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E.L. 101/87 DUNDAS AND E.L. 13/88 MOORES PIMPLE, ANNUAL REPORT 1988/89.

89-2994-1/4

MINES
File Ref.
25 JUL 1989
Doc. Ref.
Action Officer | Initials
Refer to
Corres. 24.7.89.
Resubmit to | Date

By: A.J. Cartwright
GEOLOGIST

June, 1989.

Circulation: Mines Department (1)
R.G.C Exploration (2)

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SUMMARY

This is the first annual report on E.L. 101/87 and E.L. 13/88. These adjoining licences were granted to Renison Ltd. as the results of successful tender applications in 1988. E.L. 101/87 also contains E.L. 45/88P, which was another successful tender application in early 1989. The area covered by the two E.L.'s is 79sq km (with 23.2sq km excluded as M.L.'s) of heavily timbered, mountainous slopes, between Rosebery in the north, Renison in the West and Mt. Dundas in the south.

The area was acquired because it is considered highly prospective for structural/sediment replacement tin deposits, structure-related gold deposits and to a lesser degree VMS polymetallic deposits.

The geology of the licence areas is dominated by siltstones, sandstones and conglomerates of the Cambrian Dundas Group. These sediments are steeply dipping and are cut by numerous faults, including two major N-S ones; the Montezuma Fault and the Rosebery Fault. Other units within the licence areas are Cambrian ultramafics, Pre-Cambrian Oonah Formation (quartzites and black shales) and Crimson Creek Formation (Cambrian mafic greywackes and siltstones).

Previous exploration in the area consists of numerous programmes of gridding, geological mapping, geophysics, geochemistry and drilling, undertaken by numerous companies, including E.Z., NCGFA, Geophoto, Comstaff and C.S.R. The Tasmanian Mines Department has also completed several drill holes in the area.

Work completed during 1988/89 consisted of gridding, geological mapping and ground magnetics over the Montezuma and Ring River Grids. A soil survey was also completed on the Montezuma Grid where the prime target was Renison-style tin mineralisation associated with the Montezuma Fault, and a gradient array I.P. survey was completed on the Ring River Grid where the main target was Henty-style gold mineralisation associated with the Rosebery Fault. Other projects undertaken were detailed sampling and geological mapping over all the numerous old mines and prospects on the E.L.'s, previous explorer's data compilation and assessment, and a

detailed airborne magnetics survey over both licences. Most of the above work was completed in a two month period over summer, using a chartered helicopter for access, and cost $346,871 in the 10 months to May, 1989.

The results of this work shows that a strong chargeability anomaly is coincident with altered Dundas Group sediments near the Rosebery Fault on the Ring River Grid. Several combined geological-geochemical-magnetic anomalies were found close to the Montezuma Fault and the work completed on the old workings shows no distinct geochemical zonation pattern or significant gold mineralisation. The results of the airborne magnetics survey were still being processed at the time of writing this report.

Work proposed for 1989/90 includes follow-up infill gridding, bedrock sampling and drilling over the anomalous area on the Ring River Grid, ground E.M. surveys, core relogging and drilling on the anomalous areas on the Montezuma Grid, gridding, geological mapping, geophysics and geochemical surveys over extensions of the major Faults identified by the airborne magnetics and regional geological mapping and sampling at East Renison and East Mt. Dundas. This work is expected to cost $730,000.

1. INTRODUCTION

This report details the work completed and results on E.L.'s 101/87 Dundas and 13/88, Moores Pimple. The areas are adjoining, regarded as geologically continuous and were therefore explored as one complete block.

E.L.'s 101/87 and 13/88 were granted in July and October, 1988 respectively. E.L. 45/88P (Renison East) was later granted and amalgamated into E.L. 101/87 in February, 1989. The licences were acquired because they are considered highly prospective for structural/sediment replacement tin deposits, structure-related gold deposits and to a lesser degree VMS polymetallic deposits.

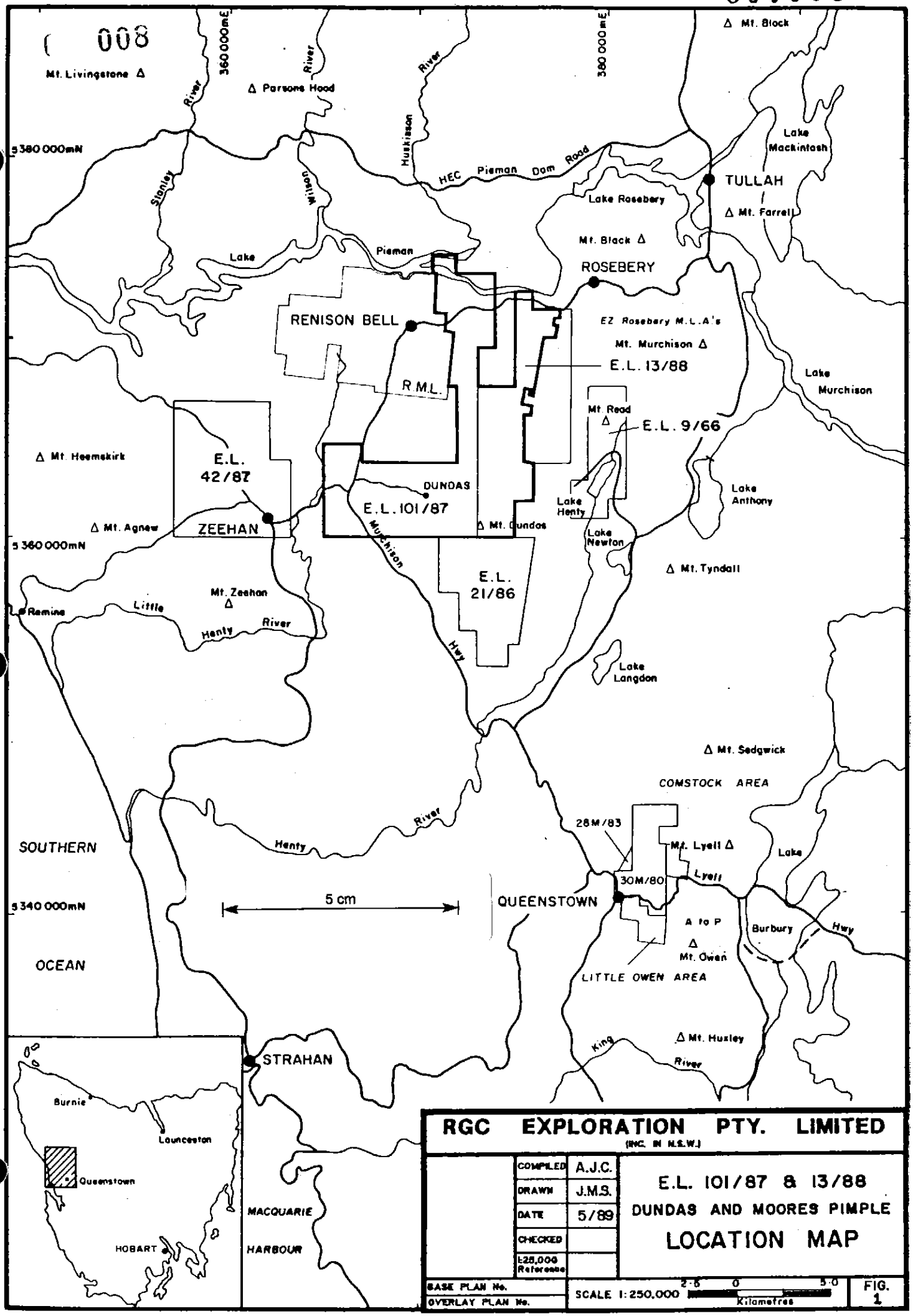
The area covered by both licences total 79 square km., with approximately 23.2 square km. held by various other parties as mining leases and tenements. Figure 1 shows the location of E.L.'s 101/87 and 13/88 relative to other Renison Licences in Western Tasmania.

The Dundas and Moores Pimple areas contain heavily forested, steep hillslopes and mountains, ranging from 200m to 1100m ASL. Steeply incised streams and rivers occur, with numerous, often spectacular waterfalls. Access into the area is difficult, being restricted to 4WD roads and walking tracks. The North-East Dundas Tramway crosses both licences from Williamsford through to Melba Flats. A sealed road exists from Rosebery to Williamsford and a good unsealed road connects Dundas (the old town area) to Zeehan. Other roads include the Comstaff Road and various Renison Mine roads from the north, and the Hercules-White Spur - Moores Pimple 4WD road from the east.

The geology of the area covered by the two E.L.'s is dominated by the Dundas Group. This is a Cambrian succession of siltstones, sandstones and conglomerates, with minor tuffs and felsic intrusives, occurring throughout the central section of the licence areas. The steep-dipping Dundas Group sediments are structurally complex with sequences commonly repeated by numerous faults. A series of Cambrian, fault-related mafic/ultramafic intrusives occur also, as do

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

COMPILED	A.J.C.	E.L. 101/87 & 13/88
DRAWN	J.M.S.	DUNDAS AND MOORES PIMPLE
DATE	5/89	LOCATION MAP
CHECKED		
1:25,000 Reference		

BASE PLAN No.
OVERLAY PLAN No.

SCALE 1:250,000 2·5 0 5·0 Kilometres

FIG. 1

several small but significant exposures of Pre-Cambrian Oonah Formation (interbedded quartzites and black slates) and Crimson Creek Formation, a series of Lower Cambrian, mafic greywackes and mudstones. Two major faults occur in the area; the Montezuma Fault, a N-S fault which may be associated with the Federal-Bassett structure at Renison, and the Rosebery Fault, another N-S trending fault which north of the licence areas, separates the Mt. Read Volcanics from the Dundas Group. These two faults have been the subject of most of the exploration effort this summer; the Montezuma Fault for Renison-style tin mineralisation and the Rosebery Fault for Henty-style gold mineralisation.

At the end of April, a total of $346,871 had been spent on E.L.'s 101/87 and 13/88 in the 10 months since the start of 1988/89 financial year. Details of this expenditure are given in Appendix 1.

2. LAND TENURE

The first E.L. covered by this report, (101/87), was granted in July, 1988 as the result of a successful tender application under the Tasmanian Department of Mines' ETA system. Subsequent to this, E.L. 13/88 was granted in October, 1988 and E.L. 45/88P was granted in February, 1989. Both of these were also successful tender applications. E.L. 45/88P was not granted as a separate title, but was however granted as part of a expanded E.L. 101/87. A brief description of the two licences are as follows:

(i) Dundas, E.L. 101/87. This licence totals 50 square km; including 8.8 square km of mine leases and tenements. Virtually all of these leases and tenements are held by prospectors and mineral collectors in small blocks, except for Minops Pty. Ltd who hold a 210 hectare lease over the Razorback Mine.

(ii) Moores Pimple, E.L. 13/88. This licence totals 29 square km; including 14.4 square km of mine leases. Practically all of the mine leases are held by the E.Z. Co. of Austral asia Ltd., as part of the Rosebery Mine Lease.

The E.L.'s contain several small crown and timber reserves, and the northernmost part of E.L. 13/88 covers a small block of private land. The remainder of the area is unoccupied crown land.

The licences are held by Renison Ltd, which is a wholly owned subsidiary of R.G.C. Ltd, and exploration of the licences is undertaken by R.G.C. Exploration, also a wholly owned subsidiary of R.G.C. Ltd.

3. PREVIOUS WORK

Lead-silver mineralisation was first discovered at Dundas in 1889. Mining in the district continued over the next 30 years, concentrating on the Dundas, Colebrook Hill, Fentons and North Dundas areas. Recorded production from the Dundas field is approximately 25,000 tonnes of lead, 600 tonnes of zinc and 56 tonnes of silver (Blissett, 1962). The North Dundas field produced about 160 tonnes of copper, 170 tonnes of arsenic, 20 tonnes of lead, 3 tonnes of silver and a little tin (Ellis, 1987). Production at Colebrook Hill and Fentons is unrecorded and is likely to have been very minor.

Exploration of the area commenced in 1930 when the Tasmanian Department of Mines diamond drilled three holes beneath the West Comet Workings. From the late 1940's to the early 1960's, a succession of companies and government authorities - including Australian Mining and Smelting, Northern Broken Hill, Rio Tinto and the Tasmanian Department of Mines and the BMR explored the Dundas Field through a combination of geological mapping, data compilation, airborne and ground geophysical surveys and diamond drilling.

In 1966, the Consolidated Syndicated (comprising New Consolidated Gold Fields Australia, Renison and Mt. Lyell) pegged SPL 20 over the North Dundas Field. NCGFA gridded and mapped this area and covered the grid with soil geochemistry and ground magnetics (Elders, 1967 and Forsythe, 1968; 1969). This work identified a linear coincident Sn-As-Cu soil geochemical anomaly, which was followed up by the excavation of a costean. The latter exposed stanniferous sulphides in a series of thin veinlets associated with a shear zone (Ferguson, 1970). NCGFA relinquished SPL 20 in 1971.

In 1968, the Dundas area and the southern part of what is now E.L. 13/88 was pegged by Geophoto Resources Consultants on behalf of Texins Developments as E.L. 7/68. Geophoto completed an enormous amount of work on the area including Turair airborne EM-magnetics, detailed gridding, geological mapping, soil and rock chip geochemistry, magnetics SP and VLF-EM surveys and 79 diamond drill holes (Discala 1974a).

Geophoto put a particularly large effort into diamond drilling the South Comet-Kosminsky line of workings. This work demonstrated that a series of parallel, north-west trending, west dipping, narrow lead-zinc lodes is present over a strike length of nearly one kilometre to a depth of at least 300m below the surface. A scan of the Geophoto assay results suggests that this zone probably contains several million tonnes of mineralisation with an average grade of around 6% Pb + Zn and about 50g/t Ag in a number of 1 to 2m thick lodes. Included within this (subeconomic) resource, Geophoto defined a higher grade reserve of 41,000 tonnes at 8.2% Pb, 7.1% Zn and 86g/t Ag (Discala, 1974b). As the latter did not meet their corporate objectives, the E.L. was relinquished in 1974.

Comstaff Ltd. acquired the Renison East area in 1963, but did not begin exploration until 1970. Initial work was directed towards the discovery of granite-related base metal and tin mineralisation. Regional stream sediment geochemistry and geological mapping lead to the recognition of several anomalous areas which were tested by limited programs of gridding; soil geochemistry; IP, magnetics and Crone EM surveys and geological mapping. Costeaning exposed minor mineralisation in the vicinity of old workings associated with the Exe River Tinfield. One hole (RBE1) was drilled to test an IP anomaly with disappointing results.

In 1975, the Renison East area was flown by an Input EM survey as part of a much larger program. A total of 10 AEM anomalies were identified for follow-up investigation. Over the ensuing four years each anomaly was investigated by limited programmes of gridding, soil geochemistry, magnetics, IP, EM, SP and geological mapping but these failed to locate any target-style carbonate replacement tin mineralisation. All accessible old workings were mapped and channel sampled during this phase of exploration.

In 1976, C.S.R. acquired the Dundas-North Dundas areas as E.L. 15/76. They first carried out a series of stream sediment surveys which were then followed up with grid-based geochemical and geophysical surveys in the Cuni-Nevada area and the Howards Road area

(now covered by E.L. 21/86). Two airborne geophysical surveys were flown (INPUT and DIGHEM) and the resultant anomalies checked on the ground; the most extensive ground follow-up work was in the Carbine Hill area where ground magnetics, VLF-EM, soil geochemistry and gradient array I.P. surveys were undertaken. A large suite of mineralised drill core samples from the Dundas and Montezuma areas were assayed for a wide variety of elements in an attempt to identify a zoning pattern in the Dundas and North Dundas fields, unfortunately without much success (Ellis, 1987). A total of seven diamond drill holes were completed by C.S.R.

In 1978, Getty Oil formed a Joint Venture with E.Z. over E.L. 1/62, covering the Colebrook Hill - Moores Pimple - Mt. Dundas area (virtually all of what is now E.L. 13/88). Serious systematic exploration commenced over the area in 1980 and was sustained through to 1986. This work involved several regional air-borne geophysical surveys, which covered part or all of the area including aeromagnetics, INPUT EM, TURAM EM AND DIGHEM. The area north of Moores Pimple was explored in some detail by: gridding; geological mapping, including sampling of all accessible workings; stream sediment, soil and rock geochemistry; dipole-dipole and some gradient array IP; ground magnetics; VHEM; VLF EM; GENIE EM (in part) and SP (in part). This lead to the completion of 17 ground-supported diamond drill holes, including two holes drilled in 1963 just west of the Mine Lease, for a total of approximately 4000m (Figure 2). In addition, the Mines Department drilled a deep hole at Colebrook Hill and another, helicopter-supported hole, at Moores Pimple during 1984-86 for a further 1480m. Five of the drill holes in the Colebrook Hill area were surveyed by down-hole SIROTEM. The area south of Moores Pimple to Mt. Dundas has only been explored at a reconnaissance level with regional stream sediment geochemistry and limited geological mapping and sampling.

The principal target for the EZ-Getty Joint Venture was either Renison-style metasomatic replacement tin-sulphide deposits or Queen-Hill-style tin-sulphide vein mineralisation. Some encouragement for the occurrence of such deposits was obtained with zones up to 5m wide

averaging 1% Sn being delineated in the Olympic Mine workings. Similar style tin mineralisation was intersected in thin quartz-carbonate-sulphide veins and fracture zones in a number of diamond drill holes in the Colebrook Hill and Olympic-Athenic Mine areas, however no economic grades and/or widths were identified.

Several zones of semi-massive sulphide were also intersected in the course of drilling targets in the Colebrook Hill area. Some of these carry significant levels of copper mineralisation with the best interval being 11m at 1.3% Cu in hole CHP240. The Mines Department drill hole, CB1, which was designed to test the complete granite contact aureole beneath Colebrook Hill, also intersected several broad zones of encouraging Cu ± As ± W mineralisation. The potential for economic deposits of this nature was not as thoroughly investigated as was the tin mineralisation potential. Most of the principal tin targets in the Colebrook Hill area were evaluated by at least some shallow diamond drilling.

In 1982, the northeastern section of E.L. 15/76, covering the North Dundas field and the Montezuma area, was Joint Ventured by C.S.R. to EZ and Getty Oil. E.Z. as the operator, proceeded to reclear the old NCGFA grid and extended the later southwards over the Montezuma area on the eastern flank of the Upper Proterozoic "dome" of Concert Schist. As a result of this work, EZ confirmed the NCGFA results and demonstrated that the main tin soil geochemical anomaly extends southwards to the Montezuma prospect along a mineralized trend which was then called the Montezuma Fault (Sainty, 1982).

EZ also covered the Joint Venture area with a DIGHEM Survey (Sainty, 1982) and diamond drilled four holes to test the tin anomalous zone, two in the vicinity of the Curtain Davis workings and two to test the Montezuma tin anomaly to the south in a position where the Maestries Dolomitic Conglomerate was thought to approach the Montezuma Fault (Sainty, 1983 and 1984). These holes intersected weakly stanniferous mineralisation (up to 0.2% Sn) which was considered insufficiently encouraging to justify further work. A deep hole was proposed to test the predicted contact between the Maestries Dolomitic

Conglomerate and the Montezuma Fault as the earlier, shallower drilling had failed to intersect that position. However it was never drilled.

E.L. 15/76 was relinquished in its entirety in August, 1987.

A mining lease was pegged in 1975 by Minops Ltd., over an area known as the Godkin Prospect. This 50ha area lies in the Montezuma-North Dundas region and was the subject of a Minops-Paringa-Constaff Joint Venture between 1979 and 1984. During this time, Comstaff as operators, completed geological mapping, geochemical re-sampling, Crone pulse EM and six diamond drill holes with some down-hole geophysics. The results of this work were that Comstaff believed that they had an "indicated resource" of 300,000 tonnes of 0.9% Sn and that as further potential in the area was limited, they withdrew from the project. Minops retain tenure of the lease.

In the Renison East area, diamond drilling commenced in 1978, after a Joint Venture Agreement had been finalised between Comstaff and Preussag Australia Pty. Ltd the previous year. Initially, the drill programme was designed to test for tin-sulphide mineralisation associated with fault zones and talc-carbonate altered parts of the ultramafic bodies. Hole RBE3 intersected 1.1m at 1.1% Sn and hole RBE5 intersected 4.9m at 13.1% Pb, 2.5% Zn, 434g/t Ag. These intersections lead to the recognition of the Fentons Tin lodes and Salmons Lead-Zinc veins and an intensive programme of diamond drilling followed. In all 53 drill holes were completed by 1984 for an approximate total meterage of 20,000m, including 3 deep holes drilled to a maximum depth of 1188m. This work was concentrated largely between the Pieman River and the Murchison Highway and no holes were drilled into the southern part of the area to test the strike extensions of the Federal Fault system. Thse programs failed to locate metasomatic massive sulphide tin deposits, however widespread tin mineralisation in favourable geological settings was identified. In particular, several veins of lode Sn and Pb-Zn-Ag mineralisation were outlined as part of a multiple vein system extending over 1.5km withn the Crimson Creek Formation, Dundas Group and talc-carbonate altered ultramafic

units. The vein system occurs within the outer contact metamorphic aureole of a major granitic intrusion, which was intersected in two of the deep drill holes (D1 and D2 900m and 700m below the surface).

The density of drilling allowed Comstaff to carry out preliminary feasibility studies on the vein mineralisation and they made rough estimates of two small resources:

(i) Fentons Vein 430,000t at 1.0% Sn, 0.18% Cu, 0.06% Pb, 0.32% Zn, 8g/t Ag.

(ii) Salmons Vein 830,000t at 0.19% Sn, 0.62% Cu, 3.17% Pb, 2.24% Zn 104g/t Ag.

Comstaff considered that these resource estimates did not favour an economic mining operation.

A Dighem survey, which was flown in 1983, was the only other significant exploration completed to date over the Renison East block. However, it appears that no significant conductors were identified within the area. BHP Minerals Ltd. farmed into the Comstaff Joint Venture in late 1985 but did not carry out any investigations over the Renison East portion prior to relinquishment of this area in June, 1988.

In 1984, EZ recognised the potential for gold mineralisation in the Moores Pimple area, and developed a Timmins model based on the occurrence of: carbonatised ultramafics; fuchsitic conglomerate; prominent veining and sulphides and proximity to an inferred volcanic vent in the Moores Pimple area. The potential for gold related to the major Rosebery thrust fault based on recent studies of the Rosebery deposit as well as the occurrence of gold anomalous quartz-tourmaline veining along this structure at the Salisbury and Chamberlain Workings was also recognised at about this time. EZ's investigation of these gold models involved detailed rock geochemistry over specific areas, reassaying some previous drill core for gold and reconnaissance geological mapping, sampling and petrographic work. They obtained limited encouragement before this programme was suspended in 1986.

At the same time the Mines Department completed a diamond drill hole, MP1, close to Moores Pimple. The hole was collared within the White Spur Formation and passed through the Rosebery Fault to end in Dundas Group volcanics and sediments, however, no significant gold or base metal mineralisation was intersected. The previous stream sediment geochemical survey carried out by EZ over the area south of Moores Pimple did not include gold assaying. Although it was recommended that this work was needed as part of the gold investigations here, it was not initiated, so that the area is effectively unexplored for gold in modern times. The area was relinquished in January, 1988.

4. WORK COMPLETED 1988/89

Between the successful acquisition of the licences in July-October, 1988, and the start of the 1988/89 summer field season in December, 1988, a comprehensive data compilation and exploration planning programme was undertaken. This included the following:

(i) Set-up and drafting of a series of 1:5,000 base plans to cover the entire area. These plans were divided up evenly across the 1:25,000 Lands Department Maps Series that covers the state.

(ii) The geological data accumulated by all the previous explorers was assessed and compiled onto the 1:5,000 base plans.

(iii) All the geochemical, geophysical and drilling information on the licence areas was also assessed.

(iv) The compiled data was used in planning the summer field programme, which is outlined below.

The field work planned for the summer of 1988/89, was designed to test for the following targets, based on the programmes outlined in the ETA submissions on the licence areas (Roberts, 1987; Fitzgerald and Newnham, 1988; Newnham and Fitzgerald, 1988):

(i) The potential for Henty-style gold mineralisation along the Rosebery Fault. Gridding, geological mapping, ground I.P. and magnetics were planned for the section of fault between Moores Pimple and Williamsford.

(ii) The potential for Renison-style mineralisation along the Montezuma Fault. Gridding, geological mapping, soil sampling and ground magnetics were planned to test the fault from the Renison Mine Lease south.

(iii) A detailed evaluation of the numerous old prospects and mines

in licence areas was also planned. This was designed to find and indications of significant tin or gold mineralisation.

(iv) An airborne magnetics survey was planned for the entire licence area. It's purpose was to pin down the southern extension of the Rosebery Fault and held define any other major structures.

(v) No work was planned for the Colebrook Hill, Cuni-Nevada or Mt. Dundas areas.

Details of the work completed during the summer field season are given in the following sections.

4.1 Access

Two grids were completed this summer; the Montezuma Grid over the Montezuma Fault south of Renison and the Ring River Grid over the Rosebery Fault between Moores Pimple and Williamsford. Also completed were six helipads and a number of walking tracks, electrode lines and infill grid lines. All of the above work was undertaken by the Purton Bros. on contract. Much of the grid cutting was a re-clearing and re-pegging of original grids constructed in the early 1980's. A total of 65.6km of line cutting was completed, comprising:

Montezuma Grid: - 32km.(all lines are 1km long, slope corrected,
Ring River Grid: - 18km. spaced at 200m and pegged every 25m.)
Walking tracks, electrode lines, infill grid lines,
(Ring River Grid): - 15.6km

Bulldozing contractor, W. Lawson cleaned up the North-East Dundas Tramway and the old Comstaff access road (across the Ring River) onto the Tramway to make vehicle access to the northern parts of the Montezuma Grid possible. The northern end of the Ring River Grid is also accessible via the Williamsford Road, but nearly all the work completed on the two grids was under-

taken using a chartered Jetranger helicopter (from Helicopter Resources Ltd.) over a seven week period beginning in early January.

4.2 Geology

The two grids and all the known old prospects and mines were geologically mapped during summer. Contract geologist W. Herrmann, assisted by contract geologist M. White, mapped the Ring River Grid and the old prospects and mines. W. Herrmann completed a report on each of these and they are included as Appendix 2 (the Ring River Grid) and Appendix 3 (the old workings). Mapping on the Montezuma Grid was completed by the author and an R.G.C Exploration geologist, R. Marjoribanks made a reconnaissance visit to Western Tasmania and as part of this, carried out several regional and detailed mapping programmes in the area.

4.3 Geochemistry

A soil sampling programme was completed on the Montezuma Grid during the summer field season. Contractors, Mooreville Exploration Services Ltd. undertook the work, which involved taking hand augered, B/C horizon samples, approximately 500gms in weight, at 25m intervals over the entire Grid. Rock chip samples were taken over areas of outcrop.

A total of 1110 samples were taken and all were assayed for Cu, Pb, Zn, Ag, As, Bi and Sn.

In addition, approximately 250 rock chip samples were taken during the course of all the geological mapping carried out this summer. These samples were multi-element assayed.

4.4 Geophysics

Geoterrex Ltd were contacted to complete all the geophysical

surveys over the licence ares this summer. These included the following:

Ground surveys:- (i) Ring River Grid (14km) - gradient array I.P. (readings every 25m), magnetics (readings every 12.5m).

(ii) Montezuma Grid (27km) - magnetics (readings every 12.5m).

Airborne survey:- The entire licence area (both E.L.'s) was flown using a Squirrel Helicopter from Helicopter Resources, during March. This detailed survey, totalling 2067 E-W line km., was flown at a 150m line spacing with a 75m bird height using a continuously reading (4m approximately) Cs-vapour magnetometer.

Geoterrex have also processed all the data and produced contour plans and profile lines of all the ground surveys. At the time of writing this report, the airborne results were not to hand.

5. RESULTS

The results of the work completed on E.L.'s 101/87 and 13/88 to date are described below, on a regional basis. This enables a combined geological-geochemical-geophysical assessment of the exploration potential of each area.

5.1 Montezuma Grid

The Montezuma Fault is a N-S trending structure that runs north from the Mt. Dundas area to the South Renison area. This fault is known to be associated with significant tin, silver and base metal mineralisation. Also, the structure was though to have possibly been a continuation of the Federal–Bassett Fault, responsible for the tin mineralisation at Renison (Roberts, 1987). Although previous companies in this region had concentrated their efforts around the Montezuma Fault, none had systematically and completely explored the structure and surrounding areas.

The Montezuma Grid was designed to test for evidence of possible feeder structures and structural preparation in the Dundas Group sediments. Carbonate horizons were also a target, and these three features, together with the known presence of shallow, underlying tin granite, are considered the essential elements for the formation of Renison-style tin mineralisation.

In order to find these features the Montezuma Grid was geologically mapped in detail, and both a soil geochemistry and a ground magnetics survey were completed over the grid. The interpreted geology is shown on Figure 2; contour plans of each of the elements assayed are shown on Figures 3-8; a magnetics contour plan is shown on Figure 9 and composite line profiles of each of the grid lines are shown in Figures 10-36. Rock chip sample locations, sample descriptions and assays are given in Appendix 4. Appendix 5 contains assays results of all of the soil samples taken over the grid.

The geology of the Montezuma Grid area is dominated by the Montezuma fault system, which runs almost the entire length of the Grid. In the south, Pre-Cambrian Oonah Formation is faulted against Dundas Group sediments by a structure that trends out of the gridded area near Line 6100N (Figure 2). A sub-parallel fault in the south, around Lines 4200N - 4900N, causes minor offsets within the Oonah Formation, and a long splay structure runs from Line 5400N to Line 8800n. This fault however, appears not to offset any of the various sub-units within the Dundas Group. All the structures have some associated mineralisation and/or alteration but the strongest mineralisation and alteration occurs along the latter structure and the southern end of the other two structures.

The Oonah Formation mapped on the Grid consists of interbedded quartzites and black shales. A particularly persistant, continuous quartzite bed, approximately 100m thick forms a prominent strike-ridge running NW-SE between lines 4900N and 4200N. Also in this southern area, are the other two Oonah Formation units mapped on the Grid. These are the basal parts of the Formation; the Concert Schist and overlying this, the Maestries Dolomitic Conglomerate. This section of the Grid is known as the Duck Creek Prospect and was the subject of detailed exploration (including diamond drilling) be E.Z. and Geophoto. The area is reported on in more detail in a later section of this report.

Two exposures of Cambrian ultramafics occur on the Grid, possibly in faulted contact with Dundas Group rocks. The ultramafic body in the north is part of the Serpentine Hill Complex, and in places is strongly altered and serpentinised. This is particularly evident in the Sn, As and base metal geochemistry (Figures 3-7), with values all elevated well above background values from the Dundas group rocks.

The Dundas Group lithologies appear to correlate with sequences from the upper part of the Group, mapped by Brown (1986) in the Dundas township area. Basically, the two main units on the

Montezuma Grid are the Razorback Conglomerate, which contains mafic volcanic conglomerates and greywackes, and the overlying Brewery Junction Formation. The Razorback Conglomerate is exposed in the northern part of the Grid and appears to have an unconformable rather than faulted contact with the Serpentine Hill Complex, as clasts of the ultramafic were found in the Conglomerate on Line 9200N at 5450E. The lowest unit in the Brewery Junction Formation (Ebs) is dominantly made up of fine grained, laminated siltstones. Minor sandstones and coarse, poorly sorted polymictic conglomerates containing numerous quartzite and chert clasts in a hard siliceous matrix, also occur. The next two units (Ebc and Ebn) contain varying amounts of these three main rock types, also with minor tuffaceous sediments. The contacts shown on Figure 2, between these units are quite arbitrary, being based on relative abundances of the various rock types, i.e:

(i) Ebt - mainly tuffaceous volcaniclastics with minor gritty sandstones.

(ii) Ebm - mainly fine grained laminated siltstones with minor conglomerates, sandstones and tuffs.

(iii) Ebc - mainly polymictic conglomerate with minor siltstones and tuffs.

(iv) Ebs - mainly fine grained laminated siltstones with minor sandstones and conglomerates.

The uppermost unit in the Brewery Junction Formation (Ebg) is a series of distinctive, interbedded, purple, fine sandstones and siltstones, with minor green siltstone and polymictic conglomerate. All of the Brewery Junction Formation rocks strike north-north east and dip between 20° and 70° to the southeast. Foliation where it occurs, trends more northerly and dips near vertical. An unusual pillowed mafic volcanic was found within Ebc on Line 7000N at 6500E.

The results of the soil geochemical survey completed over the Montezuma Grid show several significant features:

(i) The Montezuma Fault is strongly anomalous in Sn, As, Pb (and Ag). These elements are particularly high in three main areas; on Lines 4200N - 4400N (Duck Creek Prospect), 5900N - 6100N (near the Curtin Davis Consols workings) and 7000N - 7400N (Greens Prospect). A strong Sn, As anomaly occurs on Lines 7800N - 8200N (just north of the Frazer Mine).

(ii) Sn, As, Cu, Pb, Zn and Bi are all evelated over the Serpentine Hill Complex. The base metals are probably due to the levels in the ultramafics, but the Sn, As and Bi are all probably being increased in the soils by run-off from the numerous small skarns around the Pine Hill Granite, which lies immediately west of the gridded area.

(iii) Zn and Cu are generally also anomalous where the other elements are anomalous, but tend to be less indicative of the mineralising structures.

A suite of representative rock chip samples was taken from the Grid through the course of mapping. These were not taken from the numerous old workings in the area as they were the subject of a separate study. In general assay results from the rock chips were low, with base metal and tin values up to several hundreds ppm, rising to several thousand where mineralised samples were obtained.

The magnetics survey completed over the Montezuma Grid shows (Figure 9) that the area south of Line 6600N is quite flat, but north of this grid line, numerous highs and lows occur. In particular, the Serpentine Hill Complex nort of Line 8800N is apparent as a series of highs and lows. The most interesting area of anomalies lies in a zone between Lines 6600N and 7800N, centred over the Greens-Frazer area.

5.2 Duck Creek Prospect

This area lies on the southern end of the Montezuma Grid. Figure 37 is a 1:2,500 interpretative geology plan of the prospect, based upon grid mapping of the Montezuma Grid, previous company mapping and drilling by E.Z. and Geophoto, and detailed mapping by R. Marjoribanks.

The prospect is developed alongside the Montezuma Fault structure, which is a complex, north-south trending series of faults separating Dundas Group Brewery Junction Formation to the east from Oonah Formation and other Pre-Cambrian units to the west. These Pre-Cambrian units form part of a regional inlier surrounded by Cambrian Dundas Group.

The Brewery Junction Formation consists of steep-dipping/ vertical, north-south striking, interbedded, purple, fine sandstones and siltstones. The Pre-Cambrian units consist of interbedded black slates and quartzites (the Oonah Formation), also steeply-dipping and striking north-northwest. Stratigraphically below the Oonah Formation, lies the Maestries Dolomitic Conglomerate, which contains a mixture of dolomites and polymictic conglomerates in a dolomitic matrix, 100m thick and is underlain by the Concert Schist, which is a series of fine grained phyllites and psammites thought to be the metamorphosed equivalents of the Oonah Formation.

The Maestries Dolomitic Conglomerate outcrops as a well developed gossan in the Duck Creek area, and this was the target of a series of diamond holes drilled by Geophoto in the early 1970's. Geophoto also drilled holes beneath several small adits developed on Cu-As-Bi-Sb-Sn mineralisation in the Montezuma structures. The results of this showed that both the Conglomerate and the Fault are east-dipping and that patchy, thin mineralisation occurs in the Fault and the conglomerate contains only very weak Pb-Zn mineralisation.

In the early 1980's E.Z. drilled a series of diamond drill holes

holes in an attempt to find the Conglomerate/Fault contact (the fault dips more steeply east than the Conglomerate), but the results of this drilling indicated that the contact should lie approximately 600m below the surface.

Results of mapping on the Montezuma Grid and along the various road exposures are interpreted on Figure 37. In general, the structures and lithologic relationships found by the previous explorers was confirmed, although several new features were recognised, i.e:

(i) The Maestries Dolomitic Conglomerate contains significant dolomitic horizons.

(ii) The rocks east of the Fault are upper Dundas Group (Brewery Junction Formation) rather than Crimson Creek Formation.

Geochemically, both the fault trace and the gossaneous outcrop of the conglomerate are well defined. The fault has a very strong Pb (1450ppm max.), Sn (584ppm max.) and Ag (4.5ppm max.) anomaly developed in soils (Figures 3-8). The Conglomerate produces a strong Cu (610ppm max.), Pb (4150ppm max.), Zn (565ppm max.) and As (1350ppm max.) soil anomaly. Values in the other lithologies at the prospect are all generally low or, below background, except Cu and Zn, which are slightly elevated (several hundred ppm) over the Brewery Junction Formation.

