &amp; Co. Pty. Ltd.

## ANALYTICAL DATA

SAMPLE PREFIX

REPORT NUMBER

REPORT DATE

CLIENT ORDER No.

PAGE

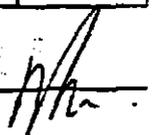
SAMPLE PREFIX		REPORT NUMBER				REPORT DATE	CLIENT ORDER No.			PAGE	
		23.3.08.06154				19/05/89	7513			1 OF 2	
TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Au	Ba	Ba	As	Cr	
1											
2	482134	5	10	25	<0.5	-	2000	-	3	10	
3											
4											
5											
6											
7											
8											
9											
10											
11											
12											
13											
14											
15											
16											
17											
18											
19											
20											
21											
22											
23	DETECTION	5	5	5	0.5	0.008	10	0.1	1	5	
24	UNITS	PPM	PPM	PPM	PPM	PPM	PPM	%	PPM	PPM	
25	METHOD	101	101	101	101	309	401	406	114	401	

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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# ANALABS

A Division of Macdonald Hamilton & Co. Pty. Ltd.

## ANALYTICAL DATA

SAMPLE PREFIX

REPORT NUMBER

REPORT DATE

CLIENT ORDER No.

PAGE

23.3.08.06:54

19/05/89

7513

2 OF 2

TUBE No.	SAMPLE No.	Zr	Ti						
1									
2	482134	200	1850						
3									
4									
5									
6									
7									
8									
9									
10									
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									
21									
22									
23	DETECTION	5	50						
24	UNITS	PPM	PPM						
25	METHOD	401	401						

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



089

621090

APPENDIX 3.

# ANALABS

A division of MacDonald Hamilton & Co. Pty. Ltd.

Phone (09) 458 7999

52 Murray Road, Welshpool, W.A. 6106  
FAX: 004 31 8890

Telex AA92560

## ANALYTICAL REPORT No. 23.3.08.06083

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

Aberfolye Resources Exp. Division  
P.O. Box 952  
Burnie  
Tasmania 7320

ORDER No.	PROJECT
6225	
DATE RECEIVED	RESULTS REQUIRED
20/03/89	ASAP

No. OF PAGES OF RESULTS	DATE REPORTED	No. OF COPIES	TOTAL No. OF SAMPLES
2	04/04/89	1	2

REFER BELOW	SAMPLE NUMBERS	PRE-TREATMENT							ANALYSIS			
		DRY	CRUSH	SPLIT	PUL-VERISE	SIEVE	OTHER SEE REMARKS	NONE	REFER TO ANALYSIS SECTION	PREPARATION	METHOD	
	482120/21	RC	Prep: 009,011,012,013,016							Cu,Pb,Zn,Ag/101,As/114		
	482120/21	RC								Ba,Cr,Zr,Ti/401,Au/309		

RESULTS TO  
Aberfolye Resources Exp. Division  
P.O. Box 952  
Burnie  
Tasmania 7320

RESULTS TO

REMARKS  
*L. Waitford*

STATE OF SAMPLES	ANALYSIS — PREPARATION	ANALYSIS — METHOD
whole core WC	perchloric acid A1	atomic absorption CA
split core SC	hydrochloric acid A2	x-ray fluorescence XRF
cutting CU	nitric acid A3	spectrophotometry SPEC
rock Ro	aqua regia A4	colorimetry COL
oil SO	nitric-perchloric A5	chromatography CHR
pulp PU	HF mixture A6	titration TTN
water WA	HF under pressure A7	other chemical means CHEM
tissue TI	fusion A8	miscellaneous MISC
stream sediment SS		fluorescence FLUOR
heavy mineral HM		inductively coupled plasma ICP

AUTHORISED OFFICER *[Signature]*

091

# ANALABS

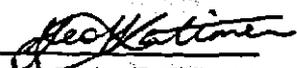
A Division of Macdonald Hamilton & Co Pty Ltd.

## ANALYTICAL DATA

SAMPLE PREFIX		REPORT NUMBER				REPORT DATE	CLIENT ORDER No.			PAGE	
		23.3.08.06083				04/04/89	6225			1 OF 2	
TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Au	Ba	As	Cr	Zr	
1	482120	<5	<5	25	<0.5	<0.008	280	2	<5	240	
2	482121	<5	<5	25	<0.5	<0.008	580	1	<5	270	
3											
4											
5											
6											
7											
8											
9											
10											
11											
12											
13											
14											
15											
16											
17											
18											
19											
20											
21											
22											
23	DETECTION	5	5	5	0.5	0.008	10	1	5	5	
24	UNITS	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	
25	METHOD	101	101	101	101	309	401	114	401	401	

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



092

# ANALABS

A Division of Macdonald Hamilton & Co. Pty Ltd.

## ANALYTICAL DATA

SAMPLE PREFIX

REPORT NUMBER

REPORT DATE

CLIENT ORDER No.

PAGE

23.3.08.06083

04/04/89

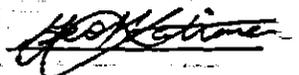
6225

2 OF 2

USE No.	SAMPLE No.	Ti							
1	482120	1200							
2	482121	1400							
3									
4									
5									
6									
7									
8									
9									
10									
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									
21									
22									
23	DETECTION	50							
24	UNITS	PPM							
25	METHOD	401							

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



# ANALABS

A division of MacDonald Hamilton & Co. Pty. Ltd.  
52 Murray Road, Welshpool, W.A. 6106  
FAX: 004 31 8890

Phone (09) 458 7999

Telex AA92560

ANALYTICAL REPORT No: **23.3.08.06115**

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

Aberfolye Resources Exp. Division  
P.O. Box 952  
Burnie  
Tasmania 7320

ORDER No.	PROJECT
6267	
DATE RECEIVED	RESULTS REQUIRED
07/04/89	ASAP

No. OF PAGES OF RESULTS	DATE REPORTED	No. OF COPIES	TOTAL No. OF SAMPLES
2	26/04/89	1	6

No. OF SAMPLES	SAMPLE NUMBERS	PRE-TREATMENT						ANALYSIS			
		DRY	CRUSH	SPLIT	PULVERISE	SIEVE	OTHER SEE REMARKS	NONE	REFER TO ANALYSIS SECTION	PREPARATION	METHOD
	482123/29, 482350, 482450	RC	Prep: 009, 012, 013, 016						Cu, Pb, Zn, Ag/101, As/114		
	482123/29, 482350, 482450	RC							Au/309		
	482123/29, 482350	RC							Ba, Cr, Ir, Ti/401		

RESULTS

TO

Aberfolye Resources Exp. Division  
P.O. Box 952  
Burnie  
Tasmania 7320

RESULTS

TO

REMARKS

*LYNDA FOLD*

STATE OF SAMPLES	ANALYSIS — PREPARATION	ANALYSIS — METHOD
whole core WC	perchloric acid A1	atomic absorption AAS
split core SC	hydrochloric acid A2	x-ray fluorescence XRF
cutting CU	nitric acid A3	spectrophotometry SPEC
rock Ro	aqua regia A4	colorimetry COL
soil SO	nitric-perchloric A5	chromatography CHR
pulp PU	HF mixture A6	titration TTN
water WA	HF under pressure A7	other chemicals means CHEM
slime TI	fusion A8	miscellaneous MISC
slam sediment SS		fluorescence FLUOR
heavy mineral HM		inductively coupled plasma ICP

094

621095

# ANALABS

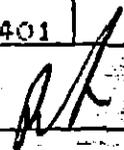
A Division of Macdonald Hamilton & Co. Pty. Ltd.

## ANALYTICAL DATA

SAMPLE PREFIX		REPORT NUMBER				REPORT DATE		CLIENT ORDER No.		PAGE	
		23.3.08.06115				26/04/89		6267		1 OF 2	
SUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Au	Ba	As	Cr	Zr	
1	482123	20	10	780	2.0	<0.008	1200	33	6	130	
2	482124	10	1450	490	4.0	<0.008	210	800	80	120	
3	482125	<5	15	15	0.5	<0.008	900	10	25	240	
4	482126	5	<5	20	0.5	<0.008	940	3	8	280	
5	482127	5	30	70	1.0	0.010	530	3	10	250	
6	482128	<5	<5	60	1.0	<0.008	1150	7	<5	280	
7	482129	10	<5	105	0.5	<0.008	980	2	25	210	
8											
9											
10											
11											
12											
13											
14											
15											
16											
17											
18											
19											
20											
21											
22											
23	DETECTION	5	5	5	0.5	0.008	10	1	5	5	
24	UNITS	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	
25	METHOD	101	101	101	101	309	401	114	401	401	

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



095

621096

# ANALABS

A Division of Macdonald Hamilton & Co. Pty Ltd.

## ANALYTICAL DATA

SAMPLE PREFIX

REPORT NUMBER

REPORT DATE

CLIENT ORDER No.

PAGE

23.3.08.06115

26/04/89

6267

2 OF 2

TUBE No.	SAMPLE No.	Ti							
1	482123	3150							
2	482124	610							
3	482125	1250							
4	482126	1450							
5	482127	1650							
6	482128	1900							
7	482129	3900							
8									
9									
10									
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									
21									
22									
23	DETECTION	50	3						
24	UNITS	PPM	PPM						
25	METHOD	401	401						

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



098

621097

APPENDIX 4.

097

621098

**ANALABS**

A division of MacDonald Hamilton &amp; Co. Pty. Ltd.

Phone (09) 458 7999

52 Murray Road, Welshpool, W.A. 6106

Telex AA92560

FAX: 004 31 8890

**ANALYTICAL REPORT No.** 23.3.08.06082

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

ORDER No.

PROJECT

6224

Aberfolye Resources Exp. Division  
P.O. Box 952  
Burnie  
Tasmania 7320

DATE RECEIVED

RESULTS REQUIRED

20/03/89

ASAP

No. OF PAGES  
OF RESULTSDATE  
REPORTEDNo.  
OF COPIES

TOTAL No. OF SAMPLES

6

06/04/89

1

50

STATE OF SAMPLES	REFER BELOW	SAMPLE NUMBERS	PRE-TREATMENT						ANALYSIS				
			DRY	CRUSH	SPLIT	PUL- VERISE	SIEVE	OTHER SEE REMARKS	NONE	REFER TO ANALYSIS SECTION	PREPARATION	METHOD	
		482300/49	RC	Prep: 009,011,012,013,016							Cu,Pb,Zn,Ag/101,As/114		
		482300/49	RC								Ba,Cr,Zr,Ti/401,Au/309		

REMARKS

KING RIVER RUNNER

RESULTS

TO

Aberfolye Resources Exp. Division  
P.O. Box 952  
Burnie  
Tasmania 7320

RESULTS

TO

STATE OF SAMPLES	ANALYSIS — PREPARATION	ANALYSIS — METHOD
hole core	perchloric acid	A1
split core	hydrochloric acid	A2
cutting	nitric acid	A3
rock	aqua regia	A4
oil	nitric-perchloric	A5
slip	HF mixture	A6
water	HF under pressure	A7
tissue	fusion	A8
stream sediment		
heavy mineral		
WC	cold acid	CA
SC	specific sulphide	SS
CU	other mixed acids	Ma
Ro	alkaline attack	AA
SO	volatilization	VO
PU	ignition	IG
WA	pressed powder (XRF)	PP
TI	glass fusion (XRF)	GF
SS		
HM		
		atomic absorption
		x-ray fluorescence
		spectrophotometry
		colorimetry
		chromatography
		titration
		other chemicals means
		miscellaneous
		fluorescence
		inductively coupled plasma
		AAS
		XRF
		SPEC
		COL
		CHR
		TTN
		CHEM
		MISC
		FLUOR
		ICP

AUTHORISED OFFICER



098

621099

## ANALABS

A Division of Macdonald Hamilton &amp; Co. Pty. Ltd.

## ANALYTICAL DATA

SAMPLE PREFIX

REPORT NUMBER

REPORT DATE

CLIENT ORDER No.

PAGE

23.3.08.06082

06/04/89

6224

1 OF 6

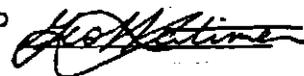
TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Au	Ba	As	Cr	Zr
1	482300	5	<5	25	<0.5	<0.008	910	6	7	240
2	482301	5	<5	25	<0.5	<0.008	620	7	20	180
3	482302	5	<5	30	1.5	<0.008	700	4	9	160
4	482303	10	<5	15	<0.5	<0.008	1350	4	6	170
5	482304	5	<5	15	<0.5	<0.008	1350	6	25	160
6	482305	5	<5	25	0.5	<0.008	730	9	5	180
7	482306	5	<5	25	<0.5	<0.008	650	5	20	200
8	482307	10	<5	25	<0.5	<0.008	750	6	6	190
9	482308	5	<5	20	<0.5	<0.008	740	4	20	160
10	482309	5	<5	25	<0.5	<0.008	650	7	<5	200
11	482310	5	<5	30	<0.5	<0.008	790	3	15	210
12	482311	5	<5	20	<0.5	<0.008	760	2	<5	190
13	482312	5	5	25	<0.5	<0.008	700	2	15	190
14	482313	25	745	35	1.5	<0.008	630	9	8	210
15	482314	10	<5	15	0.5	<0.008	980	3	<5	160
16	482315	5	<5	20	<0.5	<0.008	760	8	15	230
17	482316	5	<5	20	<0.5	<0.008	1050	6	25	200
18	482317	10	<5	25	<0.5	<0.008	950	10	40	200
19	482318	5	<5	55	4.5	<0.008	890	6	25	210
20	482319	25	<5	30	<0.5	<0.008	1150	23	25	190
21	482320	10	100	170	0.5	<0.008	870	27	25	250
22	482321	10	<5	30	<0.5	<0.008	1200	22	40	220
23	482322	10	<5	40	<0.5	<0.008	1050	10	40	240
24	482323	5	<5	75	<0.5	<0.008	1050	17	20	240
25	482324	5	<5	140	<0.5	<0.008	1200	12	25	230

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

099

621100

# ANALABS

A Division of Macdonald Hamilton & Co. Pty. Ltd.

## ANALYTICAL DATA

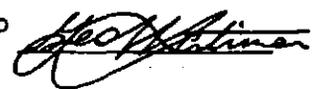
SAMPLE PREFIX      REPORT NUMBER      REPORT DATE      CLIENT ORDER No.      PAGE

23.3.08.06082      06/04/89      6224      2 OF 6

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Au	Ba	As	Cr	Zr
1	482325	5	<5	90	<0.5	<0.008	830	20	55	190
2	482326	<5	<5	110	<0.5	<0.008	1200	1	40	200
3	482327	5	<5	105	<0.5	<0.008	810	4	70	240
4	482328	10	<5	105	<0.5	<0.008	1150	3	65	260
5	482329	10	10	65	<0.5	<0.008	840	3	50	210
6	482330	10	<5	80	<0.5	<0.008	570	3	60	210
7	482331	5	<5	55	<0.5	<0.008	500	4	50	240
8	482332	<5	<5	45	<0.5	<0.008	730	2	60	210
9	482333	10	<5	35	<0.5	<0.008	830	1	45	210
10	482334	5	<5	65	<0.5	<0.008	750	2	35	270
11	482335	20	5	95	<0.5	<0.008	460	1	70	200
12	482336	10	5	245	<0.5	<0.008	650	1	90	240
13	482337	30	<5	250	<0.5	<0.008	1400	1	70	220
14	482338	10	<5	135	<0.5	<0.008	1000	2	85	240
15	482339	10	<5	115	<0.5	<0.008	760	1	75	250
16	482340	10	<5	100	<0.5	1.970	930	5	85	240
17	482341	<5	<5	45	<0.5	<0.008	920	<1	70	260
18	482342	<5	<5	55	<0.5	<0.008	890	1	70	260
19	482343	<5	<5	45	<0.5	<0.008	620	3	80	230
20	482344	<5	<5	100	<0.5	<0.008	1300	12	75	2600
21	482345	<5	100	40	<0.5	<0.008	1300	22	95	270
22	482346	25	55	210	<0.5	<0.008	780	44	30	190
23	482347	20	<5	65	<0.5	<0.008	220	6	25	110
24	482348	10	<5	70	<0.5	<0.008	280	2	20	65
25	482349	50	<5	60	<0.5	0.018	1500	7	35	150

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



# ANALABS

A Division of Macdonald Hamilton & Co. Pty. Ltd.

## ANALYTICAL DATA

SAMPLE PREFIX      REPORT NUMBER      REPORT DATE      CLIENT ORDER No.      PAGE

23.3.08.06082

06/04/89

6224

3 OF 6

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Au	Ba	As	Cr	Zr
1										
2										
3										
4										
5										
6										
7										
8										
9										
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										
22	DETECTION	5	5	5	0.5	0.008	10	1	5	5
23	UNITS	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM
24	METHOD	101	101	101	101	309	401	114	401	401
25										

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



100

621102

# ANALABS

A Division of Macdonald Hamilton & Co. Pty. Ltd.

## ANALYTICAL DATA

SAMPLE PREFIX

REPORT NUMBER

REPORT DATE

CLIENT ORDER No.

PAGE

23.3.08.06082

06/04/89

6224

4 OF 6

TUBE NO.	SAMPLE NO.	Ti							
1	482300	1700							
2	482301	1100							
3	482302	1050							
4	482303	1050							
5	482304	1050							
6	482305	1100							
7	482306	1300							
8	482307	1150							
9	482308	1100							
10	482309	1300							
11	482310	1350							
12	482311	1300							
13	482312	1200							
14	482313	1250							
15	482314	1100							
16	482315	1600							
17	482316	1800							
18	482317	1700							
19	482318	1950							
20	482319	1350							
21	482320	2250							
22	482321	2100							
23	482322	2200							
24	482323	2350							
25	482324	2150							

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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## ANALABS

A Division of Macdonald Hamilton &amp; Co Pty Ltd

## ANALYTICAL DATA

SAMPLE PREFIX

REPORT NUMBER

REPORT DATE

CLIENT ORDER No.

PAGE

23.3.08.06082

06/04/89

6224

5 OF 6

TUBE No.	SAMPLE No.	Ti							
1	482325	2200							
2	482326	2200							
3	482327	2700							
4	482328	3000							
5	482329	2500							
6	482330	2550							
7	482331	2700							
8	482332	2400							
9	482333	2400							
10	482334	2300							
11	482335	2500							
12	482336	3100							
13	482337	2650							
14	482338	2950							
15	482339	2850							
16	482340	2950							
17	482341	2750							
18	482342	2900							
19	482343	2600							
20	482344	3000							
21	482345	3000							
22	482346	2200							
23	482347	1100							
24	482348	700							
25	482349	1400							

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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OFFICER

*Geoff Hinton*

# ANALABS

A Division of Macdonald Hamilton & Co Pty Ltd

## ANALYTICAL DATA

SAMPLE PREFIX

REPORT NUMBER

REPORT DATE

CLIENT ORDER No.

PAGE

23.3.08.06082

06/04/85

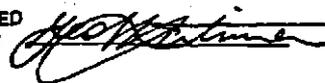
6274

6 OF 6

TUBE No.	SAMPLE No	Ti							
1									
2									
3									
4									
5									
6									
7									
8									
9									
10									
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									
21									
22	DETECTION	50							
23	UNITS	PPM							
24	METHOD	401							
25									

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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621105

# ANALABS

A division of MacDonald Hamilton & Co. Pty. Ltd.

Phone (09) 458 7999

52 Murray Road, Welshpool, W.A. 6106

FAX: 004 31 8890

Telex AA92560

ANALYTICAL REPORT No: 23.3.08.06115

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

Aberfolye Resources Exp. Division  
P.O. Box 952  
Burnie  
Tasmania 7320

ORDER No.

PROJECT

6267

DATE RECEIVED

RESULTS REQUIRED

07/04/89

ASAP

No. OF PAGES OF RESULTS

DATE REPORTED

No. OF COPIES

TOTAL No. OF SAMPLES

2

26/04/89

1

8

PRE-TREATMENT

ANALYSIS

REF. NO.	SAMPLE NUMBERS	PRE-TREATMENT						ANALYSIS				
		DRY	CRUSH	SPLIT	PUL-VERISE	SIEVE	OTHER SEE REMARKS	NONE	REFER TO ANALYSIS SECTION	PREPARATION	METHOD	
	482123/29, 482350, 482450	RC	Prep: 009, 012, 013, 016							Cu, Pb, Zn, Ag/101, As/114		
	482123/29, 482350, 482450	RC								Au/309		
	482123/29, 482350	RC								Ba, Cr, Zr, Ti/401		

REMARKS

RESULTS TO

Aberfolye Resources Exp. Division  
P.O. Box 952  
Burnie  
Tasmania 7320

*LYNCH FOLD*

RESULTS TO

STATE OF SAMPLES

ANALYSIS — PREPARATION

ANALYSIS — METHOD

whole core	WC	perchloric acid	A1	cold acid	CA	atomic absorption	AAS
split core	SC	hydrochloric acid	A2	specific sulphide	SS	x-ray fluorescence	XRF
cutting	CU	nitric acid	A3	other mixed acids	Ma	spectrophotometry	SPEC
rock	Ro	aqua regia	A4	alkaline attack	AA	colorimetry	COL
oil	SO	nitric-perchloric	A5	volatilization	VO	chromatography	CHR
pulp	PU	HF mixture	A6	ignition	IG	titration	TTN
water	WA	HF under pressure	A7	pressed powder (XRF)	PP	other chemicals means	CHEM
issue	TI	fusion	A8	glass fusion (XRF)	GF	miscellaneous	MISC
stream sediment	SS					fluorescence	FLUOR
heavy mineral	HM					inductively coupled plasma	ICP

105

621106

## ANALABS

A Division of Macdonald Hamilton &amp; Co. Pty Ltd.

## ANALYTICAL DATA

SAMPLE PREFIX

REPORT NUMBER

REPORT DATE

CLIENT ORDER No.

PAGE

23.3.08.06115

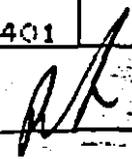
26/04/89

6267

21 OF 2

TEST No.	SAMPLE No.	Cu	Pb	Zn	Ag	Au	Ba	As	Cr	Zr
8	482350	10	60	40	4.5	18.300	1100	920	70	260
9										
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
23	DETECTION	5	5	5	0.5	0.008	10	1	5	5
24	UNITS	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM
25	METHOD	101	101	101	101	309	401	114	401	401

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 

106

621107

# ANALABS

A Division of Macdonald Hamilton & Co. Pty. Ltd.

## ANALYTICAL DATA

SAMPLE PREFIX

REPORT NUMBER

REPORT DATE

CLIENT ORDER No.

PAGE

23.3.08.06115

26/04/89

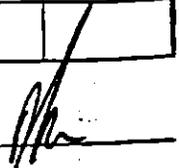
6267

2 OF 2

TUBE No.	SAMPLE No.	Ti							
1									
2									
3									
4									
5									
6									
7									
8	482350	2850							
9									
10									
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									
21									
22									
23	DETECTION	50	3						
24	UNITS	PPM	PPM						
25	METHOD	401	401						

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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APPENDIX 5.

















LICENCE:

PROJECT:

Lynchford

2600N

1/2.

SAMPLED BY:

COORD	NUMBER	DEPTH	COLOUR
2600N			
" 750E	514432	90	Br/BK
" 75	" 433	80	Or
800	514434	80	Br/or
" 25	" 435	90	Or/Br
" 50	" 436	90	Br/or
" 75	" 437	80	Br/or
900	514438	100	Or/Br
" 25	" 439	90	Or/Br
" 75	" 441	90	Or/Br
1000	514442	90	Br/or
" 25	" 443	90	Br/or
" 50	" 444	90	Or/Br
" 75	" 445	80	Or/Br
1100	514446	80	Or/Br
" 25	" 447	90	Br/or
" 50	" 448	80	Br/or
" 75	" 449	90	Br/or
1200	514450	90	Br
" 25	" 451	90	Or/Br
" 50	" 452	90	Or/Br
" 75	" 453	30	Br/or
1300	514454	85	Br/or
" 25	" 455	90	Or/Br
" 50	" 456	70	Or/Br
" 75	" 457	80	Br/or
1400	514458	80	Br
" 25	" 459	90	Pu/Rd

COORD	NUMBER	DEPTH	COLOUR
" 50	" 460	90	Rd/or
" 75	" 461	80	Br/or
1500	514462	90	Br
" 25	" 463	80	Br
" 50	" 464	90	Br
" 75	" 465	80	Br/or
1600	514466	80	Br
" 25	" 467	90	Br/or
" 50	" 468	70	Br/or
" 75	" 469	90	Or/Br
1700	514470	100	Or
" 25	" 471	90	Bl/or
" 50	" 472	100	Br/or
" 75	" 473	80	Br/or
1800	514474	70	Br/or
" 25	" 475	70	Br
" 50	" 476	80	Br
" 75	" 477	90	Or/Br
1900	514478	90	Rd/or
" 25	" 479	80	Or
" 50	" 480	100	Or/Br
" 75	" 481	70	Br/or
2000	514482	90	Br
" 25	" 483	90	Or/Br
" 50	" 484	80	Or
" 75	" 485	100	Or
2100	514486	100	Br/or
" 25	" 487	100	Br/or
" 50	514488	90	Or

621117



LICENCE:  
PROJECT:

Lyrichford

2800N

SAMPLED BY:

118

COORD	NUMBER	DEPTH	COLOUR
2800N			
" 50	" 52	90	Or
" 75	" 53	70	Br/or
1800	514 54	100	Br/Rd
" 25	" 55	80	Or/Br
" 50	" 56	90	Or/Br
" 75	" 57	70	Or/Br
1900	514 58	80	Or
" 25	" 59	30	Br
" 50	" 560	70	Rd/or
" 75	" 61	80	Or
2000	514 562	90	Or
" 25	" 63	90	Or
" 50	" 64	80	Or
" 75	" 568	80	Or/Br. sample. 6/15/73.
<del>2100</del>	<del>514 566</del>	<del>80</del>	<del>Or/Br</del>
" 25	" 67	80	Br/or
" 50	" 68	90	Or
" 75	" 69	90	Or
2200	514 570	90	Br/or
" 25	"	90	Br/or
" 50	"	80	Br/or
" 75	"	70	Or

No sample

COORD	NUMBER	DEPTH	COLOUR
2300	514	50	Gy
" 25	"	80	Or
" 50	"	70	Or
" 75	"	80	Or
2400	514 578	70	Or
" 25	"	90	Or
" 50	" 580	90	Or
" 75	"	90	Or
2500	514	80	Or
" 25	"	90	Or
" 50	"	80	Or
" 75	"	90	Or/wh
2600	514	80	Or/Gr
" 25	"	80	Or/Br
" 50	"	60	Gy/wh
" 75	"	40	Br/Gr
2700	514 590	40	Br/Gr
" 25	"	40	Br
" 50	"	90	Gr/wh
" 75	"	50	Br/Gr
2800	514	60	Br
" 25	"	50	Br/Gy
" 50	"	60	Br/Gy
" 75	"	50	Br/Gy
2900	514 598	90	Br/Gy





LICENCE:  
PROJECT:

Ly. chford

3400N

SAMPLED BY:

COORD	NUMBER	DEPTH	COLOUR
3400N			
900E	514740	No Sample	
25	514741	90	
50	742	100	
75	743	70	
1000	744	100	
25	745	100	
50	746	100	
75	747	100	
1100	748	100	
25	749	90	
50	750	90	
75	751	100	
1200	752	50	
25	753	100	
50	754	90	
75	755	100	
1300	756	100	
25	757	80	
50	758	100	
75	759	100	
1400	760	100	
25	761	100	
50	762	100	
75	763	90	
1500	764	90	
25	765	90	
50	766	100	
75	767	90	

COORD	NUMBER	DEPTH	COLOUR
1600	768	100	
25	769	100	
50	770	100	
75	771	90	
1700	772	100	
25	773	90	
50	774	100	
75	775	100	

2200	792	90	
25	793	80	
50	794	100	
75	795	40	
2300	796	100	

621122









# ANALABS

A division of MacDonal Hamilton & Co. Pty. Ltd.

Phone (09) 458 7999

52 Murray Road, Welshpool, W.A. 6106

FAX: 004 31 8890

Telex AA92560

**ANALYTICAL REPORT No.** 23.3.08.05900

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

ORDER No.