5.3 Ring River Grid

The Rosebery Fault is a N-S trending structure, running from the Pinnacles Prospect (a gold-base metals prosepct) near Burns Peak in the north, past the Rosebery Mine to the Moores Pimple area in the south. This fault is a major thrust, which marks the western edge of the Mt. Read Volcanics, in a similar fashion to the way the Henty Fault marks the eastern boundary of the Central Sequence. The southern extension of the Rosebery Fault

is thought to be prospective for gold mineralisation in much the same way that the Henty gold mineralisation occurs along the Henty Fault (Roberts, 1987). The section of Rosebery Fault occurring on E.L.'s 101/87 and 13/88 lies along Bather Creek, between the Ring River and Moores Pimple. Past exploration in this area consisted of gridding, mapping and magnetics, completed by E.Z. who were primarily interested in locating Renison-style tin mineralisation.

The Ring River Grid was designed to accurately locate the position of the Rosebery Fault and find any areas of associated alteration/mineralisation if present.

The Grid was geologically mapped and a ground magnetics and I.P. survey were also completed over the Grid. The geological work was completed by W. Herrmann and his report, which gives a detailed description of the lithologies found on the Grid is included as Appendix 2. Rock chip sample locations, descriptions and assays are given in Appendix 4. The interpreted geology is shown on Figure 38, a magnetics contour plan is shown on Figure 39, chargeability and resistivity contour plans are shown on Figures 40 and 41 respectively and composite line profiles of each of the grid lines are shown in Figures 42-55.

The Rosebery Fault runs through the centre of the Grid; its surface trace occurring along Bather Creek (Figure 38). Although the Fault can be located accurately by virtue of it marking the contact between the White Spur Formation and younger Dundas Group rocks, few exposures of the Fault were located. Zones of increased foliation occur adjacent to the fault and in the few fault outcrops found, the structure dips east at 40°-45°. This is in agreement with the known trends of the fault in areas further north.

The White Spur Formation is the oldest Dundas Group unit on the gridded area, being overthrust from the east onto younger Dundas Group sediments by the Rosebery Fault. The White Spur Formation

consists of steeply dipping, steeply foliated coarse felsic sandstones, tuffs and siltstones. W. Herrmann has differentiated two units within the White Spur Formation, a more volcanic-rich, coarse unit (Ewf on Figure 38) and finer grained turbiditic siltstones (Ewt). These unaltered units closely resemble the White Spur Formation found in the Howards Road area (Cartwright, 1988), 8km to the south.

Other younger Dundas Group lithologies, occurring west of the Rosebery Fault include the following:

(i) sandstones and conglomerate sandstones (Edq on Figure 38)

(ii) polymictic conglomerate (Edc on Figure 38)

(iii) interbedded sandstones and siltstones (Edt on Figure 38)

This sequence forms a series of broadly folded, moderately steeply dipping units in the southern part of the grid. A number of lenses of felsic tuff (Edv) also occur through the sequence, particularly in the interbedded sandstones and siltstones to the north. All of these units closely resemble the Dundas Group units found on the Montezuma Grid, and are therefore correlatible with the Brewery Junction Formation.

A Cambrian Ultramafic Complex, consisting of basalt and gabbro, intrudes the younger Dundas Group rocks in the south western part of the grid. They are generally strongly altered to a quartz-carbonate-fuchsite assemblage.

A rhyolitic quartz porphyry intrudes all the above sequences, in a zone 300m wide, either side of the fault (Figure 38), although most of it does occur in the fault footwall. Also along the fault are a number of small silicified zones; the silicification being so intense, that recognition of the original rock types is very difficult. In general, a 100m wide strongly altered zone extends along the fault, in its immediate footwall, from Line

4400N to Line 5600N. This zone consists of sericitic-silicified -sulphidic altered conglomerates sandstones and tuffs. Four short (400m) infill lines were cut across this anomalous zone to further test it, and at the time of writing this report, the southernmost of the four lines (Line 4700N) had been mapped and extensively rock chip sampled. Preliminary gold assays from the rock chips revealed consistent low levels (0.05-0.1ppm) of gold in the altered sediments. Limited sampling by W. Herrmann (Appendix 4) failed to find detectable gold.

The chargeability contours produced from the gradient array survey (Figure 40) shown a large, elongate, very strong anomaly between Lines 4400N and 5800N, immediately east of the Rosebery Fault trace. The fault trace itself causes a lesser anomaly along Bather Creek but the main anomaly is some 20mv/v higher. An associated resistivity low is present (see Figure 41), masked to some extent by a regional (lithological), increasing-eastwards gradient. The resistivity contours also clearly show a contrasting 'grain' between the older and younger Dundas Group units separated by the Rosebery Fault. The ground magnetics contours (Figure 39) show a pair of magnetic lows over the area of high chargeability. This could well be due to strongly altered rocks occurring in the footwall of the Rosebery Fault.

5.4 Regional Exploration

Regional exploration in the summer field season 1988/89 consisted of two main programmes. An airborne magnetics survey was completed over both E.L.'s but as this was still being processed at the time of writing, its results will be given in a future report. Also completed, was a reconnaissance mapping and sampling programme, examining all the old workings, mines and prospects throughout the licences. This was undertaken to compliment the grid mapping on the Montezuma and Ring River Grids, and to comprehensively evaluate these old workings in terms of their gold and tin mineralisation potential, their mineralisation/alteration/structural settings and their possible

significance and contribution to a geochemical zonation pattern in the Dundas area.

The reconnaissance work was completed by contractors W. Herrmann and M. White, and their report which gives a detail description and plan of all the workings is included as Appendix 3. Figure 1 referred to in Appendix 3 is an AO-sized summary plan of many of the workings in the Montezuma area, and this has been included with the main report plans as Figure 56.

The results of this work show that all of the veins that have been worked are far too small to be economically viable as large-scale deposits and gold values in the various prospects and mines are all low (0.92ppm of West Wallace's being the best value obtained). Also, no significant wall alteration or other signs of mineralising/altering systems larger than veins, were observed. In general the veins occur in narrow, steep-dipping, northerly striking structures. They are polyphase and polymetallic, with particularly abundant silver, lead and zinc. Herrmann and White noted four main mineral assemblages and from textural evidence developed a relative timing of emplacement for these veins. No real zoning pattern has emerged from this study.

An encouraging result from the reconnaissance sampling programme was the presence of significant tin (up to several percent) at Exe Proprietary, Green's Prospect and the Frazer Mine. These values were obtained from one of the four vein systems described by Herrmann and White as vuggy milky quartz with arsenopyrite ± cassiterite (type d on Figure 56). All these workings are of lower elevations than the other old mines and this fact together with the observation that tin values increase with depth in the Curtin-Davis Mine indicate that tin mineralisation may be significant at lower levels in the Montezuma area. Also, in the Green's Workings-Frazer Mine area, Herrmann and White have shown (Figure 56) that some degree of structural complexity may exist, with the Montezuma Fault possibly offset by a NE trending structure.

6. CONCLUSIONS AND RECOMMENDATIONS

The field programmes completed this summer have highlighted and targetted several areas for further work. These areas are considered highly prospective for Renison-style tin mineralisation and Henty-style gold mineralisation. Elsewhere on the E.L.'s, where more regional work has been completed, potential remains high for discovering further prospective areas.

A strong, combined geological-geophysical anomaly was located on the Ring River Grid. Here the Rosebery Fault has thrust older Dundas Group (the White Spur Formation) over a younger sequence of moderately-highly altered sandstones, siltstones, tuffs and conglomerates. Coincident with this zone of alteration, is a strong chargeability anomaly. It appears that the altered sediments dip steeply to the west (as part of the eastern limb of a syncline - see Figures 42-49), and the I.P. anomaly corresponds to the down-fault (in the footwall) extension of the alteration, in particular where the conglomeratic unit is likely to be in contact with the Rosebery Fault. There is little likelihood that the I.P. anomaly is due to the overlying White Spur Formation, as these rocks are unaltered and are identical to those exposed in the Howards Road area, where a similar gradient array I.P. survey produced no significant anomalies.

In order to follow up the anomalies found on the Ring River Grid four short infill lines were cut and one of these had been mapped and sampled by the end of May. Further follow-up work should include geological mapping and rock-chip sampling of the other three lines and a wacker power auger sampling programme over all the lines between Line 4600N and Line 5600N. Ideally this sampling programme should concentrate on the sections of lines covering the immediate fault footwall, sampling at a close spaced interval (i.e. 5m) in order to locate any Henty-style gold mineralisation, which is likely to be quite narrow. This programme, which should be a helicopter supported programme undertaken during spring 1989, could then lead to a significant helicopter supported drilling programme in summer, targetting on the generated geological-geophysical-geochemical anomalies.

Several strongly anomalous areas were found on the Montezuma Grid. Although no carbonate units were found during the surface mapping and adit mapping programmes, significant magnetic and geochemical anomalies, associated with the Montezuma Fault were discovered. The anomalous areas are:

(i) In the north, elevated and noisy magnetics occur over the Serpentine Hill complex, which also has associated geochemical anomalies. This area is undoubtably anomalous and has been the target of numerous Renison drill holes in the 1970's and early 1980's. The Serpentine Hill Complex is moderately altered and has probably undergone a certain degree of replacement and vein mineralisation from the nearby Pine Hill granite. Some of the geochemical anomalism is probably also due to run-off from the nearby Pine Hill skarns.

(ii) The Green's Prospect - Frazer Mine area. Here a very strong coincident geochemical-magnetics anomaly occurs over the Montezuma Fault, which has been worked for tin mineralisation. The potential at this area of structural complexity, is for deep Renison-style mineralisation. The Frazer Mine area (and to the north) is covered by a small mining lease (as are Green's Workings to the south), and any further work undertaken in this area should be after an appropriate agreement with the owners of these leases has been reached. The Frazer Mine lease was the subject of a Joint Venture agreement between Paringa and Comstaff between 1979 and 1984, called the Godkin Prospect. P. Roberts visited Paringa's office in 1985 and assessed all the Joint Venture data. A memorandum on this is included as Appendix 6. The six diamond drill holes completed on the Godkin Prospect (best results 1.2m at 1.50% Sn and 0.7m at 6.94% Sn), are probably located in the Comstaff coreshed at Zeehan and should be relogged and re-assayed as part of a follow-up programme in this area. Also, a deep-looking EM survey, if completed as part of a helicopter supported field programme in spring, 1989, should enable the generation of drilling targets in summer. Drilling these

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holes may or may not be a helicopter job depending on their collar positions relative to the Northeast Dundas Tramway, which runs through the Green's Prospect-Frazer Mine area.

(iii) Near the Curtin-Davis Consols workings. This area has a well developed geochemical anomaly over the Montezuma Fault, but has no significant magnetic anomaly, apart from a large, wide, magnetic high approximately 200-300m east of the Fault. This area was drilled by E.Z. who completed two short diamond drill holes in the early 1980's. Thse holes should be re-logged and re-assayed and a deep-looking EM survey should be completed over the area this spring, to test for the possibility of buried Renison-style mineralisation. Any anomalies found could then be drilled, wih helicopter support during summer.

The Duck Creek prospect, which lies on the southern end of the Montezuma Grid has a strong geochemical anomaly, but is magnetically quiet, apart from a small high over the gossaneous dolomitic conglomerate. The Prospect was the subject of two diamond drilling programmes, both of which failed to detect significant tin mineralisation. The potential for carbonate-replacement tin deposits remains high at depth and outside the drilled areas however, and a deep looking EM system would be the best method of testing for the presence of Renison-style mineralisation. The Montezuma Grid would have to be extended southwards for approximately 1.0km to fully test the Prospect. If the EM survey was completed in spring this year, then drilling any produced anomalies could be undertaken during summer. Also, all the previous drill holes should be re-logged and where appropriate, re-assayed.

Regionally, the E.L.'s are at present being tested by a detailed airborne magnetics survey. This is expected to help locate the southern extension of the Rosebery Fault past Moores Pimple (Figure 57), and this structure must be regarded as highly prospective after this season's field work. The other main structures that should be located from this survey are the southern extensions of both the Grand Prize structure (south of the Dundas area) and the Montezuma

Fault (Figure 59). All of these areas occur on the rugged, heavily timbered northern and western slopes of Mt. Dundas and they should be explored in a similar fashion to the programmes completed this field season on the Montezuma and Rosebery Faults; i.e. helicopter supported gridding, geological mapping, magnetics, gradient array I.P. (for potential gold mineralising structures) and soil geochemistry (for potential Renison-style tin mineralisation). This work should be undertaken as part of a major helicopter field programme, this summer.

Other areas that require further work on E.L.'s 101/87 and 13/88, include the East Renison area and the East Mt. Dundas area. The Montezuma Fault, appears to be trending northwards into the East Renison area and this should be the subject of further field work, possibly by gridding, mapping and soil geochemistry. Also, the Exe Proprietary workings were found to have significant tin mineralisation and these should be the subject of a further examination. The East Mt. Dundas area is relatively unexplored compared to other areas on the E.L.'s and has the potential to host both VMS mineralisation and structure-related gold mineralisation. This area should be stream sediment sampled and reconnaissance geologically mapped soon, in order to bring it up to a possible gridding stage. Vehicular access is possible in both the East Mt. Dundas area and the East Renison area.

A summary of the field programme proposed for E.L.'s 101/87 and 13/88 is given below:

a) Regional

(i) Compilation and assessment of the airborne magnetics survey. Location of southern extensions of the Montezuma, Rosebery and Grand Prize Faults.

(ii) Gridding, geological mapping, magnetics, gradient array I.P. and soil geochemistry over these fault extensions, in the North and West Mt. Dundas areas.

(iii) Reconnaissance geological mapping and stream sediment sampling in the East Mt. Dundas area. Possible follow-up gridding.

(iv) Reconnaissance geological mapping in the East Renison area. Possible follow-up gridding.

b) Montezuma Grid

(i) Contact the two mine lease holders and negotiate agreement to complete work over Green's Prospect and the Frazer Mine.

(ii) Re-log and re-assay drill core the Frazer Mine and Curtin-Davis Consols Mine areas.

(iii) Deep E.M. survey over the Green's Prospect - Frazer Mine and Curtin-Davis Consols Mine areas.

(iv) Follow-up drilling, approximately 600-700m.

c) Duck Creek Prospect

(i) Re-log and re-assay all drill core from the Duck Creek area.

(ii) Extend the Montezuma Grid southwards approximately 1.0km (or further, depending on the results of the airborne magnetics survey) and complete a deep E.M. survey over the prospect.

(iii) Follow-up drilling, approximately 600-700m.

d) Ring River Grid

(i) Complete geological mapping and rock-chip sampling on the infill grid lines.

(ii) Close spaced wacker power-auger geochemical sampling programme over the anomalous fault-footwall area on the grid.

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(iii) Follow-up drilling, approximately 600-700m.

Most of the above work should be carried out during the spring-summer field season of 1989/90. Much of the field work will be helicopter supported. The proposed programme is expected to cost a total of $730,000. A detailed proposed expenditure is given in Appendix 7.

7. REFERENCES

BLISSETT, A.H., 1962. Explanatory Notes, Zeehan 1 Mile Sheet. Tas. Geol. Surv. Explan. Report, p272.

BROWN, A., 1986. Geology of the Dundas - Mt. Lindsay - Mt. Youngbuck region. Geol. Surv. Bull, 62, Tasmanian Dept. of Mines.

CARTWRIGHT, A., 1988. E.L. 21/86 Howards Road Annual Report, 1988. Unpublished RGCE report.

DISCALA, L., 1974a. Summary Review of Exploration in the Dundas Area of E.L. 7/68. West Tasmania, August, 1968 - December, 1973. Unpubl. Geophoto Minerals Report No. 1974/4.

DISCALA, L., 1974b. Final Report, Kosminsky - South Comet Zone of Mineralisation - E.L. 7/68, West Tasmania. Unpubl. Geophoto Minerals Report No. 1974/8.

ELDERS, J., 1967. Progress Report, S.P.L. 20, North Dundas. Unpubl. Renison Ltd. Report.

ELLIS, P.D., 1987. Past Exploration within the area of E.L. 15/76. Dundas, Tasmania. Unpubl. CSR Report No. EMR73/87.

FERGUSON, K.McL., 1970. North Dundas Project, Tasmania (S.P.L. 20) Report on Follow-up work done in 1969-1970 Field Season. Unpubl. NCGFA Report.

FITGERALD, F. and NEWNHAM, L., 1988. Rosebery Exempt Area. Submission accompanying application for 30sq. km area Unpubl. RGCE Report.

FORSYTHE, D.L., 1968. Progress Report SP.L. 20 for 1967-1968 Field Season. Unpubl. NCGFA Report.

FORSYTHE, D.L., 1969. Progress Report S.P.L. 20 for 1968-1968 Field Season. Unpubl. NCGFA Report.

NEWNHAM, L., and FITZGERALD, F., 1988. Burns Peak Exempt Area. Submission accompanying application for Part 3, approx. 14.5sq. km in area. Unpubl. RGCE Report.

ROBERTS, P., 1987. Dundas Exempt Area. Submission accompanying application for 33sq. km area. Unpubl. RGCE Report.

SAINTY, R.A., 1982. Montezuma Joint Venture - Part E.L. 15/76, report on Exploration Activity, 22nd February to 20th November, 1982. Unpubl. EZ Report No. 160MD

SAINTY, R.A., 1983. Montezuma Joint Venture, Part E.L. 15/76, Report on Exploration Activity, 4th May to 4th November, 1983. Unpubl. EZ Report No. 172MD

SAINTY, R.A., 1984. Montezuma Joint Venture, Part E.L. 15/76, Report on Exploration Activity, 30th May to 13th November, 1984. Unpubl. EZ Report No.T197.

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APPENDIX 1

Expenditure 1988/89 and Proposed Budget 1989/90.
for E.L. 101/87 and E.L. 13/88.

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EXPENDITURE 1988/89 TO APRIL 30TH, 1989 (10 MONTHS).

EXPENSES	$
Personnel Costs	84,118
Consultants and Contractors	211,722
Sample Preparation and Analysis	21,449
Stores and Supplies	10,984
Land Acquisition	1,137
Vehicles and Plant Equipment	12,272
Office Costs	5,189
	346,871

PROPOSED BUDGET 1989/90

EXPENSES	$
Personnel Costs	210,500
Consultants and Contractors	253,000
Sample Preparation and Analysis	43,000
Drilling	172,000
Stores and Supplies	13,500
Land Acquisition	2,000
Vehicles and Plant Equipment	21,000
Office Costs	15,000
	730,000

APPENDIX 2

Notes on the Geology of the Ring River Grid,
by W. Herrmann.

NOTES ON THE GEOLOGY OF THE RING RIVER GRID

For: RGC Exploration Pty. Ltd., Burnie, Tasmania.
By: W. Herrmann, RSD 1066, Devonport. 7310

Date: March, 1989.

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(T 07956 - 07962)

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1. INTRODUCTION

These notes are intended as explanatory notes to accompany the 1:5,000 Geological Interpretation Plan of the Ring River Grid.

The Ring River Grid of about 2.5 sq. km. extent essentially covers the valley of Bather Creek between Moore's Pimple and the Ring River.

The grid is not strictly orthographic. The east-west cross lines at nominal 200m. spacings represent a recut of an earlier (ca. 1980) E.Z. Co. grid; They are pegged at 25mslope corrected intervals; the eastings are relative only to individual lines. The NNE trending access line is also pegged at 25m. slope corrected intervals with "Northeastings" based on an arbitrary 4000NE at the Ring River end. Track cutting and pegging was carried out by Rod Purton and associates during December 1988 - January 1989.

The mapping of geological exposures along the cut lines was carried out under contract agreement by W. Herrmann over eight field days during late January 1989. Access was by helicopter from Zeehan to various landing pads near the western margin of the grid and near Williamsford.

All of the cross lines and most of the NNE access track were approximately "surveyed" by compass and clinometer with azimuths recorded in degrees AMG. These were used to plot the position of the grid lines as shown on the plan but it should be noted that the survey was very approximate and in most cases direct sightings from peg to peg were not possible and some guesswork was required.

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2. DESCRIPTION OF LITHOTYPES

(Numbers prefixed "R" refer to rock land specimens, now lodged in RGC's collection.)

Gug: Gabbro

A hyalocrystalline rock consisting essentially of plagioclase and ferromagnesian (probably originally pyroxene) in proportion about 2:1 in a medium grained (1-3mm) hypidiomorphic tabular fabric, usually quite massive in outcrop. Specimen R14 represents an unusually fresh example. It is not magnetic. Most exposures are moderately to intensely altered and although relict fabric may be well preserved R1, 16, 27). The primary minerals appear to be largely replaced by an assembage of carbonate + silica + chlorite sometimes with patchy weak fuchsite staining. The more strongly altered types appear to be rather brecciated and are often associated with irregular quartz and carbonate veining occasionally carrying rare traces of pyrite or chalcopyrite. T07456 of this type does not contain significant levels of base metals silver or gold.

Gub: Altered Basalt

This lithotype typically consists of a pale greenish grey fine grained grannular matrix of quartz with (probably) carbonate and minor chlorite (?) sometimes containing small (1-5mm) dark greenish grey chloritic? ellipsoidal structures resembling amygdales. (Specimens: R13). Outcrops are generally massive or strongly fractured/cleaved but occasionally display rounded pillow like structures of 15-30cm diameter. These rocks appear to be strongly silica + carbonate $\pm$ minor fuchiste altered mafic extrusives (R24A). The fine matrix sometimes shows a faint relict "trachytic" fabric resembling primary fine plagiochase laths. They are commonly associated with extensive irregular white carbonate $\pm$ quartz veining and sometimes with traces of pyrite and chalcopyrite.

Eus: Mafic Volcaniclastic Siltstone

A pale-medium grey or brownish grey thinly bedded siltstone consisting of pale fuzzy cloudy specks or grains in a dominant fine-flinty siliceous matrix. (Specimen R26). Of apparently restricted occurrence, observed only at one locality in association with altered basalt on the Bonnie Point - Moores Pimple track near line 4800N, this appears to represent a silicified or perhaps originally cherty volcaniclastic sediment. The pinkish grey selvedges of the pillow like structures in the altered basalt have generally similar cherty constitution.

Ewf: Medium to Coarse grained Felsic volcanic lithicwacke and Breccia.

These typically consist of medium sized (1-5mm) crystals and fragments of pale creamy-grey plagioclase and minor quartz, common small olive greenish wispy fragments of pumice and occasional fragments of quartzphyric rhyolite in a pale grey murky siliceous matrix. They are generally poorly sorted, non stratified and massive in outcrop although in places are intensely cleaved with associated strong sericitization of feldspars and glass. I interpret these rocks to represent felsic pyro-epiclastic mass flow deposits. (Typical specimens: R6, 8, 10, 19, 54, 57, 73.)

Ewt: Turbiditic/Interbedded Fine grained felsic-lithicwacke and micaceous siltstone.

Rocks in this category occur as thinly interbedded turbiditic sediments ranging from medium to fine sandy to fine silty (Cwts) grain size. The sandy members (Ewts) are essentially finer grained equivalents of Ewf; fine to medium grained wackes of dominantly felsic volcanic provenance (feldspar, quartz, altered vitric ash etc.) but sometimes with minor detrital mica (eg: R21A) suggesting some metasedimentary input. They are of variable dark grey to pale buff known colour, most commonly the latter.

The fine-grained members (Cwts) are fine grained dark grey slaty siltstones often with a phyllitic sheen or small flakes of detrital mica on the plane of bedding.

These are most commonly thinly interbedded on a millimetric to decimetric scale and are interpreted to represent a sub aqueous depositional environment with steady influx of fine clastic sediment of metasedimentary provenance repeatedly punctuated by turbiditic surges of sandy sediment derived from a felsic volcanic terrain.

Specimens: R20, 21A, 21B, 55, 56, 58, 75

Edc Polymictic Conglomerate

A distinctive rock type consisting of well rounded small pebbly clasts generally in the range (5-40mm) dominantly of chert, jasper, siltstone, fine grained wackies, occasional felsic volcanics and rare altered mafic rocks matrix supported in a fine to medium grained sandy quartz rich partly calcareous or felsic volcaniclastic matrix. The clasts often have a flattened lensoidal shape inherent from their bedded sedimentary origin rather than strong deformation but this often gives rise to quite sharp razorback or tombstone like outcrops. Outcrops are generally otherwise massive and not stratified.

Edq: Quartzwackes

These are fine to medium grained pale grey wackes in which the principal granular component appears to be quartz with common subordinate feldspar, mica, felsic volcanic ash and fine lithic grains of dark grey siltstone. They are variably massive to thinly bedded and commonly turbiditically interbedded with fine grained dark grey mudstones. (Cdm)

This turbiditic assemblage is designated Cdt on the geological plan.
Typical examples of the quartzwacke are Specimens R3, 5, 15, 22, 28, 29, 30.
Examples of turbiditically interbedded Cdq/Cdm are R63, R69.

Edm: Argillaceous - Cherty Mudstone/Siltstone

These are very fine grained siltstones and slaty mudstones of variable pale grey, dark grey and occasionally purplish brown (hematitic) colour. They are often thinly laminated, often with fissility parallel to bedding or fine scale transposition of layering where cleavage is oblique to bedding. Typical examples: R4, 43, 61A.

Edv: Felsic Vitric Tuffs

These are pale grey to pale brownish or yellowish grey rather flinty rocks of variable grainsize from very fine grained cherty or glassy to fine wacke (0.5mm).
They appear to be largely of felsic volcanic derivation and in the coarser varieties fine crystal fragments of plagioclase feldspar and glassy shards defining a faint eutaxitic fabric can be distinguished.

They tend to be massive in outcrop but in some places occur as thick beds within the quartzwacke-mudstone sequence.

Typical specimens: R35, 64, 70, 72.

Edp: Quartz Porphyry

A uniform pale whitish grey rock consisting of small phenocrysts (2mm) of grey quartz sparsely distributed (<3%) in a pale siliceous/glassy/aphanitic looking matrix. It is usually quite massive in outcrop apart from common fine intersecting quartz + carbonate veinlets and may be interpreted to be either a rhylolitic extrusive or high level intrusive.

Esi: Silicified Rocks of Unrecognizable Precursors

These are siliceous rocks composed mainly of quartz in a fine granular or saccharoidal fabric, often rather porous or cavenous and generally associated with considerable quartz veining. Outcrops tend to be massive, in some cases prominent and cliff like with heavy superficial iron staining. They gave the general impression of oxidized, leached surface expressions of strongly, pervasively silicified rocks but the original rock type is obscure. Example: R33 (lost)

3. GENERAL DISCUSSION OF STRUCTURE AND STRATIGRAPHY

The dominant structural feature of the area is the Rosebery Fault which has a more or less NNE trend following the course of the upper part of Bather Creek but diverging slightly east of the creek north of about 5600N.

The fault zone is not particularly well exposed on any of the grid lines crossing it except for 6400N where it appears to dip at about 50 to the east. At this location the fault zone appears to be no more than about 0.6m wide and is not associated with notable shearing or brecciation of the adjacent wall rocks. However, southwards of 5600N outcrops observed in Bather Creek are characteristically intensely sheared, brecciated and locally silicified with variable intensity of coarse and fine quartz + carbonate stringer veinlets sometimes associated with minor pyrite or galena and sphalerite mineralization and/or limonitic staining. Analytical samples T7957, 7958, 7959 and 7961 are all from this zone but only T7958 consisting of (high graded) quartz + carbonate + minor galena, sphalerite and pyrite stringer veins and patches at the sheared contact between polymictic conglomerate and grey siltstone is significantly anomalous with 7.9% Pb, 4.2% Zn and 126 g/t Ag. None of the samples contain detectable gold. The Rosebery Fault (Corbett + Lees, 1987) is considered to be a major underthrust fault zone dipping at an average of 40 to the east.

It has been intersected in Tas. Mines Dept. Drill Hole No. MP1 which was collared near The White Spur Track about 400m east of Moore's Pimple. (E.Z. Co. Report No. T222) (1986) Minor carbonate vein systems and breccia infills with minor galena, sphalerite, pyrite mineralisation were intersected in the footwall of the fault. Assays of drill core from this zone quoted in the E.Z. Co. Drill Log (op. cit.) indicate sporadic Pb, Zn, Ag mineralisation but no anomalous gold.

On the Ring River Grid, rocks on the eastern (hanging wall) side of the fault comprise an assemblage of massive medium to coarse grained epiclastic wackes and pumiceous mass flow tuffs and thin bedded turbiditic fine grained felsic wackes and micaceous siltstones. These are part of the White Spur Formation representing the basal part of the Dundas Group (Corbett + Lees, 1987.) In the south eastern part of the grid a thick felsic epiclastic unit appears to be underlain to the west by a fairly thick unit of turbiditic siltstone/wacke. This part of the sequence appears to be generally east forming and steeply east dipping although a westerly facing observed near 4800N/7550E suggests local overturning of the west limb of a tight anticlinal fold parallelling the trend of the fault. In the north eastern part of the grid dips are likewise dominantly eastward with occasional westerly dips implying the presence of minor assymmetric drag folds and vergence towards a synclinorial closure to the east. Corbett + Lees (op cit) report that near Hercules the lower contact of the White Spur Fmn. dips to the west.

On lines J400N, J600N and J800N there are a few anomalous south to south easterly dips implying the presence of an open westnorthwest trending fold? axis which seems to coincide with a slight bend or offset? of the Rosebery Fault and also apparent offset of a minor synclinal axis west of the fault.

Rocks on the western (footwall) side of the Rosebery fault are dominated by an interbedded sequence of quartzwacke and mudstone. E.Z. Co. mapping indicates that these are partly dolomitic and this may be so although I have been unable to obtain a reaction from cold 20% HCl. The quartz wackes tend to become more prominant in outcrop westwards but I suspect that the finer sediments are everywhere present but perhaps subdued in outcrop. North of 6200N there are

several thin units of felsic vitric/crystal tuff which appear to be perfectly comfortable and interbedded with the quartzwacke mudstone sequence. (Corbett (1986) shows a fault bounded slice of quartzwacke-mudstone and felsic tuff between Bather Creek and The Rosebery Fault extending northward from about 5365500N. I consider that the felsic tuffs here are part of the White Spur Fmn).

On the western margin of the grid between 4800N and 5400N there are exposures of distinctive polymictic conglomerate and conglomeratic quartz sandstone. These appear to occupy an anticlinal crest with quartzwacke-mudstones dipping away from the contact on both sides of the anticline implying that the conglomeratic unit underlies the quartzwacke-mudstone sequence. However the complete assemblage is tightly folded about more or less meridional fold axes, few variable facing directions have been observed and I have no strong convictions about the relative age relations or overall younging direction within the sequence. Lithologically this sequence seems to be similar to the "Upper Dundas Group" consisting of "interbedded siltstone, lithicwacke mudstone and conglomerate with minor felsic tuffs" as described by Corbett + Lees (1987, p.53.)

South of line 5000N, most of the spur running up to Moore's Pimple is occupied by an assemblage of altered gabbro, pillowed basalt and minor fine grained cherty volcaniclastic siltstone. Most of the mafic rocks are intensely and pervasively altered to an apparent assemblage dominated by silica + carbonate ± fuchsite but features of the primary igneous fabric are locally preserved. Extensive quartz + carbonate veining is commonly associated and in places carries minor traces of pyrite and chalcopyrite. Contacts between this mafic group and the

adjacent sediments have not been observed. However, the occurrence is almost coincidental with the apparent anticlinal axis centred on the conglomerate unit - There is a possibility that the contact is depositional; ie: conglomerates on mafics. Further detailed mapping, particularly along the Bonnie Point-Moore's Pimple track might help to elucidate this.

In the upper part of Bather Creek there are three small dyke like (?) perhaps connected, bodies of rhyolitic quartz porphyry. The larger (connected?) bodies occur on the western side, close to the Rosebery Fault. The southern one of these is flanked to the west by a narrow strip of felsic vitric and pumiceous lithic tuffs suggesting that the quartz porphyry could represent a co-magmatic lava. The drill log of MP1 by T.C. Lees 1986 (E.Z. Co. Report T222) describes some unusual "shale-rhyolite breccias" in the immediate footwall of the fault which are interpreted (by Lees) to be subaqueously erupted lava breccias. On line 5000N the quartz porphyry contain large xenoliths of polymictic conglomerate upto 2m. in length rather suggesting an intrusive relationship. The presence of a single outcrop on line 5200N near 7800E in a location interpreted to be in the hangingwall of the fault also implies an intrusive origin.

Other Mineralization:

Corbett + Lees (1987) refer to Devonian quartz + tourmaline vein mineralization with associated Cu, Pb, Ag, Au, Sb, Bi and F located within the Rosebery Fault zone in the Rosebery-Chamberlain area. They (op.cit) also refer to auriferous quartz vein prospects within or adjacent to the

fault south of Williamsford. These are presumably the several (7) old workings shown on E.Z. Co's 1:5,000 Ring River-Geology plan, circa 1982, lying along Bookers Creek.

This coincides approximately with the position of the Rosebery Fault as shown by Corbett (1986). Projection of my geological interpretation northwards would place this area within the White Spur Fmn. with the Rosebery Fault located about 300m. further west. However, in consideration of RGC's structurally controlled gold mineralisation exploration rationale for the Ring River grid area, some investigation of the Booker Creek workings would seem to be warranted.

The main Svengali workings clustered about the western end of mine 6400N are developed on a series of carbonate veins carrying traces of pyrite, chalcopyrite and tetrahedite. The higher western prospecting adits expose minor shear parallel stringers of vein quartz with traces of pyrite and galena in sheared slaty mudstones. None of these workings appear to have resulted in significant production. The Svengali area is discussed in more detail in our report on the Dundas Mineral Field. (Herrmann + White, 1989).

4. REFERENCES:

Corbett, K.D. 1986	Map 3. 1:25,000 Geology of the Henty River - Mt. Read Area. Geol. Survey of Tas; Tas. Dept. of Mines.
Corbett, K.D. and Lees, T.C. 1987	"Stratigraphic and Structural Relationships and evidence for Cambrian deformation at the western margin of the Mt. Read Volcanics, Tasmania" Aust. Jour. E. Sciences. V34, No. 1.
E.Z. Co. 1986	E.L. 1/62 - Mt. Black. Annual Report on Exploration Activity in the Colebrook Area for 1986. EZ Report No. T222. Tas. Dept. Mines Open File No. 86-2621.
Herrmann, W and White, M. 1989	The Dundas Mineral Field Report to RGC Exploration Pty. Ltd.
E.Z. Co. C.a. 1982	1:5000 Plan: Ring River Geology.

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APPENDIX 3

A Reconnaissance of Old Workings in the Central and North Dundas Mineral Field, Tasmania,

by. W. Herrmann and M. White

A RECONNAISSANCE OF OLD WORKINGS IN THE CENTRAL AND NORTH DUNDAS MINERAL FIELDS, TASMANIA.

FOR: RGC Exploration Pty Ltd Burnie/Tas.

DATE: May, 1989.

AUTHORS: W. Herrmann (RSD 1066 Devonport - 7310)
M. White (RGC Exploration Pty Ltd, Tas)

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1. INTRODUCTION

This report represents a compilation of the results of brief investigations of twenty-nine abandoned mines and mineral prospects in the North and Central Dundas mineral fields of Western Tasmania, carried out over approximately five weeks field work during February and early March, 1989.

At that time, RGC Exploration Pty. Ltd was undertaking grid based detailed exploration in Exploration Licences 10/87, 13/88 and 21/86 aimed at assessing the potential for structurally controlled (Henty style) gold mineralization focussing particularly on the southern extensions of major known or inferred faults including the North Henty, Rosebery and Montezuma Fault zones. Secondary potential was also considered to exist for replacement pyrhottite and cassiterite mineralization along the Montezuma Fault on the basis of a possible structural connection with the Federal Fault at Renison Bell.

The objective of this reconnaissance of abandoned prospects was to obtain data which would allow an improved understanding of the structural and metallogenic styles of the known mineral occurrences.

The reconnaissance was carried out, under contract arrangements with RGC Exploration, by W. Herrmann ably assisted by M. White.

2. SUMMARY AND CONCLUSIONS

Systematic but fairly cursory investigations of some twenty mine abandoned mines and mineral prospects in the North and Central Dundas areas has led to accumulation of fairly voluminous descriptive geological and analytical data.

The occurrences of the North Dundas field are all narrow, steeply dipping vein type deposits mostly of NNW or NNE orientation but of which the structural control is obscure. Four main mineral assemblages are represented:

* quartz + pyrite + arsenopyrite infilling brecciated/sheared country rock.

* vuggy milky quartz with arsenopyrite ± cassisterite.

* massive siderite veins with associated sulphides including py, cpy, gn, sp, and tetrahedrite.

* veins and shoots of jamesonite.

The former two may be synchronous and laterally/vertically equivalent and there is textural evidence that the latter two represent successive second and third stages of mainly open space filling mineralization superimposed upon the former.

Most of the veins are polyphase and polymetallic. Silver, lead and zinc are widely distributed, nearly ubiquitous, across the field whilst tin, gold and to lesser degree bismuth seem to be clustered, perhaps in a NNW corridor approximating to the position of the Montezuma Fault with a "focus" at abouth the latitude of Green's Prospect.

The preservation of the mine workings at Central Dundas is poor by comparison with North Dundas and the quantity of information obtained allows but a very generalized interpretation of the style of mineral-

ization. Of the prospects visited here most seem to be silver, lead and zinc rich sideritic veins or replacement deposits formed at the dolomitized margins of serpentinite bodies. None of the samples obtained here were anomalous in tin and ony the Platt Prospect yielded slightly anomalous gold up to 0.13g/t.

3. NORTH DUNDAS MINERAL FIELD

The greater portion of the mineral prospects investigated lie on the Godkin Ridge. The rediscovery and access to these was greatly assisted by the detailed "1:400" and "1:200" geological plans of Forsythe (1969) which show the workings and the old pack tracks, many of which are still in good condition thanks to the maintenance carried out by the Queenstown venture Scouts.

The 1989 RGC Exploration grid is at least in the southern parts a recut of the old New Consolidated Goldfields grid (ca. 1968) and this has enabled fairly accurate plotting of the workings at 1:5,000 scale on Figure 1.

Access to the prospects at higher elevation was facilitated by helicopter to landing pads at two locations on Godkin Ridge whilst access to the lower northern areas was mainly via the N.E. Dundas Tramway.

3.1 Wallace's Prospect

Wallace's Prospect is located near the upper valley of Frazer Creek. It is relatively accessible on foot via Wallace's Tram from Confidence Saddle or via the Carbine Hill Track from Dundas (approx 1½ hrs walking time). Alternatively if helicopter access is available the closest landing pad is on the crest of Godkin Ridge near line 4700N and from there the venture Scouts Moore's Pimple to Frazer Creek Hut walking track provides the best access.

There are three main workings; refer to Figs. 1-6 for locations.

The Eastern Workings (Fig. 3, 4) consist of two adits and two small open pits developed on a lode formation trending 350-355° and dipping at 70° E.

The small southern pit exposes a lode about 0.3m wide between

well defined walls of grey slate and minor quartzite extensively veined with small stringers of pyrite and quartz and pyrite. The main body of the lode here consists of intensely brecciated country rock with infilling and silicification by white and bluish grey quartz, pyrite and lesser arsenopyrite. (eg: specimens W1, W3, W8) This material is transected longitudinally and obliquely by numerous small veinlets and veins of jamesonite, generally less than 20mm, in thickness, (eg: Specimens W3, W4, W8).

There is a fairly massive vein of jamesonite up to 70mm thick lying parallel and close to the eastern hanging wall of the lode formation (Specimen W2). There is good evidence on mesoscale that the jamesonite is a late stage introduction associated with reopening/fracturing of a pre-existing quartz + pyrite + arsenopyrite lode. The 0.3m width of the lode here was chip sampled as T7966.

The northern pit or open cut connects to the upper adit. The north end of this pit provides a good exposure of the lode which here is about 0.9m in thickness. The bulk of the lode is of the quartz + pyrite + arsenopyrite + brecciated wall rock type (eg: Specimen W6).

Immediately against the footwall there is a vein or lens of near massive pyrite (W7) up to 120mm thick and pinching down dip. The central part of the lode formation is occupied by an irregular vein upto 250mm wide composed of massive jamesonite and tetrahedrite (Figure 4). Specimen W5 shows the western contact of this massive vein. Again the jamesonite and tetrahedrite appears to post date the quartz + py + aspy. I suspect that the massive pyrite veins represent an intermediate stage in the paragenetic sequence. The lower adit intersects the lode at about 11 metres below the surface exposure; only short drives have been developed north and south on the lode which here consists of quartz + pyrite + arsenopyrite in an 0.4m wide zone of brecciated/silicified country rock dipping at 70°

to the east. There is a 60mm, wide vein of near massive jamesonite close to the footwall side. The full 40cm width was sampled as T7967; it contain's an exceptional 4660g/t Ag.

The five rock chip samples from this lode are all moderately anomalous or rich in:

Copper	: 0.07 - 3.6%
Lead	: 1.25 - 23.05%
Zinc	: 0.18 - 2.0%
Silver	: 42 - 4660g/t
Gold	: 0.17 - 0.46g/t
Arsenic	: 1.1 - 4.2%
Antimony	: 0.4 - 11%
Tin	: 0.09 - 0.35%
Bismuth	: 10 - 380ppm

Copper and lead values are positively correlated with the jamesonite rich portions of the lode; tin and bismuth likewise but rather more ambiguously. There is a limit of an negative ? correlation between gold values and the jamesonite rich lode.

B.P. Thompson (1951) visited this project (at that time being worked by N. Higgins under M.L. 134M/47) and reported that the main (northern) open cut had worked a lens of massive jamesonite 40 feet long and up to 32 inches wide which pitched steeply to the north. Apparently, about 20 tons of high grade ore had been produced.

About 300m north west of the eastern workings described above there is a small open stope or trench on the immediate north bank of Frazer Creek which we informally termed the western working. It consists of a short trench at present only about 2m deep but with a considerable pile of mullock adjacent suggesting it may once have been deeper; (Ref: Figure 5). The lode formation is about 0.55m wide at the northern end and at an orientation of 325°/75E which is clearly cross cutting with respect to

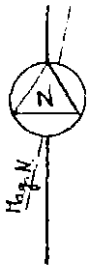
layering in the wall rocks. About halfway along the trench the east wall seems to be offset by a steep NE trending fault ? and south of this trends northerly with a steep westerly dip. The lode consists of brecciated blocks and slices of country rocks ("20%) with rather massive infilling by dark sphalerite (30%), pyrite (20%), quartz (20%), asrsenopyrite (5%) and galena (5%). The galena occurs in rich patches mainly near the hanging wall side. The lode at the southern end has pinched to about 0.3m width and is of similar constitution perhaps with a little more arsenopyrite.

Chip/channel samples representative of both faces (T7968, 7969) reflect the high sphalerite content (9.5 - 15% Zn) and are anomalous in gold. (0.63, 0.92g/t Au respectively). Jamesonite was not observed here and this is reflected in the low (0.1%) Sb values; Sn is still significantly anomalous in the range 370-630ppm but Bismuth has dropped below the detection limit (10ppm).

Adjacent to the Frazer Creek Scout Hut about 70m west of above there is an extensive mullock dump derived from three adits driven northeastwards into the hill at vertical intervals of about 5 metres. The two lower levels are not accessible; their backs near the portals are not in rock but appear to be timbered and re-covered by mullock - now in a dangerously unstable condition.

The upper level is a short cut resembling the approach to an adit portal but not extending into a drive. The cutis about 1m wide trending at 30° with a 70° westerly dip. The hanging wall is of fairly massive quartzite and minor sheared black slate intensely veined with quartz and minor pyrite. The footwall is of sheared dark grey slate with abundant (2%) disseminated and stringer pyrite with some patches of pyrite + sphalerite + quartz still adhering to the wall. In the end face the "lode" is not well defined but seems to consist of sheared wall rocks with patchy quartz veining and massive compact granular pyrite

607072 | FIGURE 3

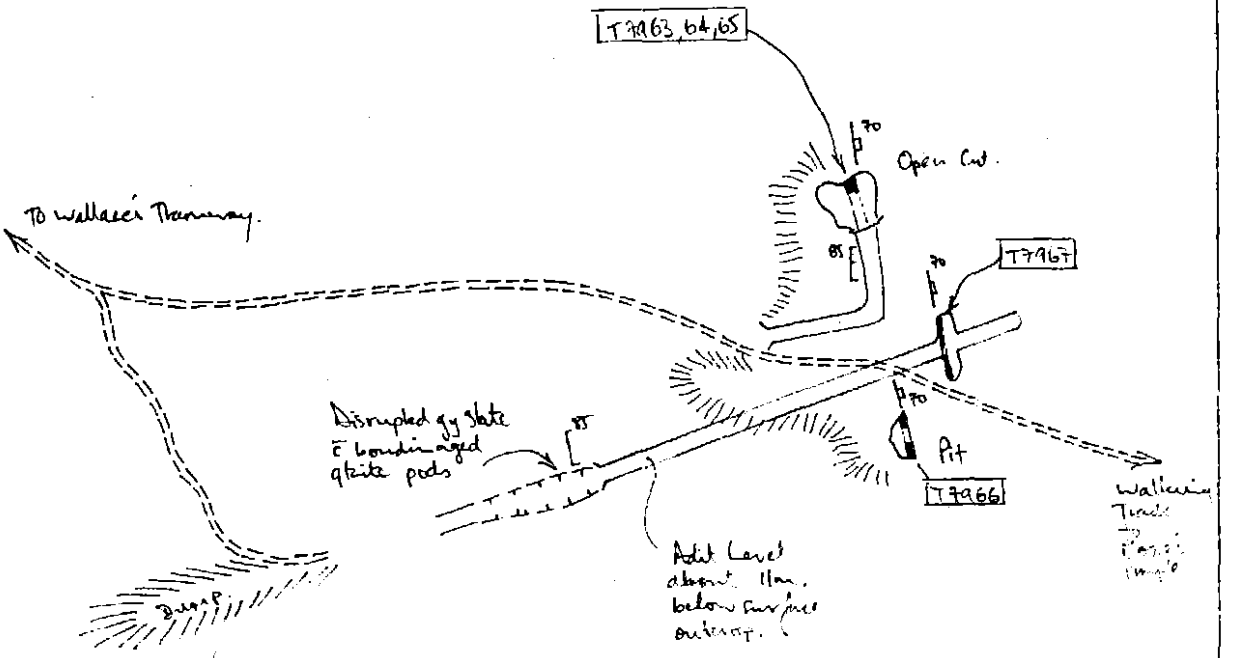


WALLACE'S PROSPECT : EASTERN WORKINGS

PLAN 1:500 Scale

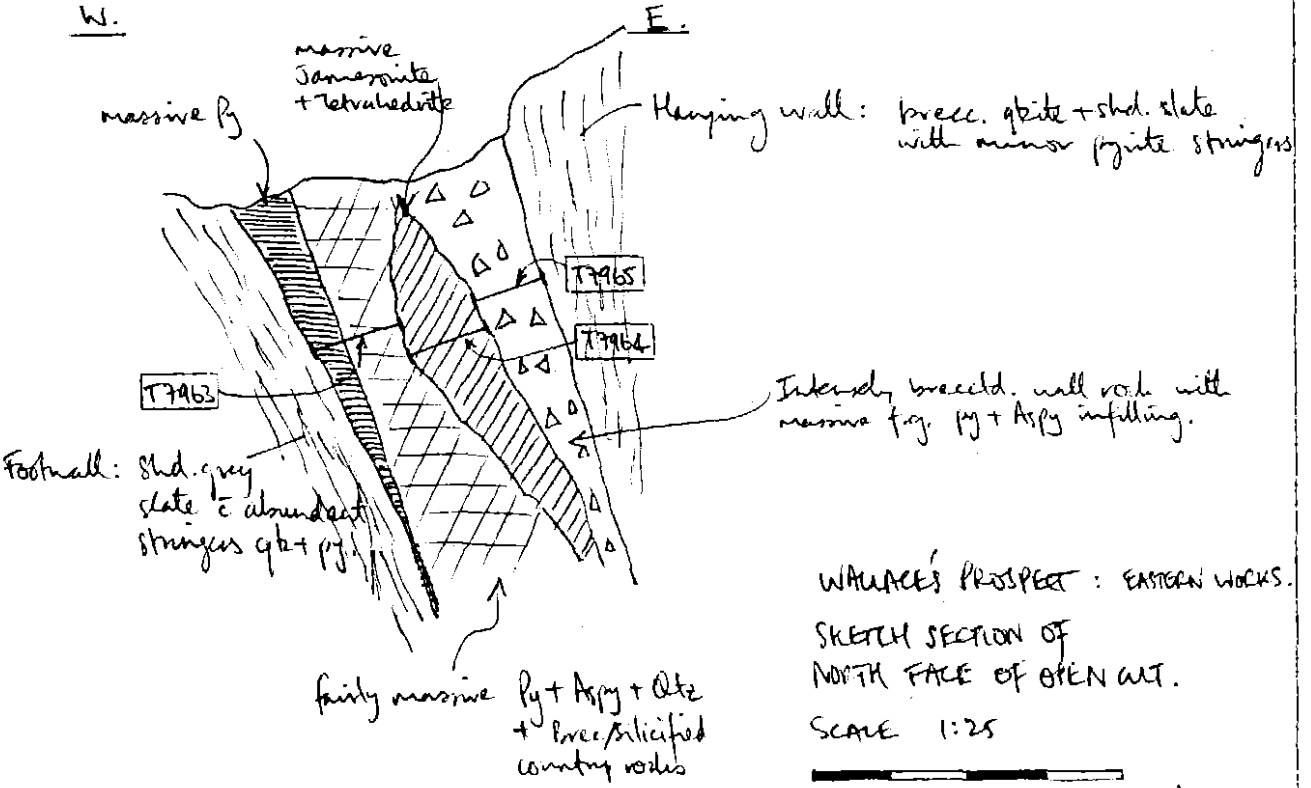
0 5 10 15 20 metres.

SH. 15/2/89.



5 cm

FIGURE 4



WALLACE'S PROSPECT : EASTERN WORKS.

SKETCH SECTION OF NORTH FACE OF OPEN CUT.

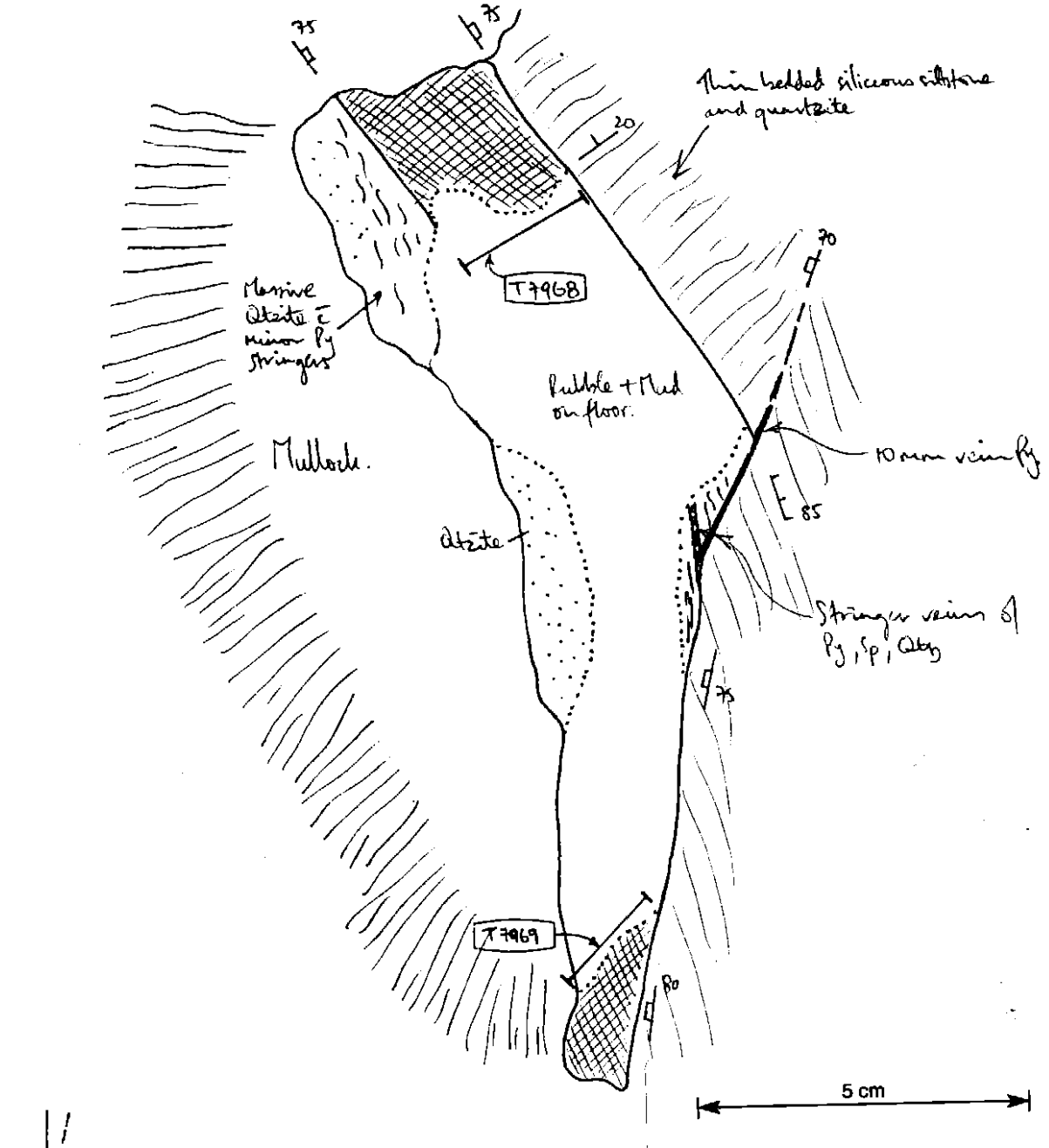
SCALE 1:25

0 0.5 1.0 metres

SH. 15/2/89

607073 FIGURE 5.

072





WALLACES PROSPECT — WESTERN WORKINGS.

SKETCH PLAN OF TRENCH.

SCALE 1:25

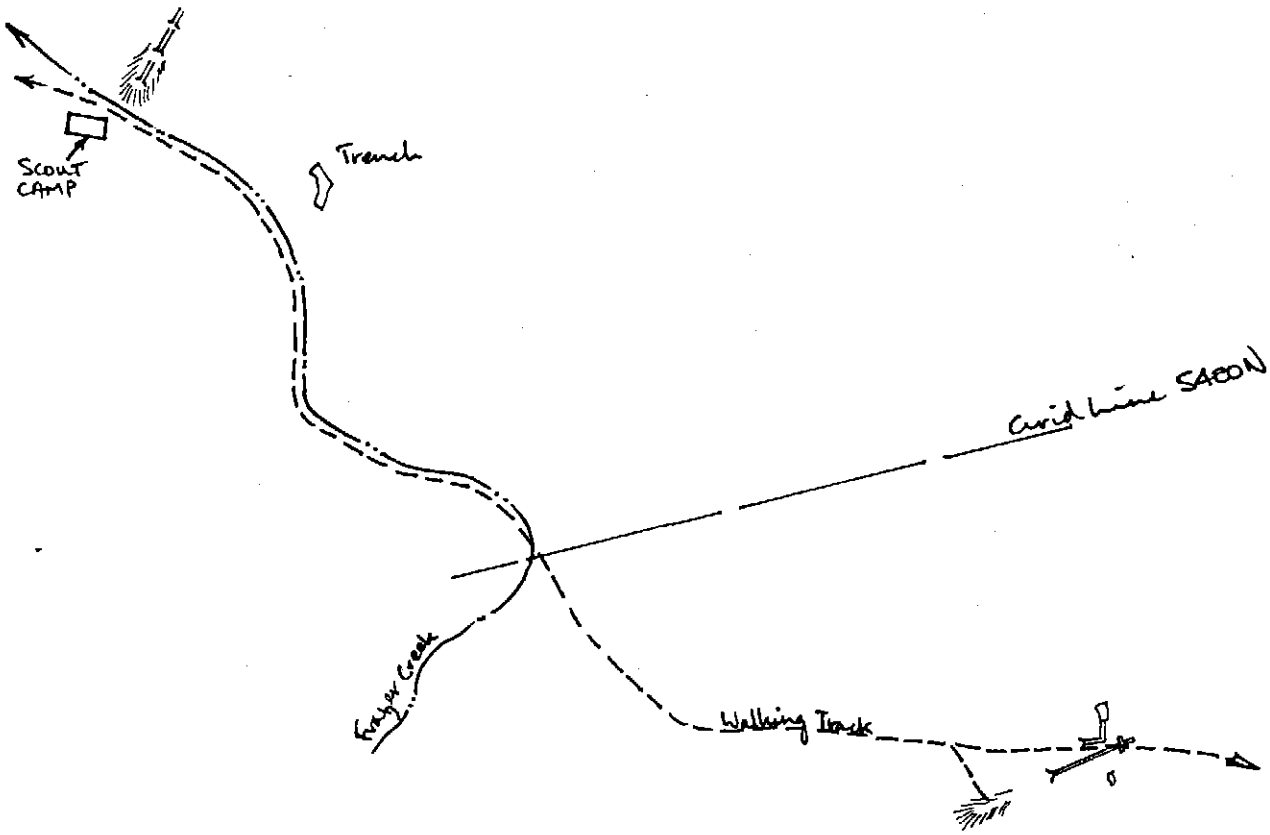
0 0.5 1.0 metres.

13/2/89

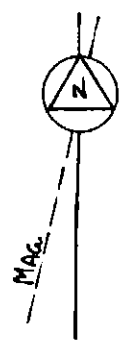
073

607074

FIGURE 6



5 cm



WALLACE'S PROSPECT.

LOCATION DIAGRAM SHOWING LAYOUT OF WORKINGS.

SCALE 1:2500

0 50 100 150 metres.

(Adapted from B.P. Thompson 1951.)

15/1/89.

mineralization averaging perhaps 15% but no other sulphides were noted. This face was sampled as T7970; it contains a little silver (27.5g/t) but unlike all the other samples from the Wallace's area it is devoid of gold and is relatively low in the metals assayed. The lode is not exposed at the 2nd level but wall rocks exposed in the approach to the portal are cleaved dark grey slate and minor quartzite with the cleavage oriented at 340/80W - vertical, oblique to the direction of the lode formation.

Thompson (1951) referred to these workings as the "sawmill pyrite lodes" and reported that they were associated with chalcopyrite, galena and sphalerite. He quotes an assay of "a grab sample from an old heap of bagged, picked ore in the adit drive" running at 10% Pb, 9.9% Zn, 33oz/ton Ag and 2.9% Sb.

There is not much mineralized rock on the dumps but there is some quartz vein material containing Py, Aspy, Sp, trace gn and possible jamesonite (Specimen SC2).

There is also some sheared black slate carrying abundant (10-15%) anastomosing stringers of pyrite and quartz, (Specimen SC1).

From the limited exposures observed, it may be concluded that the three lodes at Wallace's Prospects are transecting shear or fissure filling vein type occurrences with megascopic evidence (at the Eastern workings) for initial quartz + pyrite + arsenopyrite dominant mineralization cementing the brecciated country rock with subsequent re-fracturng and jamesonite dominated vein filling, within the same "lode" structures. On slender evidence, it seems that gold mineralization accompanied the earlier mineralising phase.

3.2 Evenden Prospect

The Evenden Prospect is located west of Frazer Creek about 300m

north of Carbine Junction and is easily accessible by the old pack track running northwards from the junction (Fig. 1).

About 80m north of the junction and just east of the track is a short adit with a long cut to the portal trending at 040° AMG. The adit itself is only about 2m long and degenerates at the face into a small burrow. The wall rocks are of weathered, buff coloured, massive cherty siltstone (?) with strong iron staining particularly on the eastern wall. The lode formation is not clear and there is no substantial mullock.

There are a few blocks (0.3m) of ferringuinous gossan with limonitic boxworks and minor yellow "jarosite" staining lying near the entrance to the cut. T7971 represents a chip sample form these blocks. It assayed (a surprising) level of Pb (11.6%), Ag (890g/t), As (5.0%) and Bi (3900ppm). Sn is relatively low at 70ppm and gold is below detection in this sample.

At the Evenden Prospect proper, just south of the Frazer Creek crossing, there are two adits. The upper (southern) adit is driven at 195° (AMG) but looks unsafe with about 0.3m of sludge on the floor and the timber sets and back partly collapsed. It was not inspected beyond the portal.

At the portal the lode appears to be about 0.6m in width with a clear footwall trending at 015°/85°W. The footwall is of fairly massive sandstone and interbedded laminated grey siltstone with fissility parallel to bedding oriented at 345°/85°W. The hanging wall side is of very sheared black slate with the principal plane of shearing trending approximately at 345° but with a flatter dip of around 60° to the west.

The lode is rather oxidized but seems to consist largely of sheared country rocks and heavy siderite veining with a fairly massive 100mm, wide vein of galena adjacent and subparallel to the hanging wall side. Within about 0.2m of the lode, the

footwall sandstone is intensely veined with stringers of pale straw coloured carbonate.

Material on the mullock dump is mainly sideritic, with very little quartz, containing veins, patches and blebs of galena, sphalerite, pyrite and minor chalcopyrite. Two rock chips (grab) samples from this mullock of galena rich siderite and relatively sulphide poor siderite (T7972, 7973 respectively) indicate 20% Pb, 14.8% Zn, 548g/t Ag in the former and low As, Bi, Sb, Au (0.01g/t) in both samples. Surprisingly, the galena rich siderite sample reports 112ppm Sn.

The lower adit, at a level about 8m below the above, is located about 30m to the north east. It is quite inaccessible, filled almost to the back with sludge and was not inspected.

It is driven on bearing of 175° AMG and it's location and bearing suggest that it was not driven on the same lode as the upper adit. There is no useful exposure at the portal which seems to be in weathered clayey siltstone. There is a small mullock dump here, largely overgrown, including some dark grey sandy siltstone with veins of quartz + carbonate with minor pyrite as dissemination in the host rock and in the veins. This was not sampled.

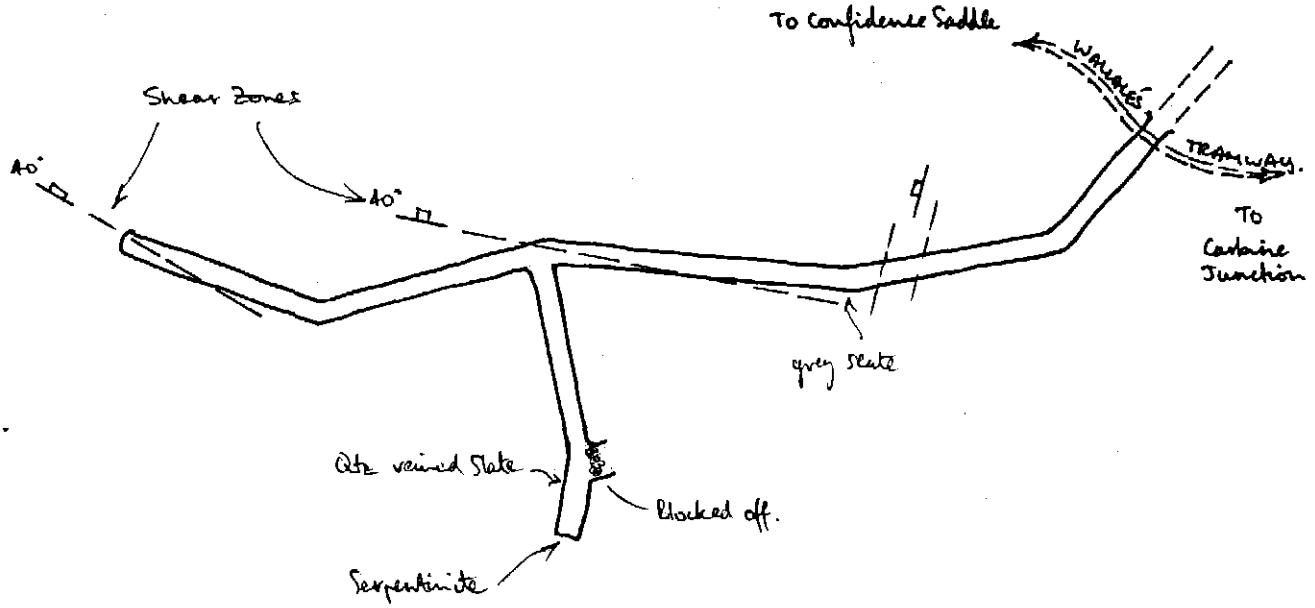
3.3 Lower Ramsdale Workings

On Wallace's Tramway about 100m west of Carbine Junction there is a massive blow of brecciated/fractured silica with heavy limonitic veining, cementation and surface encrustation. A chip sample of the outcrop, T7974, was found to be weakly anomalous in Pb, Zn (both 0.2%), Ag (2g/t) and As (1530ppm).

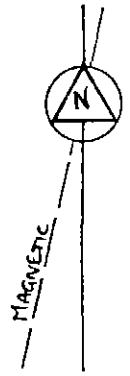
Just below the tramway adjacent to this outcrop there is an adit driven in a general westerly direction for 71.7m (Fig. 7). Rocks exposed in the walls and back are very cruddy, clayey and mostly unrecognisable but appear to include grey slate and some

FIGURE 7.

077



5 cm



LOWER RAMSDALE ADIT

SKETCH PLAN

1:500 SCALE

0 10 20 metres

15/3/89.

serpentinite. There is general strong shearing prominently on flattish NE dipping planes and steeper westerly dipping planes. I could not recognise any distinct lode structure nor rock type similar to the surface outcrop. Outcrops not far along the tramway to the east consist of chert rich conglomerate.

It is interpreted that the sheared rocks in the adit represent the tetonic contact zone between sediments and the small mafic igneous body here (Forsythe, 1969 400' to 1" geological plan). The limonitic outcrop appears to represent a surficial psuedo gossan developed over the sheared zone but does not appear to represent significant mineralization.

3.4 Ramsdale Workings

Our party spent an hour or so in search of the Ramsdale Propsect thought to exist near the Carbine Hill track about 270m south west of the junction as reported by McIntosh Reid (1925) and plotted by Forsythe (1969) (1" to 400' Plan). This area, however, is heavily overgrown with cutting grass etc. and in the absence of more detailed information our search proved fruitless.

3.5 Great Northern Creek Mine

The abandoned workings of the Great Northern Creek Mine are located just north of Wallace's Tramway about 800m west of Carbine Junction (Fig. 1).

The southern adit, just below the Tramway, is driven for about 10m on azimuth 130° in grey medium grained quartzwacke and interbedded siltstone which dip at about 40° to the north. The back of the adit is caved all the way to the end face but is still accessible (trenchlike).

The end face exposes a lode formation consisting of brecciated and weakly silicified quartzwacke with disseminations and thin

stringers of galena and sphalerite totalling about 5-10% of the volume. The lode appears to be fairly well defined and about 0.3m in width oriented at 350/85W.

Sample No. 10188 represents a chip sample across this lode in the face, it contains anticipated levels of Pb, Zn, Ag but is devoid of gold. It is weakly anomalous in As, Sb, Sn and surprisingly also in Bi and W.

Downslope, along the general line of lode are several shallow trenches and further down on the east bank of the creek another short adit adjacent to a small water filled shaft.

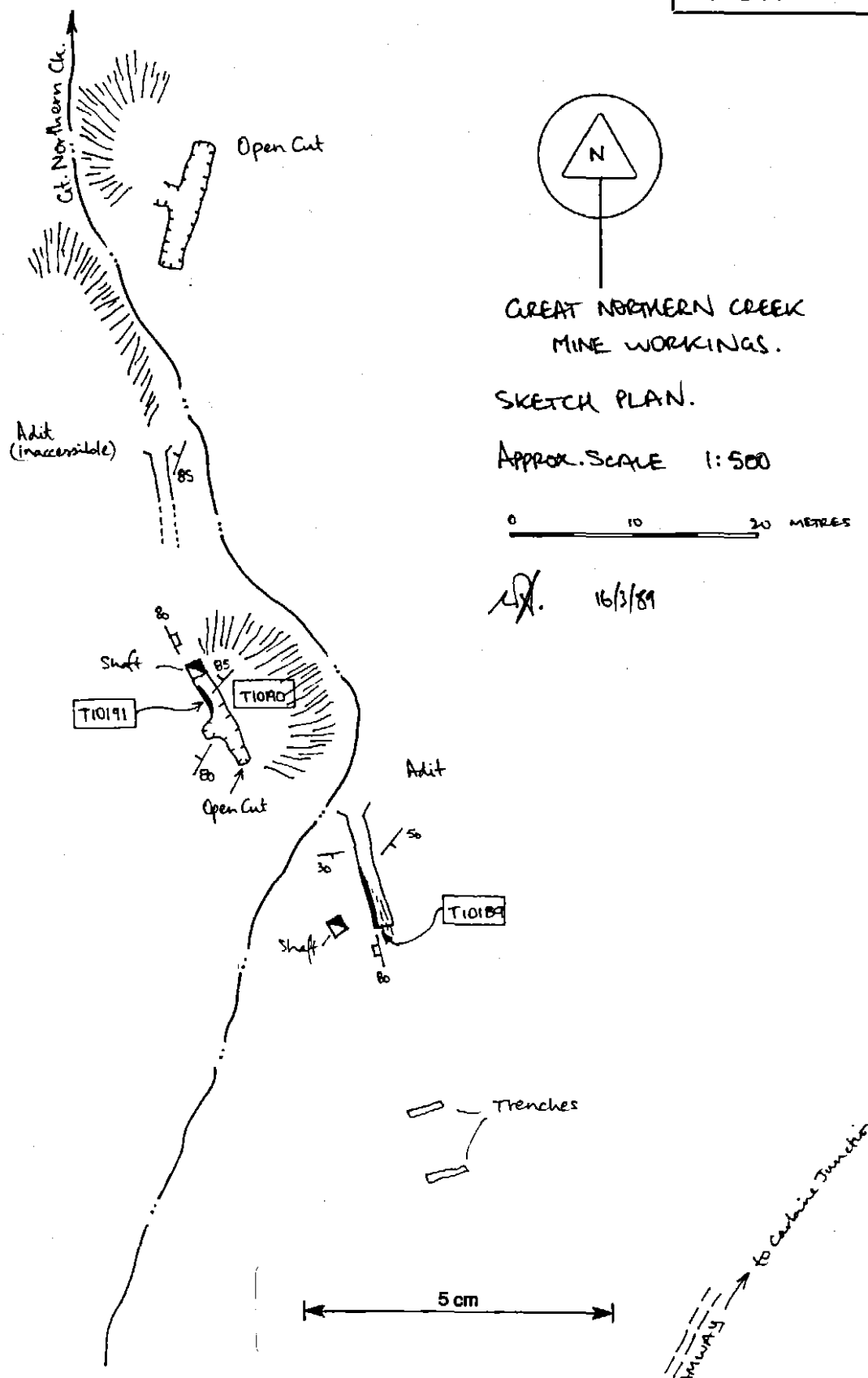
The adit is caved to the surface and trench like but appears to have been driven along a lode formation which has a well defined western (hanging) wall trending 345/80W. Country rocks are similar to those at the southern adit, i.e.: laminated quartz-wacke and grey siltstone, here dipping to the south and south east. The "lode" consists of brecciated country rock with irregular stringers and masses of galena and sphalerite generally averaging about 10% sulphides over a width of about 1.0m increasing to perhaps 20% over a 0.15-0.2m zone close to the hanging wall. The footwall is not well defined, stringers of sulphide and impersistent veins of carbonate + quartz penetrate both walls.

Sample No. 10189 is representative of the typical lode formation here, chip sampled in situ. It contains high Pb, Zn, Ag.

Just across the creek another shaft and connecting open cut are oriented at 335° with dip 80° to east and therfore appear to have been developed on a lode separate to the one described above. The lode here is completely stoped out but there is a remnant consisting of a 100mm thick lense of massive pyrite still adhering to part of the western wall. This pyritic material sampled as T10191 is only weakly anomalous in base metals and silver etc. but is rather enriched in arsenic (0.8% As).

FIGURE 8

080



N

GREAT NORTHERN CREEK
MINE WORKINGS.

SKETCH PLAN.

APPROX. SCALE 1:500

0 10 20 METRES

16/3/89

Materials on the adjacent dump (represented by specimens GN 1-4 in RGC collection) appear to indicate that the lode was comprised of an assemblage comprising an early phase of brecciated country rocks with semi pervasive silicification associated with disseminated to massive pyrite and arsenopyrite mineralization succeeded by cross cutting stringers and veins of siderite + galena + sphalerite.

A (high graded) sample from this dump (T 10190) contains > 20% Pb and Zn, 43.5g/t Ag, 1.1% As and significantly anomalous 167ppm Sn and 3210ppm W.

Similar mineralization assemblages (not sampled) occur on the dumps further downstream but the lower adit is inaccessible (flooded ~0.6m deep) and the northern "T" shaped open cut does not clearly expose any lode formation.