PROJECT

Aberfoyle Resources Exp. Division  
P.O. Box 952  
Burnie  
Tasmania 7320

5318  
DATE RECEIVED: 15/12/88  
RESULTS REQUIRED: ASAP

No. OF PAGES OF RESULTS

DATE REPORTED

No. OF COPIES

TOTAL No. OF SAMPLES

29      31/01/89      1      710

STATE OF SAMPLE	REFER BELOW	SAMPLE NUMBERS	PRE-TREATMENT						ANALYSIS				
			DRY	CRUSH	SPLIT	FUL VERISE	SIEVE	OTHER SEE REMARKS	NONE	REFER TO ANALYSIS SECTION	PREPARATION	METHOD	
	Various		SO	Prep: 0.16							Cu, Pb, Zn, Ag/101, As/114		
	Various		SO								Ba, Cr, Zr, Ti/401		
	Various		SO	Prep: 0.16							Cu, Pb, Zn, Ag/101, As/114		
	Various		SO								Ba, Cr, Zr, Ti/401		

RESULTS TO  
R. de Bomford  
Aberfoyle Resources Exp. Division  
P.O. Box 952  
Burnie  
Tasmania 7320

RESULTS TO

REMARKS

STATE OF SAMPLES	ANALYSIS - PREPARATION	ANALYSIS - METHOD
ig core	perchloric acid A1	atomic absorption AAS
sp core	hydrochloric acid A2	x-ray fluorescence XRF
cutting	nitric acid A3	spectrophotometry SPEC
rock	aqua regia A4	colorimetry COL
SO	nitric-perchloric A5	chromatography CHR
PU	H <sub>2</sub> mixture A6	titration ITN
WA	H <sub>2</sub> under pressure A7	other chemical means CHEM
TH	fusion A8	miscellaneous MISC
stream sediment		fluorescence FLUOR
heavy mineral		inductively coupled plasma ICP

AUTHORISED OFFICER



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**ANALABS**

A Division of Macdonald Hamilton &amp; Co. Pty. Ltd.

**ANALYTICAL DATA**

SAMPLE PREFIX

REPORT NUMBER

REPORT DATE

CLIENT ORDER No.

PAGE

23.3.08.05900

31/01/89

5318

1 OF 29

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Ba	As	Cr	Zr	Ti
1	482372	100	200	160	<0.5	130	23	75	130	5650
2	482373	25	55	65	<0.5	1150	7	40	300	1600
3	482375	15	45	55	<0.5	520	4	40	270	3400
4	482376	20	40	55	<0.5	260	3	15	130	1250
5	482377	10	40	60	<0.5	860	<1	10	270	2750
6	482378	15	40	45	<0.5	95	1	15	180	990
7	482379	10	40	40	<0.5	510	1	25	340	2150
8	482380	5	30	45	<0.5	660	<1	7	310	1550
9	482381	15	50	60	<0.5	680	1	6	350	2100
10	482382	15	25	35	<0.5	170	1	55	330	1600
11	482383	115	70	80	<0.5	610	9	110	210	5550
12	482384	50	50	55	<0.5	640	21	80	300	4400
13	482385	45	50	75	<0.5	250	9	75	200	4400
14	482386	45	55	55	<0.5	1450	15	40	240	3450
15	514036	15	30	25	<0.5	610	3	20	220	1500
16	514037	15	30	25	<0.5	330	<1	55	170	1100
17	514038	10	25	25	<0.5	240	<1	7	140	830
18	514039	5	25	25	<0.5	510	<1	20	230	1250
19	514040	15	25	25	<0.5	25	<1	<5	75	310
20	514041	5	30	30	<0.5	760	<1	30	140	1700
21	514042	5	20	25	<0.5	580	<1	20	120	1850
22	514043	25	50	30	<0.5	590	2	55	290	2500
23	514044	15	40	25	<0.5	390	<1	40	190	1850
24	514045	10	30	50	<0.5	460	<1	15	210	1200
25	514046	10	35	25	<0.5	610	<1	<5	260	1350

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A Division of Macdonald Hamilton &amp; Co. Pty. Ltd.

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TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Ba	As	Cr	Zr	Ti	
1	514047	5	10	20	<0.5	600	1	15	200	1350	
2	514048	10	15	35	<0.5	530	2	55	690	3150	
3	514049	15	15	20	<0.5	220	<1	70	420	1700	
4	514050	5	5	20	<0.5	25	<1	7	190	460	
5	514051	5	<5	20	<0.5	<10	<1	55	90	290	
6	514052	35	60	25	<0.5	280	2	30	680	2500	
7	514053	15	20	25	<0.5	590	1	80	340	2800	
8	514054	10	15	25	<0.5	680	<1	110	450	4050	
9	514055	5	<5	20	<0.5	160	<1	<5	160	1000	
10	514056	30	30	25	<0.5	90	<1	50	60	500	
11	514057	5	15	25	<0.5	740	7	<5	360	1600	
12	514058	<5	<5	20	<0.5	230	<1	45	330	1800	
13	514059	10	10	25	<0.5	310	<1	8	250	1350	
14	514060	25	20	25	<0.5	160	<1	45	140	840	
15	514061	20	35	30	<0.5	260	1	30	250	2750	
16	514062	25	50	40	<0.5	940	1	5	250	4400	
17	514063	20	40	40	<0.5	500	<1	15	270	4900	
18	514064	10	20	30	<0.5	780	<1	10	230	3450	
19	514065	20	40	30	<0.5	440	<1	25	230	4100	
20	514066	20	30	20	<0.5	160	<1	20	130	2500	
21	514067	45	100	40	<0.5	300	3	60	140	2400	
22	514068	20	60	45	<0.5	410	4	70	160	2200	
23	514069	45	80	80	<0.5	690	8	130	220	3550	
24	514070	40	90	65	<0.5	380	11	55	260	5600	
25	514071	105	90	65	<0.5	1100	16	90	240	4000	

Results in ppm unless otherwise specified.  
 \* element present but concentration too low to measure  
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TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Ba	As	Cr	Zr	Ti
		23.3.08.05900		31/01/89		5318		3 OF 29		
1	514072	70	75	40	<0.5	730	22	140	260	4900
2	514106	5	10 <5	10	<0.5	280	2 <1	70	90	1100
3	514107	<5	<5 <5	10	<0.5	1000	1 <1	25	150	2250
4	514108	<5	<5 <5	10	<0.5	430	1 <1	35	150	2300
5	514109	10	15 <5	15	<0.5	260	8 5	25	180	2700
6	514110	40	35 20	20	<0.5	230	4 2	95	180	1750
7	514111	<5	10 <5	15	<0.5	110	2 <1	25	100	920
8	514112	10	10 <5	10	<0.5	80	3 <1	70	90	1100
9	514113	45	55 45	30	<0.5	100	3 1	20	85	780
10	514114	<5	15 <5	15	<0.5	690	1 <1	10	240	1700
11	514115	<5	10 <5	15	<0.5	180	1 <1	55	270	1700
12	514116	<5	<5 <5	10	<0.5	590	1 <1	35	140	1250
13	514117	5	25 <5	15	<0.5	340	3 <1	70	270	2050
14	514118	<5	10 <5	15	<0.5	480	1 <1	25	180	1600
15	514119	10	15 <5	15	<0.5	110	2 <1	70	80	1600
16	514120	5	15 <5	10	<0.5	120	1 <1	75	100	1450
17	514121	<5	5 <5	10	<0.5	830	1 <1	60	160	1100
18	514122	15	20 <5	20	<0.5	75	2 <1	40	20	320
19	514123	10	20 10	15	<0.5	810	1 <1	130	240	2250
20	514124	25	45 35	20	<0.5	490	3 <1	75	170	1900
21	514125	<5	5 <5	15	<0.5	900	1 <1	30	230	1350
22	514126	10	15 <5	15	<0.5	1000	2 <1	30	300	2200
23	514127	<5	25 <5	10	<0.5	55	1 <1	90	50	550
24	514128	<5	25 <5	10	<0.5	740	1 <1	7	230	2700
25	514129	<5	20 <5	10	<0.5	510	3 2	40	220	3300

Results in ppm unless otherwise specified  
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TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Ba	As	Cr	Zr	Ti		
1	514130	5	40	5	15	<0.5	640	2	<1	25	200	2300
2	514131	10	110	95	10	<0.5	490	2	<1	10	190	1900
3	514132	45	65	30	15	<0.5	740	2	<1	45	190	3350
4	514133	15	30	<5	20	<0.5	650	1	<1	25	190	3100
5	514134	15	40	<5	25	<0.5	550	2	<1	65	150	2650
6	514135	15	315	290	140	<0.5	700	12	8	15	260	360
7	514136	25	35	<5	15	<0.5	550	4	2	50	200	2400
8	514137	10	100	45	<0.5	970	5	3	35	280	3900	
9	514138	20	490	50	<0.5	570	12	60	220	3150		
10	514139	35	15	25	<0.5	570	33	85	170	3350		
1	514140	15	10	15	<0.5	530	3	65	180	2100		
12	514141	85	50	50	<0.5	520	18	180	240	4700		
3	514142	<5	5	10	<0.5	140	2	100	120	1550		
4*	514143 STD	20	195	190	<0.5	640	78	30	230	3850		
15	514174	15	<5	15	<0.5	320	9	65	250	4200		
6	514175	50	10	80	<0.5	220	13	320	220	5350		
17	514176	25	<5	70	<0.5	360	5	160	180	3900		
8	514177	185	40	85	<0.5	1650	8	400	160	6150		
9	514178	80	30	45	<0.5	190	8	670	210	6250		
20	514179	265	30	120	<0.5	830	9	380	160	4750		
11	514180	265	40	125	<0.5	320	6	670	200	7250		
22	514181	230	40	130	<0.5	620	8	800	240	7100		
3	514182	80	40	70	<0.5	420	19	270	160	4450		
14	514183	10	15	20	<0.5	380	3	75	150	3050		
25	514184	15	15	15	<0.5	120	2	35	70	1650		

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TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Ba	As	Cr	Zr	Ti	
1	514185	20	55	20	<0.5	1050	23	85	200	3000	
2	514186	15	20	20	<0.5	520	3	35	190	1850	
3	514187	10	15	25	<0.5	1600	7	15	270	2600	
4	514188	45	35	40	<0.5	1150	150	10	220	2750	
5	514189	10	15	20	<0.5	590	5	40	290	2200	
6	514190	10	10	10	<0.5	60	3	45	50	520	
7	514191	20	25	15	<0.5	400	2	45	250	1750	
8	514192	5	10	15	<0.5	600	5	50	240	1650	
9	514193	5	20	10	<0.5	390	<1	70	180	2750	
10	514194	5	10	20	<0.5	1750	<1	10	290	2350	
11	514195	5	10	25	<0.5	1000	4	<5	320	1950	
12	514196	10	15	20	<0.5	920	3	<5	310	2050	
13	514197	20	25	45	<0.5	910	5	15	290	2550	
14	514198	15	30	20	<0.5	900	18	20	220	2000	
15	514199	25	470	20	<0.5	750	9	80	190	1550	
16	514200	15	25	15	<0.5	690	4	<5	270	1700	
17	514201	10	15	10	<0.5	75	3	55	30	370	
18	514202	<5	<5	10	<0.5	50	<1	5	30	680	
19	514203	5	5	10	<0.5	940	3	65	230	3500	
20	514204	15	50	30	<0.5	300	4	5	170	1650	
21	514205	15	20	25	<0.5	970	4	50	310	1850	
22	514206	5	<5	15	<0.5	430	3	180	240	1350	
23	514207	5	<5	10	<0.5	1050	3	50	160	1250	
24	514208	5	5	10	<0.5	100	4	120	80	720	
25	514209	90	110	110	<0.5	1000	20	250	170	5400	

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TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Ba	As	Cr	Zr	Ti	
1	514210	80	105	45	<0.5	970	51	110	240	3500	
2	514244	40	30	45	<0.5	220	11	120	210	5400	
3	514245	15	20	15	<0.5	460	13	15	300	2350	
4	514246	100	20	65	<0.5	190	12	210	200	7500	
5	514247	35	30	100	<0.5	420	50	130	170	6400	
6	514248	175	30	80	<0.5	450	4	460	150	5400	
7	514249	165	45	70	<0.5	260	9	490	180	6750	
8	514250	145	40	55	<0.5	220	9	630	230	7100	
9	514251	175	40	65	<0.5	120	10	660	180	5800	
10	514252	160	30	70	<0.5	320	34	190	210	6000	
11	514253	155	35	60	<0.5	370	26	380	250	6850	
12	514254	70	45	40	<0.5	520	44	190	210	4850	
13	514255	85	55	55	<0.5	1100	54	130	220	4700	
14	514256	30	55	60	<0.5	490	17	25	230	3300	
15	514257	20	40	25	<0.5	300	3	8	220	1250	
16	514258	5	25	20	<0.5	800	1	25	270	1750	
17	514259	10	25	15	<0.5	150	3	100	85	1350	
18	514260	30	35	25	<0.5	550	9	15	380	2400	
9	514261	10	20	20	<0.5	420	2	25	340	1900	
20	514262	10	30	15	<0.5	520	<1	30	200	1300	
21	514263	25	45	25	<0.5	1200	5	30	380	2750	
22	514264	20	870	60	<0.5	500	56	360	140	3350	
23	514265	5	25	15	<0.5	180	2	60	190	1750	
24	514266	5	20	10	<0.5	40	<1	15	180	1000	
25	514267	10	25	20	<0.5	410	4	120	340	1850	

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		23.3.08.05900				31/01/89		5318		7 OF 29	
TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Ba	As	Cr	Zr	Ti	
1	514268	<5	25	10	<0.5	340	2	15	100	880	
2	514269	5	25	10	<0.5	450	2	60	150	1350	
3	514270	<5	40	15	<0.5	590	<1	25	180	1450	
4	514271	15	40	35	<0.5	770	11	20	290	3600	
5	514272	15	30	55	<0.5	470	9	25	270	4400	
6	514273	10	30	20	<0.5	810	5	35	230	1700	
7	514274	10	25	15	<0.5	500	2	<5	280	1450	
8	514275	5	15	15	<0.5	230	<1	60	65	680	
9	514276	10	15	20	<0.5	940	3	20	300	3400	
10	514277	15	30	35	<0.5	890	8	15	270	3700	
11	514278	45	25	55	<0.5	1300	21	20	300	3850	
12	514279	10	15	40	<0.5	620	5	25	180	3200	
13	514280	25	15	25	<0.5	910	<1	15	400	3150	
14	514304	10	35	65	<0.5	890	4	5	270	1600	
15	514305	30	60	40	<0.5	840	16	50	210	1900	
16	514306	45	45	55	<0.5	840	28	95	190	3400	
17	514307	125	45	125	<0.5	160	11	410	200	6650	
18	514308	80	50	115	<0.5	180	17	390	240	5900	
19	514309	55	35	65	<0.5	270	14	190	210	5950	
20	514310	65	30	40	<0.5	210	19	200	220	5900	
21	514311	15	25	20	<0.5	110	6	110	250	6900	
22	514312	50	45	40	<0.5	340	17	210	230	5900	
23	514313	55	50	75	<0.5	420	20	180	210	4950	
24	514314	155	50	255	<0.5	270	8	360	150	4550	
25	514315	25	60	55	<0.5	1150	21	130	180	4200	

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		23.3.08.05900				31/01/89		5318		8 OF 29	
TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Ba	As	Cr	Zr	Tl	
1	514316	25	20	40	<0.5	2000	17	30	260	3200	
2	514317	25	40	55	<0.5	890	15	200	220	5650	
3	514318	115	40	170	<0.5	660	11	190	190	5150	
4	514319	235	45	125	<0.5	650	7	710	170	5750	
5	514320	160	30	70	<0.5	330	3	170	150	6150	
6	514321	100	45	50	<0.5	310	8	460	230	7650	
7	514322	275	45	150	<0.5	740	16	470	300	7650	
8	514323	160	60	70	<0.5	580	7	330	210	6350	
9	514324	225	50	115	<0.5	590	11	370	310	8200	
10	514325	85	120	50	<0.5	890	51	160	180	4400	
11	514326	30	25	60	<0.5	780	4	25	180	2750	
12	514327	35	30	40	<0.5	1150	5	25	300	2000	
13	514328	85	60	105	<0.5	390	8	50	400	2150	
14	514329	30	25	40	<0.5	660	4	15	250	3100	
15	514330	30	30	85	<0.5	640	5	10	290	3000	
16	514331	5	<5	<5	<0.5	60	<1	10	250	1100	
17	514332	225	65	265	<0.5	330	18	450	220	3850	
18	514333	15	20	15	<0.5	790	2	7	310	1950	
19	514334	15	20	30	<0.5	460	4	20	280	2100	
20	514335	30	15	35	<0.5	520	3	6	330	1900	
21	514336	40	105	110	<0.5	210	3	460	140	3350	
22	514337	15	30	20	<0.5	460	2	30	310	1950	
23	514338	5	15	10	<0.5	850	<1	5	310	1800	
24	514339	15	15	15	<0.5	770	<1	<5	390	2100	
25	514340	10	<5	<5	<0.5	20	<1	150	55	300	

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A Division of Macdonald Hamilton &amp; Co. Pty. Ltd.

**ANALYTICAL DATA**

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		23.3.08.05900				31/01/89		5318		9 OF 29	
TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Ba	As	Cr	Zr	Ti	
1	514341	10	10	5	<0.5	490	<1	180	200	1300	
2	514342	10	15	5	<0.5	660	<1	40	230	1600	
3	514343	5	<5	<5	<0.5	530	<1	6	150	1300	
4	514344	10	<5	<5	<0.5	890	<1	100	240	1450	
5	514345	15	25	5	<0.5	980	<1	7	270	1900	
6	514346	15	<5	5	<0.5	45	<1	65	55	850	
7	514347	15	15	10	<0.5	1900	<1	400	180	4550	
8	514348	5	<5	<5	<0.5	1200	<1	25	260	1700	
9	514349	10	<5	5	<0.5	500	<1	190	160	1200	
10	514350	10	90	10	<0.5	1600	18	85	230	2350	
1*	514351 <sub>510</sub>	25	170	170	<0.5	660	91	25	240	3900	
12	514355	20	25	55	<0.5	1500	6	70	190	5050	
3	514356	30	40	65	<0.5	610	8	100	170	7600	
4	514357	25	35	50	<0.5	770	4	65	180	5650	
15	514358	75	30	70	<0.5	850	6	65	160	5000	
6	514359	85	50	70	<0.5	570	9	130	120	3050	
17	514360	65	35	40	<0.5	460	14	85	150	4300	
8	514361	100	35	55	<0.5	280	14	110	120	2800	
9	514362	115	40	75	<0.5	660	7	240	150	3550	
20	514363	80	40	45	<0.5	1150	13	180	140	3750	
11	514364	90	50	110	<0.5	1350	13	170	150	3600	
22	514365	215	50	160	<0.5	1150	22	200	220	5600	
13	514366	205	80	145	<0.5	1200	53	180	210	4900	
14	514367	165	75	110	<0.5	1600	48	150	210	4500	
25	514368	110	65	65	<0.5	1550	19	160	170	4000	

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A Division of Macdonald Hamilton &amp; Co. Pty. Ltd.

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TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Ba	As	Cr	Zr	Ti
1	514369	145	50	105	<0.5	3050	20	95	170	3900
2	514370	155	55	105	<0.5	1350	19	380	160	4100
3	514371	260	40	160	<0.5	760	59	1100	170	4950
4	514372	175	50	145	<0.5	1050	29	730	180	5050
5	514373	180	75	170	<0.5	940	33	600	180	4850
6	514374	115	80	150	<0.5	1250	20	330	210	5800
7	514375	225	50	145	<0.5	920	33	320	160	4750
8	514376	145	55	130	<0.5	1250	25	440	210	5000
9	514377	90	40	75	<0.5	1150	13	250	190	4400
10	514378	150	75	200	<0.5	1150	15	370	180	5300
11	514379	135	70	210	<0.5	1100	53	550	170	4700
12	514380	160	60	155	<0.5	870	20	400	180	5650
13	514381	105	30	110	<0.5	750	18	190	160	3250
14	514382	110	20	65	<0.5	470	9	340	190	6150
15	514383	145	25	155	<0.5	410	11	350	160	5550
16	514384	150	15	85	<0.5	520	7	340	330	6600
17	514385	160	20	125	<0.5	1100	7	200	150	4100
18	514386	175	15	80	<0.5	960	7	270	310	6350
19	514387	185	15	85	<0.5	990	5	120	360	6650
20	514388	235	25	70	<0.5	1600	6	80	490	7650
21	514389	150	25	70	<0.5	1300	7	140	400	6800
22	514390	70	20	60	<0.5	1200	5	220	320	4750
23	514391	175	25	90	<0.5	520	10	240	300	6650
24	514392	130	30	75	<0.5	360	9	290	340	8550
25	514393	285	25	135	<0.5	590	32	350	400	7750

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TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Ba	As	Cr	Zr	Ti
1	514394	320	25	165	<0.5	610	43	320	450	8900
2	514395	180	20	80	<0.5	240	11	210	260	7800
3	514396	120	15	75	<0.5	220	11	200	210	7050
4	514397	120	15	65	<0.5	240	9	160	220	7650
5	514398	120	15	120	<0.5	560	3	150	150	3650
6	514399	195	25	145	<0.5	590	18	430	160	5000
7	514400	145	30	85	<0.5	150	9	370	190	7250
8	514401	145	20	105	<0.5	250	9	310	190	7000
9	514402	145	20	105	<0.5	320	6	300	150	6800
10	514403	200	35	125	<0.5	290	9	160	170	7100
11	514404	135	20	75	<0.5	450	12	300	170	4600
12	514405	110	60	85	<0.5	200	12	200	160	5050
13	514406	100	30	75	<0.5	95	13	220	190	5700
14	514407	145	35	80	<0.5	200	15	280	190	5500
15	514408	85	90	90	<0.5	240	39	280	190	5650
16	514409	25	10	10	<0.5	160	10	25	40	1800
17	514410	35	15	20	<0.5	55	6	55	110	1200
18	514411	25	<5	10	<0.5	25	5	8	25	270
19	514412	25	5	10	<0.5	130	4	15	350	2500
20	514413	15	5 <5	10	<0.5	35	4	40	80	520
21	514414	10	5	30	<0.5	870	3	9	350	2500
22	514415	15	10	30	<0.5	840	3	10	380	2300
23	514416	15	10 <5	10	<0.5	200	3	25	230	1350
24	514417	20	60 30	35	<0.5	620	26	15	310	2100
25	514418	10	35 10	25	<0.5	710	4	5	320	1950

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TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Ba	As	Cr	Zr	Ti	
1	514419	15	50 25	10	<0.5	760	3	45	240	1550	
2	514420	10	135 120	20	<0.5	580	1	10	240	1650	
3	514421	5	10 <5	15	<0.5	70	1 <1	60	85	410	
4	514422	5	<5 <5	10	<0.5	25	1 <1	30	75	360	
5	514423	10	30 <5	10	<0.5	370	1 <1	25	300	2000	
6	514424	10	25 <5	15	<0.5	940	3 <1	55	250	2350	
7	514425	<5	20 <5	15	<0.5	670	1 <1	10	190	1950	
8	514426	10	15 <5	5	<0.5	90	<1 <1	150	85	490	
9	514427	<5	<5 <5	5	<0.5	30	1 <1	10	80	510	
10	514428	5	15 <5	5	<0.5	450	1 <1	60	150	1000	
11	514429	<5	<5 <5	<5	<0.5	50	1 <1	10	120	690	
12	514430	10	10 <5	10	<0.5	30	1 <1	220	45	580	
13	514432	15	25 <5	45	<0.5	340	4	50	230	7550	
14	514433	10	20 <5	30	<0.5	200	3	140	270	7450	
15	514434	20	30 <5	40	<0.5	260	4	35	270	11000	
16	514435	20	30 <5	50	<0.5	240	6	70	210	9050	
17	514436	25	35 55	45	<0.5	700	4	65	190	8250	
18	514437	25	25 <5	75	<0.5	580	2	50	180	6100	
19	514438	30	35 <5	60	<0.5	450	4	75	160	6700	
20	514439	15	30 <5	45	<0.5	90	5	30	220	5500	
21											
22	514441	20	25 <5	45	<0.5	170	4	50	240	11400	
23	514442	35	30 <5	60	<0.5	690	6	50	200	6700	
24	514443	40	25 <5	90	<0.5	840	3	40	210	6100	
25	514444	35	30 <5	40	<0.5	640	5	130	150	3950	

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TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Ba	As	Cr	Zr	Ti	
1	514445	50	35 <5	30	<0.5	320	12	85	110	3050	
2	514446	100	65 40	40	<0.5	680	37	190	120	4100	
3	514447	75	95 80	60	<0.5	750	19	470	170	6450	
4	514448	80	115 95	50	<0.5	810	25	560	160	4750	
5	514449	120	100 10	25	<0.5	1250	19	170	150	3150	
6	514450	65	100	45	<0.5	1050	18	430	140	4400	
7	514451	120	1000	120	<0.5	1800	71	910	150	5250	
8	514452	185	240	220	<0.5	540	75	1500	160	5650	
9	514453	150	100	170	<0.5	600	50	1150	170	5000	
10	514454	130	50	110	<0.5	600	42	470	140	5500	
1	514455	145	30	65	<0.5	330	21	370	150	6600	
12	514456	190	<5	75	<0.5	420	10	320	150	5750	
3	514457	130	15	60	<0.5	240	22	360	170	7000	
4	514458	110	40	70	<0.5	240	11	160	170	6400	
15	514459	220	120	120	<0.5	340	13	120	200	6750	
6	514460	120	50	90	<0.5	380	13	200	220	5650	
17	514461	135	65	95	<0.5	580	15	200	170	6000	
8	514462	165	30	145	<0.5	220	14	340	160	5700	
9	514463	170	5	155	<0.5	200	9	230	150	5050	
20	514464	80	<5	60	<0.5	180	9	130	150	5700	
1	514465	105	<5	55	<0.5	360	11	140	190	6600	
22	514466	120	15	55	<0.5	220	18	270	200	7400	
3	514467	160	35	75	<0.5	640	26	170	320	7700	
4	514468	180	35	115	<0.5	1050	25	110	280	5200	
25	514469	145	35	65	<0.5	650	13	210	430	7900	

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TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Ba	As	Cr	Zr	Ti	
1	514470	200	30	75	<0.5	650	14	170	400	8150	
2	514471	200	30	90	<0.5	590	12	120	290	7150	
3	514472	155	30	90	<0.5	770	13	140	330	6850	
4	514473	190	25	150	<0.5	1350	6	55	140	3800	
5	514474	215	25	135	<0.5	760	11	300	190	5300	
6	514475	245	20	150	<0.5	1700	18	75	220	6000	
7	514476	200	55	230	<0.5	750	18	150	120	4150	
8	514477	230	20	125	<0.5	270	9	160	160	5900	
9	514478	185	25	85	<0.5	270	13	120	130	5400	
10	514479	160	20	80	<0.5	160	11	340	150	5000	
1	514480	215	20	115	<0.5	260	11	440	150	5700	
12	514481	180	20	140	<0.5	540	6	290	110	4000	
3	514482	215	40	170	<0.5	880	15	230	120	4000	
4	514483	205	25	85	<0.5	260	13	350	170	6650	
15	514484	200	25	70	<0.5	170	13	420	170	6550	
6	514485	200	25	70	<0.5	140	12	440	170	6450	
17	514486	165	35	150	<0.5	740	9	330	130	4050	
8	514487	165	30	115	<0.5	290	11	220	130	4450	
9	514488	115	20	105	<0.5	360	13	230	210	5750	
20	514489	55	20	75	<0.5	460	14	110	250	6050	
11	514490	70	45	85	<0.5	440	9	140	150	4550	
22	514491	30	20	35	<0.5	240	8	160	240	6050	
3	514492	105	45	50	<0.5	120	11	200	230	6800	
4	514493	40	35	45	<0.5	160	9	140	240	6400	
25	514494	35	20	40	<0.5	200	12	140	250	6900	