The Great Northern Creek mineralization is distinctive by its anomalous level of Tungsten which seems to correlate positively with arsenic contents. The low As and W values in T10189 of galena sphalerite stringer type suggests that the former metals (and by association Sn also) were introduced during the initial quartz + pyrite + arsenopyrite phase of mineralization.

3.6 Curtin Davis Consols

The main workings of Curtin Davis consols consist of a shaft and small cut located about 30m east of the old Helipad/campsite on the eastern fall of Godkin Ridge about 350m NE of the Frazer Creek (Scout) Hut.

The shaft is partly caved and filled with water to about 3m below surface. It appears to have been sunk on lode with the long side oriented at 350° and inclined at 75° to the east.

Mullock around the shaft consists largely of fine grained dark grey siliceous-sintery (?) pyritic siltstone (eg: Specimen CD4

in RGC collection). Similar siltstone appears to form the hanging (east) wall of the gossanous lode in a small cut 3m south of the shaft. The mullock also includes much sulphide rich material presumably ex lode, consisting of massive to granular grey quartz with much pyrite, arsenopyrite and some very dark brown mineral considered (in the field) to be sphalerite. This was sampled as T7978 and representative specimens are CD6, CD7 (in RGC collection). The assay shows low but anomalous Cu, Pb, Zn (0.2, 1.7 and 0.5%), high Ag (220g/t), As (10%), Sn 0.23 and Au(0.81g/t), Bi and Sb are also modestly anomalous. In view of the lowish zinc value it is probable that some of the dark mineral taken for sphalerite may be a secondary iron mineral ?

About 15m south of the shaft there is a small cut about 4m long running into the lode from the east side. The end face is fairly clean and presumably represents the footwall, oriented at about 350/75E, and consisting of silicified quartzite with heavy pyritic stringer veining. The lode here appears to be about 1.2m in width and is partly oxidized to to cavernous silica + limonite gossan. The less oxidized patches consist of rather massive compact granular grey quartz with 20-40% pyrite and minor arsenopyrite. A grab sampled of this material in T7977 assayed 285g/t Ag, 0.4g/t Au, 2.7% As, 0.8% Sb and 0.25% Sn.

The hanging wall here consists of bleached silicified quartz-wacke or silicified felsic wacke with 2.5% disseminated pyrite and abundant quartz + pyrite stringers.

At the intersection of the old pack track leading northwards to No. 1 Curtin Davis and grid line 5900N there is a small pit which appears to have been developed on the northward extension of the Consols lode some 60m north of the shaft working. The west wall of the pit is very clear trending 330/75E and appears to consists of intensely brecciated siliceous siltstone (?) with 10-20% disseminated pyrite and irregular stringers of very dark brown sphalerite (Specimen CD 1).

Assay sample T7975 of this material reflects the sphalerite content with 7.6% Zn and 0.35g/t Au, 1.85% As and 0.08% Sn.

The lode exposed in this pit, adjacent to the wall is quite clearly banded comprising 20mm of massive pyrite, then 20mm of massive dark sphalerite succeeded eastwards by 0.6m of compact granular ? quartz with pyrite, sphalerite and arsenopyrite and lesser galena and chalcopyrite.

Assay of T7976 representative of the full width of this complex lode indicates relatively low but anomalous values of lead, zinc, silver, arsenic and tin.

The quartz + pyrite + sphalerite + arsenopyrite dominant lode assemblage of the consols lode together with its anomalous tin and gold levels is similar to that in the small pit of the "Western Workings" at Wallace's Prospect.

3.7 No. 1 Curtin Davis Mine

The workings of the No. 1 Curtin Davis Mine consist of two adits and a couple of shallow pits located in the west bank of a tributary gully of Avon Creek about 400m north of Curtin Davis Consols.

The upper (southern) adit is driven on 265° for 20.5m in massive pale greenish grey fine grained felsic vitric tuff (?) and medium grained siliceous - feldspathic wackes. There is no obvious bedding structure. Near the portal are some flattish quartz veined shear zones oriented at about 350 to 010° dipping about 55° to the east. Minor stringer veinlets of quartz with pyrite, galena, sphalerite, chalcopyrite and arsenopyrite occur here and there along the walls and are intensely developed beyond 18m (from the portal) but it appears that no discrete lode formation has been intersected in this adit. (There is no mullock close to the portal). Specimens CD 9, 10 (in the RGC collection) are representative of the veining but assay samples were not obtained.

In the open pit south west of the portal, the wall rocks are of grey siltstone and felsic vitric tuff ? with a quartz rich lode exposed on the northwest face of the pit. The lode contains considerably varying amounts of pyrite, sphalerite, galena and arsenopyrite but the width and orientation are obscure. Orientation may be about 015° with a steep dip to the east. This face was chip sampled over a 1m width as T7979 of which the assay indicated 2.3% Pb, 9.6% Zn, 96g/t Ag, 0.25g/t Au, 4.1% As and 0.14% Sn.

The lower adit portal is located in the west bank of the creek about 70m north east of the upper adit. From the portal it appears to be driven for about 30m on azimuth of 275° with the possibility of north and south drives at the end. At the time of our visit there was about 0.6m of water on the floor and this together with the unhealthy aspect of fallen timber sets, dissuaded us from closer inspection of the working. The mullock from this adit is located about 20m further downstream and is of great volume tending to support the probability of drives on lode. Most of the mullock appears to be mineralized and it was difficult to find barren specimens of wall rocks but it seems that the principal country rock lithotypes (in order of decreasing abundance) are:

- medium grained felsic volcanic wacke/tuff (~Specimen C11)
- pale greenish grey vitric tuff (Specimen C12)
- dark grey slatey siltstone (Specimen C13)

Assemblages of sulphidic lode are complex and include (in order of decreasing abundance) arsenopyrite, pyrite, galena, siderite, quartz, marcasite (?), jamesonite, sphalerite, chalcopyrite, tetrahedrite (?)

Specimen No. 5 C14-20 are examples. Cross cutting vein relationships in these specimens suggest a complex paragenetic sequence along the following lines.

1. Initial fine scale brecciation of country rocks with semi-pervasive silicification, recementation with quartz accompanied by disseminated pyrite and arsenopyrite mineralization.

2. Refracturing with open space veinlets and veins subsequently infilled by massive siderite, pyrite, sphalerite, galena and chalcopyrite, possibly tetrahedrite. Some indications are that siderite is the first mineral deposited in this stage with the sulphide minerals subsequently introduced in subordinate fractures.

3. Refracturing with development of veins of massive jamesonite (and probably tetrahedrite ?) cross cutting everything else.

Assay samples collected were as follows:

T7980: high graded Aspy rich material, contains 1.7% Cu, 6.4% Pb, 0.5% Zn, 770g/t Ag, 1.1% Bi, 0.02g/t Au, 12.9% As, 2.4% Sb and only 61ppm Sn.

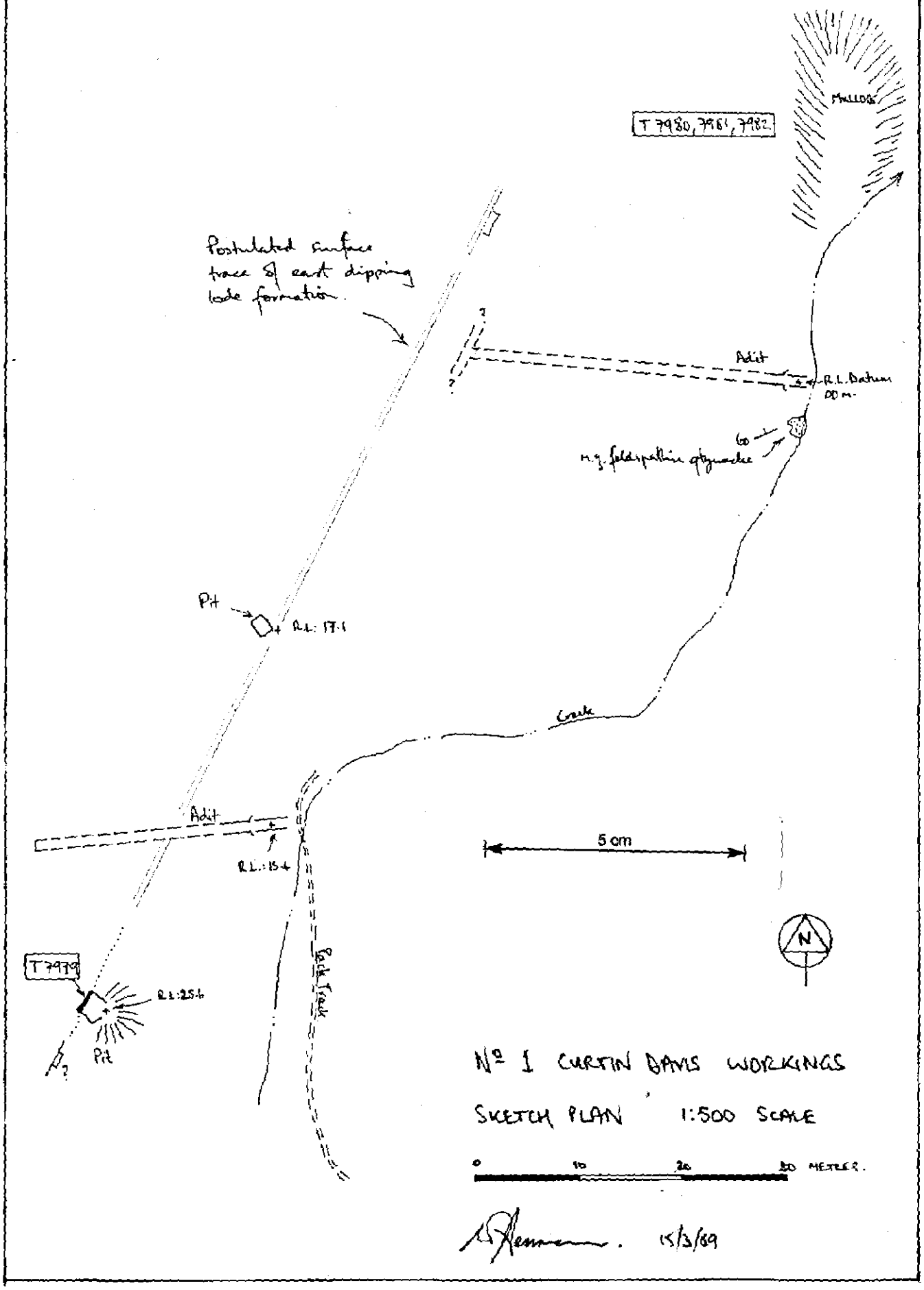
T7981: high graded galena rich material; 0.2% Cu, 31.5% Pb, 0.95% Zn, 1230g/t Ag, 100ppm Bi, 0.02g/t Au, 2.34% As, 0.3% Sb and 55ppm Sn.

T7982: high graded chalcopyrite rich material; 2.6% Cu, 209% Pb, 2.2% Zn, 314g/t Ag, 0.55% Bi, 0.01g/t Au, 9% As, 2.4% Sb and 39ppm Sn.

These results suggest a strong correlation between copper, arsenic, bismuth and antimony which may or may not be real considering the paragenetic sequence proposed. The values for gold and tin are low compared to those of T7979 from the pit near the southern adit. In consideration of the high gold and tin values in the sample set preceding this (from Curtin Davis Consols) one might suspect some laboratory/preparation contamination of assay sample T7979.

607087 FIGURE 9

085



Nº 1 CURTIN BAMS WORKINGS

SKETCH PLAN 1:500 SCALE

0 10 20 30 METRES.

15/3/69

The No. 1 Curtin Davis lode (or lodes) appears to have been intersected by EZ in their 1984 drill hole MZP 258 (on 6100N) (Sainty, 1984; a, b).

Sainty considered that the No. 1 C.D. lode/s intersected in the interval 46.5-58.6m (M7P 258) could be distinguished from the so called Montezuma Fault zone at 162.45-165.75m by the low tin values (50-200ppm Sn) in the former compared with 650-2500ppm Sn in the latter. However, his drill core log records similar sulphide assemblages and modes of occurrence in both zones and I think it likely, in view of the 0.14% Sn in T7979 from the southern pit, that tin may be patchily distributed in both lode systems. (This interpretation is dependent on the validity (non-contamination) of assay T7979). Microscopic examinations (by CMS, in Sainty 1984 (b)) of specimens from the Montezuma fault zone also indicated a three stage sulphide mineralization assemblages broadly similar to that interpreted from the lower adit mullock specimens (above).

Making allowance for the probable patchy nature of metal distribution in these complex lodes it can be generally concluded that the No. 1 Curtin Davis lode is of similar type to that of the Wallace's and Curtin Davis Consols lodes.

3.8 South Curtin Davis Mine

These workings are located in the vicinity south and west of grid peg 6300N/5050E (Figure 10).

The three shallow pits just south east of the peg appear to have been dug on a northerly trending lode formation at the sheared contact between black slatey siltstone (to the east) and cherty polymictric conglomerate (to the west). Of these, the southern pits do not appear to have found much mineralization but the northern one poorly exposes a quartz + pyrite + arsenopyrite lode of about 0.3m width in sheared slate.

A high graded sample representative of this lode material (from the adjacent dump) was assayed as T7983 and found to contain high As (6%), Bi (1.5%), Sb (2.2%), Ag (1506g/t) and Cu (2.02%). Jamesonite was not identified in this sample and the high Bi, Sb, Ag and Cu are surprising.

The shallow (or caved ?) open stopes to the west trend about 320°. There is a small exposure of bleached siltstone near the head of the cut but at the lower end outcrop is of siliceous polymictic conglomerate which extends southwestwards in small cliffs descending to Frazer Creek. The mullock dump at the northern end of the cut is mostly overgrown with moss, appears to consist largely of conglomerate with a few pieces of massive sideritic lode with variable quartz, pyrite, galena, sphalerite and minor chalcopyrite. Sample T7984 is representative of this material. It contrasts with T7983 in having low, As, Sb, Bi, but (surprisingly) contains 200ppm Sn.

The principal workings, to the south, consist of two adits (of which the lower is caved) and two open stopes. The wall rocks adjacent to the stopes and upper adit portal are of massive polymictric conglomerate with "patches" of, pebbly lithic quartzwacke but no reliable indications of bedding.

The upper adit is extensively stoped out above and below the level from just inside the portal and therefore inaccessible. The lode remaining near the portal is oxidized and gossanous. The trend of the stopes is about 345°/85°E with width varying from 0.6-1.2m. Material on the adjacent mullock dump is mostly of conglomerate sometimes with veins of quartz, siderite, pyrite, chalcopyrite, galena and sphalerite. There is also some oxidized and fresh lode material of which the latter is dominantly sideritic with some quartz, pyrite, galena, sphalerite and trace of chalcopyrite. Sample No. T7985 is representative of this and (apart from the missing zinc value) has broadly similar metal contents to T7984.

The mullock at the lower level is of similar constitution and T7986 represents a high graded sample of sideritic material with much sphalerite, pyrite and galena and minor chalcopyrite. It is notable that all of these sideritic samples are low in Bi, As, Sb but have slightly elevated values of Sn in the range 100-500ppm.

Judging by these observations it seems that the sideritic lode running northwestward from the open stopes near the upper level adit is distinct from the northerly trending pyrite + arseno-pyrite lode exposed by the small pits.

Reid (1925) commented briefly on these workings to record that the vein consisted largely of "tetrahedrite and galena in siderite"and that "about 200 tons of very rich ore was obtained" as well as "about 40 tons of clean galena....from a branch vein".

About 100m to the west of these workings are two further adits driven on another lode running subparallel to the above Figure 10). The upper adit here is driven at 155° and estimated to be about 15m in length but inaccessible due to a water filled winze or underhand stope in the floor commencing about in from the portal. At the portal both walls and the back are in fairly massive conglomerate but there is a 200-300mm wide shear zone on the eastern wall. Hard against the eastern wall of this shear zone is a 70mm band of partly oxidized, massive/brecciated pyrite with possible traces of jamesonite (?) which trends at 335°/82°W.

Sample T7987 is representative chip sample across the entire 300mm width of the shear including the pyritic band. It contains low Pb, Zn and Sn, moderate Cu and Sb and high Ag, Bi and As.

Mullock on the adjacent dump is mostly of unmineralized conglomerate with only a few blocks of near massive quartz +

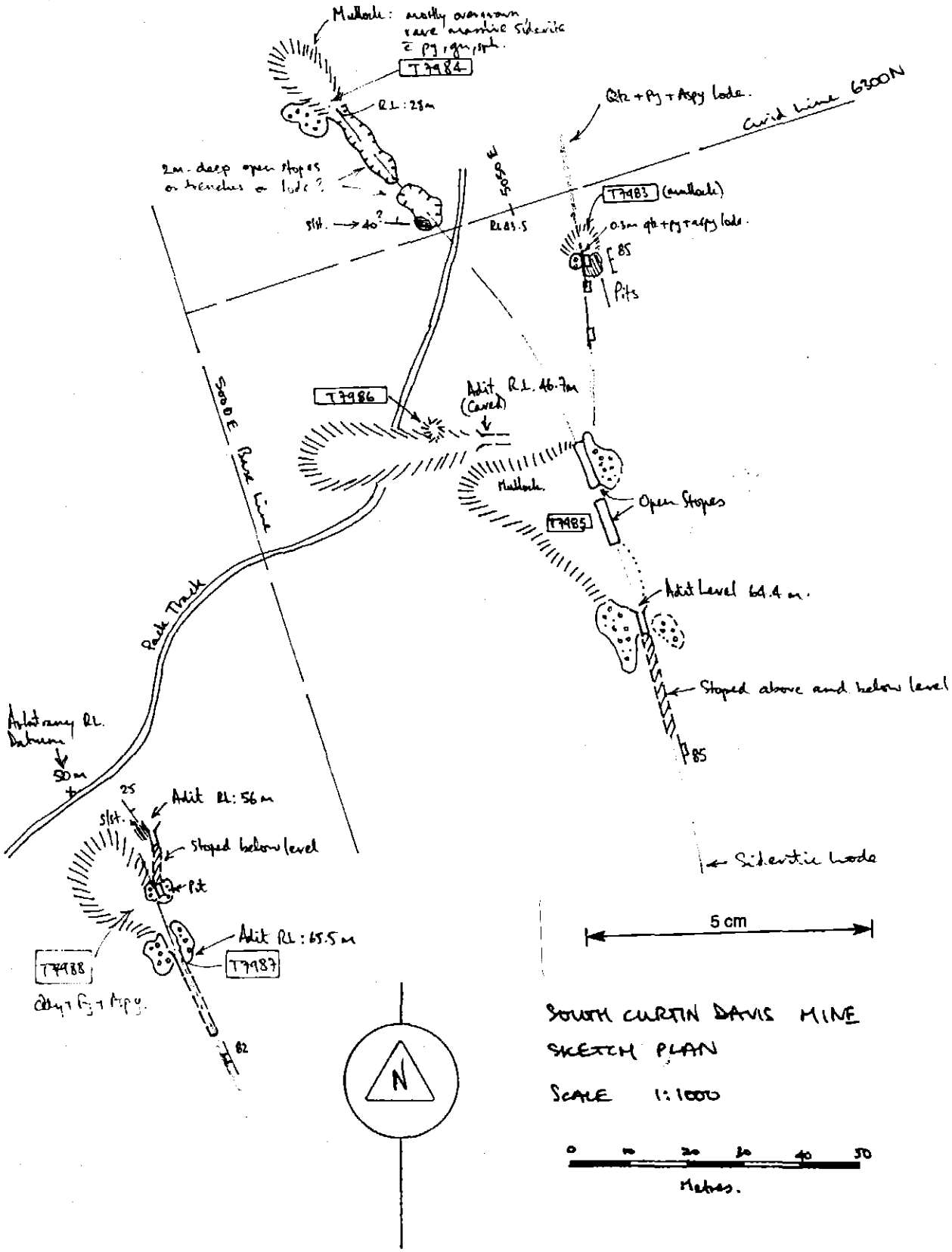
099

FIGURE 10

607091

Geological Reference :

- cherty-siliciclastic polymictic conglomerate.
- f.g. argillaceous siltstone.



pyrite + arsenopyrite; T7988 was a high graded sample of this sulphidic material and the assay shows a similar metal distribution to T7987.

The lower adit is collared at 165° but drifts westward a little beyond about 10m in from the portal. At the time of our visit there was 0.3m of water on the floor and an underhand stope or winze commencing about 5m in form the portal prevented our further access. Country rock at the portal is grey siltstone with bedding oriented at 325/25 NE but no indications of mineralization.

The South Curtin Davis assay samples fall into two groups:

T7983, 87, 88 are: quartz + pyrite + arsenopyrite ± jamesonite with low Pb, Zn, Sn values and high Cu, Ag, Bi, AS, Sb values. The high silver negatively correlated with lead but positively correlated with copper is unexpected but suggests the presence of significant tetrahedrite ?

T7984, 85, 86 are: dominantly sideritic with variable py, gn, sp and cpy containing high Pb, Zn, moderate Cu, Ag and Sn and low Bi, As and Sb.

Textural relationships elsewhere, notably at No. 1 Curtin Davis, have suggested that the former assemblage precedes the latter in the genetic sequence. The South Curtin Davis analyses are interesting in that the sideritic assemblage (by analogy: late stage) is anomalous in tin. This contains no detectable gold whilst the (early) arsenopyritic assemblage contains a trace of gold (up to 0.05g/t).

3.9 South West Curtin Davis

The southwest Curtin Davis Mine is located on the western fall of Godkin Ridge on (1989) grid line 6600N (Fig. 1, Fig. 11).

The principal working seems to be the No. 1 Adit which is driven at 120° for 26.8m to intersect a NNE trending lode. At that point the adit is nearly blocked by caving from above but it was still possible to crawl over this mullock sufficient to obscure that the lode has been driven on in both directions with extensive stoping below the level in both directions and stoping above the level to the south. A winze has been sunk immediately opposite the end of the adit. The stopes appear to be in a dangerous condition with fallen timber sets and much broken rock hanging over head and were consequently not investigated further. Judging by the form of the stopes the lode removed seems to have been about 0.5-0.7m in thickness and oriented at 025°/75 East.

Wall rocks (footwall) along the adit are fine to medium grained quartzwackes and interbedded grey flinty /slaty siltstones in about equal proportions. The bedding dips moderately to steeply to the east (50°-70°E). There is no significant veining along the adit.

The adjacent mullock dump is mainly of similar quartzwackes and siltstones with some siliceous polymictic conglomerate; this must have come out of the stopes or the winze, the hanging wall of the winze just below the level seemed to be of interbedded quartzwacke and siltstone dipping moderately eastwards.

There is some lode material on the mullock dump; it seems to fall broadly into three categories listed in order of decreasing abundance (see Specimens RGC collection).

1. Siderite + Mt with minor Po and Cpy. - No. T7993

2. Siderite with slugs and veins of massive Chalcopyrite and tetrahedrite, this sampled as T7995.

3. Sheared country rock with much pyrite, arsenopyrite, quartz and lesser chalcopyrite, tetrahedrite and sphalerite - T7994.

The lower (No. 2) adit is completely blocked at the portal by mullock from above. Mullock adjacent to the No. 2 Portal seems to be entirely of type (3) arsenopyrite/breccia lode. A grid sample of this material was assayed as T7997.

Immediately above the No. 1 Adit portal is a shaft sunk on a steep underlay to the east in quartzwacke and siltstone with the lode poorly exposed and gossanous. A small outcrop immediately north of the collar is of conglomerate.

About 40m further south along the lode there is another shaft also on an underlay to the east with a clean hanging wall trending 025°/75° E. Both walls are of massive conglomerate but a minor stope into the south wall of the shaft suggests that the lode here is about 0.5m thick. The adjacent mullock is mostly of unmineralized conglomerate but there is some lode material consisting of semi-massive pale-dark brown siderite with variable (5-20%) sulphides dominated by chalcopyrite, tetrahedrite with minor pyrite and magnetite. This was sampled in T7996.

Some general conclusions about the assay results of mullock samples from southwest Curtain Davis are:

- None of the samples are significantly anomalous in Au or Sn.

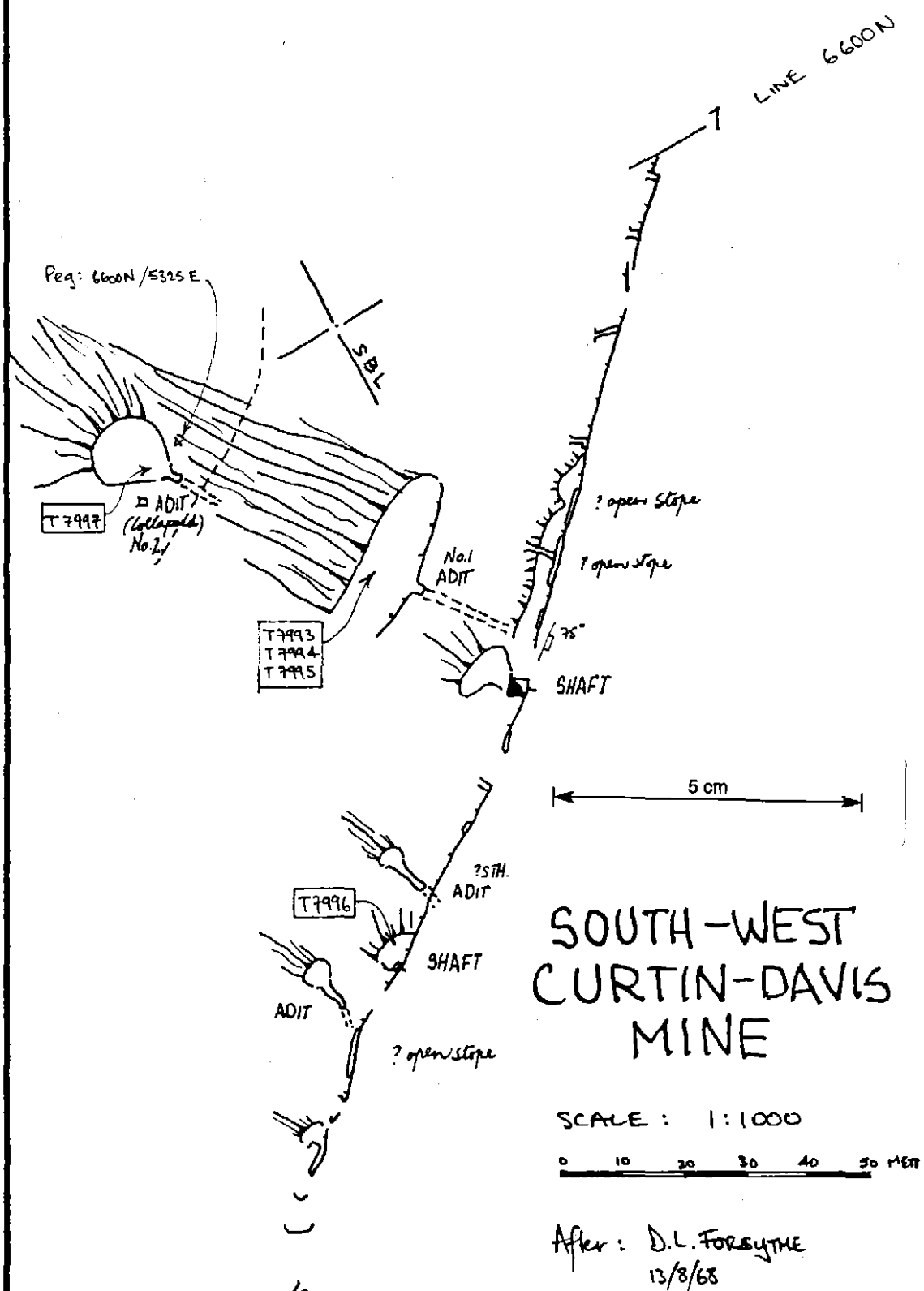
- All are surprisingly low in Pb, Zn, ranging from 200-4000ppm for Pb and 250-1900ppm for Zn. The low 925ppm Zn in T7997 is particularly unexpected given the quite coarse sphalerite observed in the specimen.

- Siderite and arsenic are strongly negatively correlated.

- Cu, Ag, and to a lesser degree Sb, Bi are positively correlated evidently reflecting the presence of tetrahedrite. It is interesting that chalcopyrite + tetrahedrite seem to occur in both arsenopyritic and sideritic types perhaps implying that these (cpy +teth) are late stage introductions (?)

607095

FIGURE 11



SOUTH-WEST CURTIN-DAVIS MINE

SCALE : 1:1000

0 10 20 30 40 50 METRES

After : D.L. FORSYTHE
13/8/68

MN

4-0051

Although textural relationships indicating a genetic sequence were not observed, this lode appears to be similar to the complex 3 stage type implicit at No. 1 Curtin Davis. Likewise, all but one of the assayed samples from the latter were low in Sn and Au.

3.10 Crown Curtin/Davis Mine

These workings are located about 200m north of southwest Curtin Davis Mine just north of (1989) grid line 6800N east of Frazer Creek (Figs. 1, 12).

At the two southwestern dumps there are two small adit approach like cuts leading crosswise onto narrow open stopes developed along a NNE trending lode formation.

Country rocks are mainly pebbly polymictic conglomerates with abundant felsic volcanic clasts, few slatey clasts and a siliceous/felsic volcaniclastic matrix. Also present are units of dark grey laminated siltstone (which are locally seen to be in depositional contact with conglomerates) and medium grained felsic volcaniclastic lithicwacke. The distribution of these lithotypes is locally complex and partly controlled by minor faulting (see Fig. 12) but general bedding trend seems to be NE with low to moderate dips to the SE.

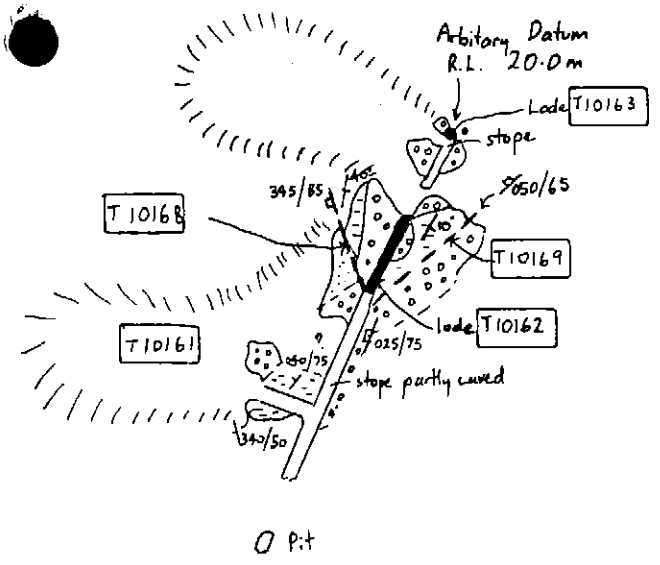
The open stopes trend about 0.25° with dip of 75° to the east. The portions of the lode remaining exposed at surface between the stopes and at the northern end range in thickness from 0.5-0.6m and there consist essentially of brecciated/silicified conglomerate with minor (5%) disseminated pyrite and arsenopyrite with subordinate tetrahedrite apparently occuring in cross cutting veinlets and patches (Specimen CC1 in RGC collection). Assay samples T10162, 63 are chip samples across the lode in situ whilst T10161 is a high graded sample from the mullock dump. These samples are characterised by low Pb, Zn, Au and Sn and moderate levels of Cu, Ag, Bi, As and Sb. (See Appendix).

607097

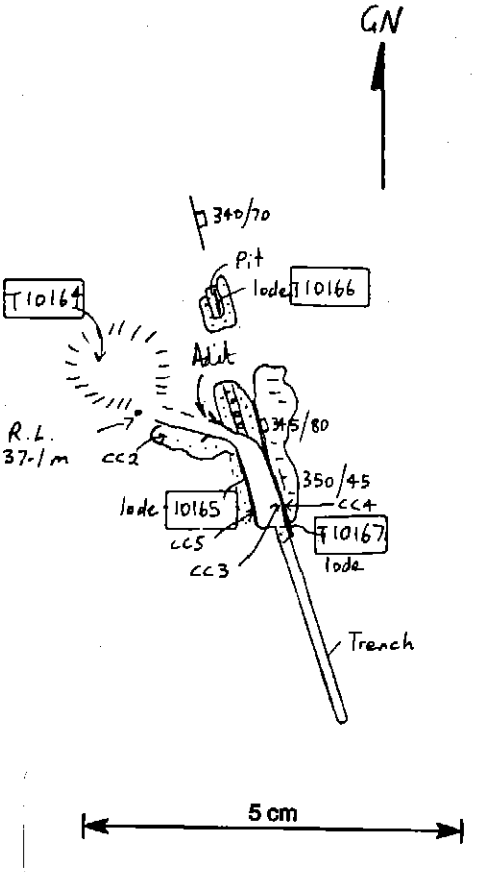
FIGURE 12

096

CROWN CURTIN DAVIS MINE



O Pit



LEGEND

- Dark Grey lam. siltstones
- Med. grained felsic volc. lithicwacke
- Conglomerate
- Mineralised Vein material.

SCALE 1:500

0 10 20

metres.

M.W. W.H. 15/3/89

There is a strong positive correlation between copper and silver and to a lesser extent also bismuth and antimony probably reflecting the presence of argentiferous tetrahedrite.

The minor fault zones partly controlling wall rock contacts (referred to above) contain narrow 5-15mm limonite stained zones of brecciated rock light surface encrustations of geothite and possibly minor weathered chlorite. These limonitic materials were sampled as T10168 and 10169 (Fig. 12) and though anomalous contain relatively low levels of Cu, Ag, As and Sb.

About 60m north east of those workings and at about 17m higher elevation there is another adit driven along a NNW trending, steeply east dipping lode formation.

The wall rocks in the adit and outcropping near the portal are interlayered medium grained felsic lithicwackes (CC2) and dark grey siltstone (CC3) which appear to dip at about 40° to the east.

The "lode" appears to be represented by two narrow shears on either wall of the main drift, variable from 20-80mm wide and consisting essentially of sheared country rocks substantially recemented by pyrite, arsenopyrite, lesser chalcopyrite, possible tetrahedrite and minor chlorite. The northward strike extension of the eastern of these mineralized fissures appears to be exposed in a trench about 8m north of the adit.

Assay samples from these exposures (T10165, 66, 67; see Fig. 12 for locations) and similar material high graded from the mullock (T10164), indicate low levels of Pb, Zn and Sn, moderate Cu, Ag, Bi and Sb (reflecting tetrahedrite) and high As. Three of these are fairly anomalous in gold (0.02g/t) and T10166 from the trench contains 0.31g/t Au.

3.11 Curtin Davis Mine

The Curtin Davis Mine is located on the northern face of Godkin

Ridge just west of Montezuma Falls. The workings were developed on mine levels spanning some 400m of elevation on a steeply east dipping apparently lenticular-en echelon lodes (Figs. 1, 13).

The two upper levels, just below the crest of Godkin Ridge are called the Curtin Davis Extended Mine. In these notes I have followed the adit nomencluture of Forsythes' 1969 1" to 200" plan. There is some confusion as to how these relate to Reid's (1925) level numbering system but I think that Reid's 100' level corresponds to the No. 1 Curtin Davis Extended adit, the 180' level to the No. 2 Curtin Davis Extended adit (which is a cross cut with the lengths approximately corresponding to Reid's description) and so on downhill so that Forsythes' No. 5 is equivalent to Reid's 1150 feet level. The total vertical distance between Reids levels ($1330' \simeq 405m$) correlates well with the fall from Godkin Ridge to Forsythes' lowest adit just north of Montezuma Creek. The (upper) No. 1 Curtin Davis Extended adit is driven along a gossanous lode of about 0.3m width oriented at about 350° with dip 75° to the east. Below this, the No. 2 Adit is a cross cut driven generally eastwards to intersect the lode at 29m from the portal (Fig. 14). The country rocks are grey medium grained quartzwacke with subordinate inter bedded grey flinty-slatey laminated siltstone mostly dipping at moderate angles to the west but with local undulations to almost flat lying. At the end of the adit the lode is about 0.7m in width and has been stoped out above level for about 8m to the north. The width of the stope varies from about 0.6-1.0m and although the walls are rather undulating and irregular the average dip seems to be about 65° to the east. Southward, a drive has been put out 41.4m on azimuth 170° but the lode appears to have pinched down to 0.25m just south of the southern winze and pinches out altogether about 15m south of there.

The winze goes down at -65° at least 10m to water and there is small scale stoping into the lode in both of it's walls. The short westward cross cut and inclined rise to the west appear to have been developed to test for en echelon continuation of the

vein, extensive secondary copper staining in the rise suggests that this may have been successful.

The best exposure of remaining lode is in the back of the drive between the adit and the southern winze. At that point it is about 0.7m wide consisting mainly of massive straw coloured siderite with about 10% sulphides principally of pyrite with minor chalcopyrite and tetrahedrite (?). This assemblage persists southward; at sample location T7991 sulphide component is slightly increased to about 15%. Assay samples T7990 and 7991 represent chip/channel samples across the lode in situ (see Fig. 14) and the results indicate low Au, As, Sn with moderately anomalous Cu, Pb, Zn, Ag, Bi and Sb.