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TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Ba	As	Cr	Zr	Ti	
1	514495	45	15	40	<0.5	150	9	110	240	6550	
2	514496	105	35	80	<0.5	260	11	160	210	6650	
3	514497	15	15	30	<0.5	190	7	210	200	5000	
4	514498	65	10	35	<0.5	410	13	110	200	4250	
5	514499	35	40	20	<0.5	670	3	140	150	3300	
6	514500	35	25	20	<0.5	220	9	85	90	1800	
7	514501	80	20	40	<0.5	250	4	330	140	5450	
8	514502	155	5	65	<0.5	160	5	160	100	3500	
9	514503	105	15	40	<0.5	190	10	710	200	6950	
10	514504	140	25	95	<0.5	190	8	960	200	8150	
11	514505	25	20	20	<0.5	320	2	85	260	2050	
12	514506	20	<5	15	<0.5	250	<1	35	200	2550	
13	514507	<5	<5	20	<0.5	1200	2	10	290	1850	
14	514508	10	15	20	<0.5	710	9	25	230	2300	
15	514509	15	25	30	<0.5	730	15	100	270	4200	
16	514510	5	<5	20	<0.5	820	1	<5	330	1950	

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6	514539	255	15	95	<0.5	250	12	300	110	4600
7	514540	165	15	70	<0.5	230	17	480	110	4850
8	514541	105	10	35	<0.5	300	17	230	120	4200
9	514542	175	30	70	<0.5	450	37	120	150	4200

9	514552	140	30	60	<0.5	360	17	140	240	6200
20	514553	195	40	65	<0.5	510	29	230	290	7700
21	514554	180	40	70	<0.5	360	17	140	190	6500
22	514555	140	30	50	<0.5	200	22	350	180	6300
23	514556	120	30	50	<0.5	320	21	210	170	6350
24	514557	120	30	50	<0.5	380	32	440	190	7400
25	514558	130	30	55	<0.5	340	29	260	180	7250

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TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Ba	As	Cr	Zr	Ti
1	514559	135	35	55	<0.5	280	40	160	190	10000
2	514560	120	30	55	<0.5	180	24	180	190	8450
3	514561	145	35	70	<0.5	390	18	100	190	7300
4	514562	150	25	65	<0.5	420	12	70	200	7300
5	514563	140	35	65	<0.5	400	17	120	190	8050
6	514564	125	35	60	<0.5	380	14	140	200	8150
7	514565	100	30	50	<0.5	260	7	210	180	6500
8	514567	50	35	60	<0.5	310	16	110	210	5300
9	514568	45	10	40	<0.5	250	7	200	240	6400
10	514569	50	15	35	<0.5	130	5	150	220	7500
11	514570	45	10	45	<0.5	160	9	160	230	5400
12	514571	20	<5	40	<0.5	180	4	110	250	5650
13	514572	20	10	25	<0.5	160	4	120	220	5100
14	514573	10	<5	15	<0.5	80	2	60	200	3800
15	514574	10	<5	10	<0.5	30	1	50	95	1550
16	514575	25	<5	25	<0.5	250	11	80	290	5000
17	514576	10	<5	15	<0.5	1250	3	50	160	1950
18	514577	95	20	40	<0.5	300	8	420	220	7200
19	514578	175	15	50	<0.5	600	6	540	240	8750
20	514579	135	15	50	<0.5	280	6	510	150	6300
21	514580	160	10	130	<0.5	350	8	480	160	4700
22	514581	360	25	215	<0.5	650	14	420	250	6750
23	514582	105	25	65	<0.5	500	18	370	280	6750
24	514583	15	<5	20	<0.5	220	5	20	180	1900
25	514584	25	10	25	<0.5	490	9	45	280	2000

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TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Ba	As	Cr	Zr	Ti
1	514585	10	<5	10	<0.5	30	1	10	25	350
2	514586	30	10	20	<0.5	1450	19	45	360	3950
3	514587	30	15	25	<0.5	270	18	370	160	5050
4	514588	5	5	10	<0.5	30	1	40	80	510
5	514589	10	<5	10	<0.5	15	<1	15	25	220
6	514590	30	30	15	<0.5	130	<1	60	170	990
7	514591	55	40	15	<0.5	310	<1	30	400	1950
8	514592	20	<5	10	<0.5	860	<1	90	480	3700
9	514593	20	15	15	<0.5	730	1	25	220	2050
10	514594	30	40	15	<0.5	720	1	55	340	2600
11	514595	25	20	15	<0.5	210	<1	530	370	1850
12	514596	10	5	20	<0.5	1450	<1	15	290	1500
13	514597	25	10	10	<0.5	60	<1	970	60	620
14	514598	50	195	40	<0.5	1100	8	110	180	2900

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TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Ba	As	Cr	Zr	Ti
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21	514663	20	10	20	<0.5	940	35	35	360	3900
22	514664	20	5	60	<0.5	430	5	170	210	6300
23	514665	70	50	20	<0.5	1450	50	160	180	3600
24	514666	90	15	30	<0.5	250	7	380	130	6000
25	514667	120	25	50	<0.5	240	5	330	170	5650

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TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Ba	As	Cr	Zr	Ti
1	514668	135	15	40	<0.5	240	4	380	150	5100
2	514669	170	70	105	<0.5	310	21	380	280	6400
3*	514670 STD	25	170	155	<0.5	650	71	40	240	3900

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TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Ba	As	Cr	Zr	Ti	
1											
2											
3											
4											
5	514729	80	45	70	<0.5	500	9	130	320	5000	
6	514730	<5	<5	10	<0.5	120	<1	120	130	2150	
7	514731	10	5	15	<0.5	410	1	25	130	1800	
8	514732	65	50	55	<0.5	1900	105	170	150	2650	
9	514733	SNR	-	-	-	-	-	-	-	-	
10	514734	115	30	60	<0.5	290	8	300	150	6150	
11	514735	165	30	105	<0.5	280	10	1600	170	6450	
12	514736	50	85	30	<0.5	1100	15	130	220	5150	
13	514737	25	25	20	<0.5	360	4	95	150	2600	
14	514738	50	20	35	<0.5	950	31	25	350	2450	
15	514741	35	30	65	<0.5	520	8	75	230	3600	
16	514742	5	15	35	<0.5	530	1	20	240	2850	
17	514743	265	180	180	<0.5	610	17	140	250	2550	
18	514744	<5	<5	15	<0.5	510	1	50	250	2950	
19	514745	<5	<5	20	<0.5	470	<1	10	270	3050	
20	514746	<5	5	20	<0.5	460	2	45	290	3800	
21	514747	10	<5	20	<0.5	380	1	<5	330	3700	
22	514748	15	15	50	<0.5	180	3	35	260	8250	
23	514749	15	5	65	<0.5	110	2	20	240	6800	
24	514750	15	5	80	<0.5	150	3	30	210	6800	
25	514751	15	10	70	<0.5	180	4	30	220	8050	

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PAGE

		23.3.08.05900				31/01/89		5318		24 <sup>OF</sup> 29	
TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Ba	As	Cr	Zr	Ti	
1	514752	50	50	85	<0.5	190	9	50	220	9250	
2	514753	20	10	50	<0.5	30	6	75	210	8000	
3	514754	55	25	60	<0.5	70	8	90	220	10000	
4	514755	20	15	60	<0.5	<10	5	110	240	10000	
5	514756	25	10	45	<0.5	25	8	70	290	8500	
6	514757	25	5	50	<0.5	10	5	75	180	8000	
7	514758	25	5	75	<0.5	55	5	80	230	9100	
8	514759	15	10	45	<0.5	<10	4	75	270	11500	
9	514760	20	20	50	<0.5	<10	5	65	300	14000	
10	514761	15	10	50	<0.5	20	6	55	240	9950	
11	514762	20	15	30	<0.5	310	13	70	180	3200	
12	514763	90	20	70	<0.5	370	65	260	250	6400	
13	514764	95	35	55	<0.5	230	13	200	230	7300	
14	514765	145	25	55	<0.5	30	11	200	240	6900	
15	514766	105	40	60	<0.5	80	11	65	220	7600	
16	514767	185	40	70	<0.5	170	10	70	190	7000	
17	514768	210	50	75	<0.5	260	9	100	170	6400	
18	514769	180	50	70	<0.5	160	8	100	210	6950	
19	514770	180	40	80	<0.5	140	12	150	180	7000	
20	514771	235	40	115	<0.5	250	5	120	170	6600	
21	514772	105	30	95	<0.5	760	3	180	100	3050	
22	514773	135	25	70	<0.5	190	6	380	230	7800	
23	514774	155	30	80	<0.5	280	5	410	250	7900	
24	514775	90	20	45	<0.5	160	4	140	170	7550	
25											

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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**ANALABS**

A Division of Macdonald Hamilton &amp; Co. Pty. Ltd.

**ANALYTICAL DATA**

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25<sup>OF</sup> 29

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Ba	As	Cr	Zr	Ti
----------	------------	----	----	----	----	----	----	----	----	----

6	514792	60	15	65	<0.5	240	13	150	230	4850
17	514793	65	20	90	<0.5	180	12	210	250	5550
8	514794	45	20	25	<0.5	720	9	160	220	5550
9	514795	10	<5	15	<0.5	40	2	20	50	700
20	514796	150	20	70	<0.5	210	11	420	190	6800
11	514797	185	25	70	<0.5	240	8	250	140	5700
22	514798	160	25	60	<0.5	200	11	220	130	5700
3	514799	145	90	65	<0.5	1000	140	290	340	6250
74	514800	165	50	115	<0.5	1000	58	420	640	10350
25	514801	240	50	65	<0.5	55	47	3300	600	10500

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A Division of Macdonald Hamilton &amp; Co. Pty. Ltd.

**ANALYTICAL DATA**

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		23.3.08.05900				31/01/89		5318		26 <sup>OF</sup> 29	
TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Ba	As	Cr	Zr	Ti	
1	514802	80	45	35	<0.5	540	88	1100	430	5500	
2	514803	10	10	10	<0.5	30	9	65	65	720	
3	514804	5	10	10	<0.5	60	3	65	120	1050	
4	514806	15	10	55	<0.5	330	2	60	200	6050	
5	514807	20	10	85	<0.5	330	3	35	240	7800	
6	514808	30	15	90	<0.5	140	3	60	200	10850	
7	514809	25	20	20	<0.5	250	15	25	220	3000	
8	514810	5	<5	10	<0.5	1800	1	50	120	950	
9	514811	30	20	20	<0.5	600	1	15	130	1150	
10	514812	5	5	15	<0.5	360	<1	85	110	1050	
11	514814	150	40	60	<0.5	40	15	570	150	6250	
12	514815	125	20	50	<0.5	190	7	460	140	5800	
13	514816	95	10	50	<0.5	120	7	480	170	6400	
14	514817	190	15	70	<0.5	220	8	190	170	6450	
15	514818	400	15	170	<0.5	110	5	120	200	7200	
16	514819	240	15	95	<0.5	180	11	160	190	7450	
17	514821	160	5	65	<0.5	170	6	170	120	5050	
18	514822	130	<5	110	<0.5	160	3	100	240	6250	
19	514823	160	10	70	<0.5	140	8	230	140	5050	
20	514824	265	15	130	<0.5	190	11	340	190	7150	
21	514825	205	10	90	<0.5	290	5	140	160	6500	
22	514826	245	10	125	<0.5	260	3	150	160	6100	
23	514827	170	<5	140	<0.5	420	2	190	190	5300	
24	514828	220	15	135	<0.5	140	7	230	170	6150	
25	514829	240	20	170	<0.5	420	8	330	150	5250	

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# ANALABS

A Division of Macdonald Hamilton & Co. Pty. Ltd.

## ANALYTICAL DATA

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27<sup>OF</sup> 29

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Ba	As	Cr	Zr	Ti
1	514830	115	10	65	<0.5	300	9	280	190	5750
2	514831	15	<5	20	<0.5	390	<1	90	230	3800
3	514832	25	<5	25	<0.5	100	1	110	260	6500
4	514833	45	10	35	<0.5	290	11	140	260	6000
5	514834	60	<5	35	<0.5	140	2	160	290	6800
6	514835	30	<5	75	<0.5	120	1	170	240	6450
7	514836	85	40	45	<0.5	160	7	230	270	7650
8	514837	35	<5	55	<0.5	120	3	140	220	5350
9	514838	25	15	55	<0.5	1550	4	45	350	3100
10	514839	35	10	60	<0.5	260	10	150	210	6500
11	514840 STD	25	170	160	<0.5	620	76	25	240	3900
12	514841	30	50	20	<0.5	1000	10	30	140	1400
13	514842	45	15	45	<0.5	970	19	160	160	3450
14	514843	175	10	90	<0.5	320	28	230	160	6200
15	514844	150	20	75	<0.5	460	72	450	290	7800
16	514845	150	15	60	<0.5	550	86	550	500	10300
17	514846	310	15	110	<0.5	1050	260	460	630	10250
18	514847	275	45	155	<0.5	1750	130	460	550	9350
19	514848	245	50	130	<0.5	760	330	1300	520	9500
20	514849 STD	30	160	175	<0.5	620	88	35	250	4050
21	514850	35	5	45	<0.5	260	14	210	250	5450
22	514851	80	<5	115	<0.5	840	9	210	150	4750
23	514852	215	20	85	<0.5	30	22	1650	170	3600
24	514854	130	<5	65	<0.5	490	15	340	120	4500
25	514855	125	<5	120	<0.5	550	7	140	210	4500

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## ANALABS

A Division of Macdonald Hamilton &amp; Co. Pty. Ltd.

## ANALYTICAL DATA

SAMPLE PREFIX

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28<sup>OF</sup> 29

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Ba	As	Cr	Zr	Ti
1	514856	120	<5	110	<0.5	630	7	230	210	5500
2	514857	40	<5	35	<0.5	500	8	80	210	4300
3	514858	30	25	15	<0.5	65	8	70	180	4850
4	514859	25	<5	30	<0.5	180	9	130	220	5650
5	514860	50	10	25	<0.5	150	9	140	250	6550
6	514861	55	<5	35	<0.5	370	6	160	240	6500
7	514862	125	<5	35	<0.5	190	27	210	240	7350
8	514863	20	25	25	<0.5	320	5	310	220	3300
9	514864	35	10	70	<0.5	290	13	90	220	4550
10	514865	20	25	15	<0.5	460	14	460	120	2150
1	514866	70	60	35	<0.5	5500	560	45	380	3150
12	514867	30	35	35	<0.5	2400	27	90	130	3200
13	514868	200	30	165	<0.5	600	34	230	240	6400
4	514869	260	10	175	<0.5	1200	140	400	160	5600
15	514870	215	20	110	<0.5	280	150	280	140	4800
6	514871	35	30	35	<0.5	400	210	100	170	4650
17	514872	85	5	95	<0.5	1400	810	180	380	5400
18	514873	35	45	35	<0.5	660	58	20	240	3150
9	514874	15	200	25	<0.5	1300	29	25	310	2600
20	514875	10	<5	10	<0.5	380	4	55	150	1550
21	514876	45	20	35	<0.5	290	13	220	260	4100
22	514877	20	<5	20	<0.5	110	5	460	170	1400
23	514878	15	<5	35	<0.5	480	3	10	300	2300
24	514879	5	20	15	<0.5	1000	4	30	130	2300
25	514880	<5	10	15	<0.5	780	3	35	130	2450

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# ANALABS

A Division of Macdonald Hamilton & Co. Pty. Ltd.

## ANALYTICAL DATA

SAMPLE PREFIX      REPORT NUMBER      REPORT DATE      CLIENT ORDER No.      PAGE

23.3.08.05900

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29<sup>OF</sup> 29

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Ba	As	Cr	Zr	Ti
1	514881 <i>STD</i>	20	170	165	<0.5	<sup>620</sup> 470	104	<sup>25</sup> 140	<sup>240</sup> 210	<sup>3900</sup> 6400
2	514882	35	35	75	<0.5	<sup>470</sup> 620	16	<sup>140</sup> 25	<sup>210</sup> 240	<sup>6400</sup> 3900
3	514883	85	35	45	<0.5	850	22	120	200	3950
4	514884	90	25	55	<0.5	710	16	270	250	5000
5	514885	60	65	95	<0.5	790	16	220	210	4950
6	514886	10	10	10	<0.5	70	6	320	55	2050
7	514887	10	10	25	<0.5	370	2	25	<del>240</del>	2000
8	514888	15	20	25	<0.5	1300	5	6	390	2650
9	514889	15	5	20	<0.5	450	1	30	310	2100
10	514890	5	<5	25	<0.5	510	2	<5	280	1500
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
23	DETECTION	5	5	5	0.5	10	1	5	5	50
24	UNITS	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM
25	METHOD	101	101	101	101	401	114	401	401	401

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APPENDIX 6.



# ANALABS

A division of MacDonaid Hamilton & Co. Pty. Ltd.

Phone (09) 458 7999

52 Murray Road, Welshpool, W.A. 6106

Telex AA92560

FAX: 004 31 8890

ANALYTICAL REPORT No. 23.3.08.06134

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

Aberfoyle Resources Exp. Division  
P.O. Box 952  
Burnie  
Tasmania 7320

ORDER No.	PROJECT
6293	
DATE RECEIVED	RESULTS REQUIRED
18/04/89	ASAP

No. OF PAGES OF RESULTS	DATE REPORTED	No. OF COPIES	TOTAL No. OF SAMPLES
2	01/05/89	1	41

TYPE OF SAMPLE	PRE-TREATMENT								ANALYSIS		
	SAMPLE NUMBERS	DRY	CRUSH	SPLIT	PULVERISE	SIEVE	OTHER SEE REMARKS	NONE	REFER TO ANALYSIS SECTION	PREPARATION	METHOD
	482401/41	SS	Prep: 002,013,016						Cu,Pb,Zn,Ag/101,As/114		
	482401/41	SS							Ba/401,Au/309		
	482401/41	SS							AuChk/309		

RESULTS

TO

Aberfoyle Resources Exp. Division  
P.O. Box 952  
Burnie  
Tasmania 7320

RESULTS

TO

REMARKS

*L/NCH/BR13*  
*-72 #*  
*STREAM SEDS*  
  
*SEE PLAN No.*  
*L/N 15*  
*FOR LOCATIONS.*

STATE OF SAMPLES	ANALYSIS — PREPARATION				ANALYSIS — METHOD		
whole core	WC	perchloric acid	A1	cold acid	CA	atomic absorption	AAS
tail core	SC	hydrochloric acid	A2	specific sulphide	SS	x-ray fluorescence	XRF
cutting	CU	nitric acid	A3	other mixed acids	Ma	spectrophotometry	SPEC
slk	Ro	aqua regia	A4	alkaline attack	AA	colorimetry	COL
soil	SO	nitric-perchloric	A5	volatilization	VO	chromatography	CHR
pulp	PU	HF mixture	A6	ignition	IG	titration	ITN
ter	WA	HF under pressure	A7	pressed powder (XRF)	PP	other chemicals means	CHEM
ue	TI	fusion	A8	glass fusion (XRF)	GF	miscellaneous	MISC
eam sediment	SS					fluorescence	FLUOR
heavy mineral	HM					inductively coupled plasma	ICP

*M*

# ANALABS

A Division of Macdonald Hamilton & Co. Pty. Ltd.

## ANALYTICAL DATA

SAMPLE PREFIX

REPORT NUMBER

REPORT DATE

CLIENT ORDER No.

PAGE

		23.3.06.06134				01/05/89		6293		1 OF 2	
JBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Au	Ba	As			
1	482401	10	<5	35	<0.5	0.012	20	4			
2	482402	5	<5	35	<0.5	<0.008	<10	5			
3	482403	25	5	45	<0.5	<0.008	18	5			
4	482404	5	<5	20	<0.5	<0.008	25	3			
5	482405	5	25	80	<0.5	0.246	580	19			
6	482406	5	25	60	<0.5	<0.008	200	11			
7	482407	20	40	65	<0.5	<0.008	300	6			
8	482408	35	45	75	<0.5	0.008	18	7			
9	482409	10	10	45	<0.5	<0.008	140	4			
10	482410	5	<5	35	<0.5	<0.008	20	5			
11	482411	5	<5	30	<0.5	<0.008	40	3			
12	482412	5	<5	25	<0.5	<0.008	35	4			
13	482413	5	<5	25	<0.5	<0.008	50	6			
14	482414	5	<5	45	<0.5	<0.008	25	4			
15	482415	5	10	50	<0.5	<0.008	70	3			
16	482416	20	35	60	<0.5	<0.008	350	12			
17	482417	5	30	65	<0.5	<0.008	130	9			
18	482418	30	15	75	<0.5	<0.008	18	4			
19	482419	5	5	25	<0.5	<0.008	110	6			
20	482420	55	25	95	<0.5	<0.008	18	7			
21	482421	10	10	60	<0.5	<0.008	140	3			
22	482422	45	45	105	<0.5	<0.008	590	9			
23	482423	70	65	150	<0.5	<0.008	800	14			
24	482424	35	25	55	<0.5	<0.008	18	4			
25	482425	20	20	45	<0.5	<0.008	500	6			

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# ANALABS

A Division of Macdonald Hamilton & Co. Pty. Ltd.

## ANALYTICAL DATA

SAMPLE PREFIX

REPORT NUMBER

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PAGE

23.3.08.06134

01/05/89

6293

2 OF 2

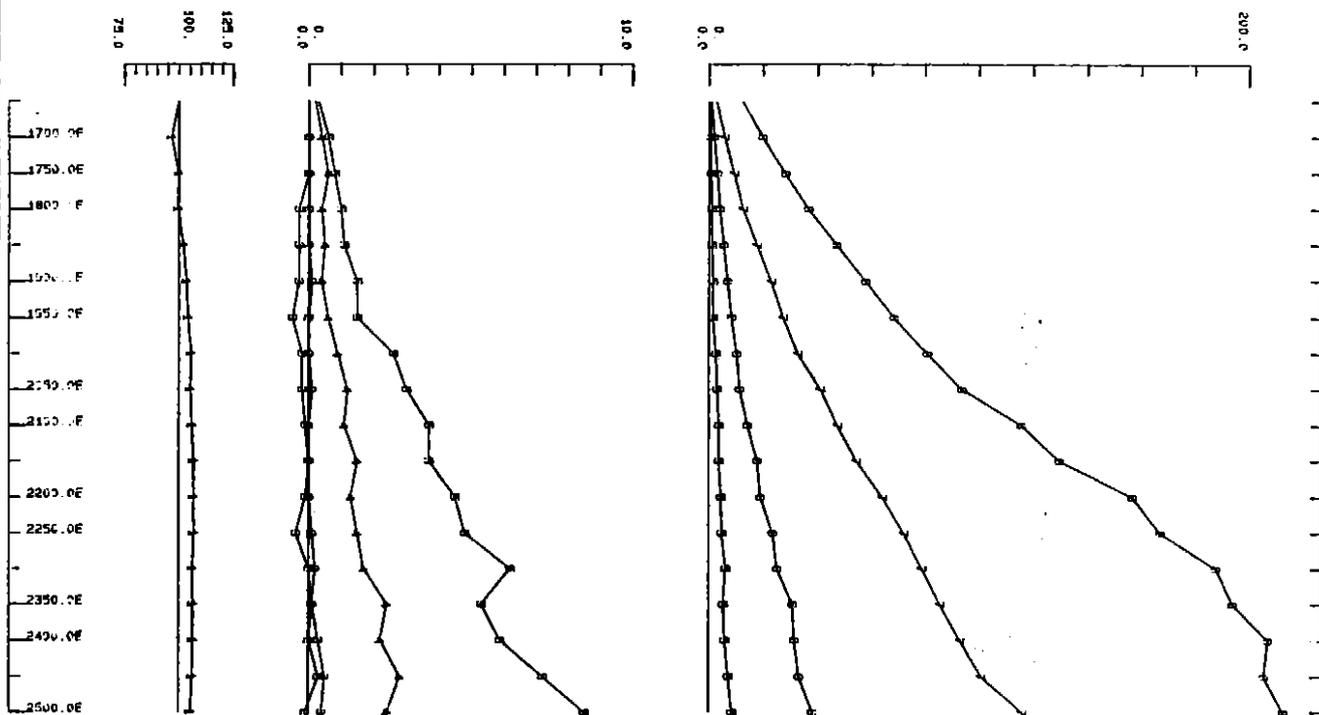
TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Au	Ba	As		
1	482426	20	5	25	<0.5	<0.008	170	5		
2	482427	35	10	40	<0.5	<0.008	290	5		
3	482428	25	5	35	<0.5	<0.008	190	4		
4	482429	20	5	30	<0.5	<0.008	290	5		
5	482430	25	5	40	<0.5	<0.008	18	5		
6	482431	45	10	55	<0.5	0.048	18	4		
7	482432	30	20	40	<0.5	0.022	18	5		
8	482433	25	10	35	<0.5	<0.008	290	5		
9	482434	30	85	70	<0.5	<0.008	240	3	↓	
10	482435	15	50	70	<0.5	<0.008	120	9		
11	482436	<5	<5	15	<0.5	<0.008	50	3		
12	482437	25	20	145	<0.5	<0.008	90	4		
13	482438	10	15	40	<0.5	<0.008	80	7		
14	482439	<5	<5	25	<0.5	<0.008	130	3		
15	482440	15	5	35	<0.5	0.008	290	5		
16	482441	45	85	85	<0.5	<0.008	18	5		
17										
18										
19										
20	NOTE: Au Checks for sample number 482405 are 0.934 and 1.350									
21	Weight of this sample was 15.85gms. There is no more sample									
22	to do further checks.									
23	DETECTION	5	5	5	0.5	0.008	10	1		
24	UNITS	PPM	PPM	PPM	PPM	PPM	PPM	PPM		
25	METHOD	101	101	101	101	309	401	114		

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AUTHORISED OFFICER

APPENDIX X 7.

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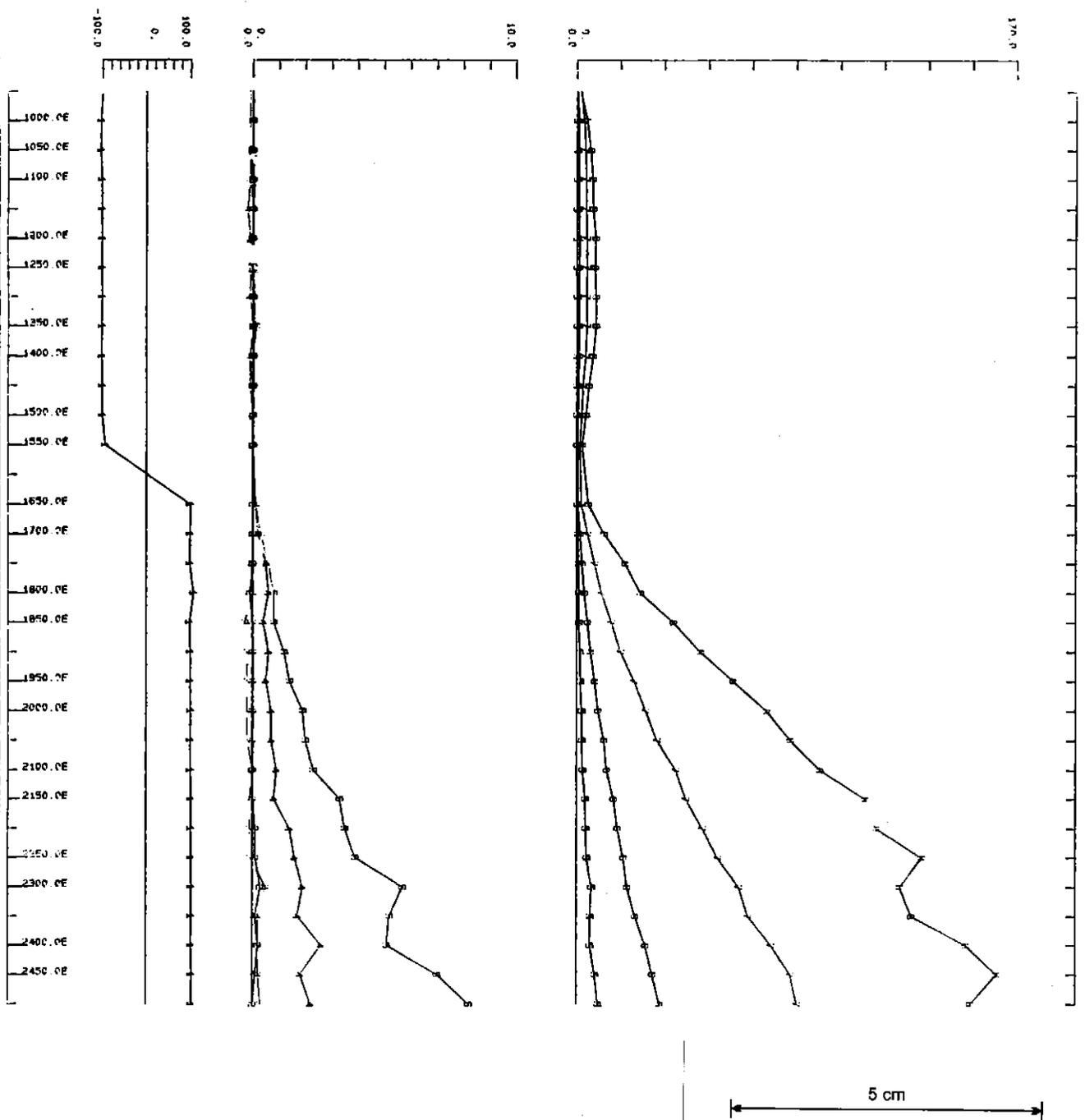


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LYNCHFORD E.L. WESTERN TASMANIA  
 December 1988 Survey Loop 1  
 Continuously Normalized Data  
 LINE 1400 N  
 Aberfoyle Resources Limited June 1989  
 Plot Date :14/06/89 Horiz scale 1: 7500.0 Plot number : 15

UTEM DATA - SECONDARY VERTICAL MAGNETIC FIELD

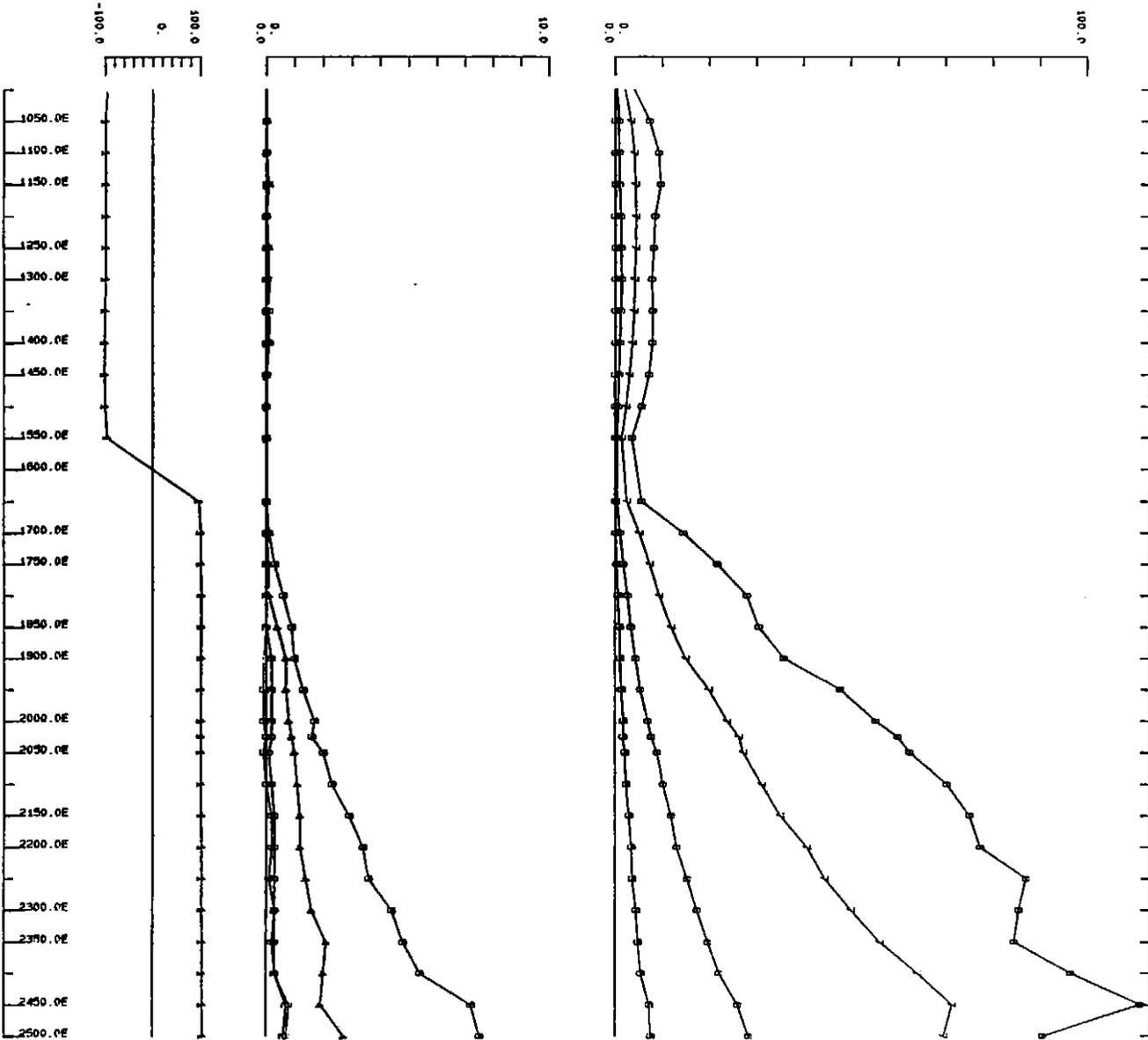
151



LYNCHFORD E.L. WESTERN TASMANIA  
 December 1988 Survey Loop 1  
 Continuously Normalized Data  
 LINE 1600 N  
 Aberfoyle Resources Limited June 1989  
 Plot Date : 14/06/89 Horiz scale 1 : 7500.0 Plot number : 15

UTEM DATA - SECONDARY VERTICAL MAGNETIC FIELD

162

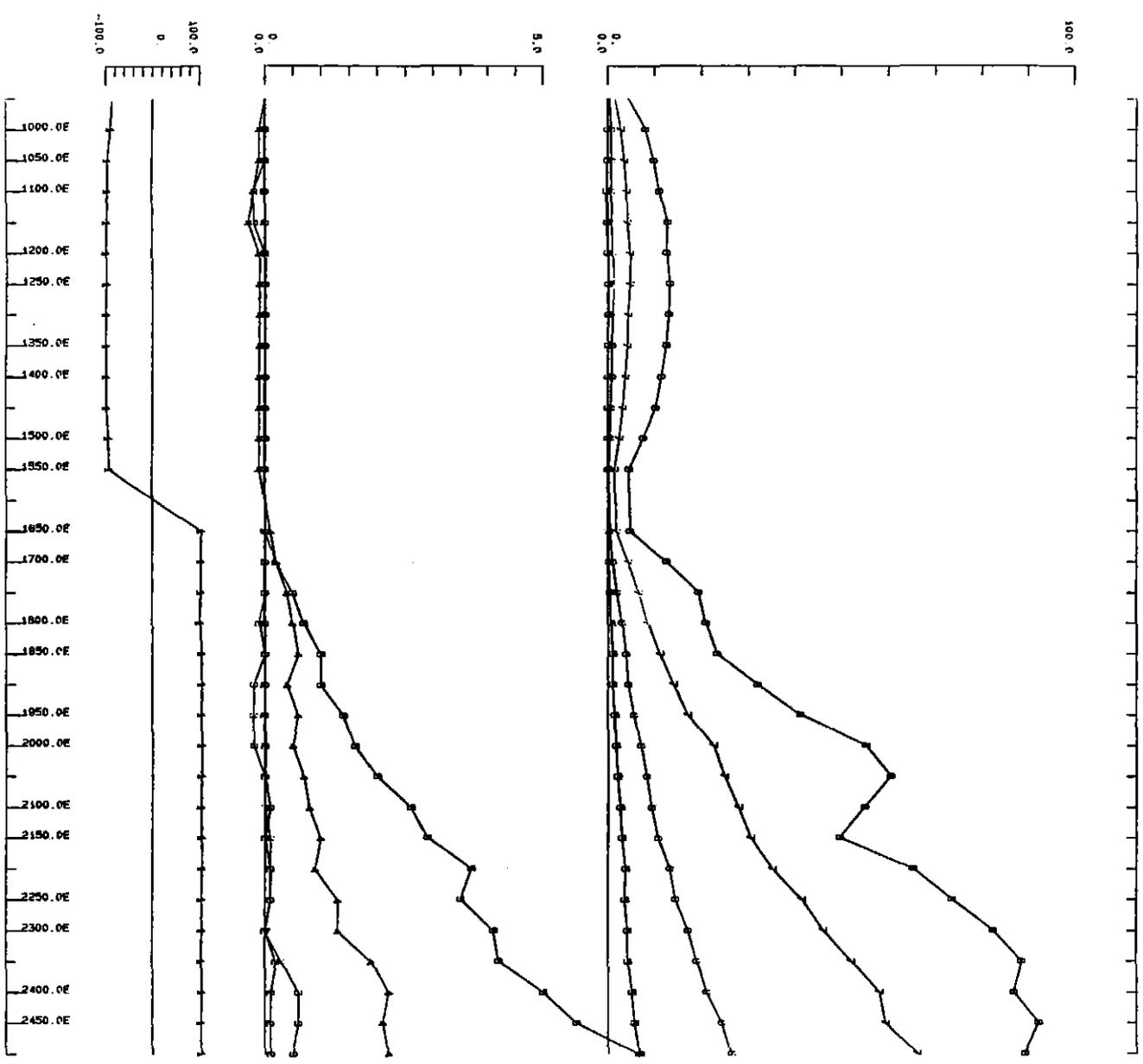


LYNCHFORD E.L. WESTERN TASMANIA  
 December 1988 Survey Loop 1  
 Continuously Normalized Data  
 LINE 1000 M  
 Aberfoyle Resources Limited June 1989  
 Plot Date :14/06/89 Horiz scale 1: 7500.0 Plot number : 17

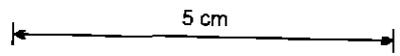
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UTEM DATA - SECONDARY VERTICAL MAGNETIC FIELD

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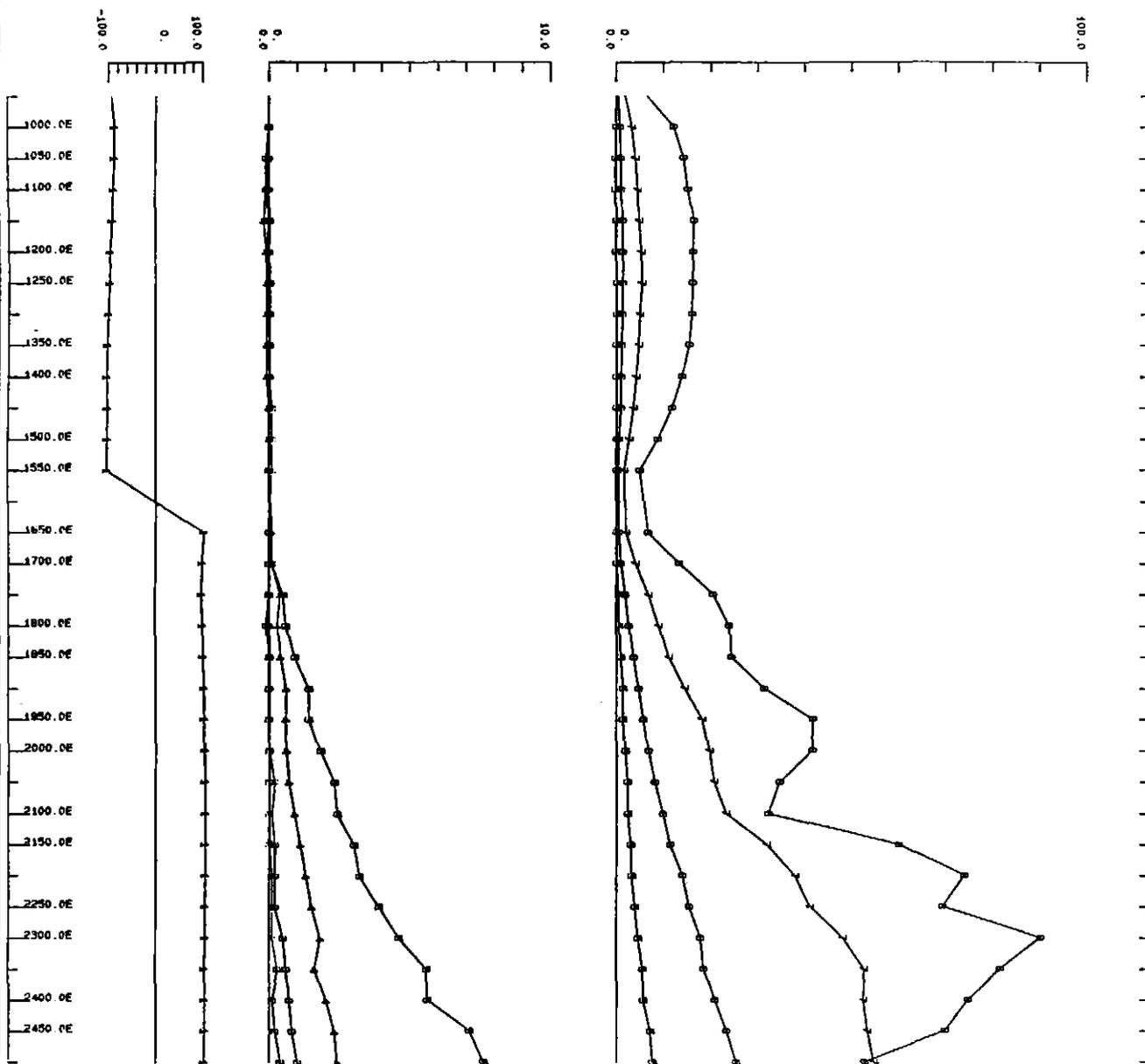


LYNCHFORD E.L. WESTERN TASMANIA  
 December 1988 Survey Loop 1  
 Continuously Normalized Data  
 LINE 2000 W  
 Aberfoyle Resources Limited June 1989  
 Plot Date : 14/06/89 Horiz scale : 7500.0 Plot number : JB



**UTEM DATA - SECONDARY VERTICAL MAGNETIC FIELD**

161

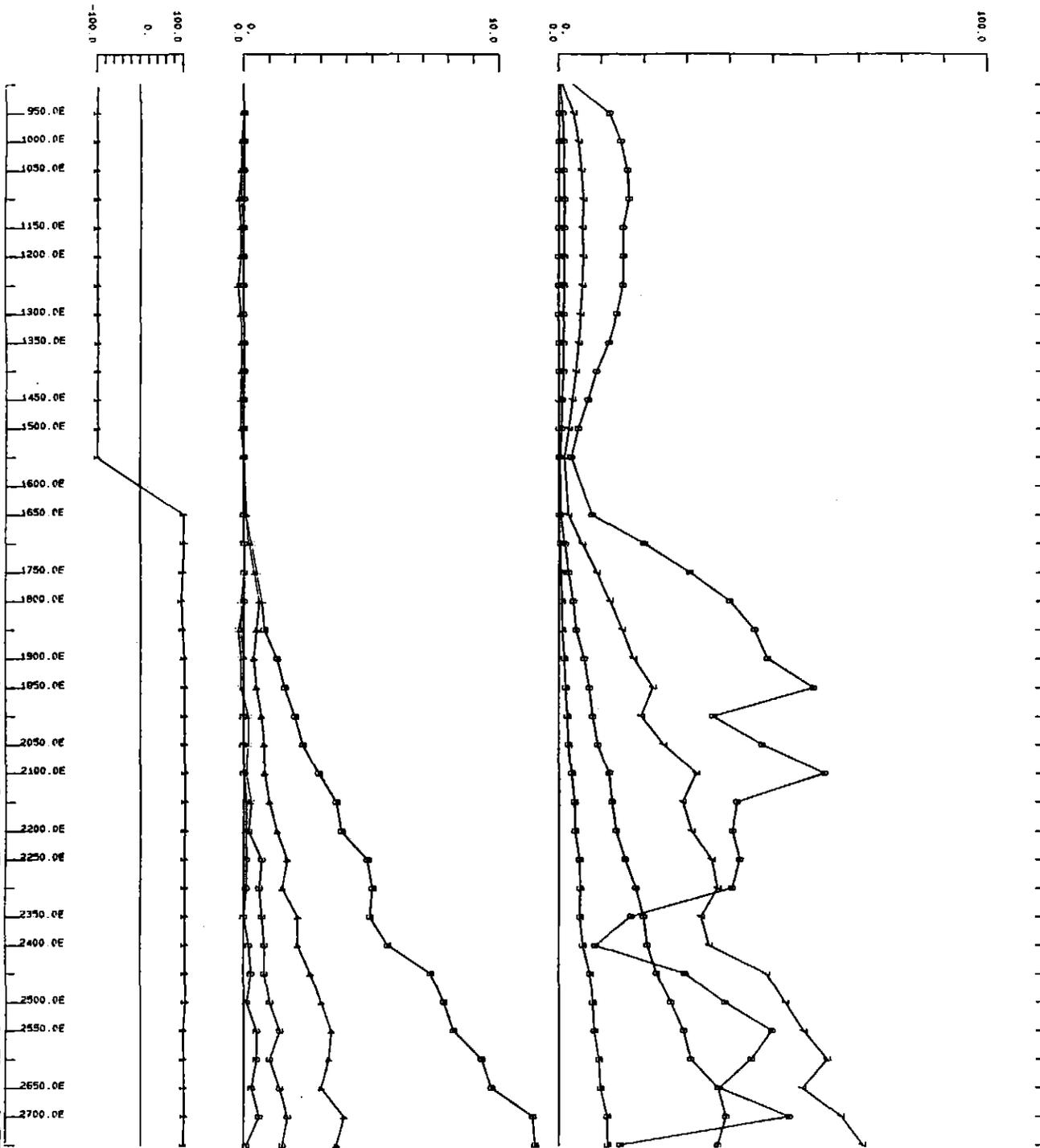


LYNCHFORD E.L. WESTERN TASMANIA  
 December 1988 Survey Loop 1  
 Continuously Normalized Data  
 LINE 2200 M  
 Aberfoyle Resources Limited June 1989  
 Plot Date 14/06/89 Horiz scale 1:7500.0 Plot number : 19

5 cm

UTEM DATA - SECONDARY VERTICAL MAGNETIC FIELD

100

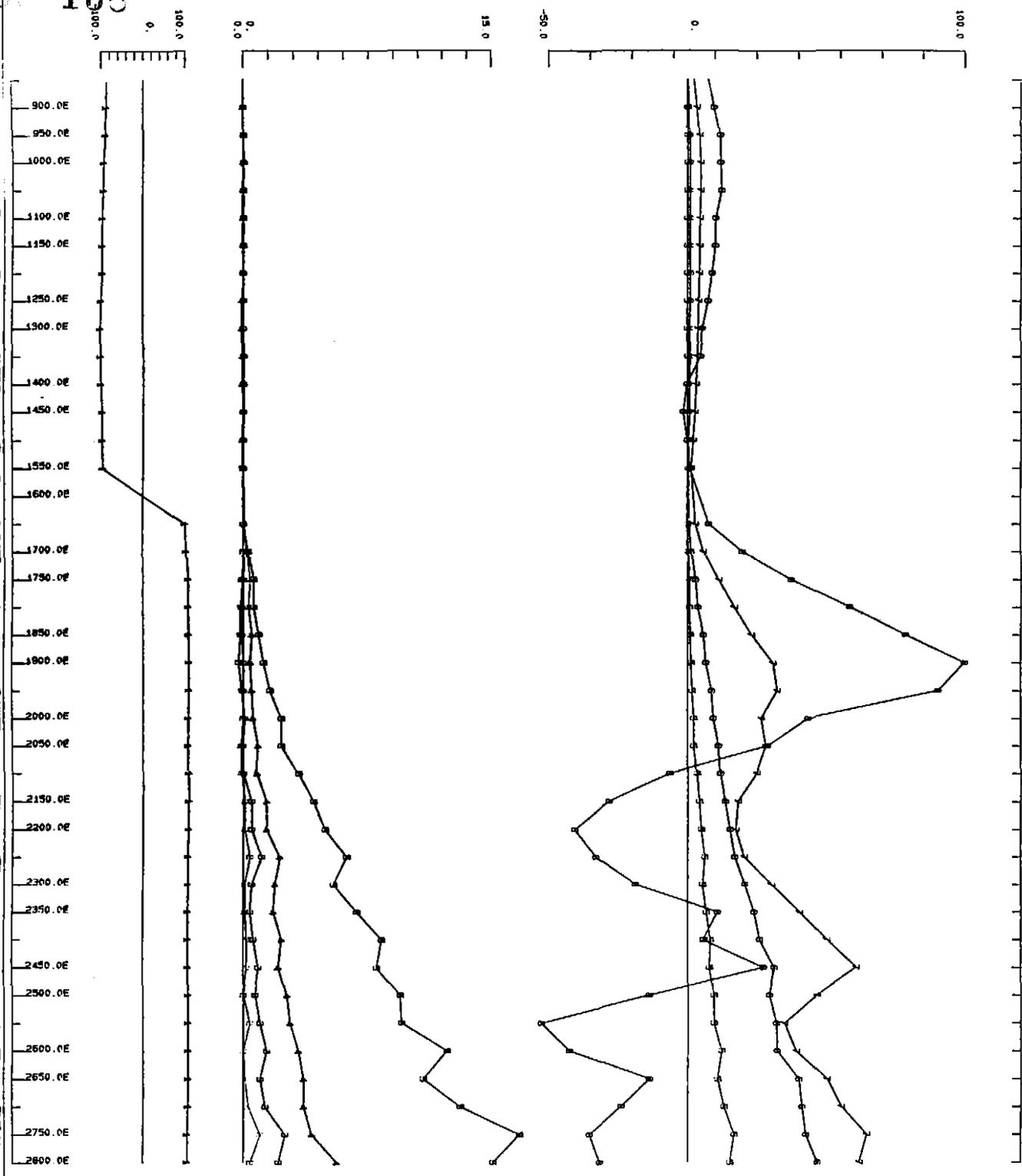


LYNCHFORD E.L. WESTERN TASMANIA  
 December 1988 Survey Loop 1  
 Continuously Normalized Data  
 LINE 2400 N  
 Aberfoyle Resources Limited June 1989  
 Plot Date : 14/06/89 Horiz scale 1: 7500.0 Plot number : 20

5 cm

UTEM DATA - SECONDARY VERTICAL MAGNETIC FIELD

168

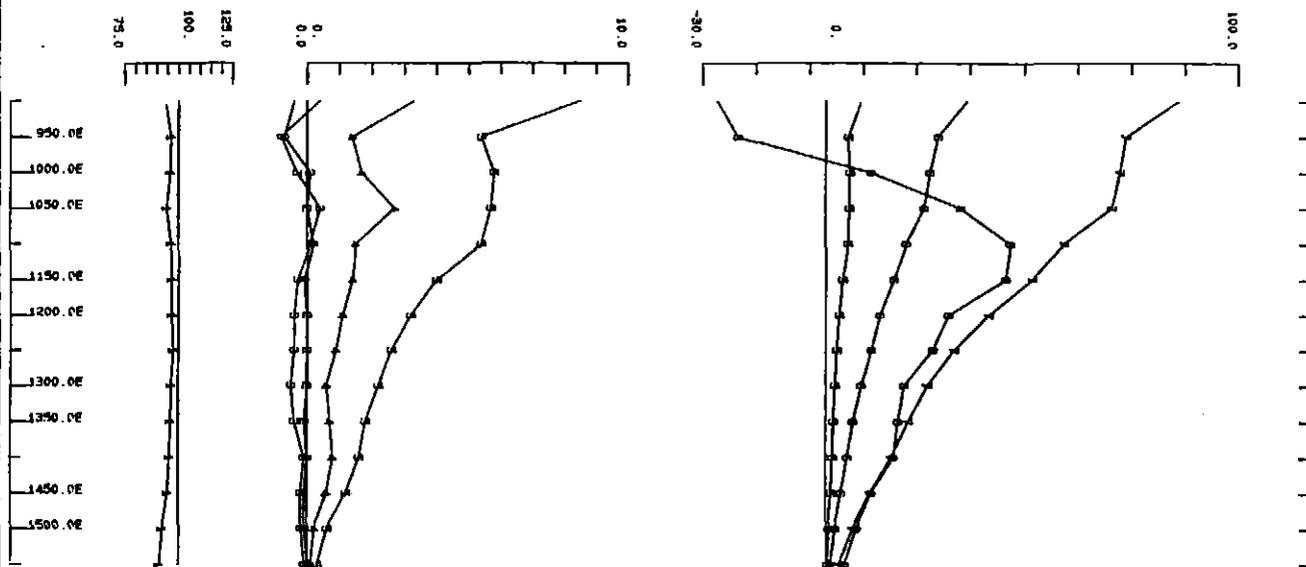


LYNCHFORD E.L. WESTERN TASMANIA  
 December 1988 Survey Loop 1  
 Continuously Normalized Data  
 LINE 2600 M  
 Aberfoyle Resources Limited June 1989  
 Plot Date : 14/06/89 Horiz scale 1: /500.0 Plot number : 21

5 cm

UTEM DATA - SECONDARY VERTICAL MAGNETIC FIELD

157

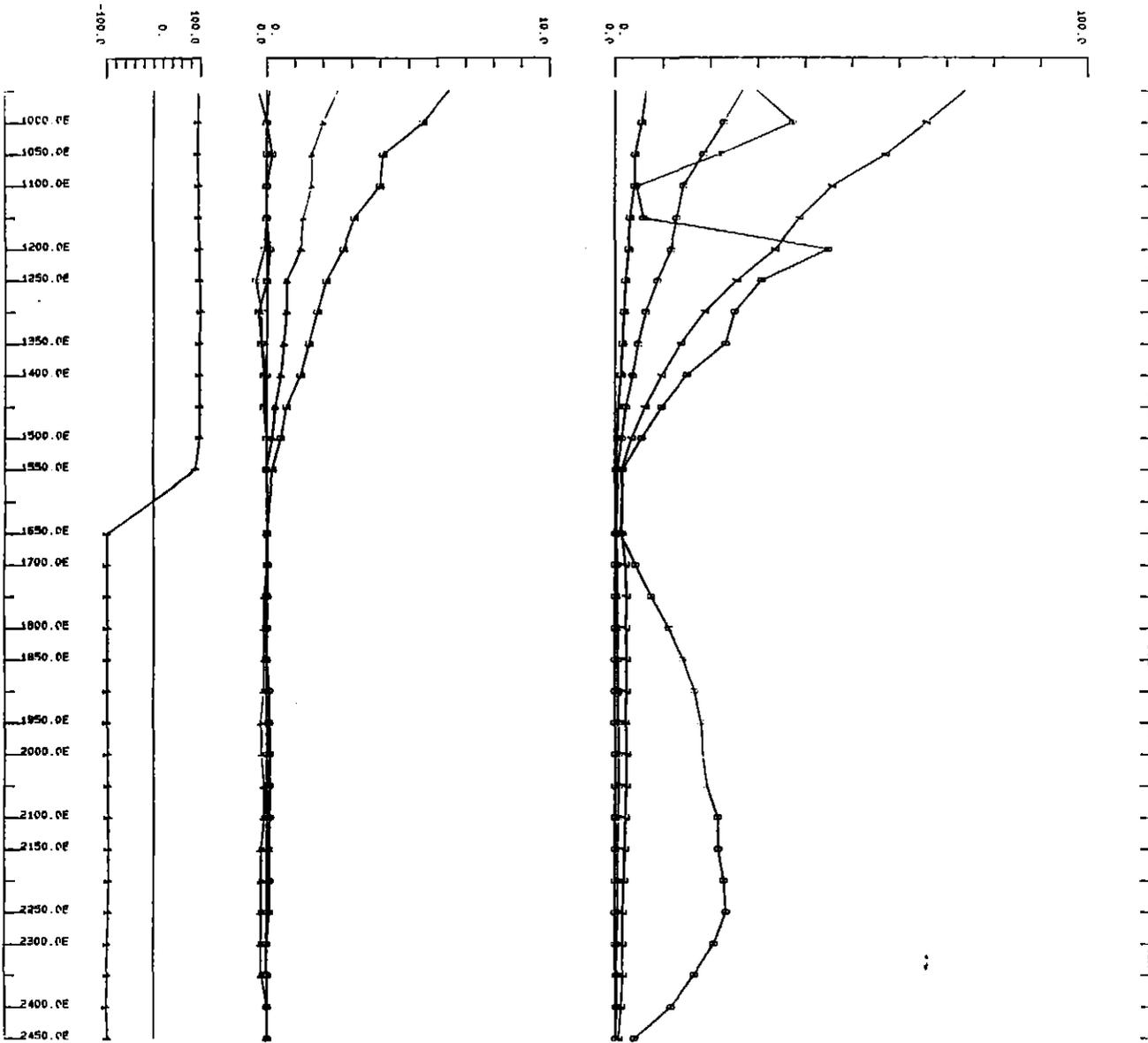


LYNCHFORD E.L. WESTERN TASMANIA  
 December 1988 Survey Loop 2  
 Continuously Normalized Data  
 LINE 1400 N  
 Aberfoyle Resources Limited June 1989  
 Plot Date :14/06/89 Horiz scale 1: 7500.0 Plot number : 23