Much of the mullock adjacent to the portal consists of lode matter dominated by massive siderite and a similar py + cpy + teth sulphide assemblage with the addition of occasional rich veins and slugs of galena and sphalerite. A high graded sample of this material (T7992) reflects this with Cu, Pb, Zn in the low percentage range and also a faint sniff of gold at 0.03g/t Au.

The next level down is unnamed by Forsythe but I have called it the Curtin Davis "Top" Adit, it probably corresponds to Reid's 420 feet level. This adit is driven on a bearing of 175° with a winze in the floor about 10m in from the portal beyond which we could not safely progress. The country rock is massive medium grained quartzwacke with minor fine silty wacke. The west wall of the adit is clean trending 355°/80°E with some pyrite staining but no significant shearing or lode apparent in the backs.

Just outside the portal (to the north) on the west wall is an apparently lenticular pod of gossan about 1m long x 120mm thick with patches of rich sphalerite, pyrite and chalcopyrite totalling up to 50% of the volume. This was sampled as T10170 for which the assay indicates 1.4% Cu, 9.4% Pb, 0.3% Zn, 4315g/t Ag, 1.05% Bi, 0.1g/t Au, 4.5% As, 0.2% Sb and a faintly anomalous 107ppm Sn.

Similar gossanous material extends along this clean footwall towards the portal but pinches out to less than 40mm in width.

Material on the mullock dump is fine to medium grained dark grey volcaniclastic wacke with occasional minor stringers of pyrite + quartz ± chlorite but no massive lode material was apparent.

According to Reid (1925) this adit (? 420 feet level) was driven to 465ft and cut "three shoots of tetrahedrite and siderite" and at the end the vein consisted "almost wholly of carbonate of iron in thin streaks through hard black slate".

At the No. 1 Curtin Davis Adit (? 560' level) the adit is driven at 180° apparently along a lode which has been extensively stoped out above level and backfilled with mullock. The sets holding up the fill are partly collapsed making the adit now unsafe and it was consequently not entered. The (stoped) lode above the adit is about 1 metre wide, trends 00°/80°E and is slightly offset to the west from the back of the adit. It appears to flatten off to shallower dip up dip (see: sketch in set Fig. 13). The winze a few metres north of the portal is offset to the eastern side of the adit apparently indicating an eastward "side step" with depth of the lode. This could be due to undulation in the dip but I think it more likely due to close en echelon arrangement of lenticular vein like openings. This interpretation is supported by the presence of the strike projection of the overhead stoped lode northwards about 10m from the portal where it can be observed in the cliffs as an irregular/pinched 0-150mm wide series of gossanous pods. Country rocks here are medium grained felsic volcaniclastic wackes and interbedded laminated siltstone which have bedding orientation (near the portal) of 00°/85° W subparallel to the lode. Adhering to the walls of the mullocked stope just above the back of the adit are patches of brecciated slatey siltstone cemented by much arsenopyrite, pyrite and chalcopyrite (CD30 in collection). T10170 represents a chip sample of this in situ lode material.

Material on the dump, by contrast, is mostly massive siderite with variable (generally < 5% but up to 40%) sulphides dominated by chalcopyrite and tetrahedrite. A sample of this "sideritic ore"in T10172 indicates a high content of Cu, Ag and As.

Gold is weakly anomalous at 0.06g/t as is tin at 0.2%. Some of the sideritic material has arsenopyritic wall rock breccia adhering to it (CD31 in collection) and as usual the textural relationships seem to indicate that the arsenopyritic breccia is an early phase of mineralization with the siderite etc. succeeding it in open space vein fillings. Although some chalcopyrite appears to be associated with the arsenopyrite and pyrite breccia filling, the more massive veins of chalcopyrite associated with tetrahedrite and some pyrite cut through massive siderite and are therefore interpreted to be a late stage introduction.

At the No. 2 Curtin Davis Level (Reid's 680' level ?) there is an adit driven at 175° along a lode dipping 70° East with extensive stoping of the lode overhead most of which has been mullocked up again. Also a 10m deep winze at the portal. There are several blocks of lode material still in situ near the portal. These indicate that the lode here is from 0.2-0.4m in width and is completely oxidized to a limonitic gossan. A chip sample of this gossan in T10173 indicated the usual high Cu, Ag, with moderate As, Sb, and Bi. Gold has dropped to 0.01g/t and tin to 54ppm in this sample. This lode pinches out rapidly northwards. About 6m north of the portal down the face of the cliff the same gossanous fissure narrows down to about 50m and within a few metres further pinches down to a few narrow stringers. Reid (1925) noted that the lode at this level was exposed for 456 feet (139m) and petered out at the end of the adit.

He recorded that "The vein at this level is very erratic in its content of the valuable minerals". There is no mullock remaining at the portal (due to the precipitous nature of the cliff)

and so I could not determine the nature of the unoxidized assemblage although judging by the analysis of the gossanousmaterial it may be deduced that it is of the complex arsenopyritic breccia succeeded by sideritic veining type.

Lower down at the No. 3 Curtin Davis level (Reid's 840' level) the lode is completely stoped out to surface above the level and then backfilled with mullock. This practice of remullocking the stopes above has made the levels now inaccessible with dangerously unstable timber sets and loose mullocky backs overhead.

The lode here appears to have trended 005°/80° E with a clear hanging wall and rough footwall. Lode width seems to have been about 0.5m but there is not any accessible lode remaining in situ for sampling. Country rocks at the portal are mainly fine grained dark grey laminated siltstones and fine felsic wackes oriented at 005°/45° W and with a prominent sub vertical cleavage at about 00°/85° W.

There is a reasonably flat bench at the portal with some mullock lying about. Most of this is of the massive siderite type with low sulphide content including Cpy, tetrahedrite and pyrhottite.

There is also some of the wall rock breccia/arsenopyrite type lode present. Both types are represented in specimen No. CD32 (in collection). There is an additional assemblage here consisting of siderite ± Cpy, Sp, Gn in a matrix consisting of a fine meshwork of chlorite which may represent metasomatized wall rocks (?) (Specimen CD33). A high graded sample comprising all of these assemblages is represented in T10174; metal ratios are similar to those in samples a the higher level.

At the No. 4 level (Reid's 1000' level ?) an adit is driven in massive fine grained siltstone and wackes with no signs of mineralization until the rise at 23m from the portal (Fig. 15). The rise, in the west wall of the drive, goes up about 3m on a 200-300mm wide sheared zone in slatey siltstone with consider-

able discontinuous, shear parallel, thick veins of white quartz with minor chlorite pyrite and arsenopyrite. This veined shear zone is oriented at 350°/45° E and appears to pinch out to less than 50mm thick at the top of the rise. Quartz vein material from the shear zone was sampled as T10175 for which the assay shows relatively low values as follows:

520ppm Cu, 1500ppm Pb, 120ppm Zn, 36g/t Ag, 70ppm Bi, 220ppm As, 780ppm Sb, 22ppm Sn, and 0.01g/t Au.

On the east wall of the adit adjacent to the rise is a lode of near massive pyrite with minor whitish grey quartz oriented at 350°/85° E and up to 200mm wide pinching to 20m over about 4m northwards and possibly widening to the south but not examined due to the dangerously unstable condition of the back. This pyritic lode was sampled in T10176 which shows generally low metal values as for T10175 except that silver and arsenic are relatively elevated to 430g/t and 1% respectively.

Both the pyritic and the quartz rich "lodes" here appear to be associated with fairly well defined narrow shear zones within which the brecciated (country) rock is weakly chloritized.

There is a small mullock dump, of lode material, on the bench about 5m west of the portal material here is mostly semi massive py + qtz + aspy with brecciated country rock (Specimen CD34) generally similar to the pyritic lode observed in the adit. There are also occasional pieces of similar material with minor veins of jamesonite (Specimen CD35) and also have pieces of pyritic + sideritic material with minor chalcopyrite and tetrahedrite (Specimen CD36). A grab sample from the dump (combining all these mineral assemblages) was taken as T10177 which has elevated Bi, As, and Sb values approaching those of samples from the higher levels.

It seems from these limited observation that the lode at this level is still of the complex, two or three phase, type but that

the earlier phases are not very well developed. This appears to be substantiated by Reid (1925) who reported that "The vein is very small and irregular and consists largely of pyrite near the end of the adit".

Near the No. 5 level (? Reid's 1150' level) there are three adits. The short upper adit is driven about 5m or azimuth 190° in conglomerate; the east wall is well defined tending 010°/70° E with discontinuous lenticular patches of gossan with locally preserved massive pyrite. This mineralization is cut off at about 3m in from the portal by a shallow (45°) northerly dipping fracture and is not repeated further in.

The middle adit is driven about 40m on 190° mostly in massive polymictic volcaniclastic conglomerate with occasional stringers and patches of quartz and pyrite in the back but no well defined lode formation. At about 32m from the portal the eastern wall becomes planar at 010°/70° E with remnants of a 50mm thick vein of massive pyrite and quartz adhering to it. This persists for only a few metres pinching out north and southwards. The pyritic vein material was sampled as T10178 for which metal values are relatively low. At about 18-22m from the portal the west wall is relatively planar and occupied by a massive white quartz vein up to 300mm wide but pinching out to north and south and oriented at about 015°/70° E. This contains a little pyrite and chlorite and rare arsenopyrite and pyrhottite (3% chlorite, 2% total sulphides). Sampled in T10179 it also contains low metal values. Reid (1925) rather confusingly refers to this as an adit cross cut and notes that no ore was found at this level.

Below this there are several very short adits and surface trenches, none of which appear to have exposed significant mineralization.

However, the lowest, at about 30m above the N.E. Dundas Tram Formation, has been driven about 4m on a minor shear zone trending 010°/80° W with ? encrustation and minor laminar quartz

veining. A small mullock dump at the entrance includes some ? rock with a few blocks of partly oxidized pyritic siliceous breccia. Sampled as T10180. This returned moderate base metal values (0.12% Cu, 0.53% Pb) with 115g/t Ag, 0.29% Bi, 0.03g/t Au, 7.62% As, 0.39% Sb, and 87ppm Sn.

The form of the occurrence and assay results suggest that at this level the lode is of the pyrite and arsenopyrite in breccia type possibly with some later stage jamesonite/tetrahedrite veining.

I did not inspect the lowest working, an adit located on the north bank of Montezuma Creek (Forsythe, 1969) which Reid (1925) referred to as the 1430' level. He noted that the lode there, exposed for 88 feet but was found to be barren of any of the commercial minerals.

The mineralization of the Curtin Davis Mine can be summarized as follows:-

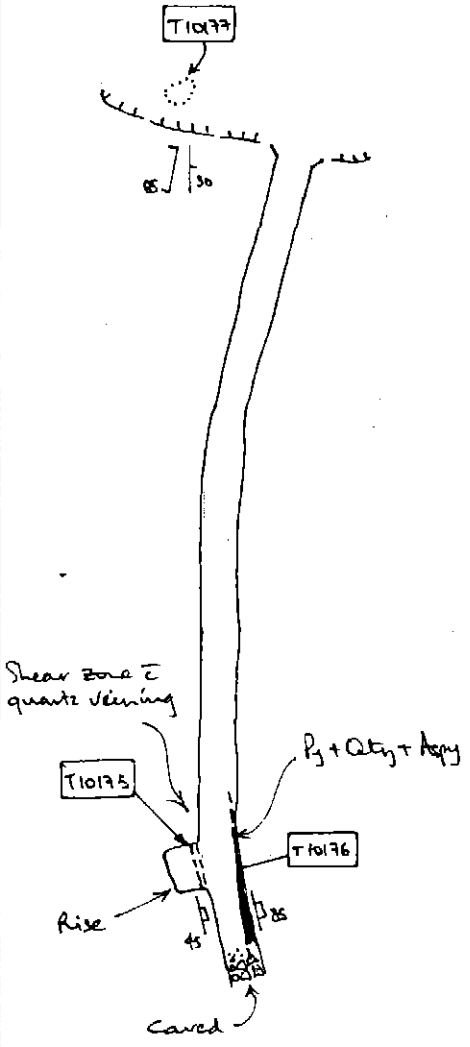
1. The "lode" appears to consist of a series of discontinuous narrow lenticular veins with a general northerly trend (350° - 010°) and steep dips (65° - 85°) to the east arranged in a tight en echleon grouping of which the enveloping surface also dips steeply to the east.

2. There is an overall transition from massive siderite type lode in the upper level through complex pyrite an arseno-pyrite/sideritic lodes in the middle levels giving way to *dominantly pyrite and arsenopyrite and quartz veins in the* levels below No.4. Textural relationships indicate that the arsenopyrite bearing assemblages pre date the introduction of siderite.

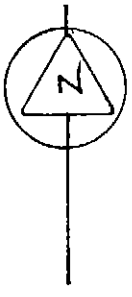
3. There is a general decline in grades of Cu, Pb, Zn and most notably Ag with increasing depth. Gold is not significantly anomalous but there is a sniff of tin associated with arseno-

T10180
ADIT
80°
ADIT
ADIT
ADITS (C.D. No. 5)
T10179
70°
T10178
T10177
ADIT (C.D. No. 4)
T10175
T10176
T10174
(multiple)
ADITS
(C.D. No. 3)
CURTIN DAVIS
MINE
ADIT
T10173
gossan
WINZE
ADIT (C.D. No. 2)
70°
Bedding
in
volcanics.
T10172
multiple
85°
WINZE
T10171
ADIT (C.D. No. 1)
70-80°
T10170
gossan ± Sp, Py,
cpy.
WINZE
ADIT
80°
Curtin Davis "Top" Adit
(420' level)
Sid + minor
Py, cpy, tet,
gn, sp.
ADIT
(C.D. EXT.
No. 2)
(180' level)
No 1 Adit
(100' level?)
Gossanous
Ridge
Top of
CURTIN DAVIS EXTENDED
MINE
shoots
of siderite-tetrahedrite
Siderite
5 cm
Basal Sheeted
Ore shape / mullocked up.
Winze
3m. wide & paral
Adit level
70°
W
E
N
SCALE : 1:1000
0 10 20 30 40 50
After : D.L. FORSYTHE 13/8/68
and : A.M.F. Reid 1925
FIGURE 13
607107

108 FIGURE 15



5 cm

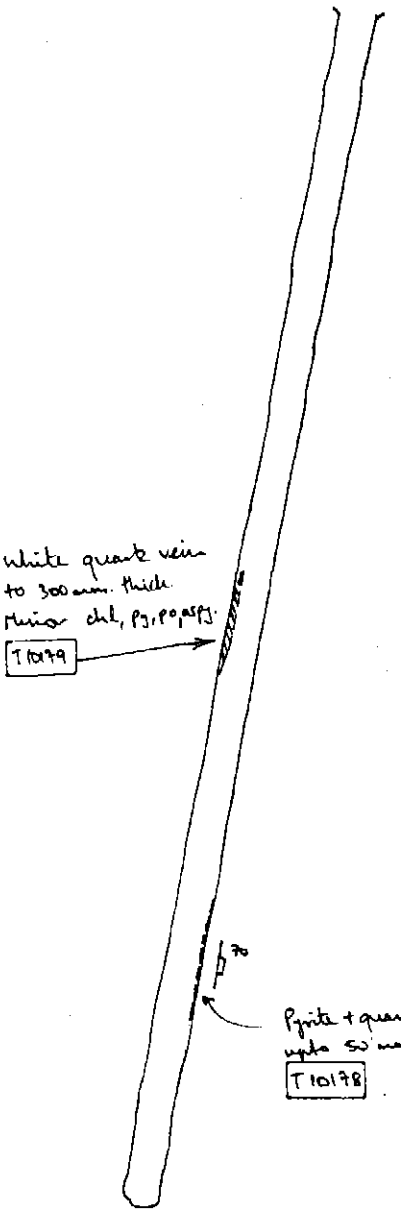


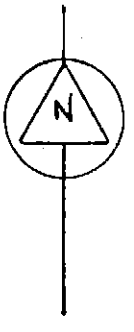
CURTIN DAMS MINE
No 4 LEVEL ~~NAT~~ PLAN

Scale 1:200

0 5 10 Metres

607108 FIGURE 16.

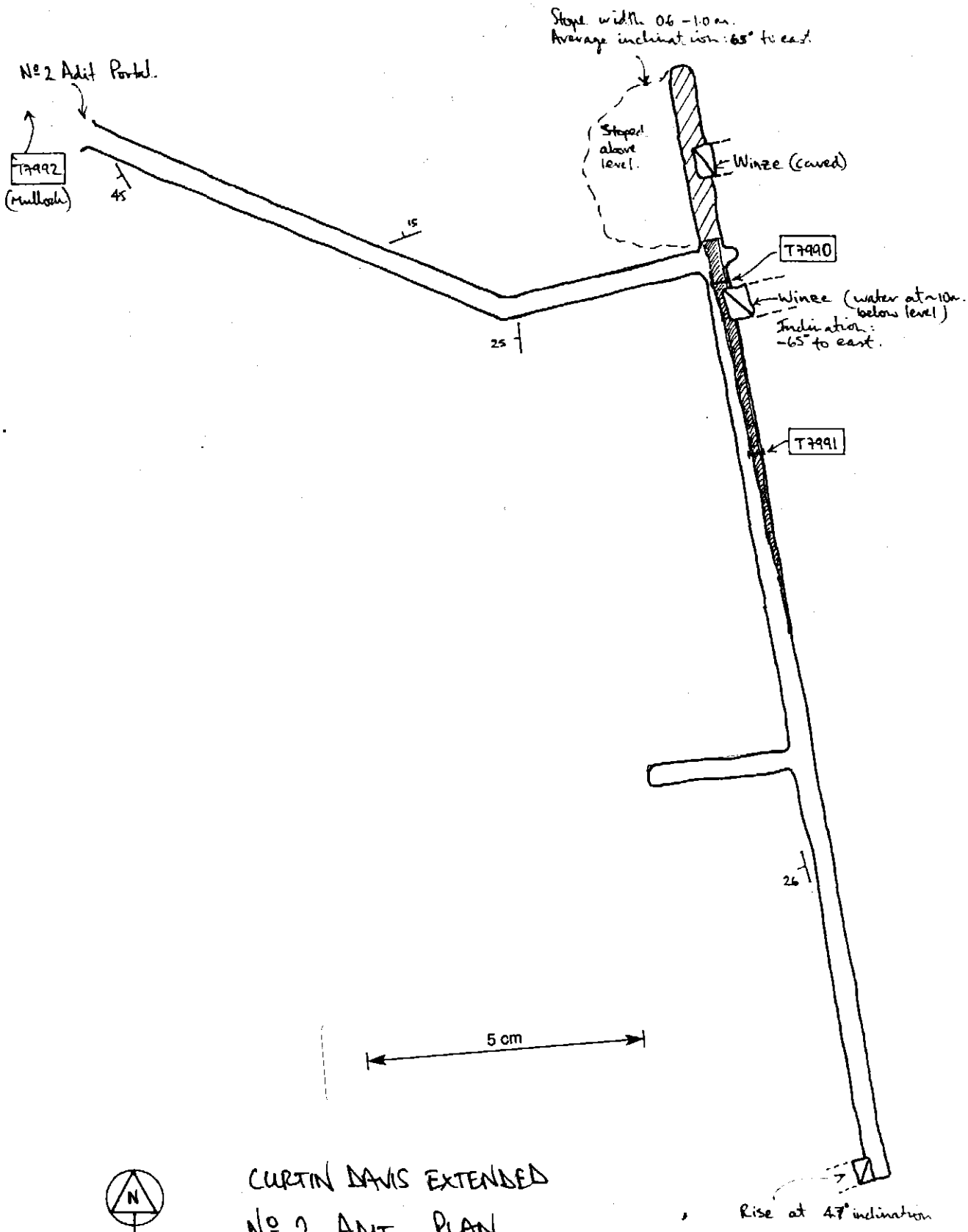




CURTIN DAMS
No 5 Level Adit Plan

Scale 1:250.

607109



CURTIN DAVIS EXTENDED

No 2 ADIT PLAN

SCALE 1: 250 0 5 10 metres

15/3/89

FIGURE 14

pyritic lode assemblages at the upper levels and at the lowest level.

3.12 Green's Prospect

The workings of Green's Prospect are located in the vicinity of (1989) grid line 7200N where it crosses the old North East Dundas Tramway just west of Frazer Creek. (Fig. 1)

At tramway level just south of 7200N, there is a narrow adit/ open stope driven from the NW side for about 3m along a quartz lode trending 325°/78° NE between walls of polymictic conglomerate. The lode, of about 0.5m width, consists of milky white, rather cavernous quartz with considerable earthy/limonitic encrustation but no fresh sulphides. Some blocks of this material lying at the portal contain about 5% cassiterite; this material was sampled as T11701 which returned low values (300ppm) for Cu, Pb, Zn, Bi, Sb, Ag; weakly anomalous As (0.12%), Au (0.26g/t) and W (475ppm) and a significant 1.34% Sn.

This same lode appears to have been intersected at the end of the lower adit (Fig. 17) which was driven at (an estimated) level of about 30m below the tramway. The lode at this level trends at 305° with dips of 78-80° to the NE and was driven on for a few metres in both directions but no stoping has been carried out. At the end of the adit it consists of 0.3-0.4m width of cavernous gossany white quartz with about 40% of volume limonitic ex sulphides. This material sampled as T11702 assayed at only 0.13% Sn but was slightly enriched in Au at 0.43g/t and Ag at 90g/t. Along the south east drift the lodge pinches down to 0.15m width of greyish-white quartz with rich patches of compact granular pyrite (or marcasite ?) exposed at the face.

Sample T11703 from the face assayed at 2.2% Sn, 0.93% As but only 0.1g/t Au and 9g/t Ag suggesting that the precious metals in the former (oxidized) sample T11702 are high due to supergene enrichment.

The face of the northwest drift exposes an 0.25m width of similarly constituted partly oxidized lode. Both walls of the lode are fairly clean and comprised of conglomerate. This adit still has iron rails on the floor and several mining artifacts in place (including an ore truck, drill steels, shovel heads etc.) suggesting some fairly recent exploration but the mullock dump is nevertheless substantially overgrown.

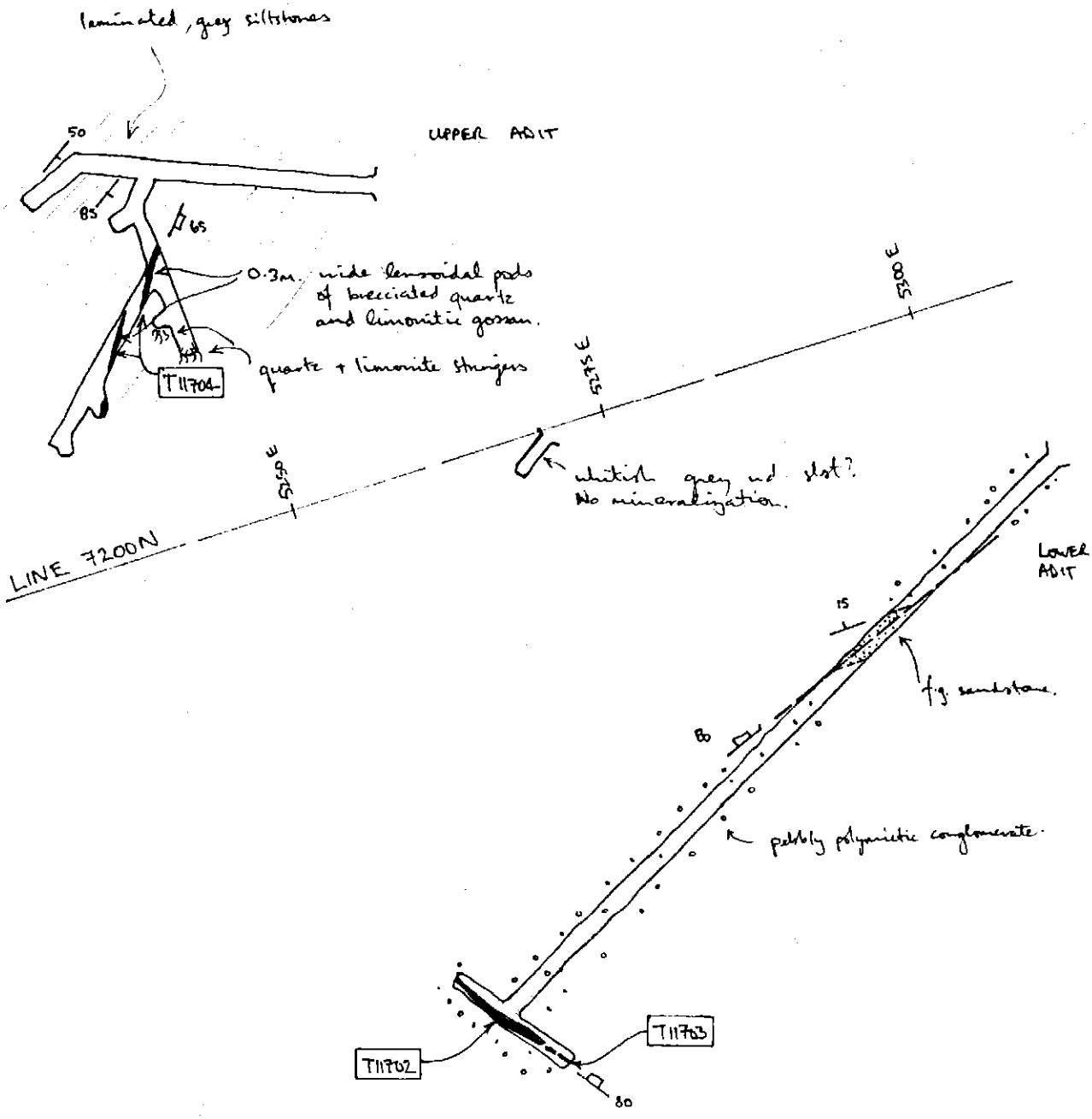
Between the lower level and the tramway, about 20m north of the 7200N/5250E peg, there is an adit driven westerly into laminated grey argillaceous siltstones which dip moderately to steeply to the southeast (Fig. 17). There are several short southerly drives which expose two steeply east dipping lenses of brecciated gossanous quartz up to 0.3m in thickness which appear to represent overlapping, en echelon, perhaps stratabound pods. Sample T11704 bulked from both of these gossanous lenses returned an assay of 1.49% Sn as well as higher base metals of 0.18% Cu, 1.0% Pb, 0.07% Zn but gold was at background level.

It is not clear if these NE trending lenses are connected with the NW trending lode described above; my plan in (Fig. 17) suggests they are not whilst the 1:200' (NE) plan of Forsythe (1969) suggests they may be.

Whatever the structural case it is clear that the dominantly milky quartz and pyrite assemblage in a massive (open space ?) vein filling is distinctive from most of the complex lodes occurring on Godkin Ridge. The early stage wall rock breccia and pyrite and arsenopyrite and quartz type lodes share some characteristics of the assemblage at Green's Prospect but here the lodes are quite massive apparently contained between clean walls without significant wall rock fragments included in the lode. The quartz and limonite stringer veins observed in the cuddy and face of the south eastern drive of the upper level may represent a transition between the two structural styles.

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FIGURE 17



GREEN'S PROSPECT.

SKETCH PLAN

SCALE 1:500

0 10 20 METRES.

16/3/89

3.13 Frazer Mine

The Frazer Mine workings are located on the west bank of Great Northern Creek over a 250m strike length extending NNW from just below the junction of Great Northern and Frazer Creeks. (Fig. 1) They are easily accessed on foot from Frazer Station on the Tramway via the old pack track or grid line 7400N.

The northwesternmost and upper working is designated the No. 1 Adit (Fig. 18). It is driven along the lode on azimuth 335°. There is a covered winze 12m from the portal and another winze at about 20m from the portal. Beyond the second winze the adit floor inclines down and appears to have been stoped out underfoot. The stope is in a bad state of collapse and was not inspected beyond the 2nd winze. Reid (1925) noted that the adit was driven for 120 feet. The wall rocks consists of laminated slatey siltstones and wackes which dip steeply to the north west. The lode has clean, parallel walls trending at 335° and dipping 85° E.

The lode near the portal is about 0.15m in width and consists of vuggy gossanous quartz. From about six metres in from the portal to the second winze the lode is from 0.3-0.35m in width and is comprised of rather drusy white quartz with about 30% partly oxidized arsenopyrite, pyrite or marcasite and minor chalcopyrite. Chip sample T10197 is representative of this zone; it contains 0.3% Sn, 4.1% As, 4.53% Cu, 175g/t Ag and 0.23g/t Au.

The No. 2 adit is located some 13m below No. 1 and to the south of it (Figs. 18, 19). The cross cut adit ends at a drive running NNE along the clean east wall of which, adheres a thin vein of quartz and arsenopyrite and chalcopyrite. This is oriented at 025°/78° E and ranges from 20-40m over the adit to about 80-120mm in thickness at the northern end where it appears to be cut off by a fault trending 330°/80° E. The drive then runs westward along this fault (?) but is caved at 3m beyond the bend. Reid (1925) states that this "drift....follows a clean

slate wall [for] 200 feet, exposing alternate rich and poor sections. A shoot ore, 134 ft in length has been stoped. He also notes that the southern drift went for 100 feet and exposed a shoot of ore 75 feet in length which was also stoped. The NNE trending mineralized vein of about 80mm thickness was sampled a few metres south of the bend as T10195 which returned assays of 0.45% Sn, 13.3% As, 1.51% Cu, 96g/t Ag and 0.19g/t Au.

At surface, at a location approximating to that of the rise or ore pass from No. 2 level (Fig. 19), there is an inclined shaft caved at 3m. The clean western wall of the shaft trends 335°/77 E and lying against this is an 0.3m wide quartz lode containing about 20% arsenopyrite and minor chalcopyrite. A chip sample of this partly oxidized surface expression in T10196 was found to contain only 0.02% Sn, 5.7% As, 56g/t Ag and 0.11g/t Au.

The thin NNE trending mineralized vein intersected at this level appears to represent a dextral offset of the otherwise NNW trending main Frazer Lode. The plane of the NNE vein is essentially parallel to cleavage in the country rocks along the No. 2 Adit (Fig. 19) and it appears to lie at or close to the axial plane of an anticlinal fold implied by the observed divergent dips on bedding. Slickensides on the hanging wall pitch at 73° to N in plane of wall.

Both NW and NNE trending lodes are also evident at Green' s Prospect to the south and it seems probable that these mineralogically similar lodes are linked in zig-zag fashion by a series of short dextral offsets.

The No. 3 Adit is about 30m south of and 10m lower than the No. 2. It is driven on azimuth 245°. At the time of our visit it was partly caved at the portal with about 0.8m of water on the floor but otherwise seemed in sound condition. Due to lack of tools to drain the water, we did not inspect this level. Reid (1925) states that at 70 feet (21.4m) it intersected the lode which was driven on for 15ft south and 3ft north of the point of

intersection. He quotes on "average" grade here of 0.3% Sn, 408% Cu, 7.23% As and about 140g/t Ag.

Mullock represented by a few blocks still remaining at the portal consists of two types:

(i) drusy quartz with 5-10% Aspy >> Cpy> marcasite, sampled as T10193 which returned assays of 0.65% Sn, 15% As, 1.25% Cu, 80g/t Ag and 0.15g/t Au.

(ii) almost massive sulphide comprising about 40% pyrhottite, 20% arsenopyrite, 10% chalcopyrite, remainder quartz and possible minor sphalerite (?) This was sampled in T10194 which contained 0.54% Sn, 18.3% As, 4.46% Cu, 0.93% Zn, 182g/t Ag and 0.3g/t Au.

The No. 5 Adit (actually just above No. 4) is driven for about 10m along the lode which here trends 325°/77° E. The country rock is laminated siltstone with weak cleavage parallel to bedding oriented at 025°/85° E, in the hanging wall. A few metres south of the portal bedding in the footwall is approximately parallel at 040°/85° E.

The lode consists of rather drusy white quartz with patches of rich arsenopyrite (average 30% Aspy) contained between clean walls about 0.3-0.4m apart. The end face provides a good exposure of the lode consisting of about 60% quartz and 40% arsenopyrite. This face was sampled as T10198 which assayed at 49ppm Sn, 21.7% As, 0.32% Cu, 6.5g/t Ag and 0.1g/t Au.

The No. 4 Adit was driven along the lode with the footwall oriented at 325°/85° E. It is partly collapsed at the portal, looks generally unsafe with 0.6m of water on the floor and was not inspected. The lode is not exposed at the portal. Mullock on the dump consists of grey "glassy" and white quartz with variable proportions of arsenopyrite, chalcopyrite, and pyrhott-

ite. The latter two are particularly notable in blocks of lode containing fragments of brecciated wall rocks; arsenopyrite seems more closely associated with massive-drusy quartz. Some of the material contains up to 10% chalcopyrite and this was high graded in sample No. T10199 to test for Cu-Au association. It, however, was found to contain only 282ppm Sn, 4.49% As, 1.77% Cu, 60g/t Ag and 0.06g/t Au. This is the only one of all the Frazer Creek samples to contain detectable (>20ppm) Tungsten at 59ppm.

The lowest working on the Frazer Lode is an adit, which I have termed the southern adit, located in the south bank of the Creek about 90m south of No. 4.

The adit is driven for 15m on azimuth 150° along a lode with a clean eastern wall oriented at 330°/70° E. At the portal the lode is about 0.3m wide, dwindles to about 0.1m halfway along and diminishes to a few stringers at the end face. The lode is constituted of brecciated country rock infilled with grey quartz, much arsenopyrite some chalcopyrite and possible minor pyrite. T10184 representative of the lode material assayed 747ppm Sn, 14.7% As, 2.06% Cu, 118g/t Ag and 0.34g/t Au.

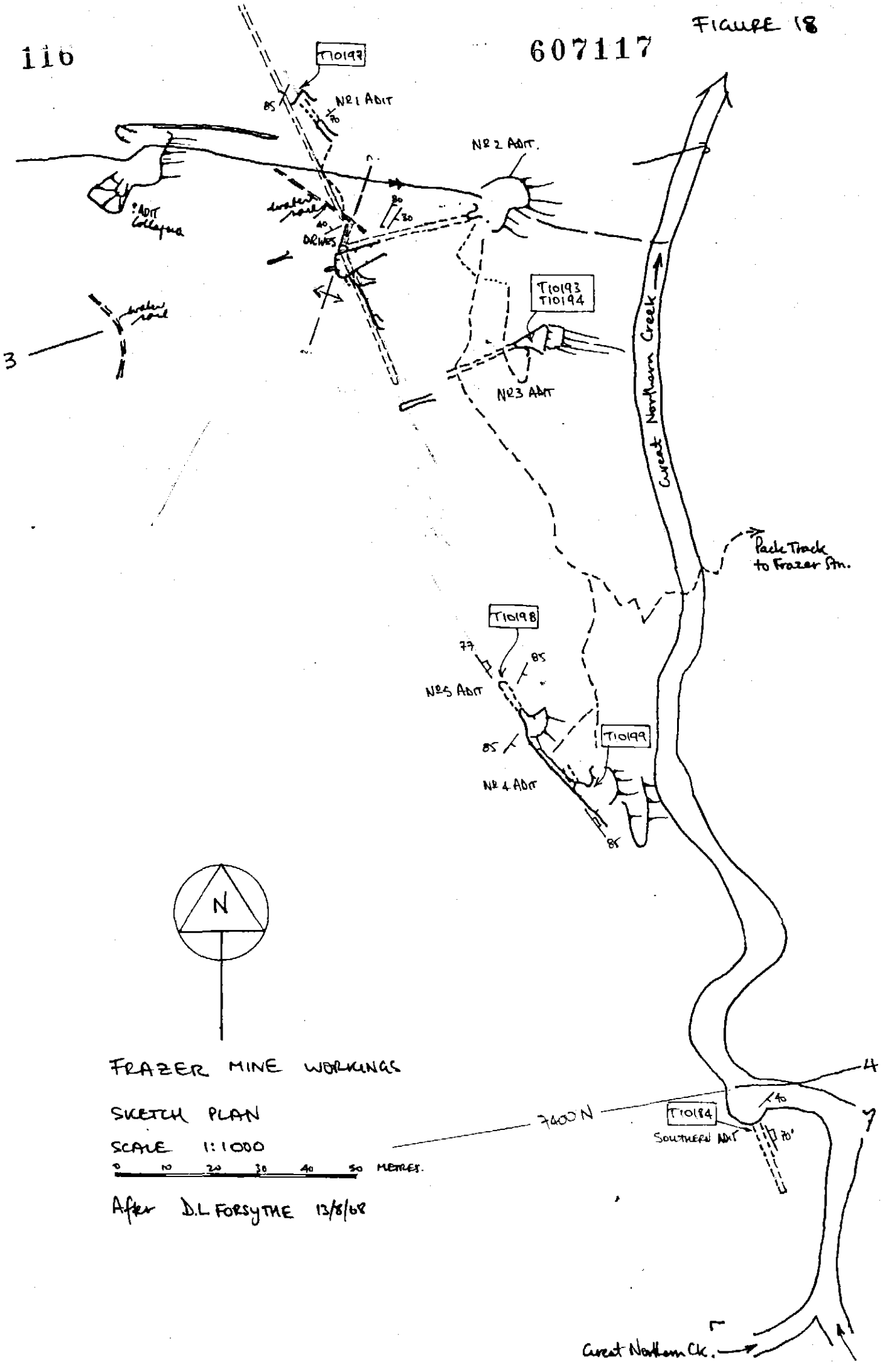
The wall rocks are finely laminated flinty grey siltstones; on the east side of the portal bedding is oriented at 050°/40° SE.