5 cm

UTEM DATA - SECONDARY VERTICAL MAGNETIC FIELD

158

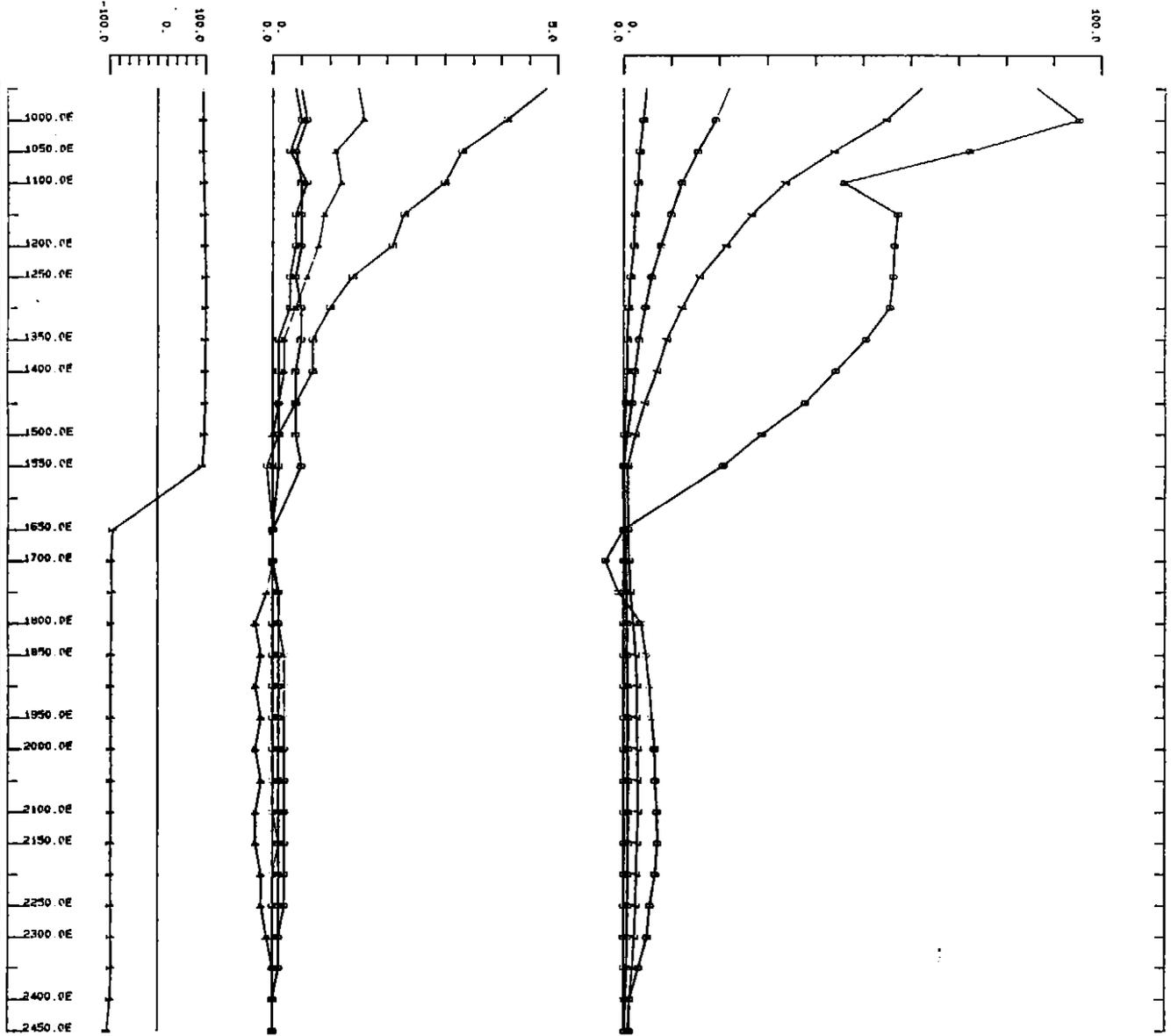


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 Continuously Normalized Data  
 LINE 1600 N  
 Aberfoyle Resources Limited June 1989  
 Plot Date : 14/06/89 Horiz scale 1: 7500.0 Plot number : 24

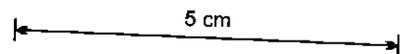
5 cm

UTEM DATA - SECONDARY VERTICAL MAGNETIC FIELD

188

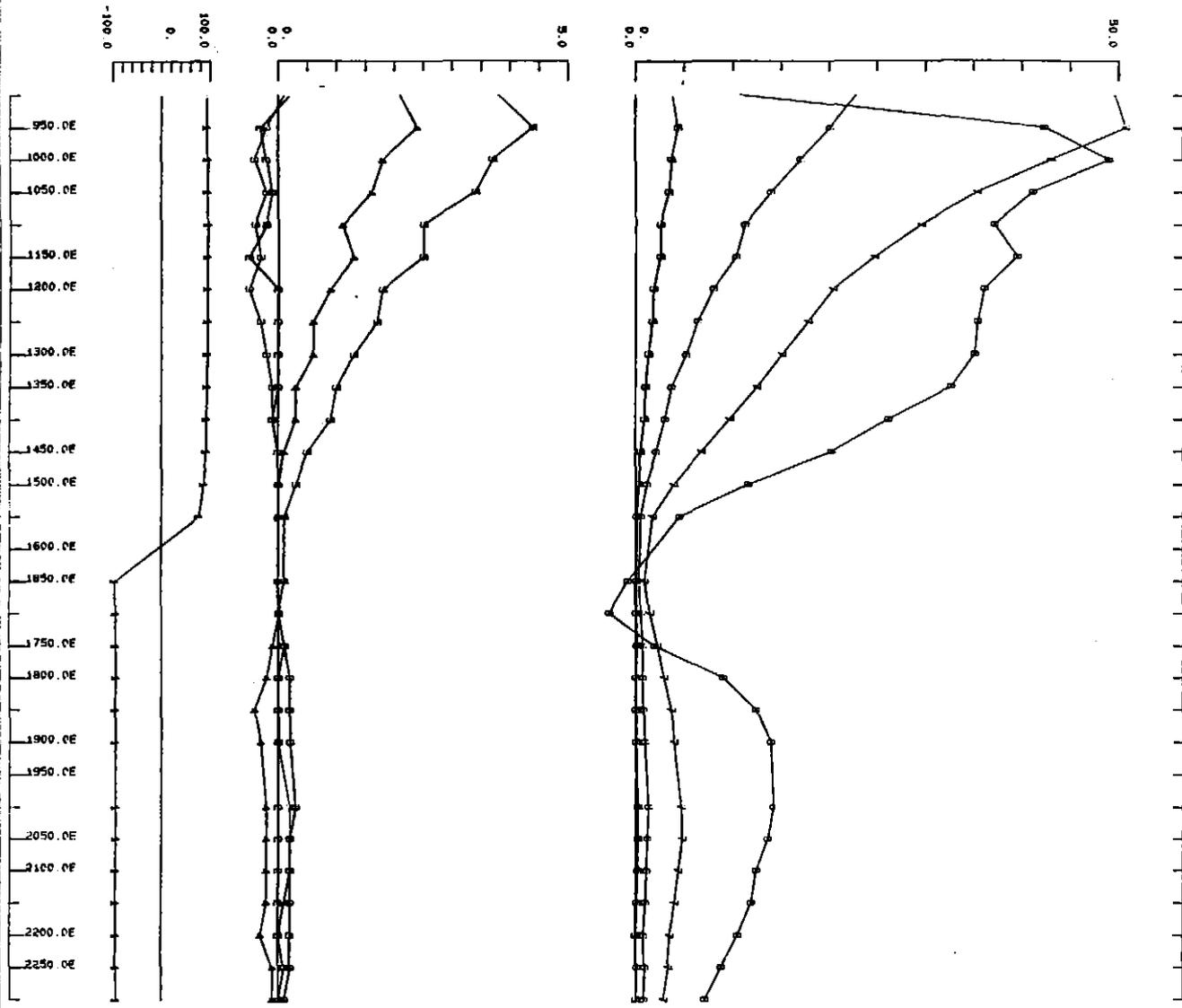


LYNCHFORD E.L. WESTERN TASMANIA  
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 Continuously Normalized Data  
 LINE 1800 M  
 Abernyle Resources Limited June 1989  
 Plot Date : 14/06/89 Horiz scale 1: 7500.0 Plot number : 25



UTEM DATA - SECONDARY VERTICAL MAGNETIC FIELD

170

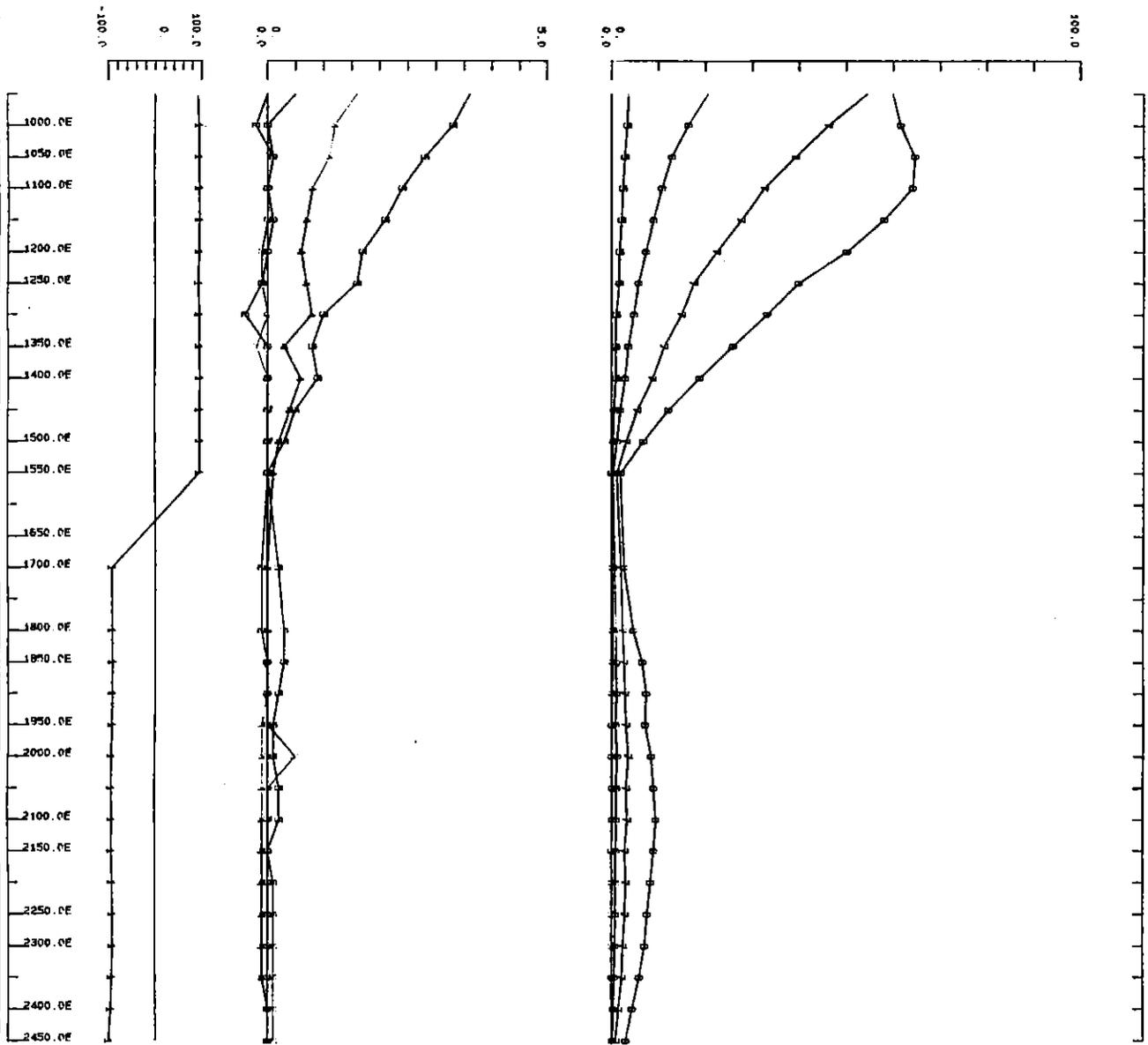


LYNCHFORD E.L. WESTERN TASMANIA  
 December 1988 Survey Loop 2  
 Continuously Normalized Data  
 LINE 2000 N  
 Aberfoyle Resources Limited June 1989  
 Plot Date :14/06/89 Horiz scale 1: 7500.0 Plot number : 26

5 cm

UTEM DATA - SECONDARY VERTICAL MAGNETIC FIELD

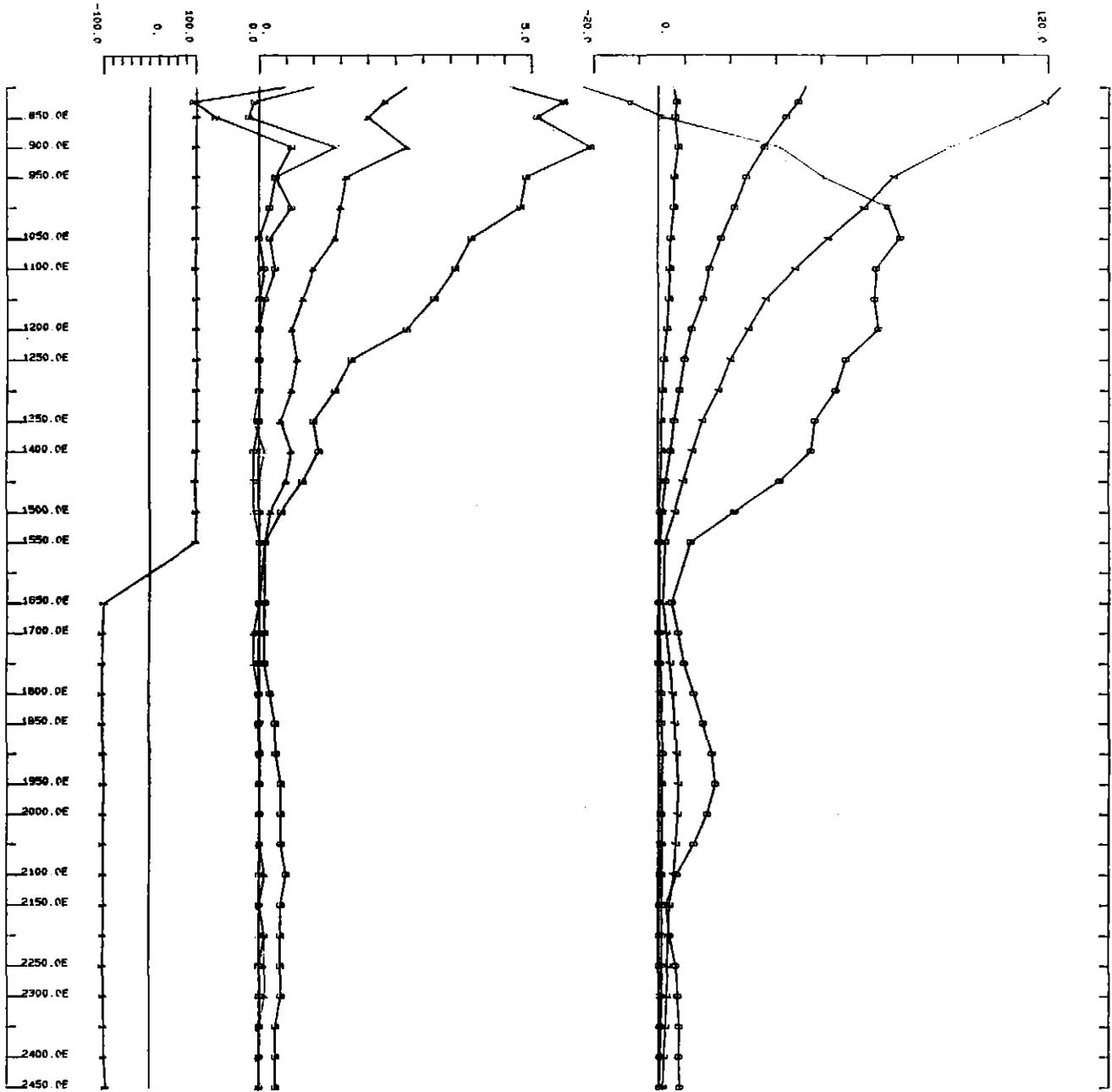
171



LYNCHFORD E.L. WESTERN TASMANIA  
 December 1988 Survey Loop 2  
 Continuously Normalized Data  
 LINE 2200 M  
 Aberfoyle Resources Limited June 1989  
 Plot Date :14/06/89 Horiz scale 1: 7500.0 Plot number : 27

5 cm

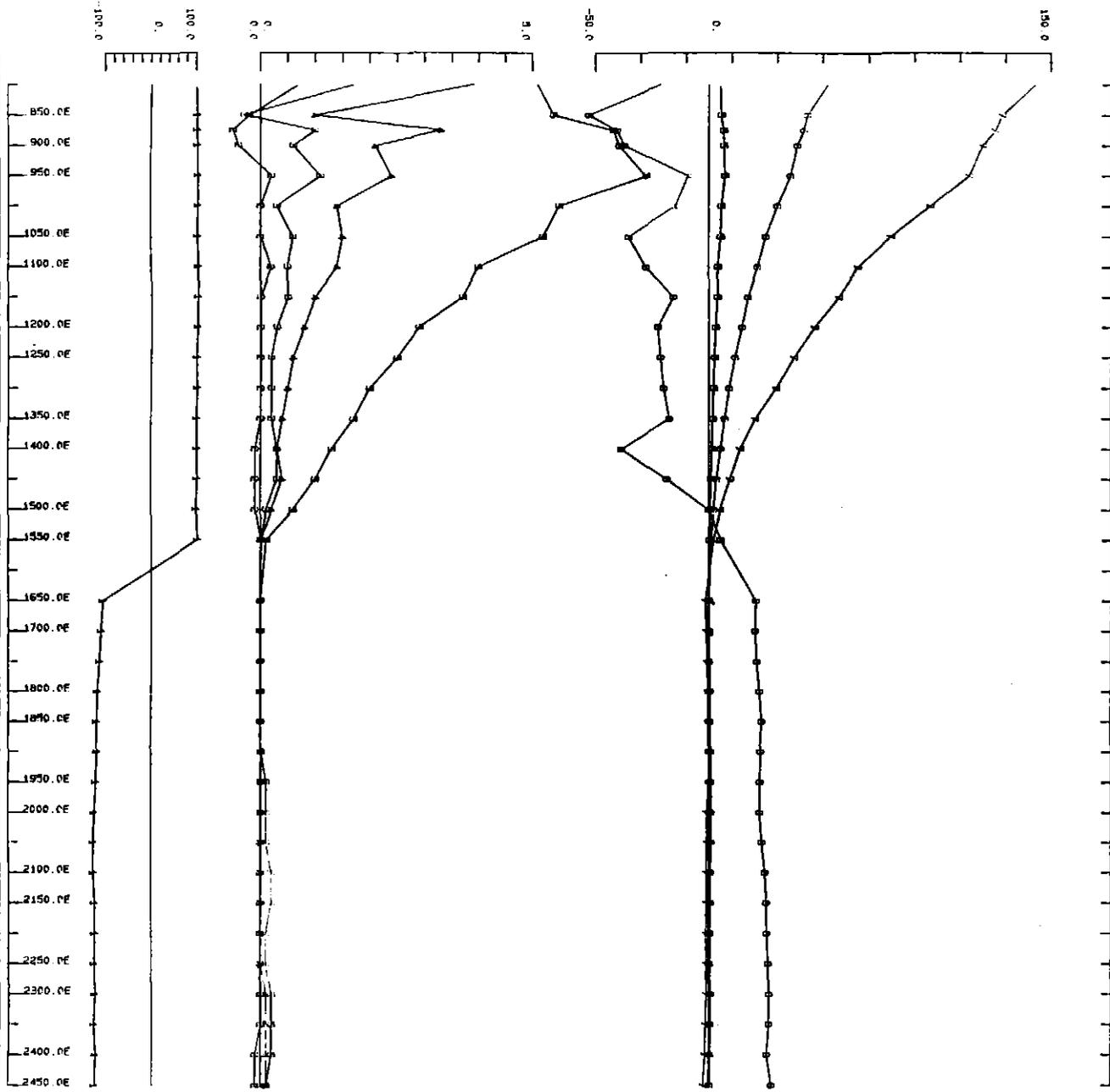
UTEM DATA - SECONDARY VERTICAL MAGNETIC FIELD



LYNCHFORD E.L. WESTERN TASMANIA  
December 1988 Survey Loop 2  
Continuously Normalized Data  
LINE 2400 M  
Aberfoyle Resources Limited June 1989  
Plot Date : 14/06/89 Horiz scale 1 : 7500.0 Plot number : 28

5 cm

UTEM DATA - SECONDARY VERTICAL MAGNETIC FIELD

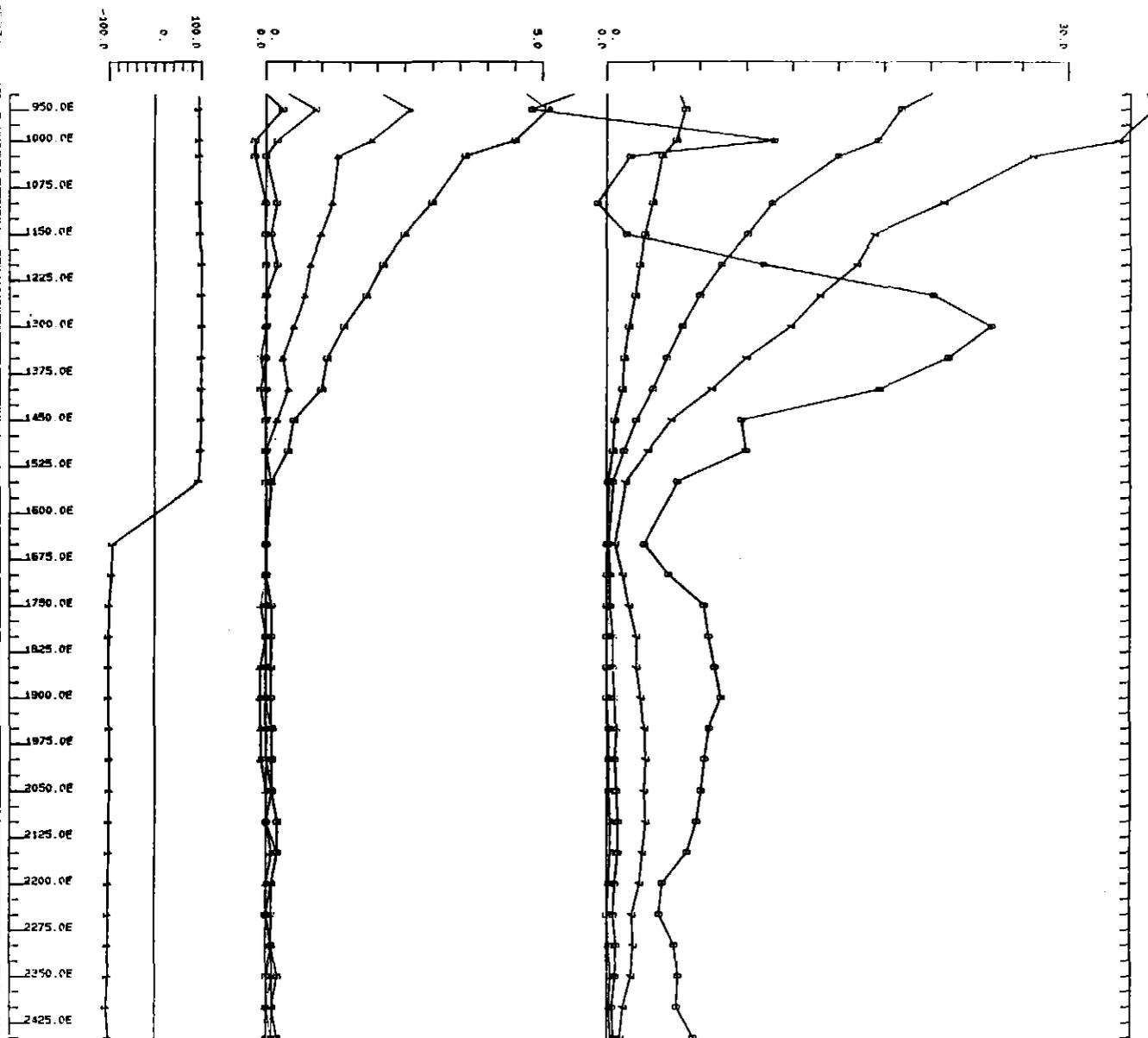


LYNCHFORD E.L. WESTERN TASMANIA  
 December 1956 Survey Loop 2  
 Continuously Normalized Data  
 LINE 2800 M  
 Aberystyle Resources Limited June 1989  
 Plot Date :14/06/89 Horiz scale 1: 7500.0 Plot number : 30

5 cm

UTEM DATA - SECONDARY VERTICAL MAGNETIC FIELD

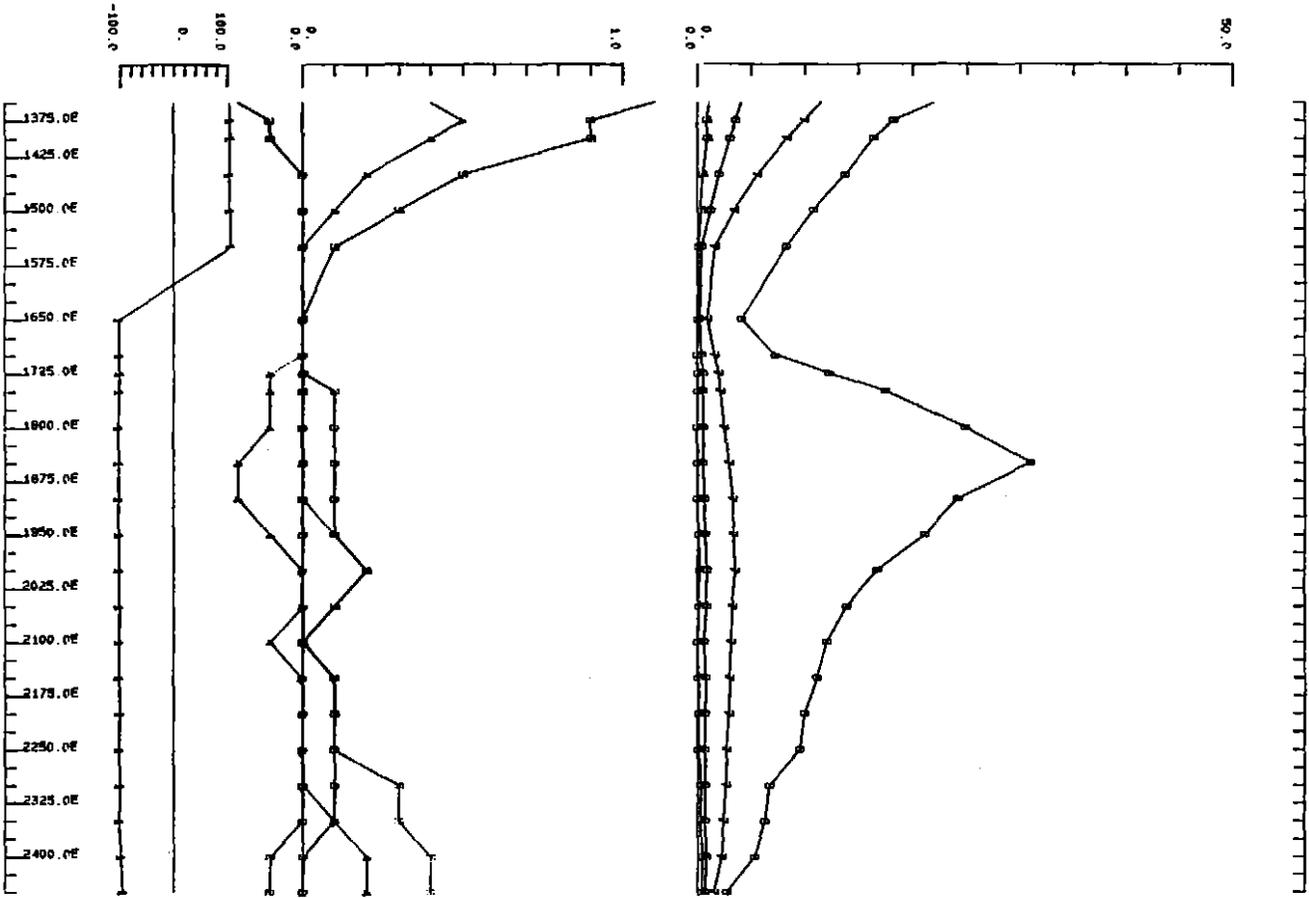
174



LYNCHFORD E.L. WESTERN TASMANIA  
 December 1986 Survey Loop 3  
 Continuously Normalized Data  
 LINE 3400 N  
 Aberfoyle Resources Limited June 1989  
 Plot Date 15/06/89 Horiz scale 1: 7500.0 Plot number : J1