Traces of fine pyrhottite occur in thin darker bedding laminar (Specimen FC1 in collection). Immediately adjacent to the lode, the wall rocks exhibit a thin 20mm selvedge of darker greenish grey silicified/metasomatised rock (Specimen FC2).

The Frazer Lode has many characteristics in common with that of Green's Prospect. Both occurrences are substantially composed of massive quartz within relatively clear cut walls and are significantly anomalous in tin, gold, arsenic, and silver with levels of lead, zinc, bismuth and antimony tending to be low. However, the Frazer Lode tends to be far richer in arsenic and

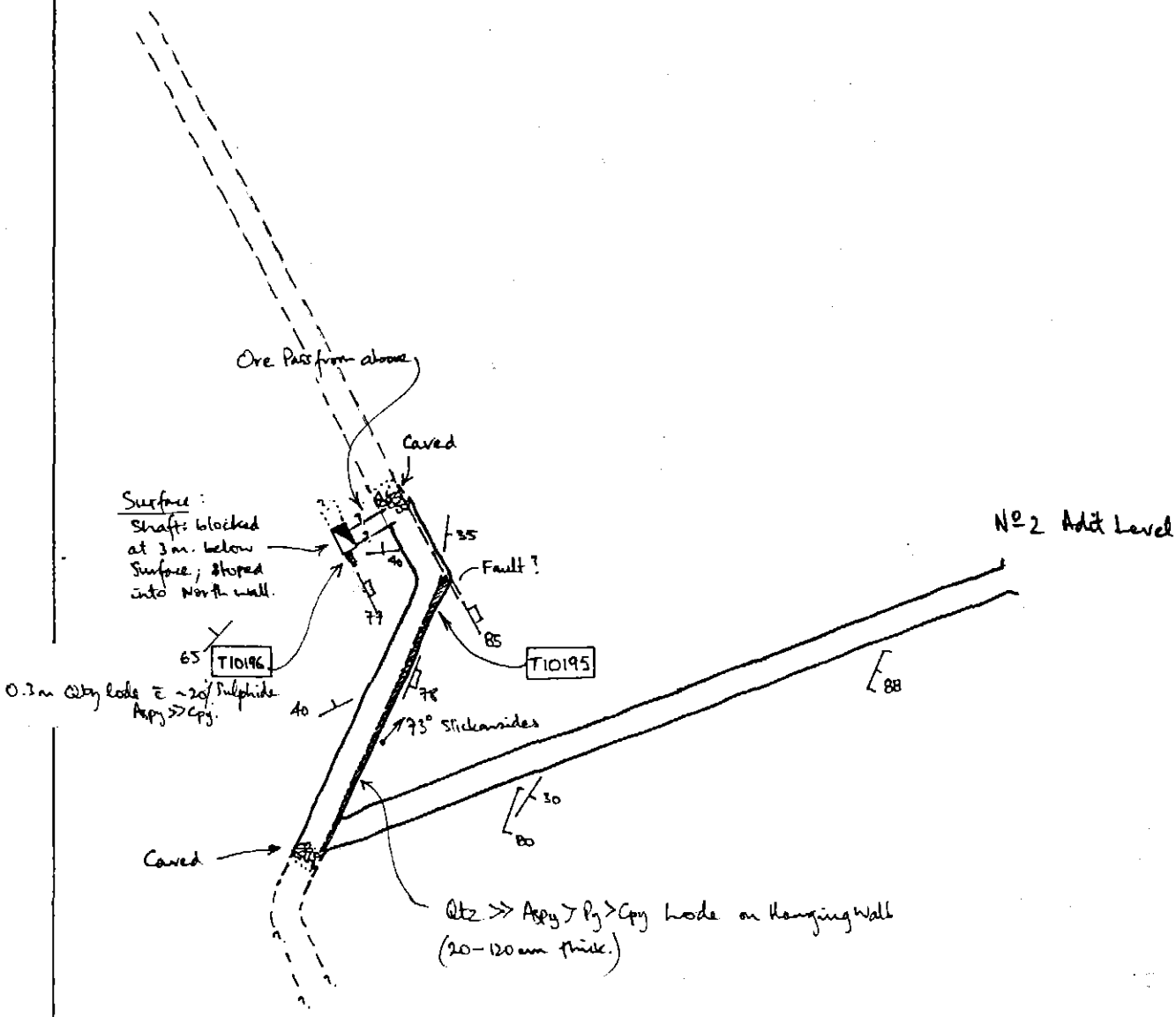
607117

FIGURE 18



607118 FIGURE 19.

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copper, whilst the Green's lodes are richer in tin. Only one of the Frazer samples contains detectable (20ppm) tungsten whilst all of the Green's samples are notably anomalous ranging up to 475ppm W. The dominantly massive, open space filling style of these lodes is distinct from the breccia infilling style of the Godkin Ridge arsenopyritic lodes although the appearance of this brecciated style at the No. 4 and southern adits of Frazer suggest a continum with the former.

NW-NNW and NNE trending lodes/veins are present at both Frazer and Green's and as suggested above may allow for a structural connection. Forsythe's (169) 1:"200' plan (NW section) notes that the Frazer Lode was "not observed" at the junction of Gt. Northern and Frazer Creeks and his plan implies that it has been terminated against a major NNE trending, steeply east dipping fault with a west side down (reverse) relative displacement. This structure parallels the minor offset of Frazer Lode and is depicted as extending from Ringville to Great Northern Creek Mine on this 1":400' plan. Forsythe claims rather massive widths 0.3-0.9m of quartz and pyrite etc. mineralization where thin fault twice crosses Great Northern Creek and the NE Dundas Tramway. These occurrences perhaps deserve further investigation for Sn, Au content.

3.14 Hecla Mine

The Hecla Mine workings are located east of Great Northern Creek near its' crossing of the N.E. Dundas Tramway.

The Northern Adit is located about 140m north east of the creek crossing and some 40m above the level of the tramway. The adit is driven at azimuth 030° with the walls dipping at about 85° to the west. The western wall is in black slate and the east in medium grained feldspathic lithicwacke but the nature of the contact is not clear. There is no obvious mineralization at the portal. There was about 0.6m of water on the floor which discouraged us from further inspection of the adit.

However, Reid (1925) reported that the adit was 60 feet in length and that at "The entrance the ore-body is 4 feet wide and dips westerly at 82°". He noted that the lode included pyrite, pyrhottite, chalcopyrite with a little arsenopyrite and bismutherite and that a large part consisted of "disseminated ore in slate and schistose grit". This may refer to a sheared/brecciated-sulphide infilling type of lode.

Material on the dump consists of the wall rocks and two main types of mineralized rock:

(i) The predominant type is brecciated slate with infilling by grey quartz, pyrite, arsenopyrite and minor sphalerite and chalcopyrite. A grab sample of this type in T11705 assayed at 2.3% Cu, 2.4% Pb, 0.09 Zn, 1.6% Bi, 1.06% Sb, 12.9% As, 269g/t Ag and 145ppm Sn with insignificant Au at 0.02g/t.

(ii) A small pile on the western side appeared to consist of hand picked material consisting largely of siderite with veining galena, sphalerite and minor silvery fibrous mineral possibly bismuthinite ? This was sampled in T11706 which returned 2.8% Pb, 1.9% Zn, 261g/t Ag but relatively lower values of 0.18% Cu, 0.17% Bi, 1.15% As and 0.07% Sb.

The orientation and location of this lode suggests that it lies upon the NNE trending reverse fault shown by Forsythe (1969) to terminate the southern end of the Frazer Lode. The westerly dip here however is opposite to the steep easterly dip near Frazer.

The Southern Adit (No. 1) is situated about 250m southwest of the former. The adit collared in a south easterly direction but after a few metres swings onto an azimuth of 195°. At 27m from the portal there is a winze decked over with timber but we judged it to be unsafe and did not proceed beyond that. There is a second winze a few metres further in (Fig. 20).

A few metres back from the first winze there is overhead stoping about 4m above the level, the lode apparently having pinched down to 50mm at the top of the stope. At adit back level the lode at the northern end of the stope is about 0.5m wide and is comprised of a band of fairly massive pyrite about 100mm thick against the eastern wall with fairly massive siderite, partly oxidized and weakly malachite stained, making up the remainder. The lode here has a clean footwall trending 015°/85° W. The full width of the lode was sampled in T11707 which assayed 1% Cu, 0.85% Pb, 0.1% Zn, 119g/t Ag, 2.05% As and 0.24% Sb.

The (E) footwall at this point seems to consist of rather sheared possibly conglomeratic, felsic lithic wacke and the hanging wall of dark grey slatey siltstone.

Towards the portal the lode appears to pinch down to 100mm sheared and brecciated pyrite and quartz and then veers into the east wall following a course of about 025°/80° W.

Mullock at the portal is scant because of the steep terrain but mainly consists of massive siderite (sampled in T11708) and lesser massive pyrite associated with wall rock breccia and quartz and arsenopyrite type infilling (sampled in T11709).

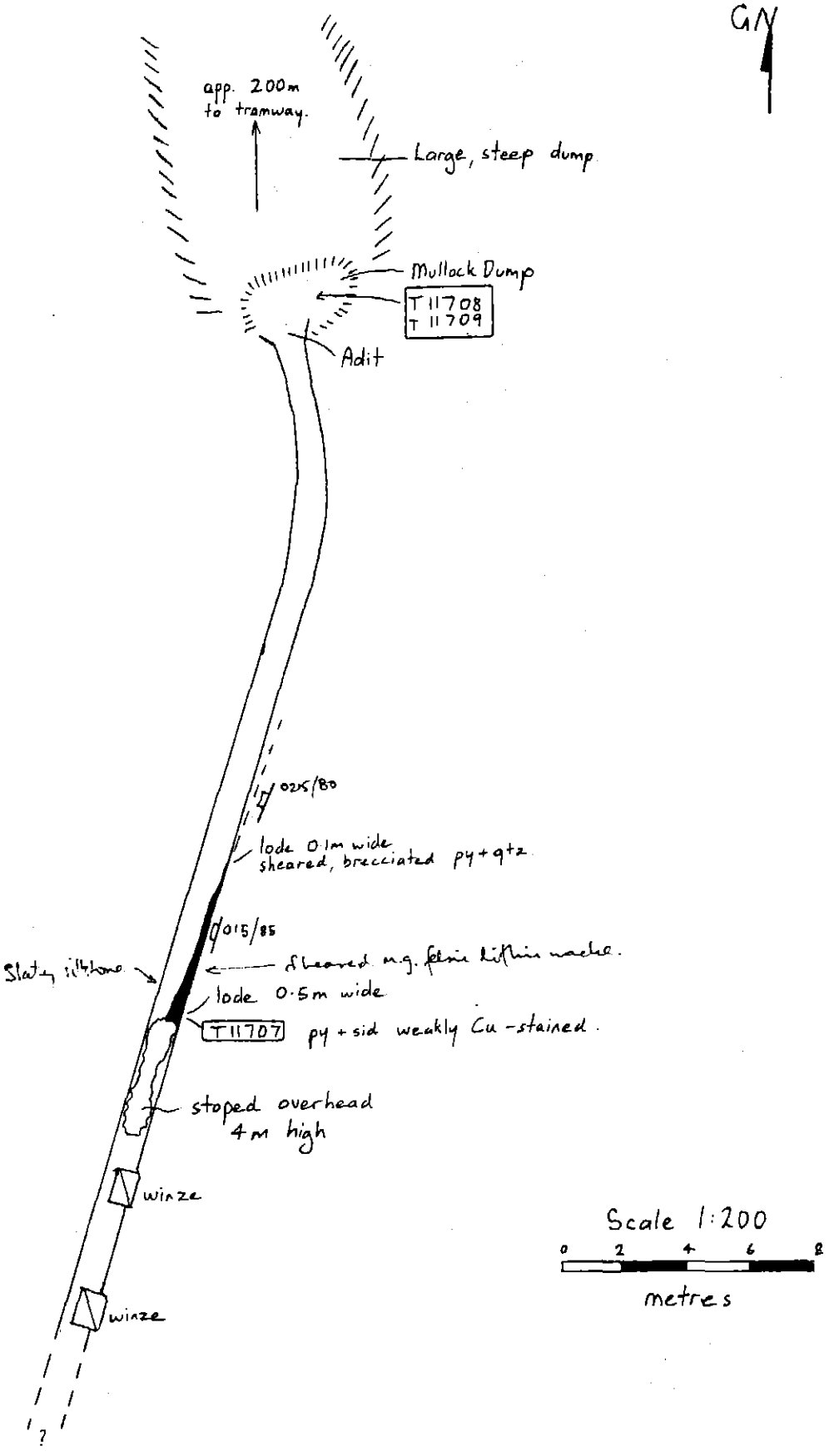
Both samples are moderately anomalous in base metals, silver, arsenic etc. T11709 surprisingly reports at 0.11% tungsten. The tungsten values in this analytical batch however, look a little suspicious (See also section: on Fahl-Rich P.A. workings).

The Hecla Lode assemblage is of the complex two stage type (arsenopyritic breccia and massive siderite) familiar on Godkin Ridge. Like most of the Curtin Davis lodes it is more or less anomalous in base metals, arsenic, bismuth, antimony and silver but essentially devoid of gold. It is faintly anomalous in tin (range 14-145ppm Sn) and tungsten range (26-110ppm W). The higher Sn and W values seem to correlate with high arsenic in the arsenopyritic breccia type lode samples. This relationship

607122 FIGURE 20.

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HECLA MINE SOUTHERN ADIT SKETCH PLAN.



is also evident at the Great Northern Creek Mine workings. Assuming that the two workings inspected are infact developed on a single lode it seems that this could represent a splay fracture associated with the major NNE fault depicted by Forsythe.

Marjoribanks (pers.comm.) interprets that this NNE reverse fault running through Ringville is terminated against the Montezuma Fault Zone adjacent to Frazer Mine and displaced initially some 1200m by the latter so that the south western extension is represented by a similarly oriented fault running approximately through the saddle on Carbine Hill. Marjoribanks (pers. comm.) could find no trace of the "Ringville" fault where it is supposed to cross the NE Dundas Tramway whereas Forsythe (1969, 1":200' NW Sheet) mapped 30" of quartz and pyrite at this point.

Whilst I suspect that Forsythe generally may have considerably overstated the lode widths, the similarity between the Hecla and the west of the Great Northern Lodes in combination with anomalous Sn, W does suggest a structural connection with the Sn, W bearing Frazer/Green's area.

3.15 Block 291 Mine

The Block 291 workings are located east of Montezuma Falls. They are fairly easily accessed on foot via EZ Co's cut line 5366700N westward from the Bonnie Point - Moore's Pimple vehicle track. The cut grid line crosses the Block 291 lode just south of the main southern open cut (Fig. 21).

Thompson (1951) reported briefly on a visit to these workings which he referred to as Higgin's Lease 48M/48.

The workings consist of a number of several small pits a shaft and adit along the lode as well as a cross cut adit driven westward to intersect the lode at 33m below the surface (Fig. 21).

The northern adit level exposes a lode trending 330° and dipping 85° W which has been extensively stoped above and below level. At the northern end of the stope the lode is about 0.3m wide and consists of massive granular pyrite and quartz which pinches out northwards down to a few pyritic stringer veins near the bend. The lode here was sampled in T11760. Country rocks near the portal consist of thinly bedded (rather transposed) fine grained felsic volcaniclastic wackes and flinty siltstone with bedding trends at about 010°/70° E and prominent cleavage at 350°/80° E.

The large mullock dump just above the adit consists largely of massive/granular pyrite and quartz lode as well as some vein rich jamesonite and galena "ore". Jamesonite here occurs in virtually massive blocks up to 200mm size associated with minor siderite and pyrite, this type of "ore" was sampled as T11759.

There are lesser amounts of complex pyrite and arsenopyrite ± minor jamesonite, galena, tetrahedrite, chalcopyrite & siderite (sampled as No. T11757) and minor rich galena and siderite (sampled as T11758).

Similar assemblages are present in the mullock of the large dump near the open cut and also the small dump adjacent to the shaft.

Samples include:

T11761: massive pyrite and quartz with 30% jamesonite.

T11779: massive pyrite; some quartz and galena and jamesonite and siderite.

T11763: silicified wall rock breccia, infilled with arsenopyrite galena and pyrite.

T11764: high grade jamesonite, minor py, gn, siderite, sphalerite ?

Textural relationships suggest that the massive jamesonite occurs as second or third stage veins cross cutting the earlier pyrite and quartz and arsenopyrite in wall rock breccia.

The open cut working at the southern end is partly overgrown but there is nevertheless good exposure of a massive pyrite and quartz lode 0.5m wide trending 340'85 W with extensive pyrite and quartz stringer veining in both adjacent walls over a width of at least 3m.

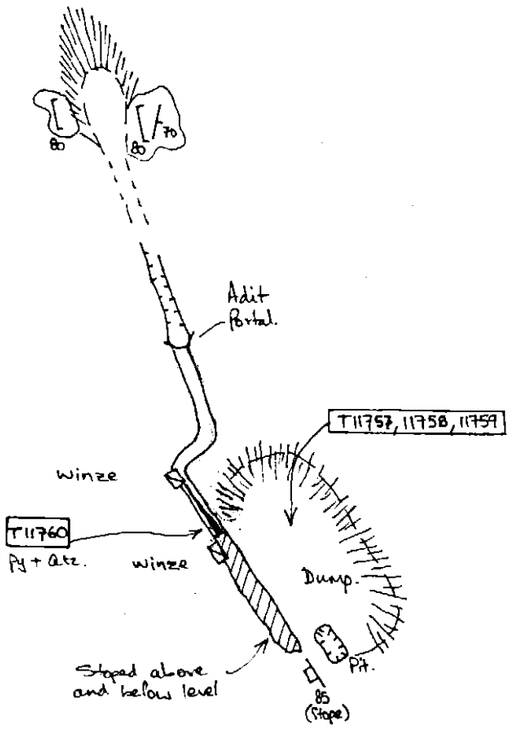
The lower adit level is driven on azimuth 250° to intersect the lode at 78m from the portal. Country rocks are alternating, massive greenish grey and purplish grey fine grained siltstone/wackes; beyond about 70m pale grey felsic looking fine grained siltywackes predominate but bedding is no where obvious.

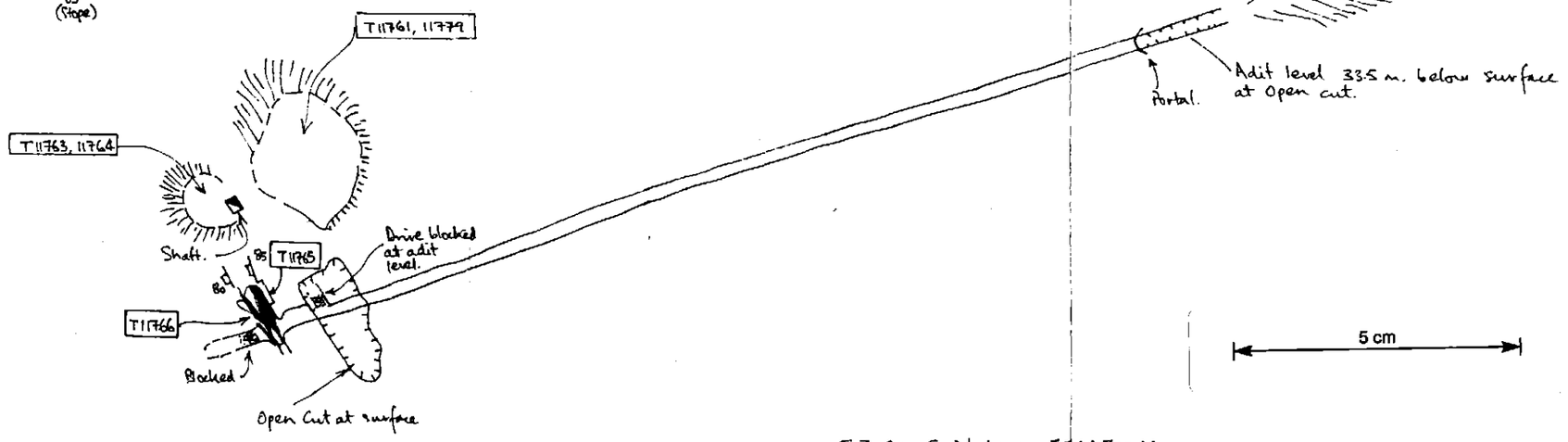
Between the blocked off north drive at 74m and the lode the wall rocks are rather strongly sheared.

The lode has been driven on for only a few metres to the north. It appears to consist of a "lode channel" about 1m in width dipping steeply to the west and comprised of irregular reefs of fairly massive sulphide etc. and intervening lenticular parcels of sheared country rock traversed by numerous quartz and pyrite stringers. Pyrite is the dominant sulphide (80%) with variable quartz, siderite (?) and minor galena and jamesonite. Sample T11766 is representative of this "average" composition of the sulphide with reefs. Against the eastern (foot) wall there is a somewhat higher concentration of galena and jamesonite in a zone about 150mm wide. This was sampled over about 1.5m along strike as T11765.

The assemblages and textures observed indicate that the Block 291 lode is of the complex two or three stage type with an early arsenopyritic/wall rock breccia type formation overprinted by successive siderite and base metal sulphide and jamesonite veining. Our chip samples representative of the early phase of

607126 FIGURE 21





BLOCK 291 WORKINGS

SKETCH PLAN

SCALE : 1:500

0 10 20 30 METRES.

Adapted from : B.P. THOMPSON 1957

SM. 16/3/89

607127

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mineralization (eg: T11757, 11760, 11761, 11763, 11766) are characterised by the presence of moderate levels of copper, lead antimony and gold (0.01-0.38g/t Au) and high contents of arsenic (to 11.8%).

The samples representative of the later sideritic and jamesonitic mineralization stages (T11758, 11759, 11761, 11764, 11765) are relatively enriched in lead (up to 43%) and antimony up to 18.5%. Silver is strongly anomalous in all samples (range 275-2150g/t Ag), bismuth, gold and tin are weakly anomalous in most samples (Bi 100-4900ppm, Au 0.01-0.38g/t, Sn 17-84ppm) but are not correlatable whilst tungsten (max 21ppm) and zinc (max 0.52%) tend to be low.

Block 291 Eastern Lode:

According to McIntosh Reid's (1925) sketch plan the workings of the eastern lode should lie just north of EZ line 5366700N about 80m west of the Bonnie Point road. We carried out intensive tranversing through this area but failed to find any trace of mine workings.

T. Cartwright (pers. comm.) has indicated that there are workings about 150-200m west of the Ring River Grid IP generator Helipad; this would be considerably south of 5366700N and many correlate with Thompson's (1951) report that they lie about a third of a mile SE of the main Block 291 workings. This location could not be investigated due to shortage of time.

3.16 Bonnie Dundee Mine

The Bonnie Dundee workings are situated on the banks of the Ring River immediately north of Bonnie Point on the N.E. Dundas Tramway.

There is a short adit on the north bank of the river and several pits and a caved shaft near the south bank but none of these

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provide useful exposure of in situ mineralization nor mullock due to their proximity to the river (Fig. 22). Country rocks are well exposed along the river bank east of the main workings. They consist of a sequence of turbiditically interbedded mudstone and fine grained felsic wackes with minor polymictic conglomerate units. They are tightly folded about more or less N-S trending axes which appear to plunge in both directions.

The caved shaft and adit working 30m along strike of the lode (?) from the river bank expose an approx. 0.5-0.7m wide zone of cruddy sheared and ironstained rock in the cut on the north side of the shaft and in the adit back at the portal. The adit is driven at 200° but is stoped underfoot and further in overhead and was not safely accessible. The sheared zone in the back at the portal was chip sampled as T7998. Apart from 17g/t Ag and 0.13% As metal values are very low.

Further south there is a long trench leading into a narrow stope oriented at 025°, dip vertical and about 0.4m wide.

Weathered gossany ? lode material is visible at the top of the stope but was out of reach for sampling. The mullock here is heavily overgrown and it was difficult to find specimens of the lode. However three samples were collected for assay:

T7999: quartz vein ? material with 5% Py in disseminated blebs and stringers.

T8000: sheared siltstone/wacke with occasional stringers and blebs of pyrite and rare pyrhottite $>$ 2% sulphide.

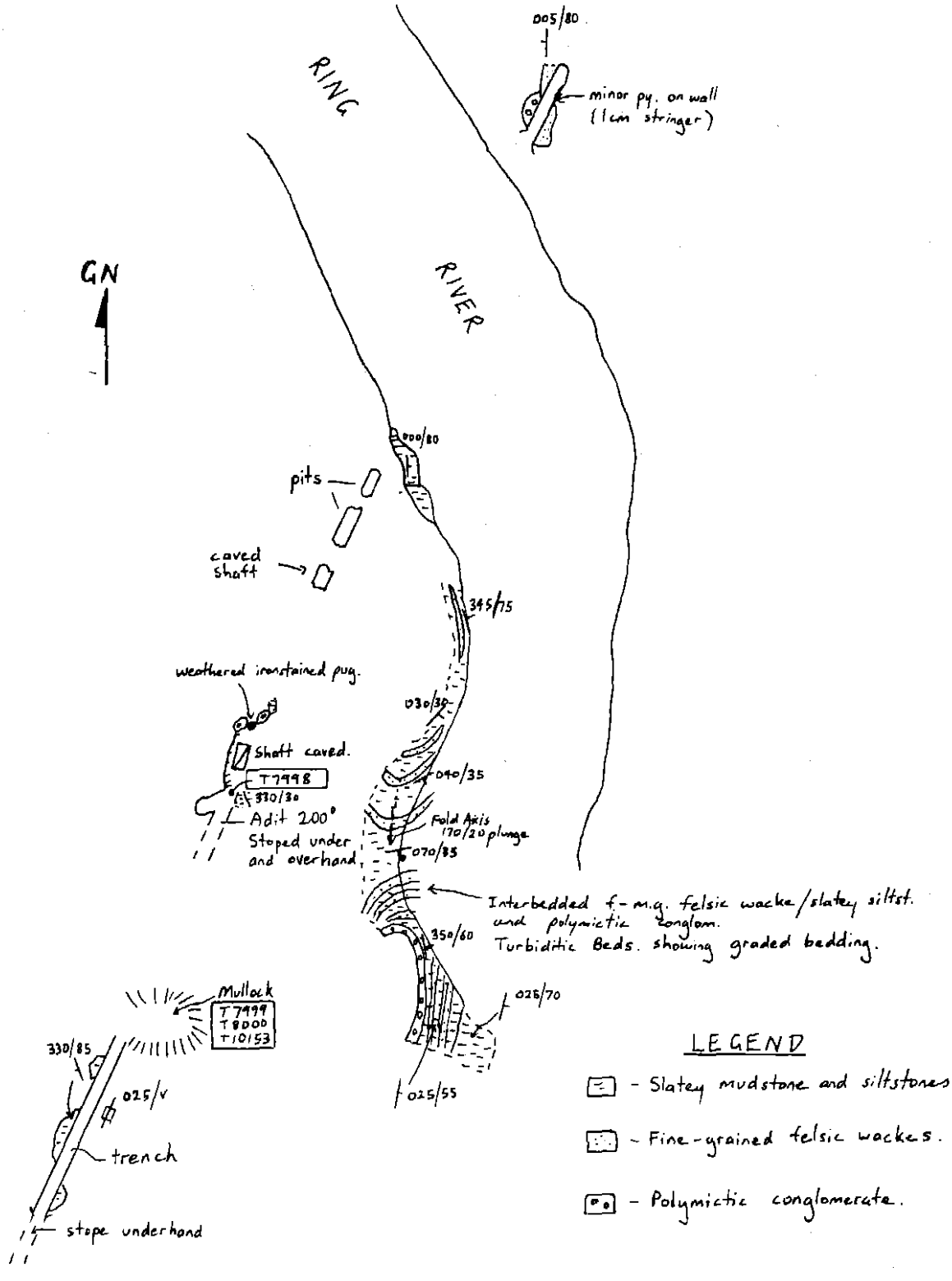
T10153: brecciated siltstone/wacke with heavy white quartz infilling and veining with minor $<$ 1% disseminated pyrite.

Although only limited observations were possible it seems that this lode has affinity with the Frazer and Green's lodes. The

FIGURE 22

607129

BONNIE DUNDEE MINE



M.W. W.H. 16-3-89

samples collected can hardly be regarded as representative but seem to indicate a sniff of tin (up to 84ppm) antimony (929ppm) the usual anomalous silver and arsenic but otherwise low metal values.

3.17 Moore's Pimple Mine (see Fig. 24)

The principal working is an adit at about 770m ASL driven into the NW slope of Moore's Pimple. The adit is driven on azimuth 100° but is now partly caved at the portal which has caused damming of water in the adit to depth of about 1.2m and hence we could not inspect it further.

Reid (1925) states that it was driven for 330ft (100m) mostly in slate and quartzite but went into dolomitized serpentinite at 270ft (82m). At this contact was found a 3" vein of gossan containing a little galena, this was driven on for 40' southwards where it was found to widen but of low grade. Another 6" vein of gossan with slugs of galena was cut near the end of the adit.

There is extensive mullock, divided into two dumps the material on the southern dump consists mainly of pale buff-grey fine grained quartz wackes and purplish grey cherty siltstone. These have minor quartz and carbonate stringer veining but are essentially unmineralized.

The dump immediately opposite the portal seems to consist mainly of carbonate altered ultra mafic rock.

Lithotypes (in decreasing order of abundance) were sampled for assay as follows:

T11767: massive pale pinkish grey carbonate, weathering to reddish brown exterior. Rare specks of galena and pyrite, minor siliceous veins and fragments of green (fuchsite ?) stained altered mafic rock.

T11771: green fuchsite stained carbonate and silica altered ultramafic rock. Rare traces of py, cpy, some dark opaques. Moderately abundant on dumps.

T11768: massive carbonate - siderite ?, pale creamy colour weathering very dark chocolate brown, traces of gn, cyp, py.

T11769: silicified carbonate ? with veinlets and blebs of g, sp, cpy, py.

T11770: single block only as for letter with 5% galena and sphalerite.

Only the latter two returned significantly anomalous assays including 3.53% Pb, 3.8% Zn, 28g/t Ag and 0.04g/t Au in T11770. The other samples have base metals <500ppm and Ag, Au below detection levels.

On the old pack track NE of the adit is a small trench sunk in extensely silicified rock (of unknown precursor) intensely veined with fine stringers of quartz and carbonate. This rock contains about 1-2% fine pyrite disseminated in the silicified rock and trackes of chalcopyrite in the veinlets. Sampled in T10185 it returned an assay of 0.13% Cu but otherwise is not anomalous.

About 170m downslope to the northwest of that trench is another trench in weathered brown gungy carbonate (?). A few loose blocks on the floor and outcrops about 10m downslope consist of somewhat fresher but similarly indeterminate silica carbonate altered rocks containing minor (1%) disseminated pyrite and traces of dark brownish black 0.5m sized octahedra resembling magnetite or chromite ?. Samples T10186 and T10187 from the trench and floaters further down indicated no significant metal values (<200ppm in base metals).

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607132

65 000mN

64 500mN

64 000mN

Severn

Creek

Montezuma

Bather

760

800

840

880

720

680

640

600

TO IP ELECTRODE POSN.

T10186

Trench

T10187

RING RIVER

T10185

A.M.T.

carpentinite

MOORES PIMPLE

Old Track to Mt. Dundas

To Dundas.

5 cm

FIGURE 24

MOORES PIMPLE MINE

SCALE 1:15000

N

1989.

The trenches on the Dundas Track south of Moore's Pimple referred to by Reid (1925) could not be located.

Conclusions from our visit and sampling are that structural (fault) permeability at/near the contact of the "serpentinite" have been weakly mineralized by carbonate dominant assemblages with generally low sulphide contents and similar to Svengali may represent the peripheral zone of lode style mineralization.

3.18 Svengali Mine

The Svengali Mine includes a number of short adits scattered about the vicinity of grid line 6400N in western tributaries of Bather Creek on the north western part of RGC's (1989) Ring River Grid. (See Ring River Grid 1:5000 Geological Interp Plan; also Fig. 23).

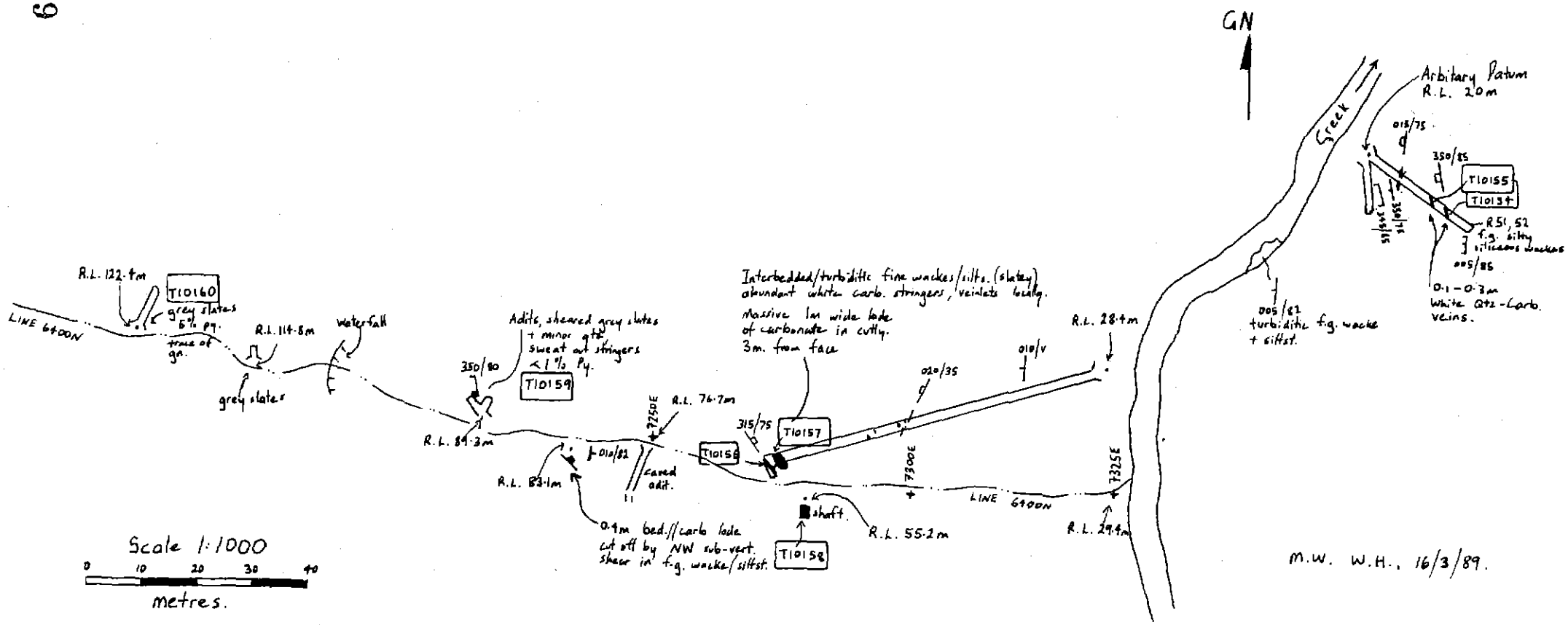
The main workings are three low level adits on either side of the north flowing stream just above the main creek level and a shaft about 60m west of the creek.

The longer of the eastern adits intersects two 0.1-0.3m thick veins of white carbonate ± quartz both steeply west dipping and associated with minor shearing in the hanging wall of the veins. The veins are barren of sulphides and our chip samples T10154, T10155 did not reveal any significant metal content (<200ppm base metals.)