5 cm

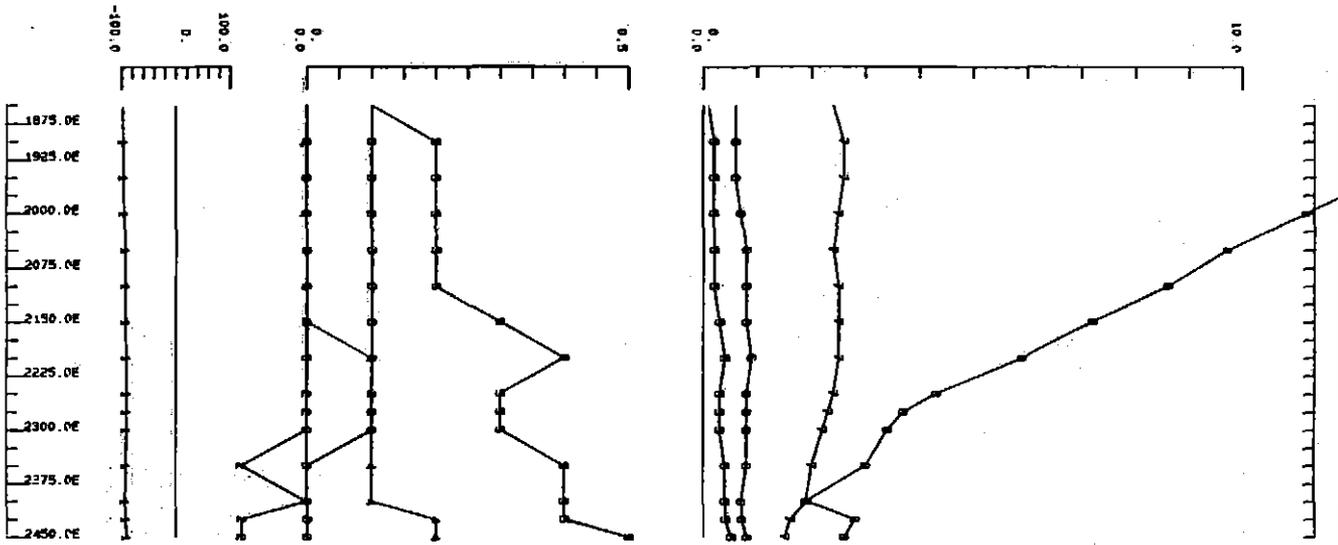
UTM DATA - SECONDARY VERTICAL MAGNETIC FIELD



LYNCHFORD E.L. WESTERN TASMANIA  
 December 1988 Survey Loop 3  
 Continuously Normalized Data  
 LINE 3600 N  
 Aberfoyle Resources Limited June 1989  
 Plot Date .15/06/89 Horiz scale 1: 7500.0 Plot number : 32

5 cm

UTEM DATA - SECONDARY VERTICAL MAGNETIC FIELD

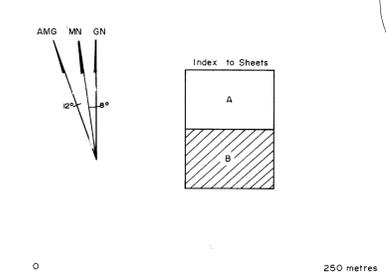
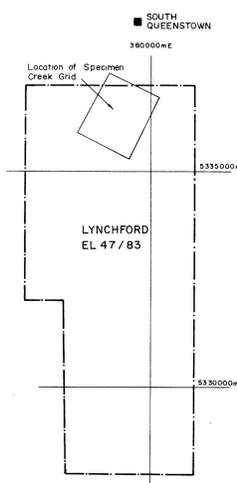
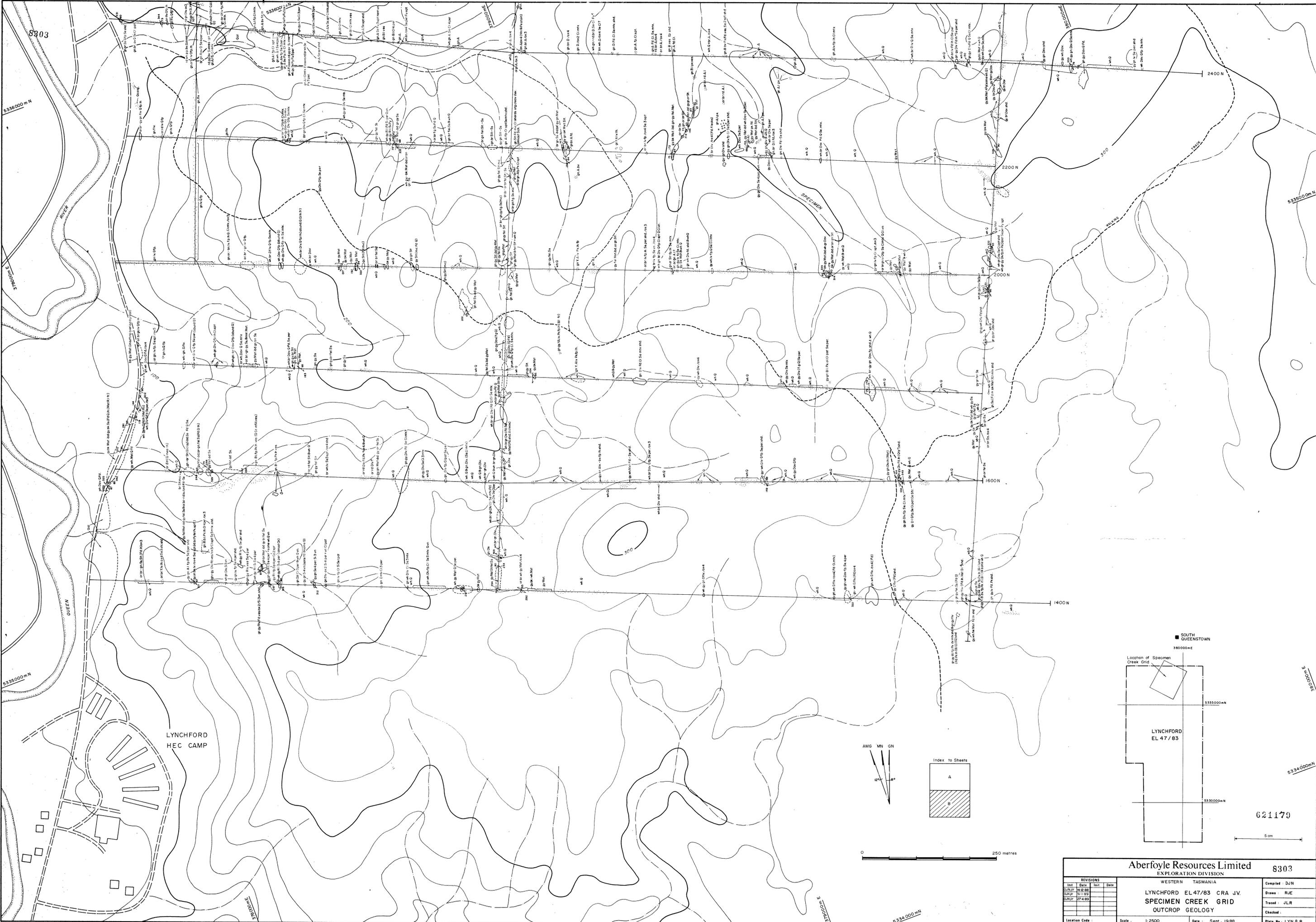


LYNCHFORD E.L. WESTERN TASMANIA  
December 1988 Survey Loop 3  
Continuously Normalized Data  
LINE 3800 N  
Aberfoyle Resources Limited June 1989  
Plot Date .15/06/89 Horiz scale 1: 7500.0 Plot number : 33

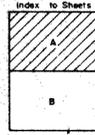
5 cm

UTEM DATA - SECONDARY VERTICAL MAGNETIC FIELD





<b>Aberfoyle Resources Limited</b> 8303 EXPLORATION DIVISION WESTERN TASMANIA				Compiled: DJN Drawn: RJE Traced: JLR Checked:
<b>LYNCHFORD EL 47/83 CRA JV.</b> <b>SPECIMEN CREEK GRID</b> <b>OUTCROP GEOLOGY</b>				Date: Sept. 1988 Plate No: LYN 8 B
REVISIONS Iss. Date Iss. Date 001/88 14-08-88 002/89 27-04-89	Location Code:	Scale: 1:2500	Date: Sept. 1988	Plate No: LYN 8 B



250 metres

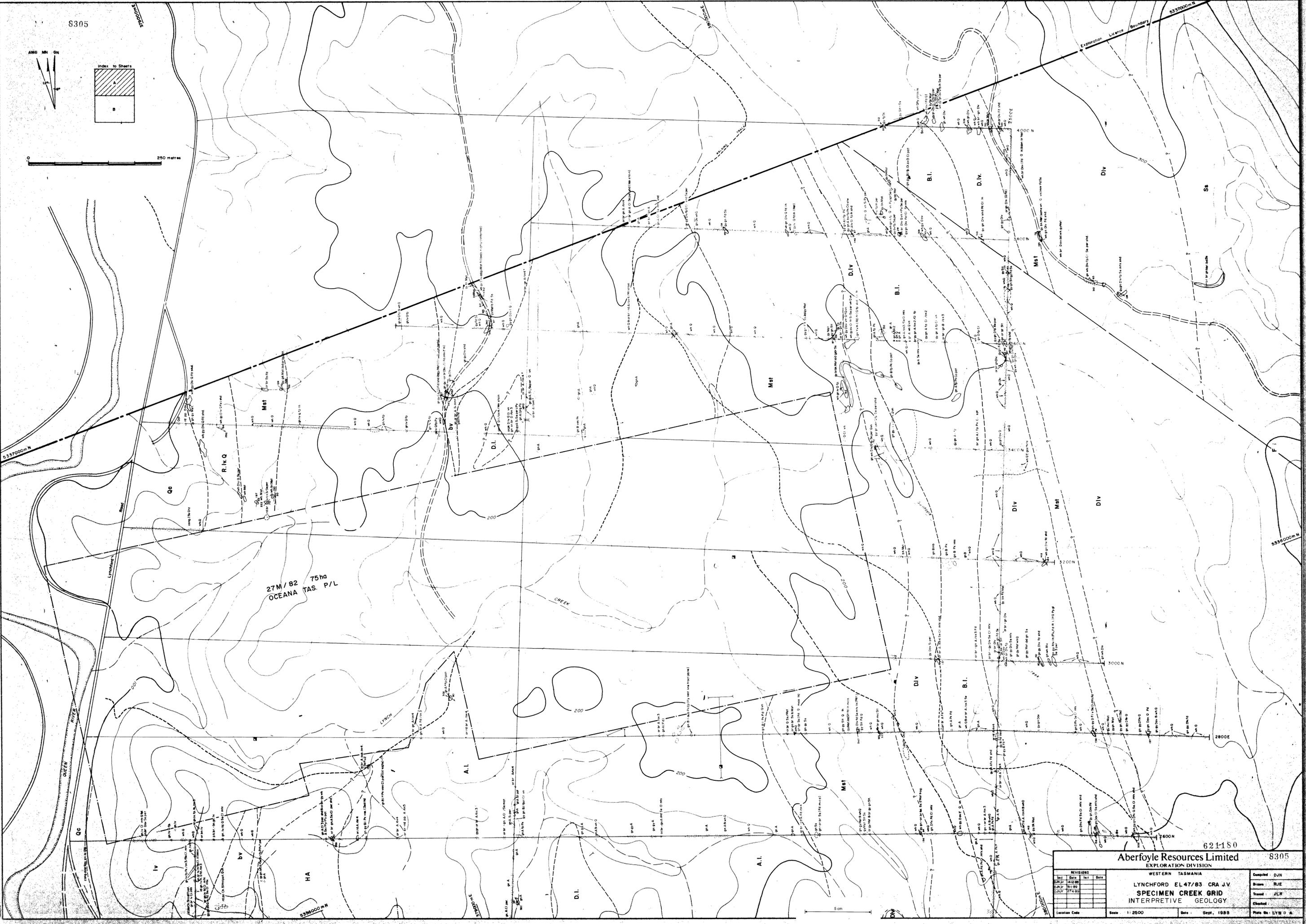
27M/82 75 ha  
OCEANA TAS. P/L

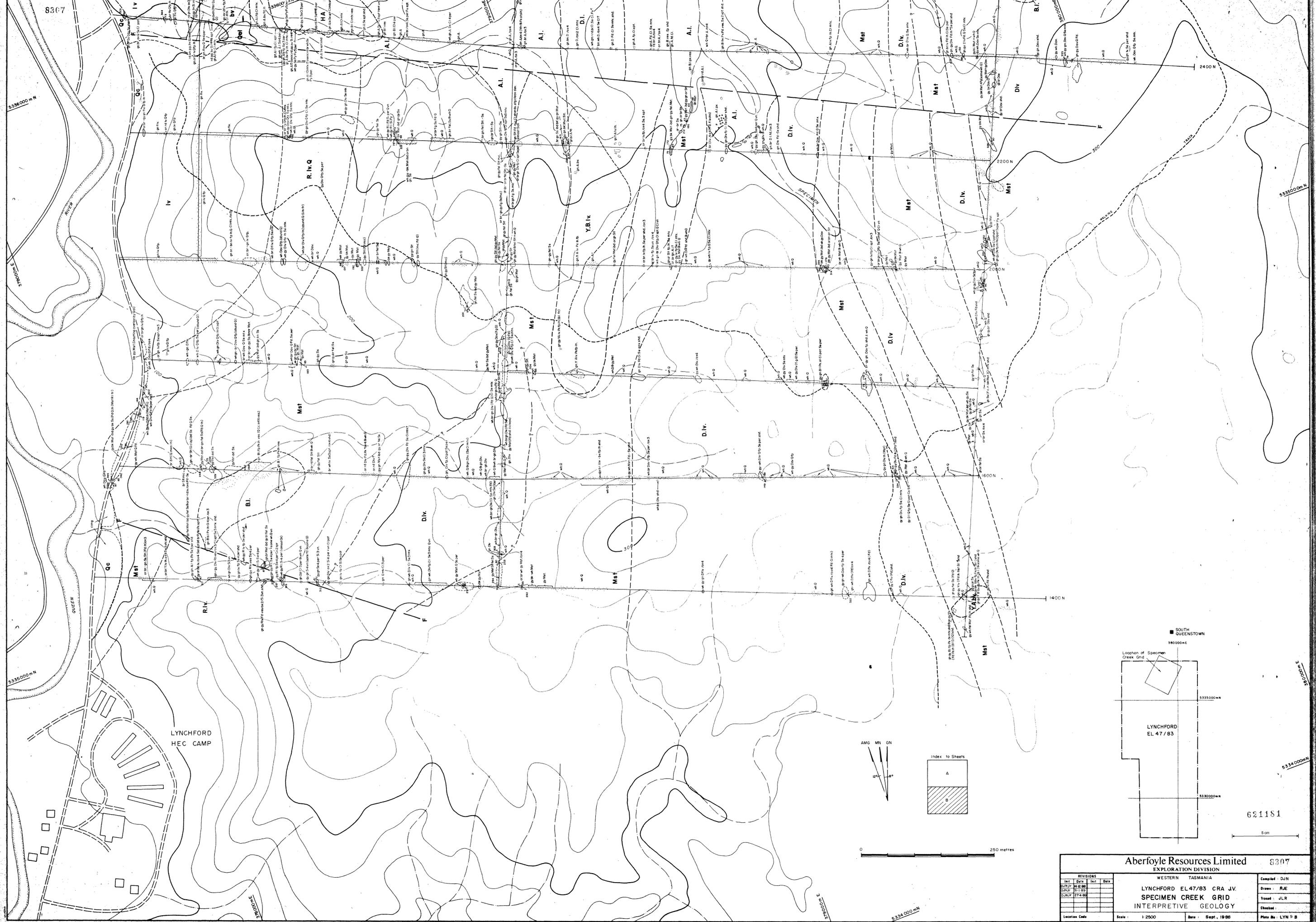
Aberfoyle Resources Limited  
EXPLORATION DIVISION  
WESTERN TASMANIA

LYNCHFORD EL 47/83 CRA J.V.  
SPECIMEN CREEK GRID  
INTERPRETIVE GEOLOGY

REVISIONS	
No.	Date
1	15/11/89
2	27/4/89
3	27/4/89
4	
5	
6	
7	
8	
9	
10	

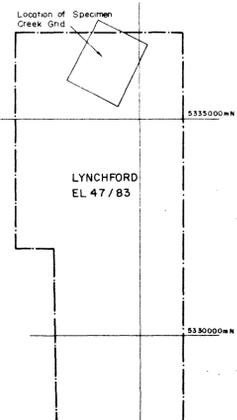
Compiled	DJN
Drawn	RJE
Traced	JLR
Checked	
Scale	1:2500
Date	Sept. 1989
Plate No.	LYN 0 8





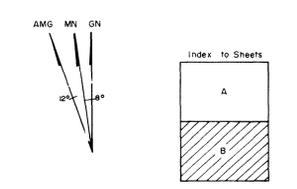
LYNCHFORD  
HEC CAMP

SOUTH QUEENSTOWN



621181

5 cm



0 250 metres

<b>Aberfoyle Resources Limited</b> EXPLORATION DIVISION		6307
WESTERN TASMANIA		
<b>LYNCHFORD EL 47/83 CRA JV</b> <b>SPECIMEN CREEK GRID</b> INTERPRETIVE GEOLOGY		
REVISIONS Int. Date Int. Date JUN 97 14-08-99 JUN 97 15-03-99 JUN 97 27-06-00	Scale: 1:2500 Date: Sept., 1998	Compiled: DuN Drawn: RJE Traced: JLR Checked: Plate No: LYN 9 B

8306

Quaternary

Qal  
8

Recent alluvial deposits.

Qc  
10

High level alluvials and glacial till.

Cambrian

Tyndall Group Correlate

Iv  
44

A green-orange brown lapilli volcanoclastic composed of quartz, feldspar, pyroxene and various lithic fragments (felsic-basic volcanics and pelitic schists).

Western Volcano-sedimentary Sequence

Riv Q  
59

A quartz rich feldspar phyric grey-green Rhyolitic ash-lapilli volcanoclastic.

D.I.  
63

Green-brown Dacitic-Rhyolitic lavas and volcanoclastics, in placed brecciated.

bv  
54

An intensively weathered and altered volcanic breccia with pervasive silica, haematite alteration.

Y Biv  
40

A polymict unit composed of numerous basaltic-andesitic lava fragments.

A.I.  
48

Various Andesitic-Basaltic lavas and breccias.

B.I.  
45

Basaltic lava commonly autobrecciated, in places polymict, with accessory andesitic lava fragments.

H.A.  
6

A highly altered sequence hosted within the main Andesitic body. Alteration is dominantly sericite-carbonate-pyrite with some associated fuchsite.

R Iv  
25

A sequence of feldspar phyric Rhyolitic-Dacitic lapilli volcanoclastics and lava. Extensively altered (sericite, carbonate) and oxidised.

Mst  
36

A complex volcanosedimentary sequence dominated by grey-black mudstone with interbedded sandstone, siltstone and varying abundances of ash-lapilli volcanoclastics.

Div  
66

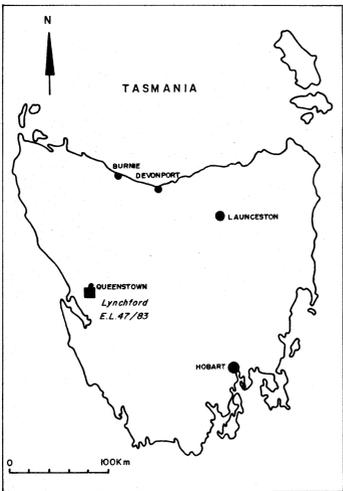
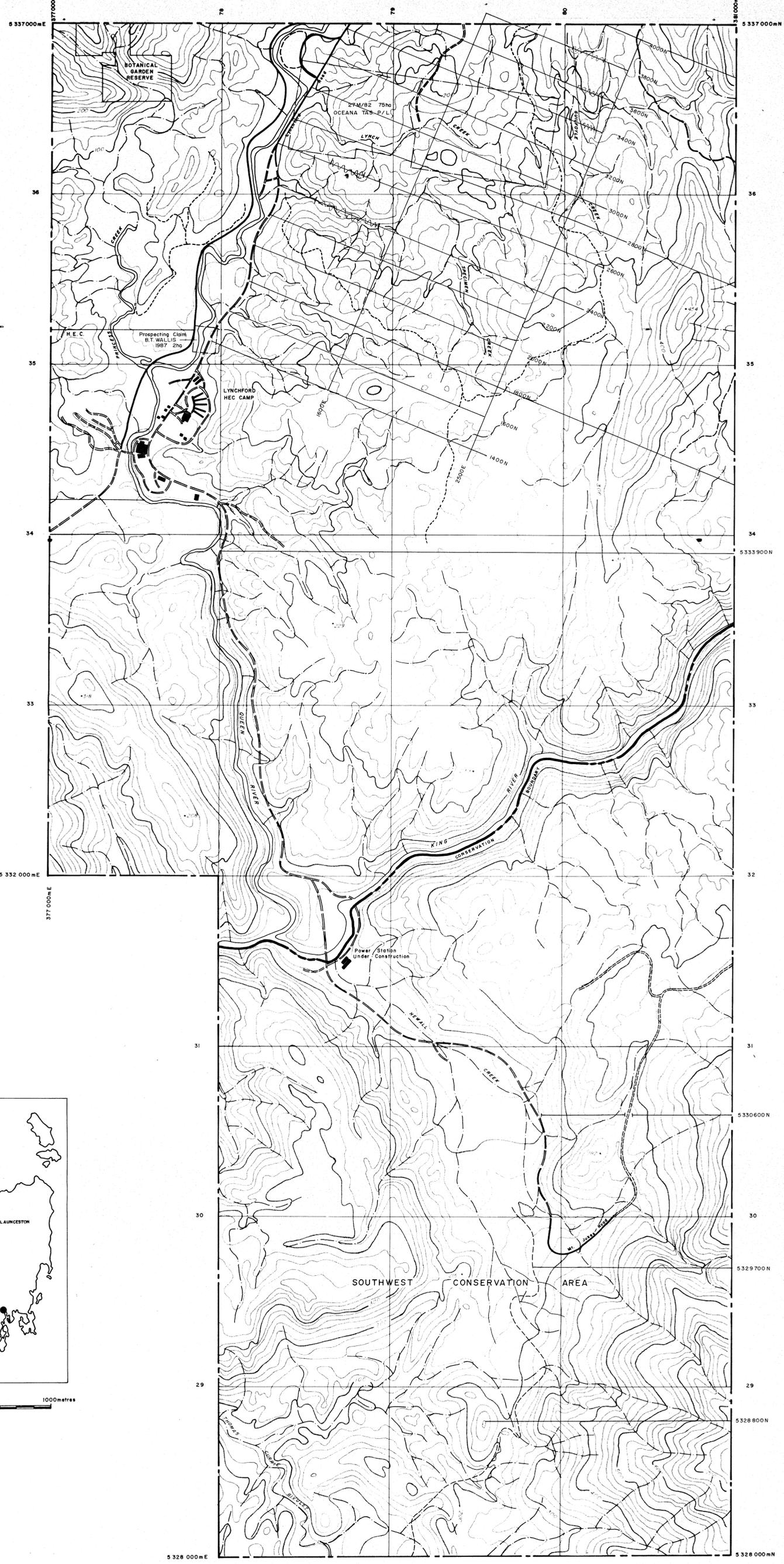
A white grey green sequence of feldspar-quartz phyric Dacitic ash lapilli volcanoclastics with intercalated sedimentary units.

Ss  
71

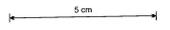
An orange-brown sandstone and mudstones (possible Miners Ridge Sandstone).