The western adit, slightly upstream, was driven for 61.5m on azimuth 255° in turbiditic interbedded fine grained siltstones and wackes with approximately N-S strike trend and semi-vertical dips. Minor white carbonate stringer veining is abundant particularly in the more massive wacke units and in proximity to the shallow west dipping fault about ½ way along the drive. Exposed in a cuddy 3m from the end is a massive 1m wide body of white carbonate with minor included slivers of slightly pyritic slate. Sampled as T10157.

Figure 23
607134

SVENGALI MINE



The end cuddy exposes several discontinuous/lenticular banded veins to 30mm width of similar carbonate, which trend 315 with semi-vertical dips. These were sampled as T10156. Neither sample contained significant sulphides or metal assay values.

The shaft appears to have sunk on the same formation as that massive carbonate intersected in the adit. Mullock around the collar is of massive compact whitish grey carbonate with disseminated coarse blebs (2-10mm) of chalcopyrite, tetrahedrite and possibly minor pyrite. Total sulphide content <5%. This was sampled as T10158 which returned assays of 0.3% Cu, 17.5g/t Ag and 0.05% Sb reflecting the tetrahedrite and chalcopyrite.

Further up the gully to the west are a number of small adits most of which appear to be developed on zones of shearing within slatey siltstone units. These zones contain minor shear parallel quartz stringer veinlets with minor (<5%) pyrite and trace galena. Chip samples T10159, 10160 are representative of these zones but apart from 0.16% Pb, 0.08% Zn in the latter are not significantly anomalous.

It is evident that in the Svengali area dilational and shear induced permeable structures are only weakly mineralized perhaps indicating the outer low temperature (?) periphery of the North Dundas mineral field centred on Godkin Ridge.

3.19 Rich P.A. and Fahl Mines

The Rich P.A. Mine workings lie adjacent to the N.E. Dundas Tramway at easting 374300mE about 1.2km by tramway west of the Bather Creek crossing.

The southern most adit we located lies at creek level about 20m south of the tramway. Outcrops in the creek just upstream from the portal are strongly transposed and disrupted fine slatey siltstones with the plane of transposition oriented at about 35°/vertical. The adit is driven on azimuth 105° for 21m with a

short southern cuddy at 9m and a short 3m southward drift at the end. The eastern wall of the drift is clean and trends at 345°/ vertical. Adjacent to this face there is a zone of intense shearing associated with apparently patchy development of "lode" over a width of 50-150mm. The lode consists of brecciated slatey wall rock, possibly weakly chloritized with patches of pyrite, pale cream carbonate and some grey quartz. Sampled as T11710 it is low in base metals but assayed 0.22% As and faintly anomalous 0.03g/t Au.

Along strike to the north are two adits on opposite banks of the Ring River. No distinct lode formation is apparent in either but the width of the backs where visible consists of highly sheared/brecciated country rocks with irregular stringers of white carbonate and quartz and pyrite. Overall sulphide content is perhaps about 10%. The sample T11711 from near the portal of the south side adit, showed similar metal assays to the previous sample with an additional sniff of tungsten at 102ppm. Extending northwards for about 80m from the river bank is a series of more or less vertical open stopes mostly ranging 0.6-1.0m in width but with no lode exposed at surface. Also ruins of a smelter, and a headframe over a large (2 x 2m) shaft occur. Adjacent to the shaft is a large pile of mullock spilling into the river but very little is mineralized with only occasional pieces showing stringers of siderite, quartz and minor pyrite. Sample T11712 is from a small dump of fine saccharoidal siliceous/silicified rock with about 20% pyrite in fine disseminated specks and veinlets; it assayed 0.18% Cu, 119g/t Ag and 0.17g/t Sb.

The line of the lode again crosses the river at the horseshoe bend where it is marked by short 2m cuts into both banks which, however, do not reveal the nature of the lode. Northwards of here it is referred to as the Fahl lode.

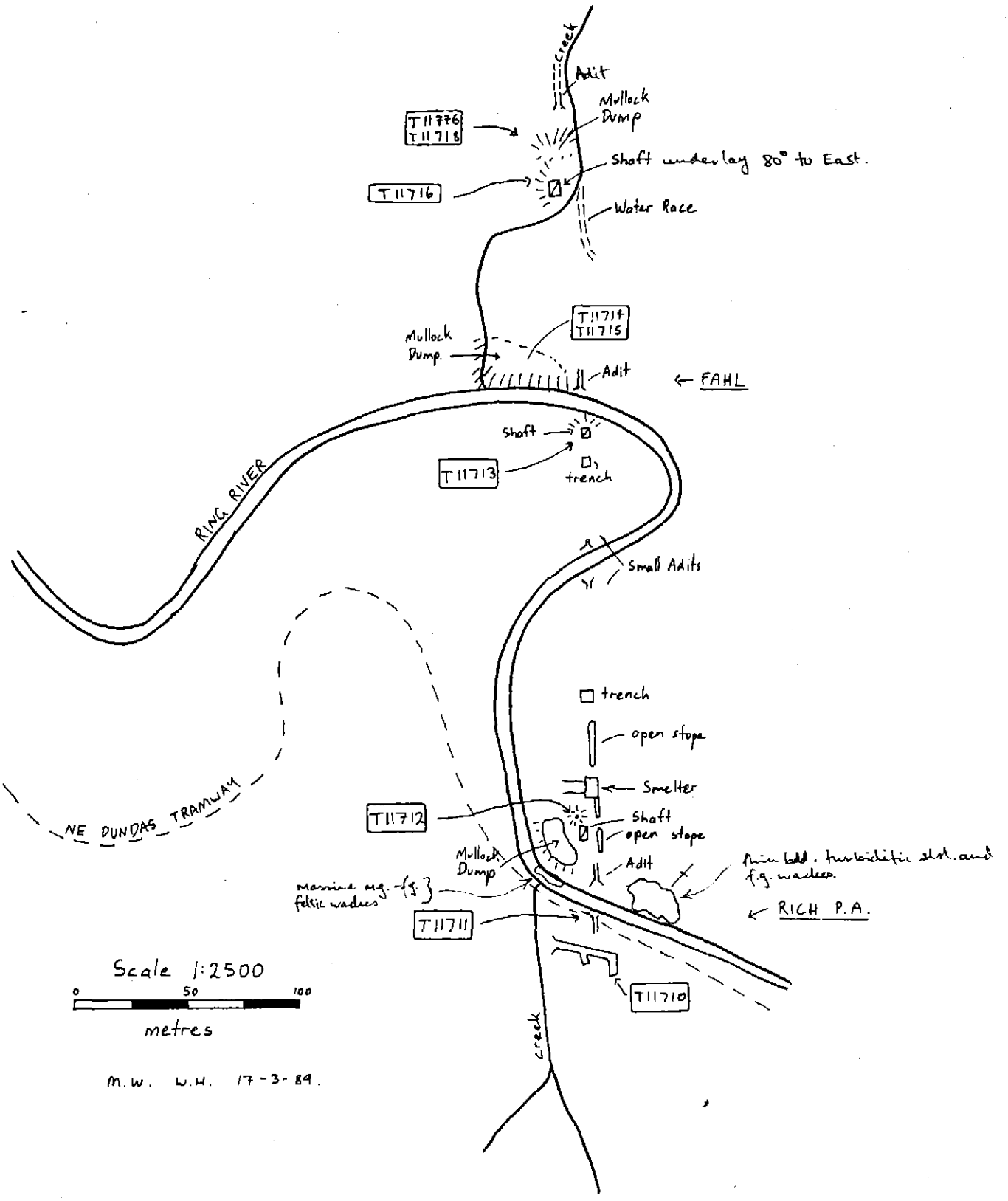
A small shaft on the inside of the bend has, on the dump, some massive siderite with minor pyrite which was sampled as T11713 but found to be not significantly anomalous.

FIGURE ~~24~~ 25

RICH P.A. and FAHL MINES

SKETCH PLAN

607137



On the north bank adjacent is another flooded (inaccessible) adit and westward from that extends a large mullock dump built up above the river bank. Most of this is very sulphide rich consisting dominantly of massive pyrite with patches of brecciated country rock, quartz, arsenopyrite, chalcopyrite, tetrahedrite, jamesonite and minor pyrhottite (Specimens RG 1, 2, 3, 4 in RGC collection). Material of this type was grab sampled in T11714 which is distinctly anomalous in Cu, Pb, Ag, As and Sb. There is also subordinate massive siderite with minor pyrite, chalcopyrite and tetrahedrite; Sampled in T11715 this is anomalous in Cu, Ag and Sb.

About 100m to the north are an underlay shaft and nearby north driven adit situated near the bed of a steep gully. There is not much mullock at this shaft (or rise ?). Mullock from the adit is mostly massive pyrite and quartz and tetrahedrite material sampled as T11716 which assayed 5% Cu, 1.2% Pb, 3980g/t Ag, 0.07% Bi, 1.57% As, 1.52% Sb and 0.1g/t Au. T1176 is of similar material with patches of siderite and contains a similar suite of anomalous metals albeit of somewhat lower grade. Brecciated country rocks with heavy stockwork veining of siderite and minor disseminated pyrite (<5%) were sampled as T11718 but found to be not significantly anomalous.

There seems little doubt that the Rich P.A. and Fahl lodes are connected. The Rich P.A. lode, in the southern part at least, appears to be of the shear zone/breccia type but only weakly mineralized with a little pyrite and arsenopyrite etc. The shaft and extent of surface stopes on the north bank suggest that some better shoots were extracted although we could find none. Northwards to Fahl the lode seems to have opened up to allow open space deposition of 2nd stage siderite and probably 3rd stage massive pyrite, tetrahedrite, jamesonite etc. This is a truly polymetallic vein significantly anomalous in all the metals analysed except zinc, tin and tungsten.

3.20 Exe Proprietary

The Exe River vehicle track crosses the Exe River about 500m

south of the Murchison Highway. Just west of this crossing the track turns sharply north into clear felled country. At this bend, on the south side, are ruins of mining machinery and a set of rails of an old haulage way leading steeply uphill to the west. The rails within about 80m lead to an adit driven at azimuth 305° into the hillside. This appears to correspond to the main adit level workings described by Ward (1911, p. 16-17).

The adit is still open and we were able to make inspection and produce a sketch plan of it (Fig. 26). There is evidence of post metrication chip sampling along the walls.

Country rocks along the main drives are purplish brown to grey fine grained mudstones and siltstones generally dipping at moderate angles to the east or southeast (Specimen XR1). The main drive bifurcates at about 40m from the portal with the NW branch extensively stoped overhead and non partly caved with daylight showing from the surface. At this bifurcation there are a number of fairly flat dipping impersistent veins of vuggy, ironstoned milky quantity. The larger veins are up to 120mm in thickness and often contain slices and fragments of silicified/ hornfelsed wall rock as well as ubiquitous (5%) greenish grey tourmaline (?) and patches and slugs of earthy limonite. Assay samples T11742 and 11743 are representative of this heavy veining, the former in situ on the north wall and the latter from loose blocks on the floor. They contain 0.24 and 0.31% Sn respectively wth arsenic weakly anomalous at 400ppm. Between the irregular major veins stockworks of fine quartz veinlets are developed in the country rock. Two samples of stockwork veined rock were obtained, T11744 vertically down the wall just west of the winze and T11745 likewise a couple of metres further in. Both are anomalous in tin (up to 0.15%) arsenic (0.13%) and copper (up to 0.06%).

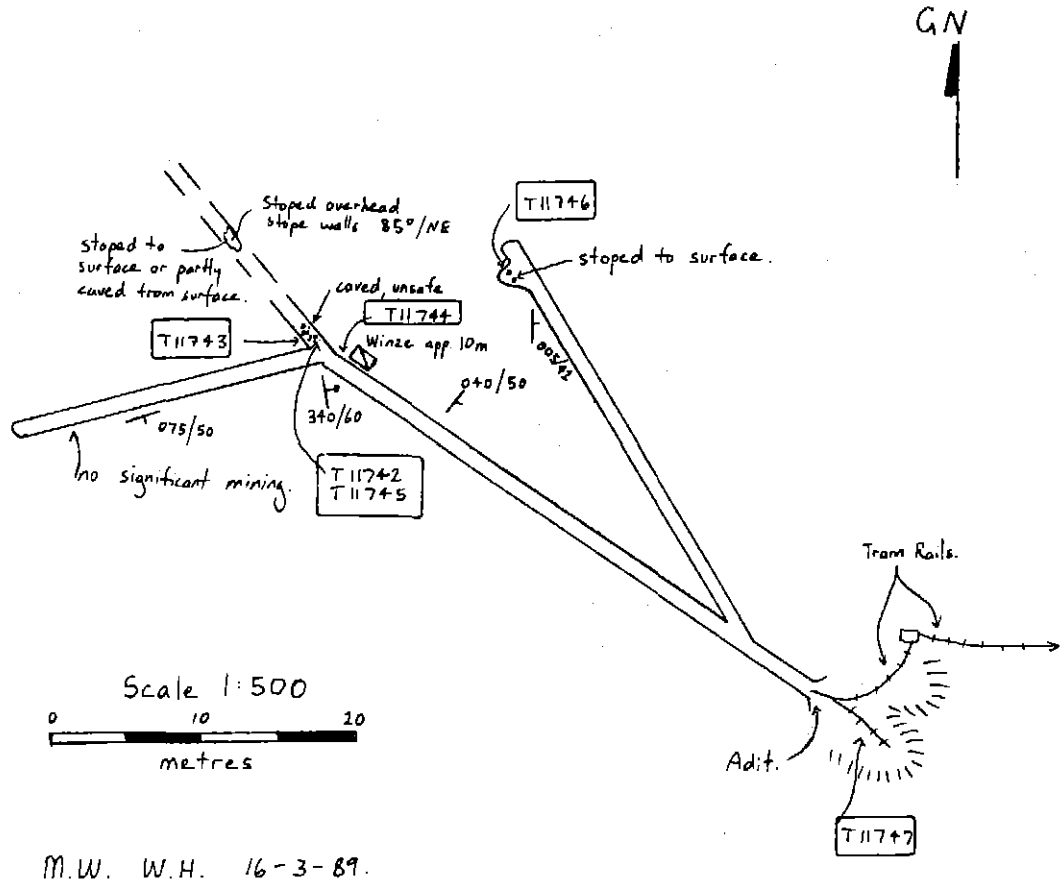
The 20m south western drive along the trend of the bedding does not appear to have intersected significant mineralization.

FIGURE 25

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607140

EXE PROPRIETARY



M.W. W.H. 16-3-89.

The northwestern drive commencing 6m inside the portal is likewise devoid of mineralization until near the end where it has been stoped overhead to the surface over a few metres of its length. Quartz vein sample T11746 is from the NW face of the stope from a fairly flattish set of subparallel veins up to 100mm in thickness. It assayed 0.21% Sn.

The mullock dump consists of vein quartz and quartz veined country rocks. The vein material is typically vughy, milky white, slightly gossanous and with patches of radiating green tourmaline (?) and fragments of partly tourmalized country rock (Specimen XR2) Some pieces retain a little 1% fresh pyrite. A grab sample of this material in T11747 yielded 0.14% Sn. Uphill to the west of the portal there are several irregular more or less east-west trenches but they are rather overgrown and present no useful exposure. Ward (1911) mentioned another "short tunnel started at a point some 4 chains north of" the main adit described. We made an attempt to locate this but its position is the heavily overgrown clearfelled patch thwarted our efforts.

The quartz reefs observed at this locality are constitutionally rather similar to those of Frazer and Green's Prospects at North Dundas but (the former) are distinct by the presence of tourmaline and the lower proportion of sulphides reflected in the low contents of base and precious metals. Exe Proprietary veins are faintly anomalous in tungsten (up to 71ppm W) but are devoid of Ag, Au in contrast to Frazer and Green's. Ward (1911, p. 12) noted that the lode system at Exe River could be regarded as meridionally elongated stockwork stockworks (rather than discrete reefs) perhaps arranged en echelon in a north westerly trending belt of mineralization running along the western side of the river.

3.21 Karlsen-Riley Workings

The several workings of the Karlsen-Riley Prospect are centred about 150m north of the northern end (9600N) of the RGC 1989

Montezuma Grid Baseline (Fig. 1). The best access is via Renison Mine roads to the foot of a spur road leading south up to Pine Hill and from there via a bulldozed track along an old water race. Montezuma Grid line 9600N is crossed about 800m from the above junction.

The area was briefly visited by Conder (1918) whose report is reproduced below in full:

(14)-Section 6710-M, 80 Acres

This section was held formerly in the names of Karlsen and Riley, and a consideerble amount of exploratory work was done on it by the Montana Company of Zeehan. Unfortunately the workings are now nearly all blocked, and the scrub has grown up so dense that it is impossible to gain any clear idea of the objective of the work. A good track runs down to the property from the Confidence Saddle, and good tin is reported to have occurred, but all is now abandoned and drifting back to primeval bush.

The country-rock shows well on the track to the property, and consists of gabbro altered in places to massive serpentine. Where the lode occurs there is a bold outcrop of limonite with chalcedonised slate, hard and compact. Trenching has been done in the surface, but this is overgrown, and at least four tunnels were driven in the hillside. The entrance of these tunnels is in yellow clay, which may be the result of decomposition of either the igneous or the slate rocks. One tunnel certainly seems to have been in slate country, though the gabbro belt should include all these workings. Quartz with pyrites and gossan shows on the tip here, and a lode of some description has certainly been cut. The occurrence might be of considerable value geologically, whatever be it economic features, since both the slates and the tin ore seem to be out of place here, but until the old workings are opended up and the young scrub cut down, any proper examination is not feasible.

Unfortunately the workings are in no better condition today and

our inspection has not done much to elucidate the general structure and geology.

The southern most workings (see Fig. 28) consist of a few trenches and an adit developed on a prominent outcrop of ironstone. This consists of variable proportions of sintery quartz, cavernous limonitic/gossanous (?) ironstone and minor brecciated vein quartz, completely oxidized and of quite unidentifiable precursor. The adit is driven in brown earthy clay at the southern margin of the outcrop. Our geochemical samples T11745 from the outcrop and T11778 from mullock indicate a sniff of copper and arsenic in the former (0.06 and 0.12% respectively) and weakly anomalous gold (at 0.11 and 0.07g/t Au respectively).

A short distance to the east are two further caved adits driven westwards apparently in serpentinite which outcrops about 20m to the south east. Mullock is mostly clayey weathered material and some ironstone. A single block on the dump of the eastern adit consists of partly oxidized sintery/saccharoidal quartz and pyrite in equal proportions; sampled as T11750 this yielded 0.16g/t Au but was otherwise not anomalous.

About 80m northeast of the first, is another prominent (10m tall) outcrop of siliceous/limonitic ironstone with several small pits, trenches and adits about it. We obtained two samples of the ironstone T11751 and T11752; both are weakly anomalous in copper (up to 0.09%) arsenic (to 0.22%) and gold (0.08 and 0.05g/t respectively). A surprise value of 646ppm tungsten is suspected of being spurious.

On the east side of the ironstone outcrop there is an adit driven at 310°; it appears to be open to at least 30m from the portal but with considerable depth of water on the floor and minor caving at 6m we preferred not to inspect it. The mullock consists mainly of clayey weathered crud and some ironstone but there is a small stack near the portal consisting of very hard, fine grained dark greenish to purplish grey rock which may be a

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calc-silicate hornfels or possibly altered metabasalt. This contains minor (1%) disseminated pyrhottite and is a possible unoxidized precursor of for the ironstone. Sampled as T11753, it was found not to be anomalous in the metal assayed.

Downslope to the east are two further adits driven SW and NW at the same level and intersecting each other close to the portals. Both are driven into soft clayey earth (at the portals) and both seem to be about 15m in length and (without the courage for an underground inspection) I suspect neither could have reached the primary rock. Both mullock dumps are mainly clayey oxidized rock and ironstone. On top of the mullock from the NW adit is a small stack of rocks consisting of carbonate with 2-3% sulphides including pyrhottite and chalcopyrite.

Three samples from this stack were taken for assay:

T11754: pale green carb. po, cpy, high graded 5% sulphides.
T11755: as above only about 2% po.
T11756: pale - med. grey harder silica and carbonate, 2% dissem. po.

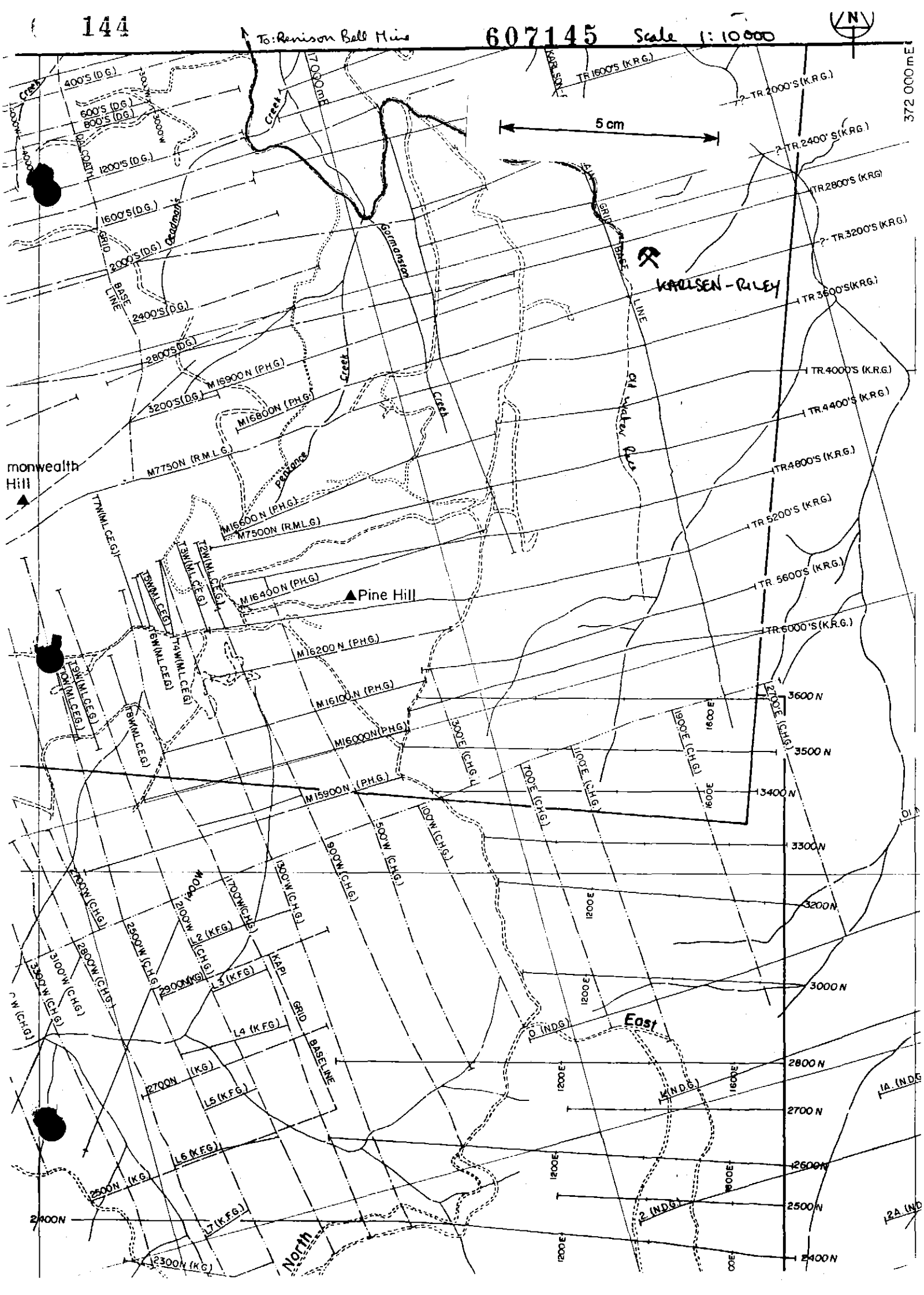
The assays indicate that none are significantly anomalous in the metals analysed. This carbonate is an obvious possible precursor for the ironstone blows of the area and its presence here (if not exotic ?) seems to indicate that the NW adit penetrated further than estimated or that there may have been winzing below the level which got down to the unoxidized rock.

On the sketchy observations made an interpretation seems more like speculation but it seems possible that there exists at Karlsen-Riley some carbonatized ultramafic of which in part has been silicified with associated iron sulphide mineralization. Tin mineralization, however, does not seem to be indicated by the low levels obtained in our samples. Gold and arsenic (with maxima 0.16g/t and 0.22% respectively are the only significantly anomalous metals.

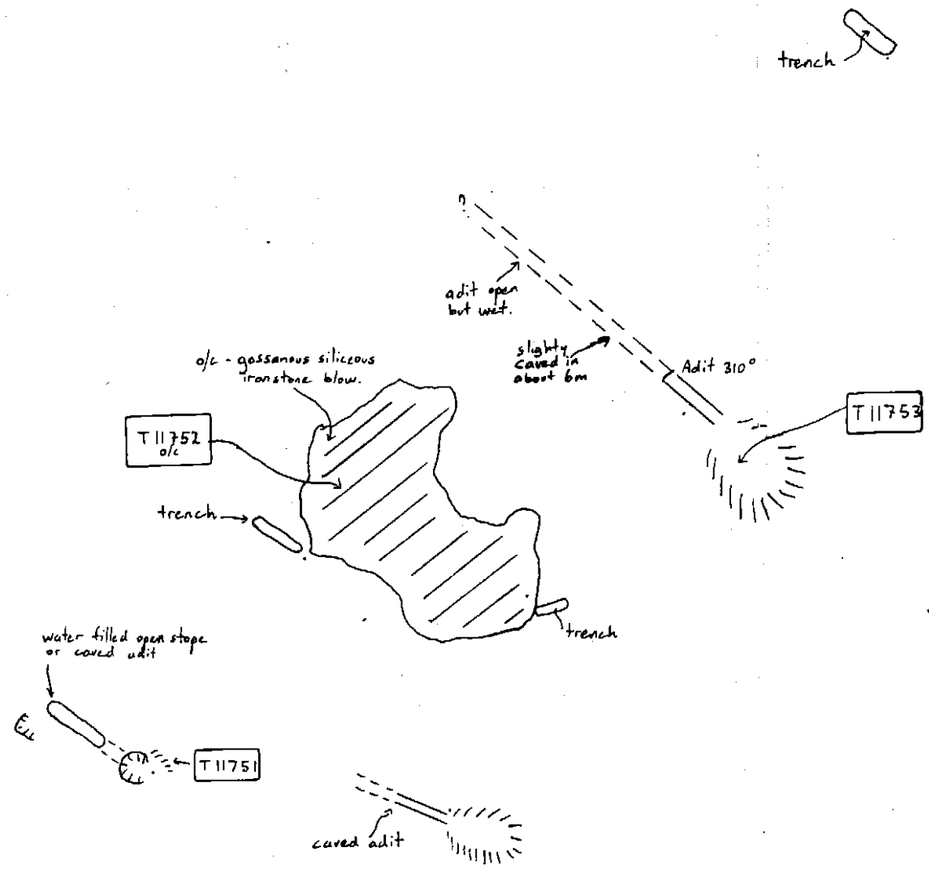
To: Renison Bell Mine

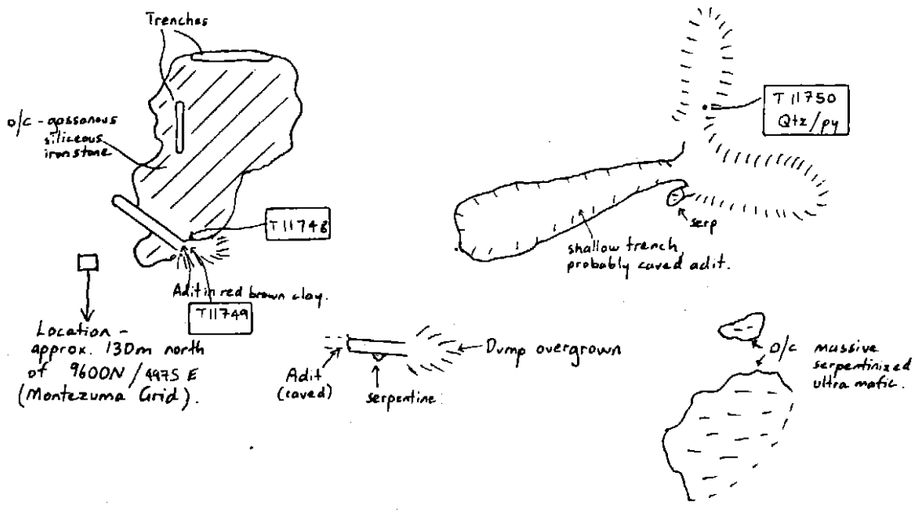
607145

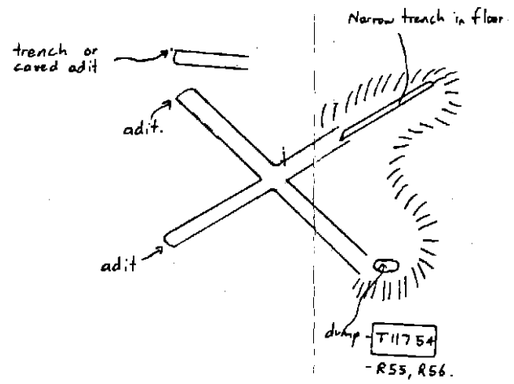
Scale 1:10000



607146 FIGURE 29







GN

KARLSON-RILEY

SKETCH PLAN

5 cm

Scale 1:500

0 10 20

metres

M.W. W.H. 16-3-89

4. CENTRAL DUNDAS MINERAL FIELD

4.1 Comet

Our assessment of the Comet Mine was limited to scrouging over the mullock dumps since the underground workings are now inaccessible and, according to, A.M. Reid were likewise in 1924.

The mullock dumps are, however, extensive and easily accessible since the road from Dundas passes directly over them (see Fig. ~~28~~ 29).

The dump material is mostly sideritic but there is also some cavernous limonitic ironstone, some slatey siltstone with minor siderite veins and some pale grey rock resembling dolomite or silicified dolorite.

The samples bagged for assay had the following characteristics: (see Specimens in RGC collection)

T11728: siderite with traces of gn, sp.
T11729: high grade galena, 50% gn, 50% Sid.
T11730: galena and pyrite in siderite gangue, 30% gn, 30%py.
T11731: siderite and pyrite; 30% pyrite, minor gn.
T11732: massive calcite and siderite with veins of aspy.
T11777: siderite and sphalerite 30% Sp.

The assays reflect the main sulphide components running up to 36% Pb, 2050g/t Ag in T11729, 15.5% Zn in T11777 and do not present any major surprises. The relatively high 0.56% Cu, 1725g/t Ag, 300ppm Bi and 0.35% Sb in T11730 suggests the presence of some tetrahedrite. Otherwise Bi, Sn and W do not seem to be significantly anomalous (Sn 50ppm) except for 263ppm W in T11777 which is suspected of being spurious. Gold is not anomalous.

Reid (1925) provides a brief summary of the geological setting

west and that it was apparently a replacement of dolomitized serpentinite.

4.2 Maestries (see Fig. 28)

The Maestries workings lie a short distance east of the road crossing over Comet Creek. As at Comet none of the workings seemed to be accessible and we were confined to sampling the mullock dumps.

This is what we obtained:

T11734: slate and fine grained quartzite with occasional fine veinlets of siderite and sphalerite and galena.

T11735: high graded galena (20% gn) in siderite gangue.

T11736: massive compact siderite; trace gn, cpy (2%).

T11737: gossanous ironstone with brecciated country rock, quartz and trace of galena.

T11738: oxidized cavernous limonitic ironstone, no sulphides or crocoite visible.

The assays again mainly reflect the galena and sphalerite content with all samples being significantly anomalous in Pb, Zn, Ag but not other metals. The presence of 1.17% As in gossanous sample T11737 characterised by the wall rock breccia texture suggests our analogy with the Godkin Ridge sideritic lodes, where it is apparent that massive siderite and sulphide veining was subsequent to pyrite and arsenopyrite infilling of breccia/shear zones.

On the basis of Reid's (1925) description, the Maestries workings were developed on the same formation as that of Comet.

FIGURE 28.

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607149

cleared drill site

COMET MAIN SHAFT

Road to Purdies

Road to old mill

old drive

B3 S30

Mullock Dump

Mullock Dump

caved shaft

Siderite Ore, with Gn, sph, py, apy. Also gossanous material.

T.N.

Fe-rich gossan scree.

COMET 1

pit or slope

lines of old drives

quartzite float

cream-green rock

phyllite?

caved at mouth

F' N° 1 adit.

adit (caved)

DUMP

DUMP

DUMP

dolomite minor PbS

Comet Creek

soft yellow-white weathered calcareous shale.

70

trench

DUMP

air shaft

fluming

24

78

60

COMET 2

DUMP

Gn, sid.

DUMP

flooded

80

56E

old track

DUMP

old lease peg

JOINT SHAFT

DUMP

DUMP

DUMP

PIT

DUMP

trenches

60

80

Comet Creek

trenching

scree of dolomitic conglomerate or breccia

Fe-rict gossan

?

?

?

?

Comet / Maestries Mines

- modified from Geophoto Resources Consultants - Comet-Kosminsky Grid Geological Map - (1968) N°1/203 for Texins Development Pty. Ltd.

5 cm

Scale 1:1000

0 10 20 30 40

metres.

607150

149

4.3 Platt Mine

The Platt workings can be reached via a foot track commencing at the end of the short spur road at 370450E/5362120N.

There are two main adits, as depicted on Fig. 30.

The eastern adit is driven 26.9m on azimuth 135°, through clayey weathered slate near the portal but passing into weathered serpentinite. At the end there is a narrow 4m drift on 040° along an 0.3m wide seam of crocoite bearing clayey ironstone dipping at 80° to SE. Crocoite content ranges up to 40% but seems confined to a 2m long shoot not extending SW across the adit nor as far as the NE face of the drift. It is associated with minor pale green nickel (?) carbonate (?) staining and the walls appear to be of weathered serpentinite. Two chip samples from this crocoite rich shoot, T11722 and T11723, contain high lead (26.9% and 43.5% respectively) moderate levels of zinc, silver and arsenic and are faintly anomalous in gold (to 0.12g/t). The small northerly drift about 8m from the end, does not appear to have exposed much mineralization apart from minor nickel (?) staining on fractures. Nevertheless, a chip sample from here, T11724, was assayed at 1.26% Pb.

The southwestern adit is driven on azimuth 155° into sheared grey slate but passing through a sharp faulted contact trending 040°/80° NW into weathered serpentinite (or limonite stained sintery silica ?). Just beyond this there is extensive irregular, small scale driving stoping and rising. Some of the mullock in the western drives contains crocoite (T11725 @ 12.1% Pb, 0.13g/t Au) but this mineral is not generally apparent in the walls and no distinct lode formation could be ascertained.

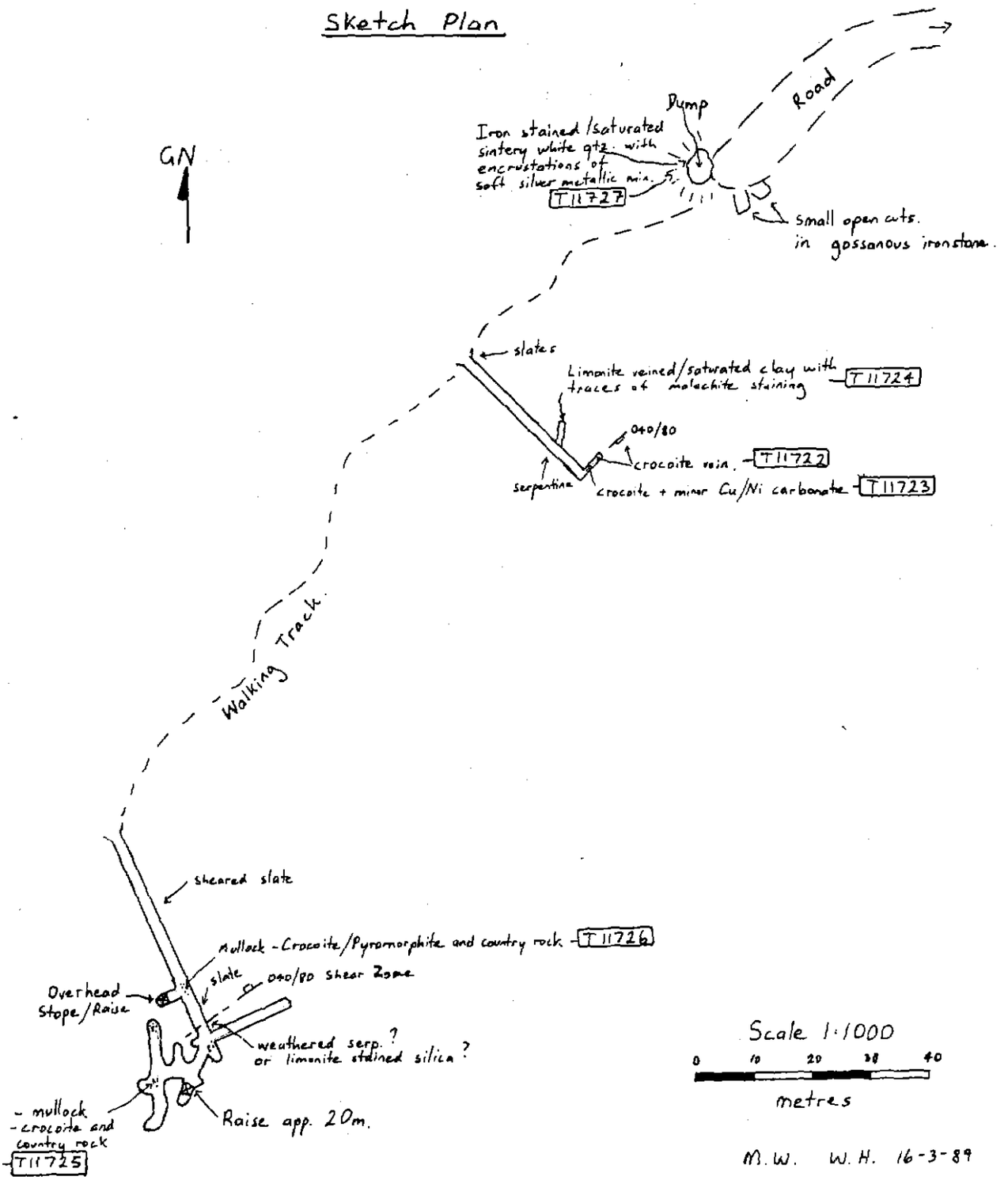
A small south westerly drift and raise 27m from the portal are developed on a diffuse zone of brecciation and heavy ironstaining in the slate. Mullock piled on the adit floor adjacent contains considerable (5%) crocoite and minor pyromorphite. Sampled as T11726 this was found to contain 6.55% Pb.