621182

<b>Aberfoyle Resources Limited</b>				8306
EXPLORATION DIVISION				
NORTH WEST TASMANIA		LYNCHFORD E.L.47/83 CRA. J.V.		Compiled : DJN
GEOLOGICAL LEGEND				Drawn : JLR
				Traced :
				Checked :
Location Code :		Scale :	Date : September, 1988	Plate No. : LYN 9C



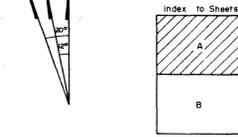
621183



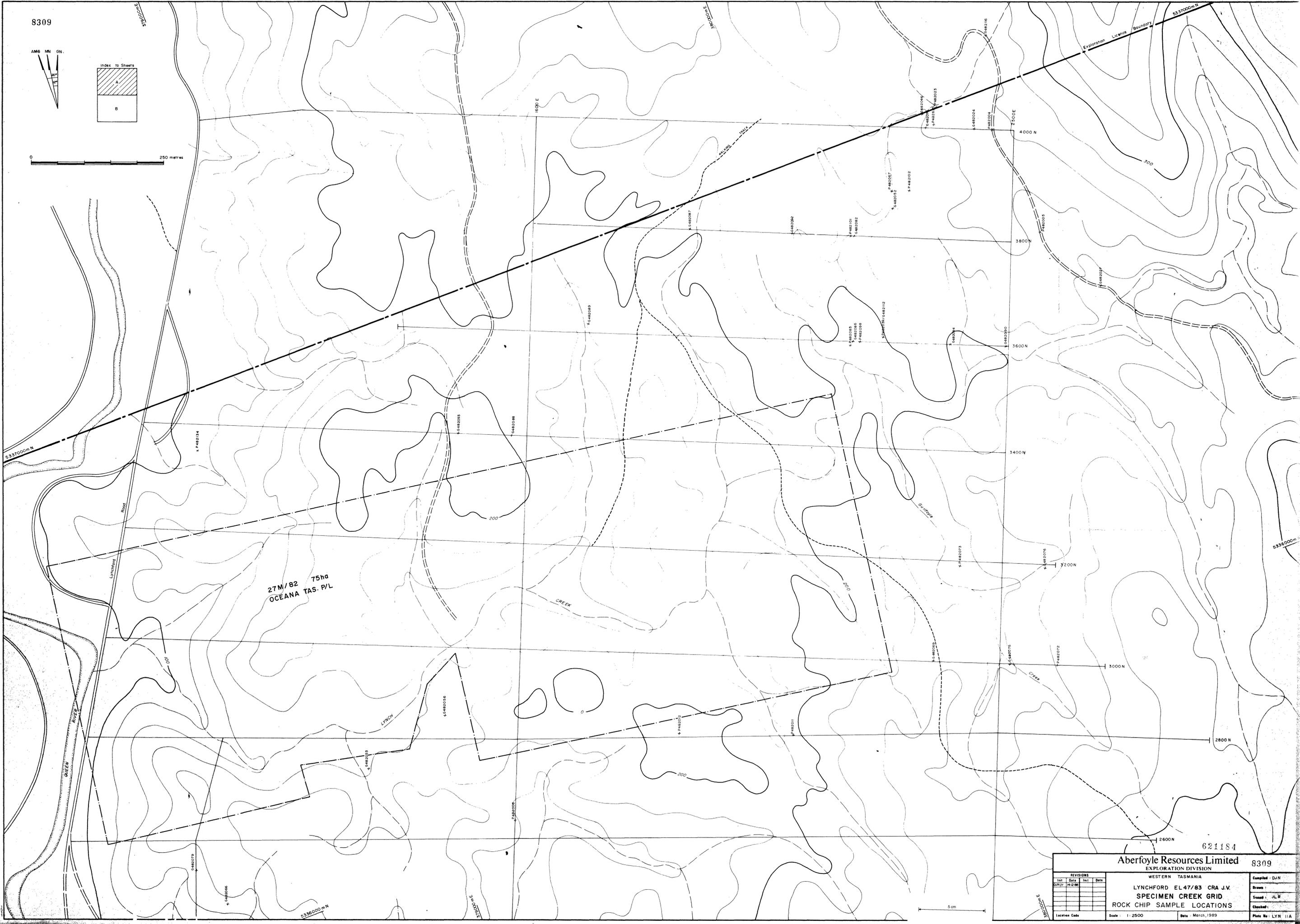
89-2977 1

<b>Aberfoyle Resources Limited</b>				8308	
EXPLORATION DIVISION					
NORTH WEST TASMANIA					
<b>LYNCHFORD E.L. 47/83-CRA J.V.</b>				Compiled: D.J.N.	
<b>GRIDDING</b>				Drawn: J.L.R.	
				Traced: J.L.R.	
				Checked:	
				Plan No: LYN 10	
Location Code:		Scale: 1:10,000		Date: March, 1989	

REVISIONS			
Init.	Date	Init.	Date



0 250 metres



27M/82 75ha  
OCEANA TAS. P/L

Aberfoyle Resources Limited 8309  
EXPLORATION DIVISION

WESTERN TASMANIA

LYNCHFORD EL.47/83 CRA J.V.

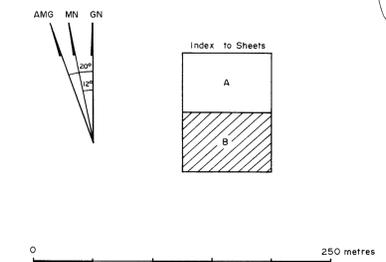
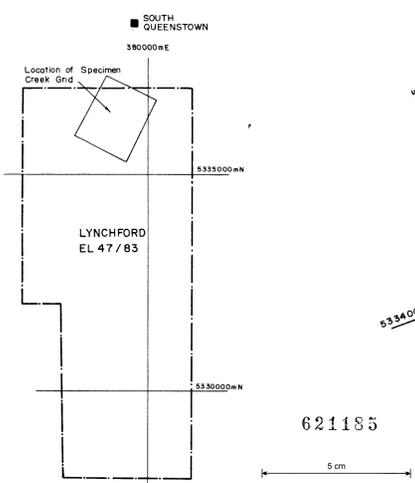
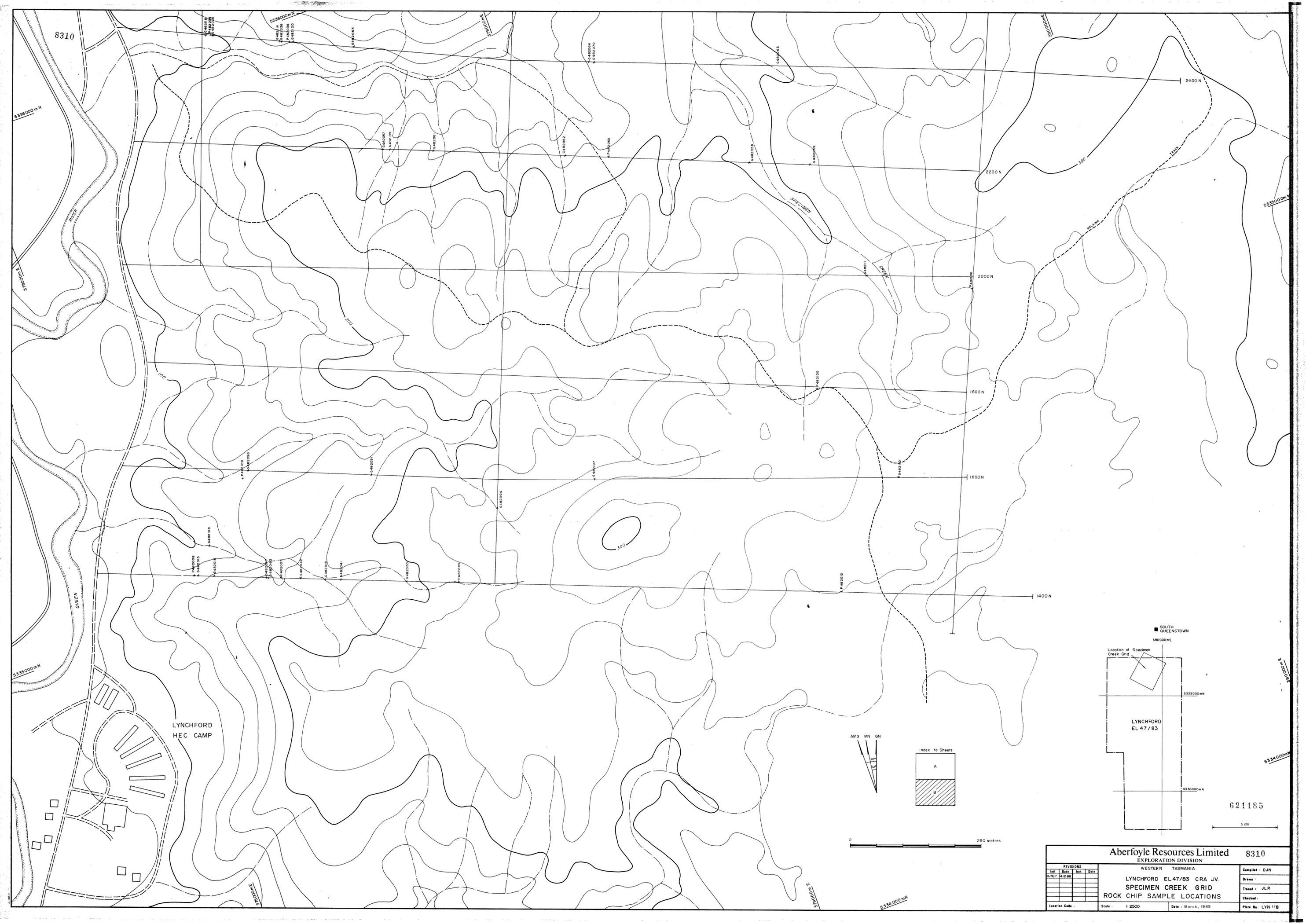
SPECIMEN CREEK GRID

ROCK CHIP SAMPLE LOCATIONS

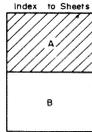
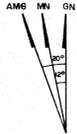
REVISIONS			
Inst	Date	By	Date
DUN/JJ	14-12-88		

Location Code Scale: 1:2500 Date: March, 1989 Plate No: LYN 11A

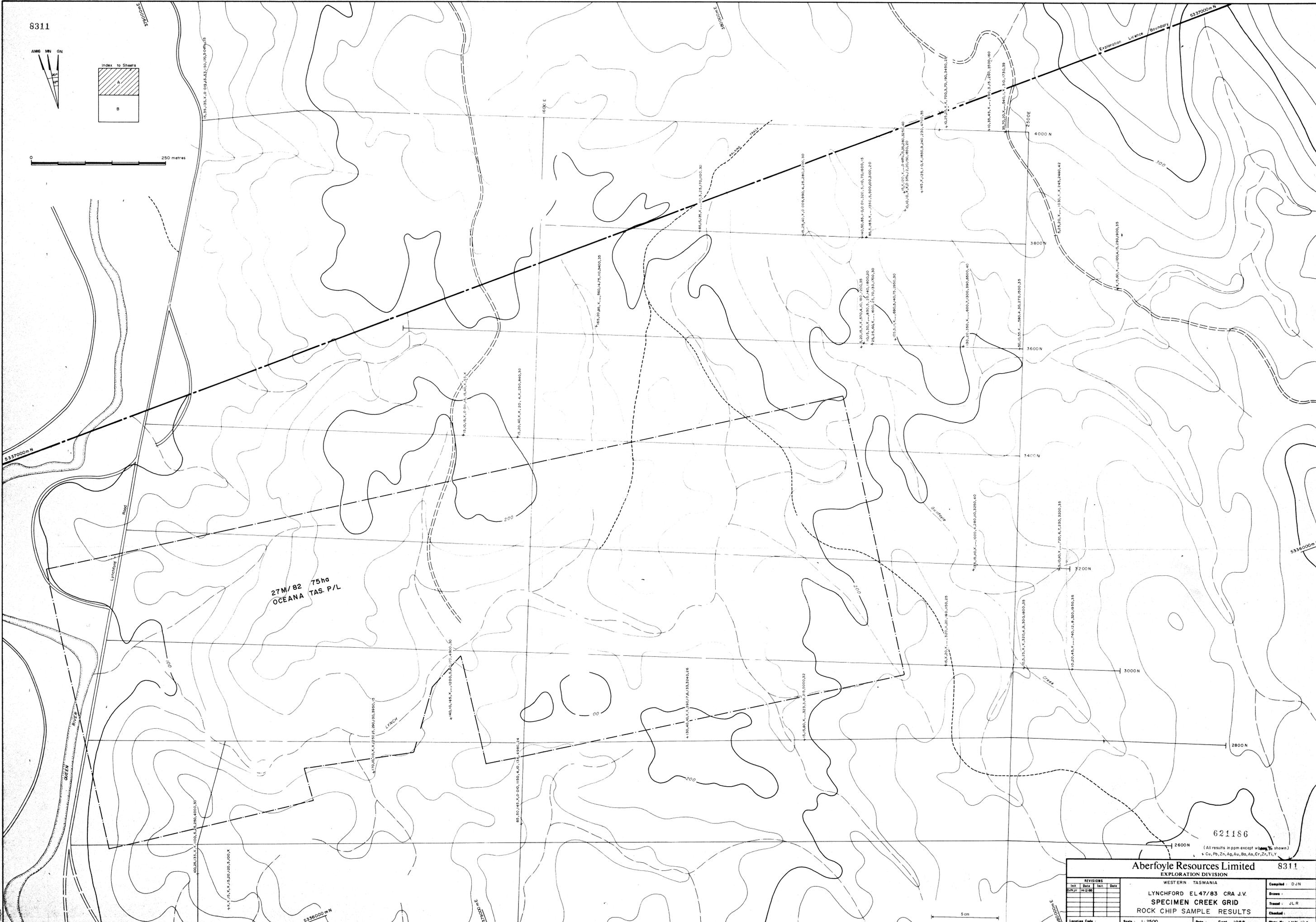
5 cm



<b>Aberfoyle Resources Limited</b> 8310 EXPLORATION DIVISION																							
WESTERN TASMANIA LYNCHFORD EL 47/83 CRA JV. SPECIMEN CREEK GRID ROCK CHIP SAMPLE LOCATIONS																							
REVISIONS <table border="1"> <thead> <tr> <th>Init</th> <th>Date</th> <th>Init</th> <th>Date</th> </tr> </thead> <tbody> <tr> <td>SLJ/JP</td> <td>14/02/89</td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>		Init	Date	Init	Date	SLJ/JP	14/02/89															Compiled: DJN Drawn: JLR Traced: JLR Checked: JLR Plate No: LYN 11 B	
Init	Date	Init	Date																				
SLJ/JP	14/02/89																						
Location Code:	Scale: 1:2500	Date: March, 1989																					



0 250 metres



27 M/82 75ha  
OCEANA TAS. P/L

621186

(All results in ppm except where shown)  
+ Cu, Pb, Zn, Ag, Au, Bi, As, Cr, Ti, V

**Aberfoyle Resources Limited** 8311  
EXPLORATION DIVISION

WESTERN TASMANIA

LYNCHFORD EL 47/83 CRA J.V.  
SPECIMEN CREEK GRID  
ROCK CHIP SAMPLE RESULTS

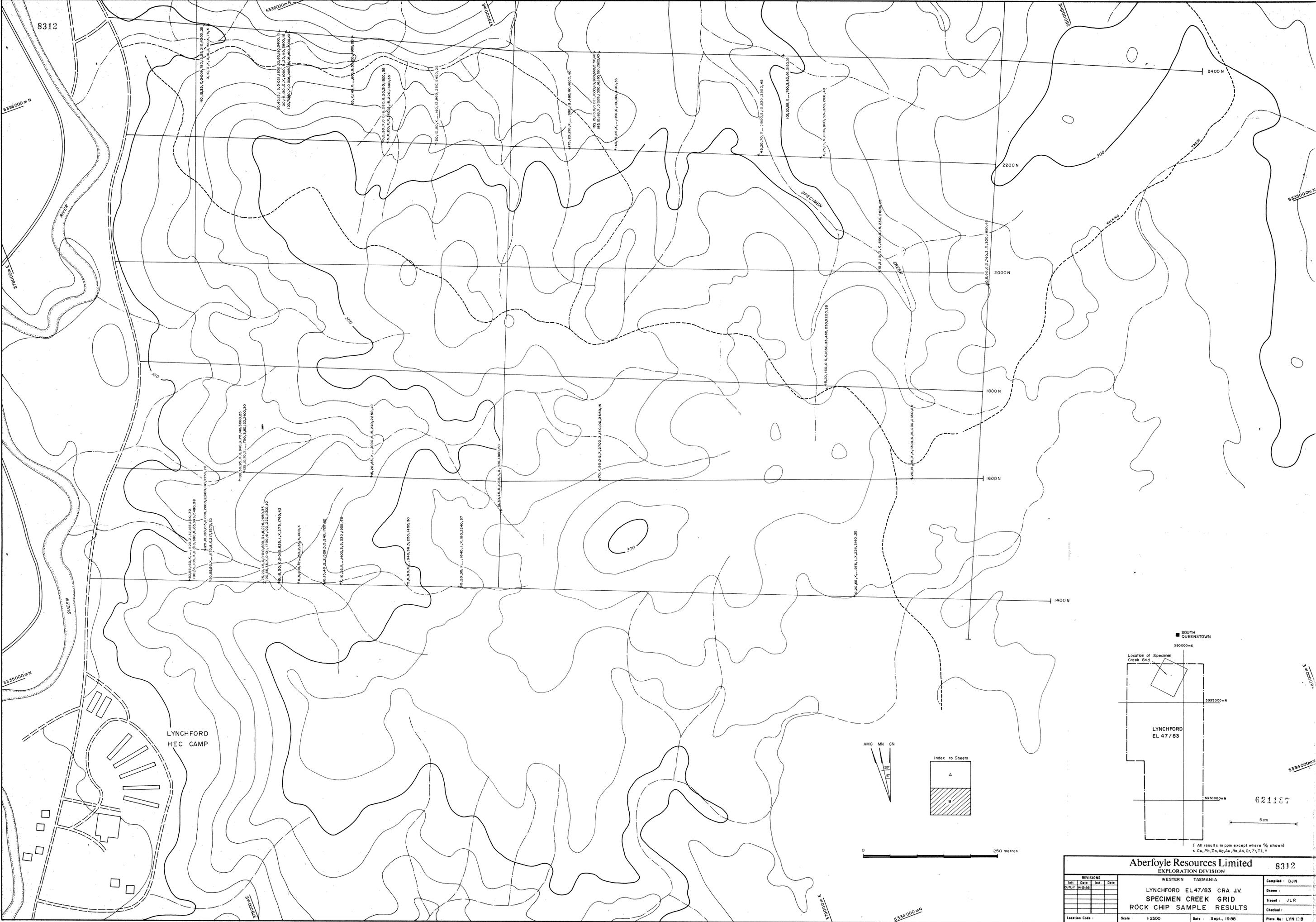
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Init	Date	Init	Date

Location Code: \_\_\_\_\_ Scale: 1:2500 Date: Sept, 1988

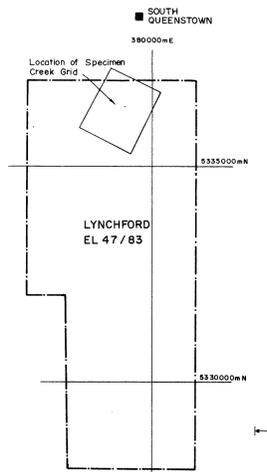
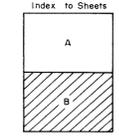
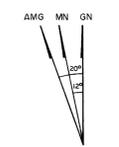
Compiled: DJN  
Drawn: \_\_\_\_\_  
Traced: JLR  
Checked: \_\_\_\_\_  
Plate No: LYN 12A

5 cm

8312

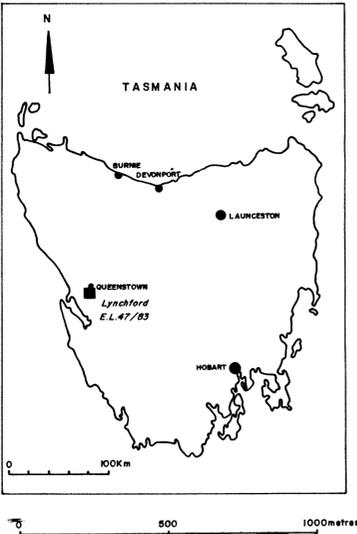
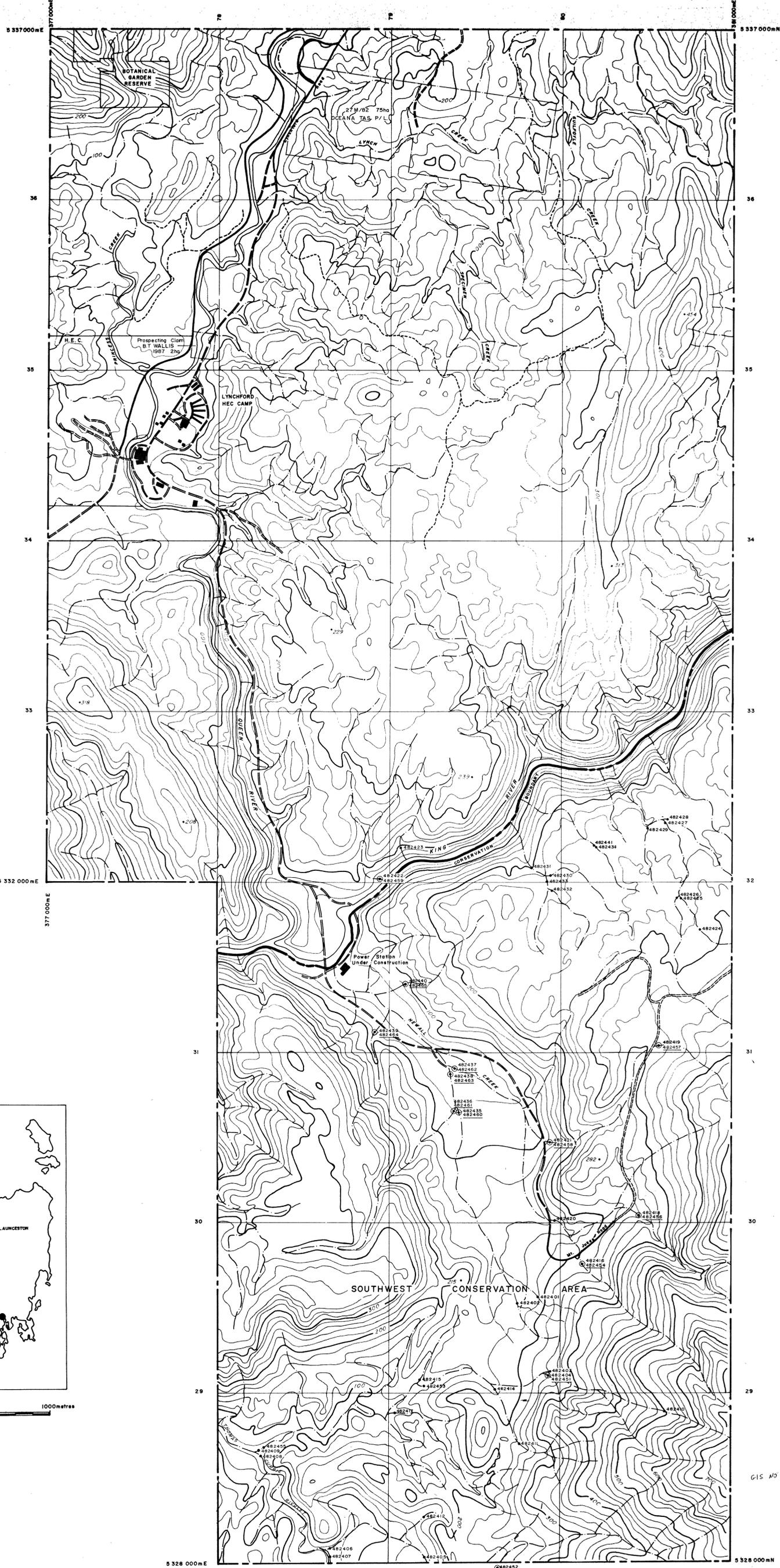


LYNCHFORD  
HEC CAMP



( All results in ppm except where % shown )  
\* Cu, Pb, Zn, Ag, Au, Bi, As, Cr, Zn, Ti, Y

<b>Aberfoyle Resources Limited</b> EXPLORATION DIVISION				8312
WESTERN TASMANIA LYNCHFORD EL 47/83 CRA JV. SPECIMEN CREEK GRID ROCK CHIP SAMPLE RESULTS				Compiled: D.J.N. Drawn: J.L.R. Checked: J.L.R. Date: Sept. 1988 Plate No: LYN 12 B
REVISIONS Date   Test   Date 02/12/88   44288	Location Code:	Scale: 1:2500	Date: Sept. 1988	Plate No: LYN 12 B



621188

GIS No 4-1708-41758

89-2977

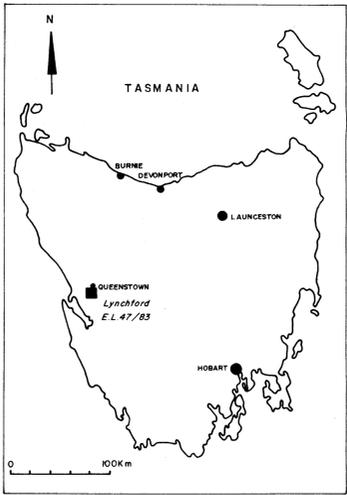
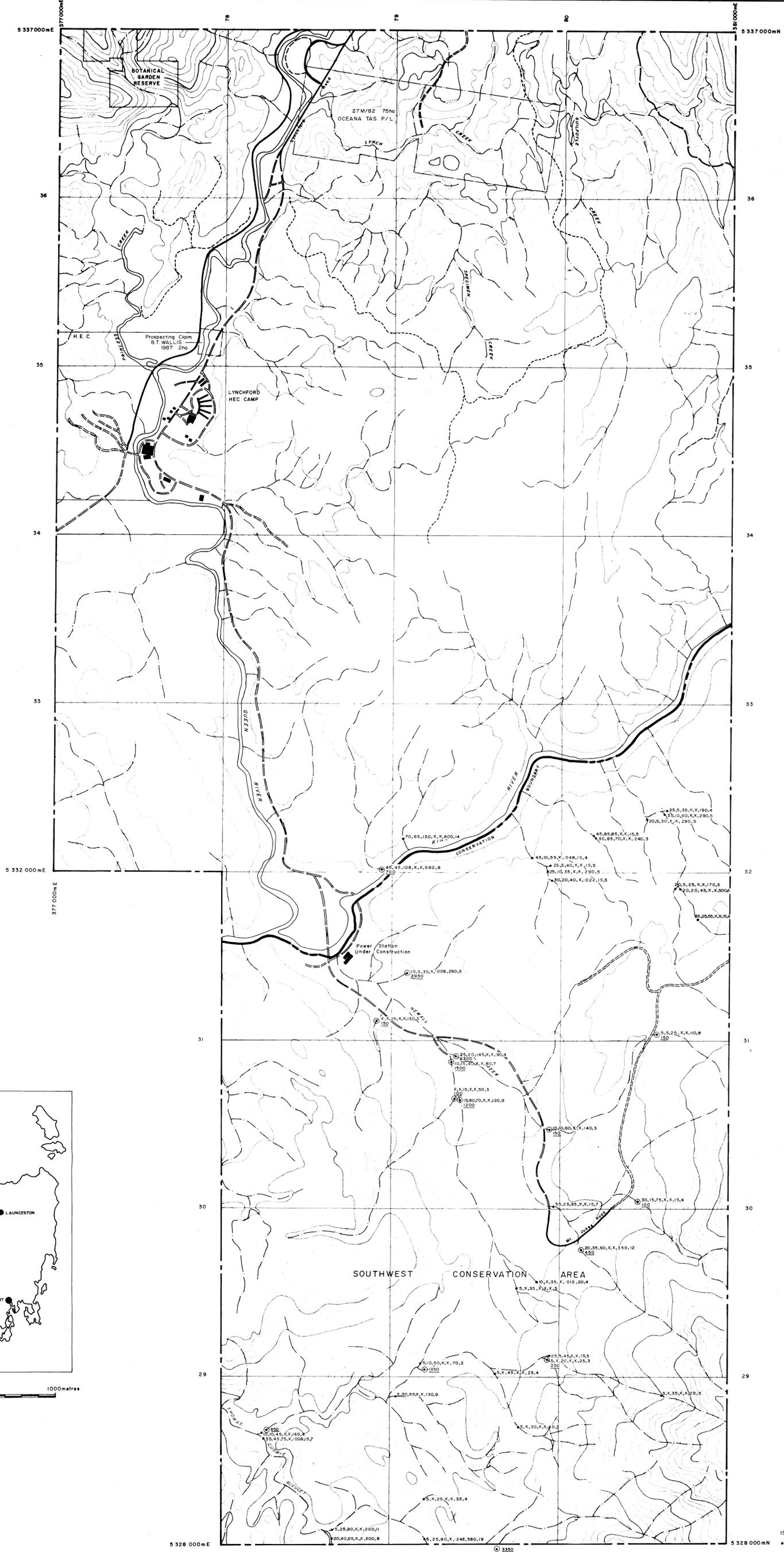
5328 000m E    -80' Sample  
 5328 000m E    -80' B.C.L. Sample (B.C.L. Sample No. Underlined)

**Aberfoyle Resources Limited**    8313  
 EXPLORATION DIVISION

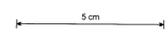
NORTH WEST TASMANIA  
**LYNCHFORD E.L. 47/83-CRA J.V.**  
 STREAM SEDIMENT SAMPLE LOCATIONS

REVISIONS				Compiled: DJN	
Int.	Date	Int.	Date	Drawn:	Checked:
				JLR	

Location Code:    Scale: 1:10,000    Date: May, 1989    Photo No: LYM 15



621189



89-2977 1

IS Insufficient Sample  
 • Cu, Pb, Zn, Ag, Au, Bi, As  
 ○ BCL Au ppt (Underlined)

<b>Aberfoyle Resources Limited</b>				8314
EXPLORATION DIVISION				
NORTH WEST TASMANIA				Compiled: DJN
<b>LYNCHFORD E.L. 47/83-CRA J.V.</b>				Drawn:
STREAM SEDIMENT ASSAY RESULTS				Traced: JLR
Location Code:				Checked:
Scale: 1:10,000		Date: May, 1989		Plate No: LYN 16

REVISIONS			
Init	Date	Init	Date

8315

378 800 E

533200N

379 200 E

379 600 E

380 000 E

5331600N

5331200N

621100

- x 482312 Rock Chip
- x (482351P) Petrology



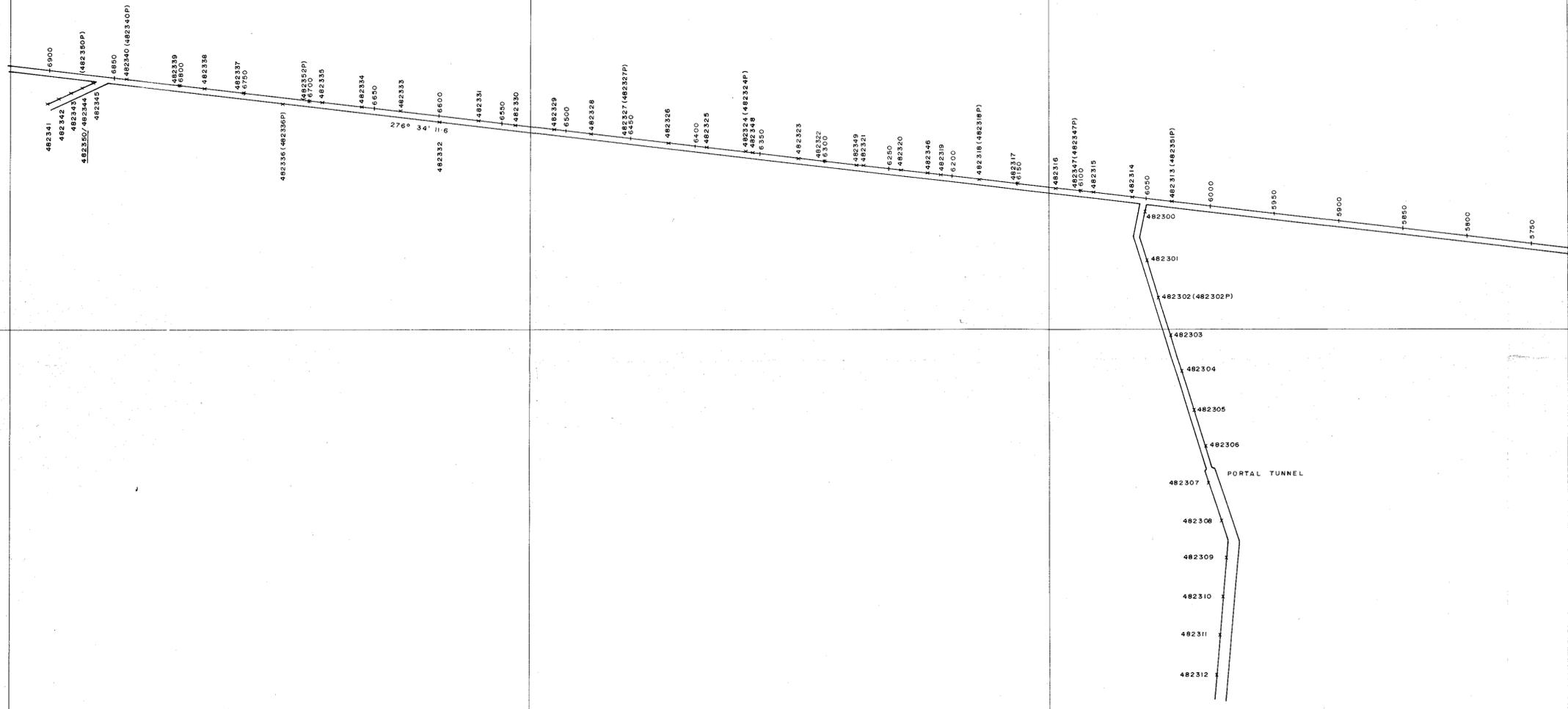
89-2977

Aberfoyle Resources Limited 8315  
EXPLORATION DIVISION

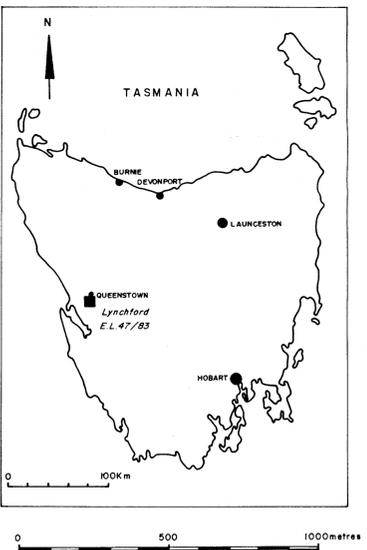
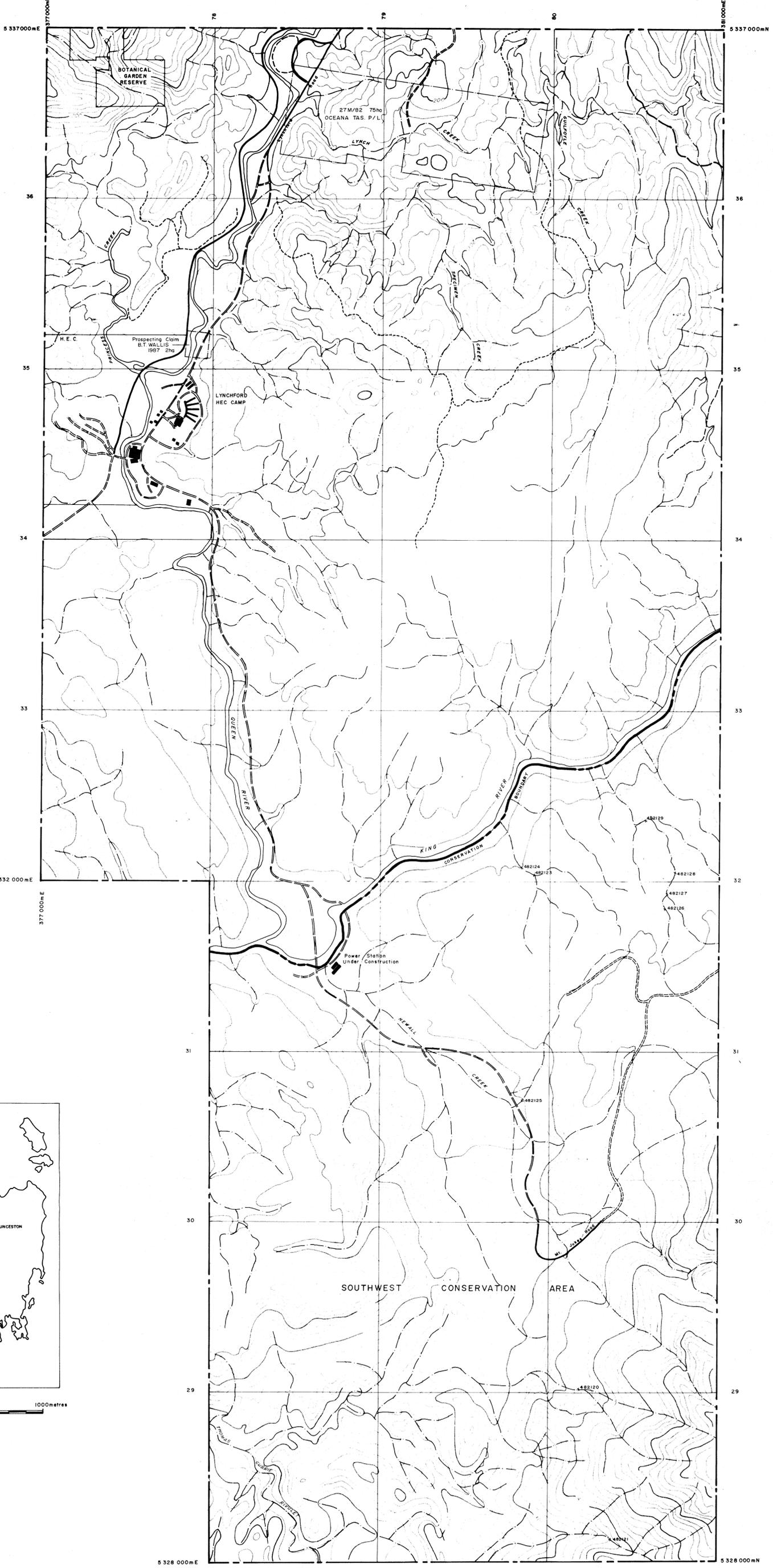
NORTH WEST TASMANIA  
LYNCHFORD E.L. 47/83  
KING RIVER POWER SCHEME-Development Tunnel  
ROCK CHIP SAMPLE LOCATIONS

REVISIONS		Compiled	D.J.N
Init.	Date	Init.	Date

Location Code:      Scale: 1:2000      Date: May, 1989      Plate No: LYN 17







621192

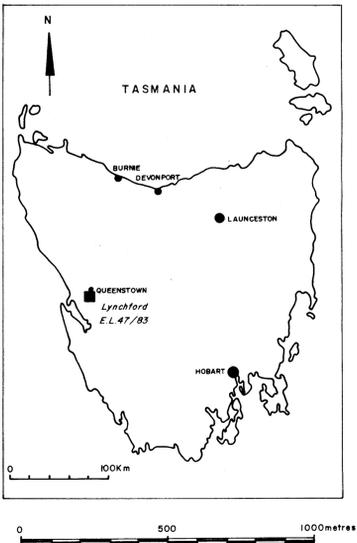
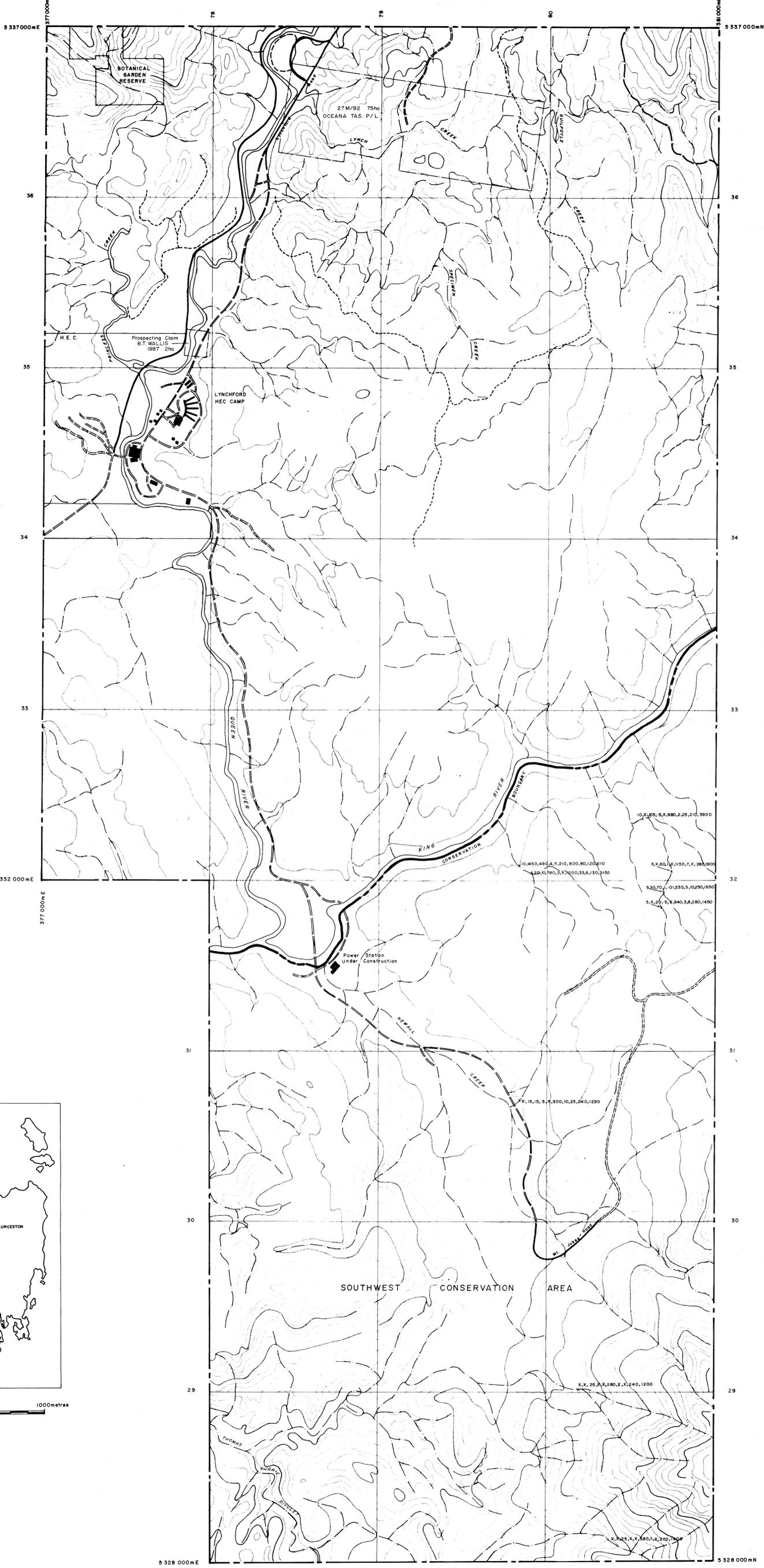
5 cm

89-2977

**Aberfoyle Resources Limited** 8317  
 EXPLORATION DIVISION  
 NORTH WEST TASMANIA  
**LYNCHFORD E.L. 47/83-CRA J.V.**  
 ROCK CHIP SAMPLE LOCATIONS

REVISIONS			
Init.	Date	Init.	Date

Location Code:      Scale: 1:10,000      Date: May, 1989      Compiled: DJN  
 Drawn:      Traced: JLR  
 Checked:      Photo No: LYN 20



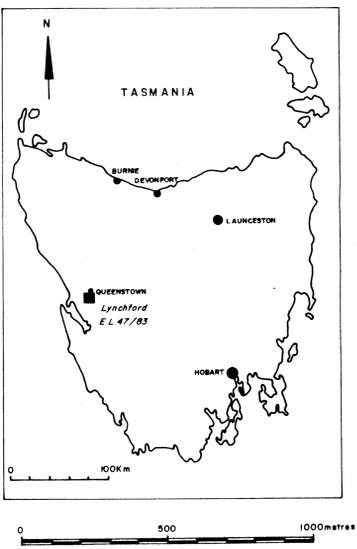
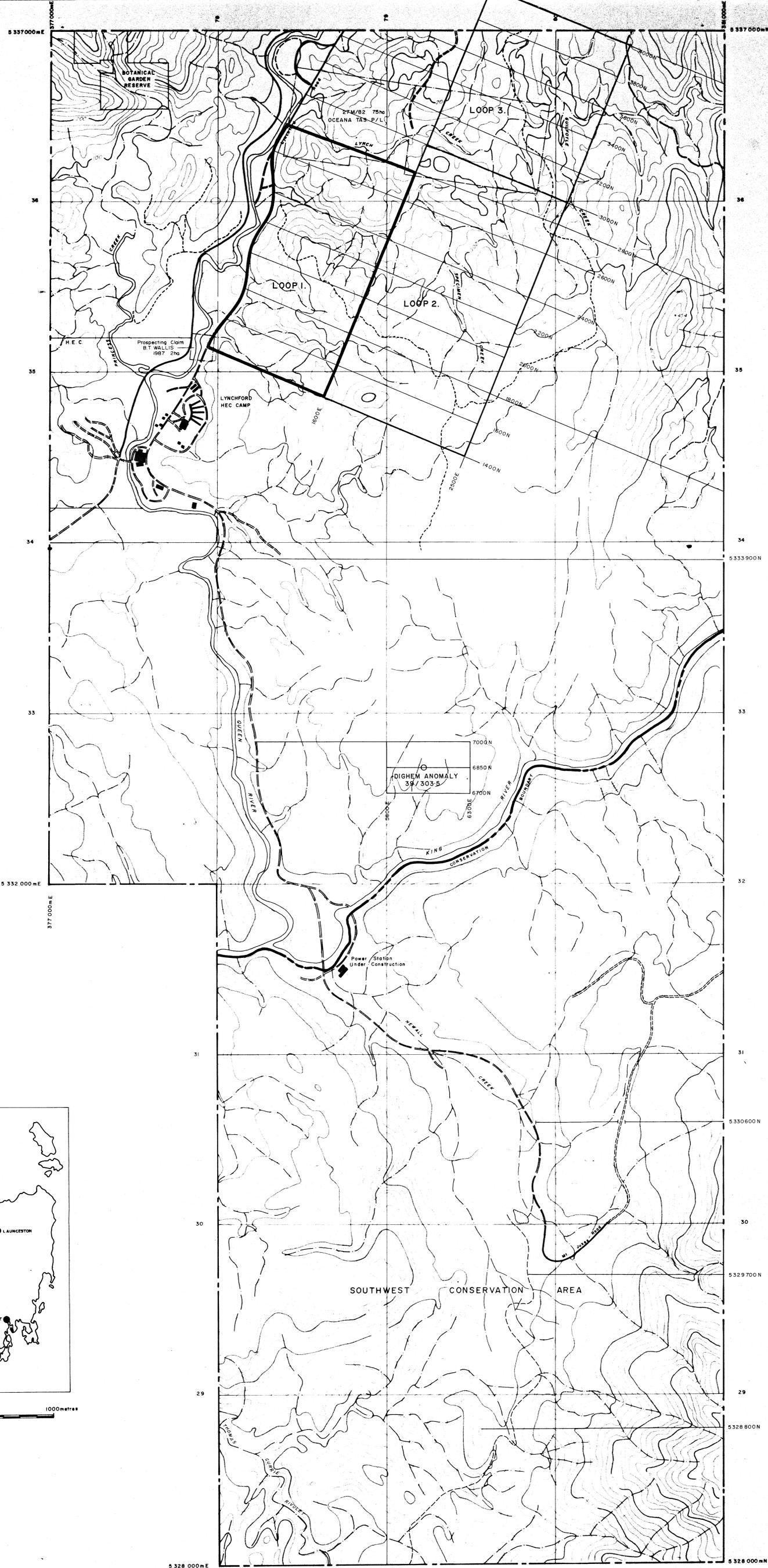
5 cm

**89-2977**

x Cu, Pb, Zn, Ag, Au, Bi, As, Cr, Zr, Ti  
**621193**

<b>Aberfoyle Resources Limited</b>				8318
EXPLORATION DIVISION				
NORTH WEST TASMANIA				Compiled: D.J.N.
<b>LYNCHFORD E.L. 47/83-CRA J.V.</b>				Drawn:
ROCK CHIP SAMPLE RESULTS				Traced: J.L.R.
Location Code:				Checked:
Scale: 1:10,000		Date: May, 1989		Photo No: LYN 21

REVISIONS			
Init.	Date	Init.	Date



621194



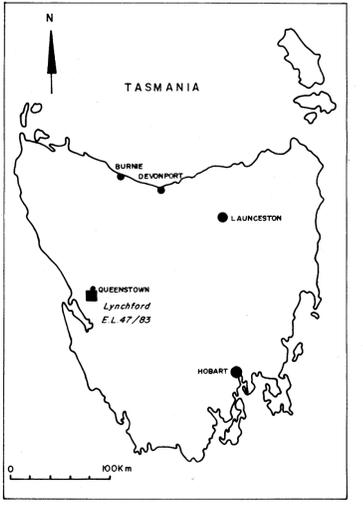
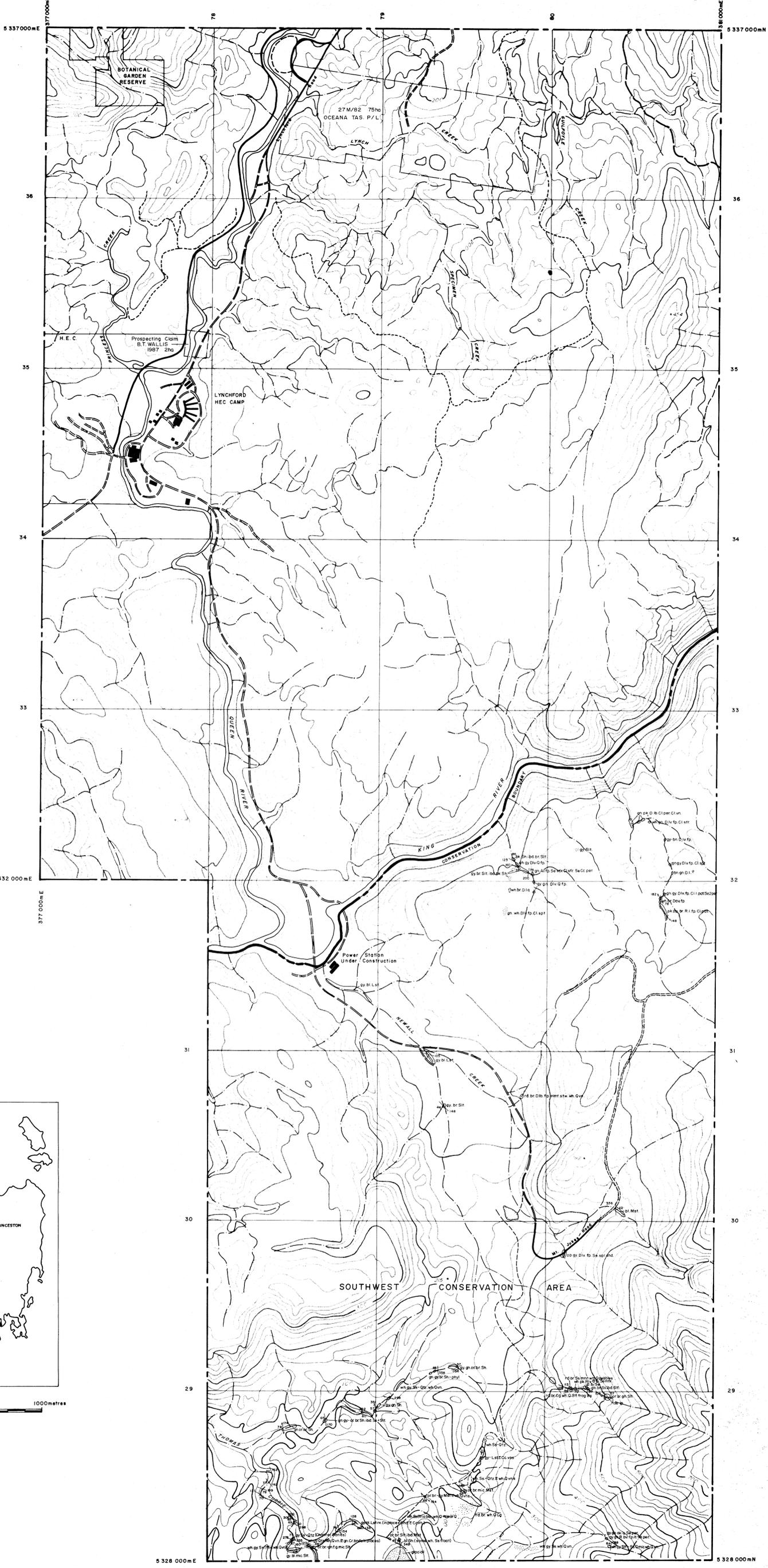
89-2977

**Aberfoyle Resources Limited** 8319  
EXPLORATION DIVISION

NORTH WEST TASMANIA  
**LYNCHFORD E.L. 47/83-CRA J.V.**  
UTEM SURVEY LOOP LOCATION PLAN

REVISED				Compiled: DJN	
Rev.	Date	By	Check	Drawn	Checked
				JLR	JLR

Location Code:      Scale: 1:10,000      Date: May, 1989      Plate No.: LYM 22



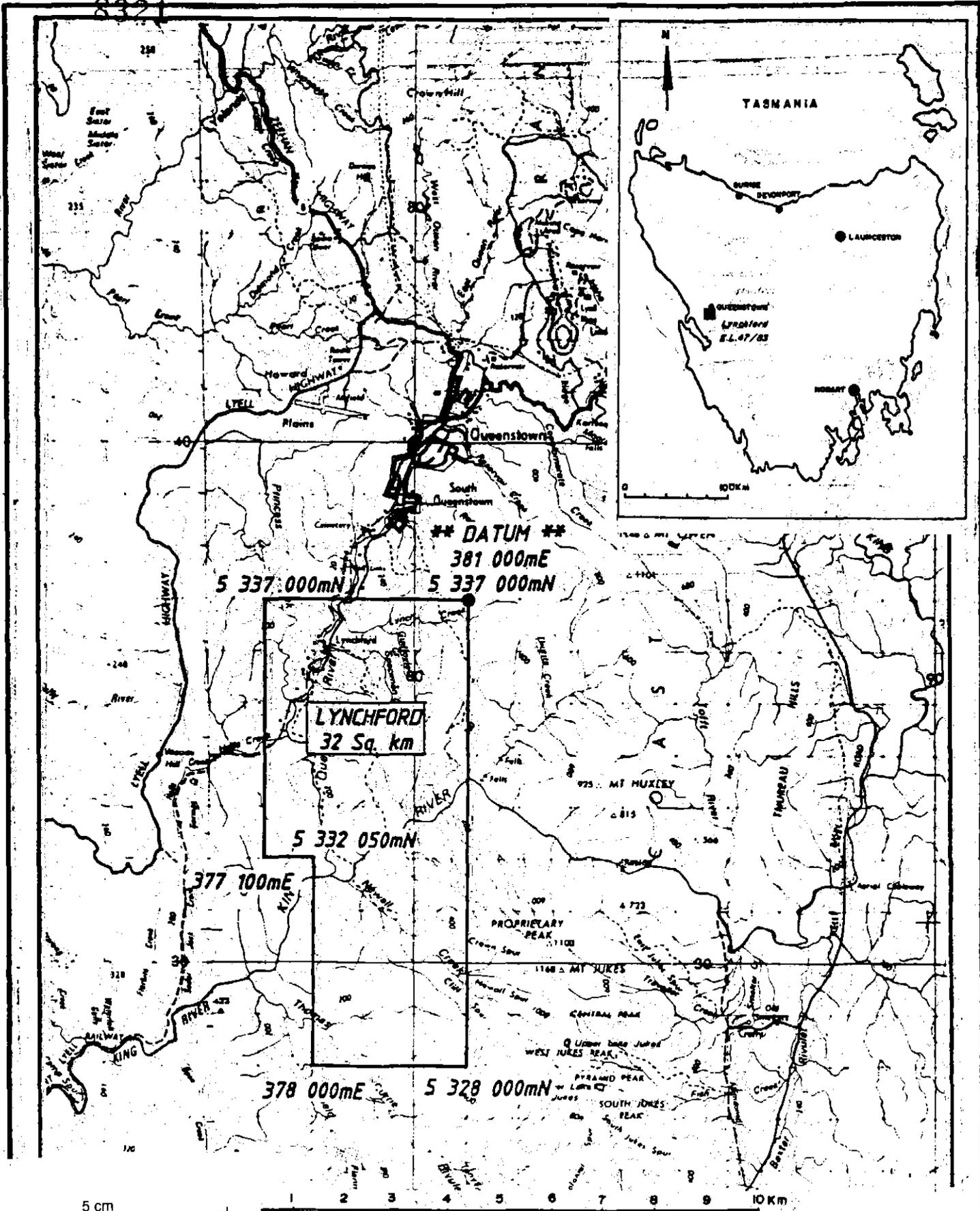
621195



89-2977

<b>Aberfoyle Resources Limited</b>				8320																		
EXPLORATION DIVISION																						
NORTH WEST TASMANIA																						
<b>LYNCHFORD E.L. 47/83-CRA J.V.</b>																						
OUTCROP GEOLOGY																						
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REVISIONS																						
Init.	Date	Init.	Date																			
Location Code:		Scale: 1:10,000		Date: May, 1989																		

8321



**Aberfoyle Resources Limited**  
EXPLORATION DIVISION

8321

NORTH WEST TASMANIA  
LYNCHFORD E.L. 47/83  
LOCATION PLAN

Compiled : DJN
Drawn :
Traced : JLR
Checked :
Plate No. : LYN 24

REVISIONS			
Init.	Date	Init.	Date

Location Code :      Scale : 1:100 000      Date : May, 1989

621196