607151

FIGURE 29. 30

PLATT MINE

Sketch Plan



There are blocks of Fe/Mn ironstone scattered about a surface upslope above the adit but no significant surface workings. A road running approximately southwest cuts across about 50m above the portal and exposures in the cutting area of serpentinite.

Reid (1925) reported that the Platt lodes consisted of galena, sphalerite, jamesonite, crocoite and cerussite in ferromanganese oxide bodies representing replacement of dolomite along the serpentinite contact.

4.4 Kosminsky Mine

Reid (1925) described two lodes both trending 335° and dipping 65° to SW and suggested that they possibly represented the northern continuation of the South comet Lode displaced sinistrally along a fault marked by south Comet Creek. He noted that the lodes consisted of galena, sphalerite, quartz, siderite, pyrite and minor chalcopyrite and were discordant to the enclosing grey and black slates trending 020° with steep westerly dip. He stated that the western lode had been opened at three levels by adits.

We succeeded in locating a low level adit about 5m above creek level, apparenlty driven at 315° but collapsed at the portal and inaccessible. We took this to be No. 3 Adit (of Reid, 1925) but despite a detailed search could find no trace of No. 1 or 2 Adits. The adit located lies about 50m south east of a collapsed shaft and headframe and in retrospect it seems possible that we had located some minor workings perhaps on the eastern lode rather than the western.

Whatever the case, mullock or the dump is located in mainly slatey country rocks with some massive siderite lode material. Much of the siderite is barren but there are some pieces very rich in sphalerite ± minor galena and others with massive-veiny galena or disseminated galena in siderite.

Two grid samples were obtained from the dump:

T11719: siderite, brecciated slate, veiny galena, minor sphalerite.

T11720: siderite, high grade sphalerite, minor galena.

These reflect the main sulphides with 12.2% Pb and 19.9% As respectively. Both are moderately anomalous in silver (71 and 115g/t Ag respectively) but all other metals analysed are not present in significant proportion.

4.5 West Comet

After some early confusion we managed to locate a large open cut at 370100E/5362250N on the west side of Comet Creek. The west wall of the open cut exposes a large blow of cavernous dark brown - black contorted and sheared slates. A sample, T11721, of the ironstone indicates levels of around 00.12% Cu, 3.27% Pb, 0.86% Zn, 147g/t Ag but otherwise barren.

Despite extensive searching up an downstream for the adit workings we could find no trace of the low level adit mentioned by Reid (1925) which one would expect to be somewhere east of the open cut. There is, however, considerable evidence of modern and ancient bulldozing and we concluded in the field that the underground workings had been covered up.

I could find us useful plans of the workings in the literature at RGC Burnie Office (5/89) but would expect that such material would exist amongst the Geophoto data.

4.6 East North Comet Workings (Marjoribank's Show)

These workings, rediscovered by R. Marjoribanks in early 1989, lie adjacent to the Dundas River about 90m downstream from the ? where the track to Duck Creek crosses the river.

There is a sludged up adit and several small cuts on the south bank but no mullock. Adjacent on the south bank on an azimuth of 055° from the adit, is a very small (1 x 1m) shaft with a shallow trench running up slope to the NE. Mullock at the shaft is mostly of siltstone with a few blocks of white sintery quartz with a trace (1%) of pyrite. This was sampled as T11739 but found to have no anomalous metal content.

Across a narrow spur, about 40m NE of this shaft is another small shaft and an adit driven on 320°. The dump at the shaft collar contains some white sintery quartz with 1-2% oxidized pyrite; it was sampled in T11740 and like the former is not geochemically anomalous.

The adit penetrates only 5m through grey or dark grey slates, well bedded with steep to moderate NW dips. Near the end there is an 0.5m wide zone of strong shearing associated with and perhaps axial planar to tight contorted assymmetric folds in bedding. This zone is oxidized in contrast to the otherwise fresh wall rocks but there is no visible sulphide or quartz veining associated. Chip sample T11741 across the shear has shown no anomalous metal content.

The NE trend of these workings subparallels the strike of the Concert/Oonah contact and also bedding in the Oonah ?.

4.7 Banner Cross

Two attempts were made to locate the Banner Cross Mine, but the party was unsuccessful on both occasions. There is some conflict between previous workers as to where the mine actually is. McIntosh Reid (1925), discusses the mine briefly and quotes that the mine is situated west of the Ainslie Mine, which is one mile south-west of the Comet Mine. A typographic error is possible as the mine is referred to by all subsequent workers as being in an area approximately one mile south-east (not south-west) of the Coment Mine.

McIntosh Reid (1925), quotes that the lode varies from one to three feet in width over considerable strike length, consisting of galena, sphalerite, pyrite, siderite and more importantly jamesonite, and that the adits were inaccessible. Since 1925, the area has been heavily overgrown by typical rain forest species and cutting grass on the forest floor, making the job of locating the workings difficult.

The first attempt to locate the mine was undertaken on 1-3-89. The RGC, 1:250,000 geological interpretation map (1988), was used. A four-wheel-drive road from Dundas, towards South Comet Mine, was taken until the five-way intersection near Kosminsky Hill. The road that runs over Kosminsky Hill was taken for approximately 500m and then a road running north was walked for 170m. The party then traversed on a bearing of 090° for approximately 250m and then on a bearing of 180° back to the ridge track. During the traverse no signs of any workings were observed.

A second attempt to locate the mine was undertaken on 11/3/89. The RGC 1:5,000 geological interpretation maps (1988) were used to give a more accurate location of the mine. Walking from Maestries Mine, Comet Creek was followed east for approximately 250m until a major north-west flowing tributary. The mine is plotted on the 1:5,000 geological interpretation map, within 50m of this tributary, about 300m upstream from the Comet Creek junction. The tributary was walked for 400m and searched either side for any signs of mine workings, but none were located. Approximately 400m south-east of the Comet Creek junction, a prospecting pit consisting of quartz veins in carbonate with minor pyrite was sampled (T11772, 73) but analyses did not indicate significantly anomalous metals.

During a visit to Burnie Office, more detailed 1:1,200 geological maps were discovered. These maps show old workings and simple geology of the area and were compiled by Geophoto Resources Consultants for Texins Development Pty. Ltd., in

1968. Small gossanous outcrops and one small adit were situated in the area of Banner Cross but no reference to the Banner Cross Mine is made. These 1:1,200 maps would be invaluable if a third attempt to locate the mine workings was required.

4.8 Ainslie/King Dundas Mines

The Ainslie Mine workings were not located by the party. From the RGC 1:25,000 geological interpretation map (1988), the Ainslie Mine is plotted just south of the ridge foot track which runs east from the end of the Kosminsky Hill road. The foot track was taken for 150m, then the area to the south of this was searched. Three water races were located one of which runs down hill to the south-south-west for 140m to a trench which exposes a fault and a 1cm thick pyrite vein within grey slates, this was sampled as T11774. Analysis indicated 0.18% Pb, 0.3% Zn and 0.16% As.

Another 10m south of the trench, is a steep area of rock, no overgrown, and one large boulder found consisted of silica-pyrite with galena and sphalerite, (35% sulfides). Sample T11775 from this boulder assay at 23.6% Pb, 0.85% Zn, 40g/t Ag, 0.34% As, and 0.25% Sb. These workings are actually part of the King Dundas Prospect and not the Ainslie Mine as originally thought.

From the more detailed 1:1,200 Geophoto geological maps, situated in the Burnie Office, the Ainslie Mine area appears to be situated to the north of the ridge foot-track and the map shows a number of adits in this area. This map would be invaluable if the mine needed to be located and investigated.

McIntosh Reid (1925), discussed the Ainslie Mine briefly and quoted that the galena-sphalerite rich vein was opened in three adits, now inaccessible. He also noted that the ore was revealed in outcrop in an irregular channel, cutting across argillaceous schist and consists of galena, sphalerite, pyrite, siderite and quartz.

5. DISCUSSIONS

The preceding detail can be partly condensed into a few broad generalizations:

* All of the occurrences visited are structurally controlled vein type deposits. There is no evidence for stratiform mineralization. Most of these mineral deposits are in narrow (1.5m) lodes, veins or mineralized breccia zones.

* In general there is no evidence for wall rock replacement, the sulphides and gangues essentially having infilled spaces in sheared or brecciated rock or as massive open space fissure fillings. The only exceptions are:

  (i) The large ironstone formations of the Central Dundas field and possibly also Moore's Pimple and Karlsen Riley, which appear to be partial replacements (?) of dolomitized selvedges of ultramafic bodies. To this extent these can be considered stratabound. It is not clear whether the sulphide mineralization was concurrent or subsequent to the dolomitization but the latter seems likely in view of the observations that dolomitization seems widespread but sulphide mineralization is localized and patchy.

  (ii) A hint of restricted (20mm selvedges) wall rock alteration at Frazer Mine and fairly distinct tourmalinization of wall rock fragments in quartz veins at the Exe Proprietary workings.

* Many of the lodes consist of complex polymetallic sulphide and gangue assemblages however a number of distinctive assemblages and styles with an apparently consistent paragenetic sequence can be differentiated.

The two most common and often closely associated mineral assemblages are:

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(a) Pyrite and arsenopyrite and quartz infilling spaces in finely brecciated or sheared country rocks.

(b) Massive siderite (perhaps also other carbonates) usually coarsely crystalline and having the appearance of open space fissure fillings. Siderite is often accompanied by other minerals amongst which may be pyrite, chalcopyrite, galena, sphalerite, magnetite and tetrahedrite. Arsenopyrite, by contrast, is very rarely found in close association with siderite and there is textural/cross cutting evidence to indicate that siderite post-dates type (a) lode formation. The sulphides mentioned here have variable modes of occurrence, sometimes as coarse or fine disseminated blebs and intergranular fillings (which look coeval to siderite) and often as fine to coarse stringers and veins which appear to postdate crystallization of siderite. Tetrahedrite, in particular, is often indiscrete veins apparently cross cutting siderite and type (a) lode.

(c) Jamesonite, occurring as fine stringers and sometimes coarse veins or large shoots. It nearly always exhibits cross cutting relationships over type (b) lode and at Wallace's (where siderite is not present) clearly occurs in open space veins and pods cutting through type (a) lode.

(d) Another distinctive assemblage is that characterised by Frazer, Green's and Exe Proprietary lodes consisting largely of milky white vuggy quartz with associated arsenopyrite ± pyrhottie ± chalcopyrite ± cassiterite. Although these commonly appear to be open space fissure fillings with well defined walls there is some evidence at Frazer and Green's Prospects, as well as the association with arsenopyrite, that these form a continuum with the type (a) lodes. It is notable that the three occurrences mentioned here (Frazer, Green's and Exe Proprietary) are all at relatively low elevations of 400m A.S.L. Further evidence may exist at the main Curtin Davis Mine where the upper levels (Curtin Davis Extended) are in type (b) sideritic lodes, the mid levels are in complex type (a) + type (b) lodes and the lower

levels are in milky quartz + pyrite + arsenopyrite type (d) lodes. There is, however, according to our sampling no indication of increasing tin grades with depth at Curtin Davis.

The observed mineral assemblages and apparent paragenetic sequence implies a multi phase origin or evolutionary sequence for mineralizing solution/s combined with periodic tectonic re opening of the fracture systems. It is notable that virtually every combination of types a, b, and c lodes have been observed (ie: abc, ac, bc, ab,) but type (d) occurs alone or (perhaps) transitional to type (a).

Beyond this it is difficult to interpret a metallogenic or structural pattern.

Without exception, the lode formation of the North East Dundas area are steeply dipping to semi vertical (minimum 65°). Strike trends are variable but NNW and NNE are most common whilst a few (notably Curtin Davis and Wallace's East) have trends very close to meridional. Dip directions are equally common east or west without absolute symmetry or pattern though it may be argued that the series of lodes running along the eastern crest of Godkin Ridge (Wallace's East, C.D. Consols, No. 1 C.D., C.D. extended and Curtin Davis) dip easterly whilst some of those on the west flank of the ridge (Wallace's Scout Hut lode, Evenden, South C.D., Crown Curtin) dip to the west. (Crown Curtin and South Curtin Davis have lodes dipping both ways).

With respect to strike trends, there is reasonable evidence at Green's and Frazer Prospects (and perhaps also at Wallace's west) that the dominantly NNW trending lodes there are "stepped" with short dextral offsets along NNE trending fractures and it is notable that both NNW and NNE sets are mineralized.

The lodes of this district were quite famous (Reid, 1925) for their lack of persistence in length, depth and breadth. Even the main Curtin Davis lode system which was prospected for some

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700m strike length and 400m in depth can be seen in detail to consist of a series of thin, partly overlapping, closely en echelon, thin lenticular veins rather than a single continuous reef.

There appears to be no correlation between lode mineral assemblages and structural orientation; lodes of all types a, b, c, d occupy both the NNW and NNE trends. In consideration of the preceding comments on paragenetic sequences in combination with structural orientation of lodes there is no evidence that one particular fracture direction succeeded or displaced another. Marjoribanks (pers. comm.) on the other hand, interpreted that the major NNE trending "Ringville Fault: (see section 3.14 of this report) is sinistrally offset some 1200m by the NNW trending Montezuma Fault. In the course of our inspections of the North Dundas Prospects we no where found indications of substantial fault displacements but it must be conceded that the exposures and the very localised extents of our mapping were not conducive to such recognition.

The only indication of structural genetic sequence obvious to me is that of progression of assemblages from type a through b to c. Perhaps the Curtin Davis lode/s here offer a clue. If it is accepted that type d and a are of similar age, then in general type d appeas to be a simple dilation vein structure whilst type a might represent the upward and lateral feathering out at the fringes of type d. Since it seems type b follows type a assemblages the vertical progression at Curtin Davis (from type d up through a and b culminating in b only) suggests an upward vertical migration of dilational open space fissures with time.

With respect to areal distribution it is apparent that the type 'b' sideritic lodes are the most widespread; they are prominent at Central Dundas and North Dundas as well as extending out to the peripheral less metallically mineralized Svengali and Moore's Pimple Prospects. The type 'a' breccia and arsenopyrite lodes are virtually ubiquitous at North Dundas over the Godkin

Ridge area (in triangle extending from Gt. Northern Creek Mine to Wallace's and Fahl). There is a hint from mullock at Maestries that type 'a' was alsp present at Central Dundas. The type 'd' milky quartz lodes (apart from Exe Proprietary which is something of a geographical wild card in this survey) on the other hand are quite restricted areally in the low level workings of Curtin Davis, Green's, Frazer and possibly Bonnie Dundee. The type 'c' assemblage characterized b late stage heavy jamesonite veining appear to be restricted to the east side of Godkin Ridge (Wallace's, No. 1 C.D., Block 291 and Fahl) but it should be noted that antimony grades of 0.1% are almost ubiquitous over North Dundas field and also report in a few of the Central Dundas samples.

On the topic of metallic zonation we interpret with some trepidation. It is very apparent in inspection of the workings and mullock and in the reports of Reid (1925) that the sulphide minerals and particularly the valuable ore shoots are/were very erratically distributed within the lodes. In recognition of this fact and the small number of our samples from each working it must be realized that the low sampling density could allow distorted or false interpretations of metal distribution.

Nevertheless, it is safe to say that silver is widely distributed, only the barely mineralized lodes of Karlsen-Riley, Svengali and Moore's Pimple did not report above 50g/t Ag in at least one sample. An exception to this rule is that of Exe Proprietary which contains high tin values but very little of any other metal assayed.

Next to silver, lead and to somewhat lesser extent zinc are also widely distributed. There are however notable "holes" in the Pb, Zn zone: south west Curtin Davis appears to contain neither significant lead or zinc and Crown Curtin no zinc whilst most of the surrounding prospects are significantly anomalous in these metals zinc drops out in the mid and lower levels of Curtin Davis and lead also in the lower levels. Neither zinc nor lead

are generally prominent in the tin bearing lodes at Green's and Frazer.

Antimony also seems to be negatively correlated with the tin bearing lodes but otherwise is fairly widely distributed at North Dundas and to lesser extent at Central Dundas. Copper is fairly widespread. Bismuth is fairly tightly clustered around the northern part of North Dundas and is not significantly anomalous (>500ppm) south of South Curtin Davis. Tin and gold appear to be positively correlated and both tend to occur in a corridor approximating to the Montezuma Fault between Frazer and Wallace's Prospects. In the case of gold this corridor can be speculatively extended northwards three kilometres to Karlsen-Riley Conder (1918) referred to reports of "good tin" from the latter but our sampling could not detect it.

However, the highest value for gold recorded in any sample was 0.92g/t (from Wallace's west) and since we generally went to some trouble to high grade the sulphide samples, the fields can hardly be regarded as highly prospective for gold. At North Dundas, on the basis of the fairly widespread Pb, Zn, Ag distribution and more confined distribution of Sn and perhaps Bi, one might be tempted to point to the northern part of the North Dundas field, say around the Green's Prospect area, as the central focus of a zoned mineral field. This ought to be tempered by the sampling density problem already mentioned and by the fact that it's rather open ended to the north there being few prospects in that direction (due perhaps to more subdued topography) but it is coincidental that this "focus" lies close to the intersection of the "Montezuma" and "Ringville" fault zone.

Although many of the mineral occurrences visited were very "showy" and could yield some impressive grades in hand picked samples, none seem to offer much scope for a medium or large scale mining enterprise. Reid in his 1925 report on the North Dundas ara indicated that some of the lodes in the Godkin Ridge

area" were of any value". He quoted production figures for some of them, most appeared to be less than 500 tons and the largest producer seemed to be Curtin Davis itself at 992 tons.

Furthermore the renowned impersistence and narrowness of the ore shoots and the many uncertainties with respect to structural control, combine to make the "findability" of new discoveries fairly low although there's practically no doubt that many rich lodes remain undetected.

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6. REFERENCES

Conder, H., 1918. The Tin Field of North Dundas Geol. Survey Bulletin No. 26 Tas. Dept. of Mines.

Forsythe, D.C. 1969. Geological Plans: 1" to 400' and 1" to 200'. New Consolidated Goldfields P.L. S.P.L. 20 North Dundas Project.

Reid, A. McIntosh., 1925. The Dundas Mineral Field. Geol. Survey. Bulletin No. 36 Tas. Dept. of Mines.

Sainty, R.A., 1984 (a). Montezuma J.V. Part of E.L. 15/76 Report on Expl. Activity 11/83-5/84 E.Z. Co. Report No. T180 MD.

Sainty, R.A., 1984 (b). Montezuma J.V. Part of E.L. 15/76 Report on Expl. Activity 5/84-11/84 E.Z. Co. Report No. T197.

Thompson, B.P., 1951. Jamesonite Prospects, Dundas and North Dundas, Tasmania. Memo No. 210. Zinc Corp. Ltd. Broken Hill, N.S.W.,

Ward, L.K., 1911. The X River Tinfield Geol. Survey Bulletin No. 12 Tas. Dept. of Mines.

●=Yes
O=1 sample only in group.

	STYLE						METALS									
	W.R. Breccia Aspy ± Py	Massive/vein siderite	Massive/vein Jamesonite	Qtz stringers py, gn, sp etc.	Drusy Qtz veins Aspy, py, po etc.	Ironstone	Cu >0.5%	Pb >0.5%	Zn >0.5%	Bi >500	Sb >1000	As >0.5%	Sn >100	W >100	Ag >50	Au >0.1
EXE PROPRIETARY					●								●			
FRAZER					●		●		O	●		●	●		●	●
GREEN'S					●			O				●	●	●	O	●
BONNIE DUNDEE					●							●			●	
WALLACES EAST	●		●				●	●	●		●	●	●		●	●
WEST	●							●	●			●	●		●	●
SCOUT HUT	●		?								●					
BLOCK 291	●	●	●				●	●	O	●	●	●			●	●
SVENGALI		●														
MOORE'S PIMPLE		●						●	●							
RICH P.A.	●										●				●	
FAHL	●	●	●				●	●		●	●	●			●	●
KARLSEN-RILEY		?				●										●
LWR RAMSDALE						●										
KOSMINSKY		●						●	●						●	
COMET/MAESTRIES		●					O	●	●		O	O			●	
PLATT						●		●	●		O				●	●
WEST COMET		●				●		●	●						●	
EVENDEN		●						●	●						●	
GT. NORTHERN CK	●	●		●				●	●			●	O	O	●	
CONSOLS	●							●	●		●	●	●		●	●
NO. 1 CURTIN DAVIS	●	●	●				●	●	●	●	●	●	●		●	O
SOUTH CURTIN DAVIS	●	●					●	●	●	●	●	●	●		●	
SOUTH WEST CURTIN DAVIS	●	●					●			●	●	●			●	
CROWN CURTIN	●						●	O		●	●	●			●	O
C.D. EXTENDED		●					●	●	●	●	O				●	
CURTIN DAVIS	●	●					●	●		●	●	●	O		●	O
HECLA	●	●					●	●	●	●	●	●	O	O	●	
MOORE'S PIMPLE		●				●		O	O							
EXE PROPRIETARY					●								●			

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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
	95.1.08.06027	21/03/89	0607	1 OF 8

TUBE No.	SAMPLE No.	Cu	Cu	Pb	Pb	Zn	Zn	Ag	Ag	Bi
1	T07956	75	-	55	-	215	-	<0.5	-	<10
2	T07957	20	-	20	-	65	-	<0.5	-	<10
3	T07958	325	-	-	7.91	-	4.17	-	126	10
4	T07959	35	-	265	-	485	-	1.0	-	<10
5	T07960	175	-	270	-	225	-	0.5	-	<10
6	T07961	35	-	40	-	250	-	<0.5	-	<10
7	T07962	155	-	160	-	755	-	<0.5	-	<10
8	T07963	780	-	12500	-	1800	-	42.5	-	10
9	T07964	-	3.62	-	23.05	-	1.97	-	469	380
10	T07965	-	1.08	-	4.23	2000	-	-	119	40
11	T07966	3800	-	-	7.76	5650	-	-	107	10
12	T07967	8900	-	-	6.22	-	1.80	-	4660	150
13	T07968	1350	-	-	5.65	-	16.05	-	175	<10
14	T07969	1020	-	-	2.10	-	9.53	-	160	<10
15	T07970	840	-	3500	-	555	-	27.5	-	<10
16	T07971	3550	-	-	11.55	1350	-	-	887	3900
17	T07972	2900	-	-	20.00	-	14.78	-	548	60
18	T07973	2100	-	4400	-	-	5.30	27.0	-	<10
19	T07974	55	-	1950	-	2050	-	2.0	-	<10
20	T07975	1550	-	2500	-	-	7.61	-	94	110
21	T07976	400	-	2350	-	-	1.59	36.5	-	30
22	T07977	500	-	-	1.81	400	-	-	285	30
23	T07978	3000	-	-	1.71	4900	-	-	223	180
24	T07979	2050	-	-	2.28	-	9.64	-	96	40
25	T07980	-	1.71	-	6.37	5100	-	-	767	-

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

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ANALYTICAL DATA

IX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	95.1.08.06027	21/03/89	0607	5 OF 8

Bi	Au	AuChk	As	As	Sb	Sn	W	
-	<0.01	-	25	-	12	16	<200	
-	<0.01	-	32	-	5	11	<200	
-	<0.01	<0.01	50	-	114	12	<200	
-	<0.01	-	74	-	8	19	<200	
-	<0.01	-	52	-	38	5	<200	
-	<0.01	-	39	-	11	3	<200	
-	<0.01	-	42	-	37	7	<200	
-	0.45	-	-	4.17	3690	1490	<200	
-	0.21	-	-	1.50	11060	2270	<200	
-	0.17	-	-	1.27	23100	907	<200	
-	0.30	-	-	1.79	37700	1050	<200	
-	0.46	-	-	1.11	41800	3520	<200	
-	0.63	-	-	5.56	704	366	<200	
-	0.92	-	-	2.17	335	637	<200	
-	<0.01	-	1930	-	2141	27	<200	
-	<0.01	0.01	-	5.01	1060	69	<200	
-	<0.01	-	850	-	230	112	<200	
-	<0.01	-	154	-	25	25	<200	
-	<0.01	-	1530	-	180	12	<200	
-	0.35	-	-	1.85	307	843	<200	
-	0.03	-	-	1.13	135	272	<200	
-	0.40	-	-	2.70	7740	2520	<200	
-	0.81	0.83	-	10.00	1820	2290	<200	
-	0.25	-	-	4.09	265	1390	<200	
1.09	0.02	-	-	12.90	24400	61	<200	

unless otherwise specified
esent, but concentration too low to measure
concentration is below detection limit
ot determined

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ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	95.1.08.06027	21/03/89	0607	2 OF 8

TUBE No.	SAMPLE No.	Cu	Cu	Pb	Pb	Zn	Zn	Ag	Ag	Bi
1	T07981	2300	-	-	31.50	-	0.95	-	1226	100
2	T07982	-	2.61	-	2.85	-	2.18	-	314	5500
3	T07983	-	2.02	-	2.28	655	-	-	1506	-
4	T07984	5000	-	-	6.97	-	22.61	-	212	180
5	T07985	1700	-	-	2.15	-	-	-	124	140
6	T07986	5350	-	-	7.57	-	22.87	-	426	590
7	T07987	-	1.27	-	2.10	1400	-	-	2949	-
8	T07988	-	1.48	5000	1.00	865	-	-	1136	-
9	T07989	130	-	3400	-	150	-	25.0	-	100
10	T07990	7750	-	5800	-	3000	-	-	-	520
11	T07991	-	3005.0	-	1.02	970	-	-	1274	960
12	T07992	-	2.25	-	6.09	-	2.28	-	790	1100
13	T07993	8100	-	225	-	250	-	31.0	-	70
14	T07994	-	2.55	2300	-	885	-	-	235	440
15	T07995	-	7.08	310	-	1900	-	-	2965	2700
16	T07996	-	2.32	200	-	925	-	-	917	480
17	T07997	5600	-	4000	-	355	-	32.5	-	570
18	T07998	485	-	120	-	80	-	17.0	-	160
19	T07999	1550	-	215	-	70	-	-	41	70
20	T08000	225	-	240	-	220	-	17.0	-	<10
21	T10153	880	-	50	-	50	-	-	237	<10
22	T10154	110	-	25	-	145	-	5.5	-	<10
23	T10155	30	-	30	-	140	-	<0.5	-	<10
24	T10156	245	-	25	-	245	-	<0.5	-	<10
25	T10157	200	-	35	-	430	-	1.0	-	<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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A Division of Macdonald Hamilton & Co. Pty Ltd.

ANALYTICAL DATA

FIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	95.1.08.06027	21/03/89	0607	6 OF 8

Bi	Au	AuChk	As	As	Sb	Sn	W	
-	0.02	-	-	2.34	3050	55	<200	
-	<0.01	-	-	9.00	23700	39	<200	
1.45	0.01	-	-	5.95	21700	72	<200	
-	<0.01	-	745	-	173	200	<200	
-	<0.01	<0.01	735	-	123	107	<200	
-	0.01	-	3980	-	148	496	<200	
1.55	0.05	-	-	3.49	1240	68	<200	
1.84	0.05	-	-	19.50	3500	58	<200	
-	<0.01	-	2910	-	72	16	<200	
-	<0.01	-	1160	-	344	17	<200	
-	<0.01	-	1850	-	9330	59	<200	
-	0.03	0.03	3720	-	389	34	<200	
-	<0.01	-	-	1.21	566	5	<200	
-	0.02	-	-	7.85	5220	29	<200	
-	0.03	-	-	1.13	33100	67	<200	
-	<0.01	-	-	3.57	14500	36	<200	
-	<0.01	-	-	25.20	4840	14	<200	
-	<0.01	-	1270	-	200	29	<200	
-	<0.01	-	-	3.12	929	84	<200	
-	<0.01	-	723	-	127	36	<200	
-	<0.01	-	400	-	122	31	<200	
-	<0.01	<0.01	70	-	11	6	<200	
-	<0.01	-	79	-	5	5	<200	
-	<0.01	-	72	-	15	5	<200	
-	<0.01	-	61	-	48	6	<200	

unless otherwise specified
present, but concentration too low to measure
concentration is below detection limit
ot determined

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ANALYTICAL DATA

SAMPLE PREFIX		REPORT NUMBER		REPORT DATE		CLIENT ORDER No.		PAGE	
		95.1.08.06027		21/03/89		0607		3 OF	8

TUBE No.	SAMPLE No.	Cu	Cu	Pb	Pb	Zn	Zn	Ag	Ag	Bi
1	T10158	2950	-	670	-	200	-	17.5	-	50
2	T10159	85	-	40	-	50	-	1.0	-	<10
3	T10160	50	-	1550	-	865	-	4.5	-	<10
4	T10161	-	2.30	2100	-	825	-	-	775	2400
5	T10162	315	-	585	-	75	-	-	49	480
6	T10163	3200	-	2450	-	80	-	-	115	3900
7	T10164	-	1.29	885	-	305	-	-	170	660
8	T10165	-	2.85	1350	-	615	-	-	850	460
9	T10166	5450	-	-	1.40	390	-	-	286	580
10	T10167	510	-	260	-	120	-	10.0	-	30
11	T10168	395	-	25	-	145	-	3.0	-	<10
12	T10169	255	-	30	-	335	-	<0.5	-	<10
13	T10170	-	1.38	-	9.40	3300	-	-	4315	-
14	T10171	-	3.05	-	1.21	4350	-	-	1288	2300
15	T10172	-	2.31	4300	-	1250	-	-	893	2200
16	T10173	-	1.83	-	1.03	2150	-	-	827	370
17	T10174	-	2.15	2050	-	715	-	-	347	530
18	T10175	520	-	1500	-	120	-	-	36	70
19	T10176	1700	-	1200	-	115	-	-	432	70
20	T10177	1150	-	1650	-	80	-	-	143	5600
21	T10178	85	-	545	-	190	-	7.0	-	80
22	T10179	65	-	35	-	85	-	2.5	-	40
23	T10180	1200	-	5250	-	400	-	-	115	2900
24	T10181	-	-	-	-	-	-	-	-	-
25	T10182	-	-	-	-	-	-	-	-	-

Results in p.p.m. unless otherwise specified
T = element present, but concentration too low to measure
A = element concentration is below detection limit
— = element not determined

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

ANALYTICAL DATA

ix		REPORT NUMBER		REPORT DATE		CLIENT ORDER No.		PAGE	
		95.1.08.06027		21/03/89		0607		7 OF	8

Bi	Au	AuChk	As	As	Sb	Sn	W
-	<0.01	<0.01	109	-	597	6	<200
-	<0.01	-	177	-	26	11	<200
-	<0.01	-	138	-	25	53	<200
-	<0.01	-	-	10.90	17700	35	<200
-	<0.01	-	-	3.60	2360	4	<200
-	<0.01	-	-	2.74	4700	27	<200
-	0.02	-	-	20.40	2900	39	<200
-	0.02	-	-	12.30	5220	60	<200
-	0.31	-	-	6.25	863	65	<200
-	0.02	-	-	1.98	299	22	<200
-	<0.01	-	2360	-	687	9	<200
-	<0.01	-	1000	-	451	14	<200
1.95	0.10	0.09	-	4.46	1860	107	<200
-	0.05	0.07	-	4.46	1990	106	<200
-	0.02	-	-	3.71	9870	40	<200
-	0.01	-	-	1.70	3070	54	<200
-	0.01	-	-	4.51	1540	44	<200
-	0.01	-	2220	-	781	22	<200
-	<0.01	-	-	1.00	394	23	<200
-	<0.01	-	-	3.05	1580	10	<200
-	<0.01	-	855	-	73	8	<200
-	<0.01	<0.01	1100	-	78	7	<200
-	0.03	-	-	7.62	3910	87	<200
-	2.87	-	-	-	-	-	-
-	4.10	-	-	-	-	-	-

...unless otherwise specified
...esent, but concentration too low to measure
...centration is below detection limit
...determined

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ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	95.1.08.06043	04/04/89	0608	1 OF 2

TUBE No.	SAMPLE No.	Cu	Cu	Pb	Pb	Zn	Zn	Ag	Ag	Bi
1	T10184	-	2.06	2050	-	2380	-	-	118	640
2	T10185	1280	-	60	-	70	-	<0.5	-	50
3	T10186	130	-	50	-	60	-	0.5	-	10
4	T10187	15	-	50	-	65	-	<0.5	-	80
5	T10188	265	-	-	3.30	-	7.11	-	135	320
6	T10189	280	-	-	14.95	-	4.93	-	330	80
7	T10190	980	-	-	21.60	-	28.00	-	435	50
8	T10191	60	-	7650	-	5980	-	22.0	-	80
9	T10192	-	-	-	-	-	-	-	-	-
10	T10193	-	1.25	565	-	<5	-	-	80	410
11	T10194	-	4.46	1550	-	9280	-	-	182	1300
12	T10195	-	1.51	330	-	290	-	-	96	590
13	T10196	4980	-	160	-	70	-	56.0	-	440
14	T10197	-	4.53	75	-	265	-	-	175	570
15	T10198	3180	-	55	-	40	-	6.5	-	230
16	T10199	-	1.77	45	-	365	-	-	60	160
17	T10200	-	-	-	-	-	-	-	-	-
18										
19										
20										
21										
22										
23	DETECTION	5	0.05	5	0.05	5	0.05	0.5	2	10
24	UNITS	PPM	%	PPM	%	PPM	%	PPM	PPM	PPM
25	METHOD	103	104	103	104	103	104	103	104	103

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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ANALYTICAL DATA

IX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	95.1.08.06043	04/04/89	0608	2 OF 2

Au	AuChk	As	As	Sb	Sn	W		
0.34	-	147000	-	290	747	<20		
0.01	-	-	206	68	<3	<20		
0.01	-	-	321	4	7	<20		
<0.01	-	-	25	<3	5	<20		
<0.01	-	-	9730	716	44	530		
<0.01	-	-	<2	244	40	30		
0.01	-	11100	-	713	167	3210		
0.01	-	7780	-	138	26	34		
0.13	-	<100	-	5	<3	<20		
0.15	-	150000	-	199	6520	<20		
0.30	0.30	183000	-	165	5350	<20		
0.19	-	133000	-	126	4470	<20		
0.11	-	57000	-	79	194	<20		
0.23	-	41000	-	71	3020	<20		
0.10	-	217000	-	177	49	<20		
0.06	-	44900	-	132	282	59		
0.95	-	-	-	-	-	-		
0.01	0.01	100	2	3	3	20		
PPM	PPM	PPM	PPM	PPM	PPM	PPM		
309	309	101	401	401	401	401		

unless otherwise specified
result, but concentration too low to measure
concentration is below detection limit
or determined

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ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	95.1.08.06070	13/04/89	0411	1 OF 8

TUBE No	SAMPLE No	Cu	Pb	Zn	Ag	Bi	Au	AuChk	As	As
1	T11701	250	175	125	2	100	0.26	0.26	1150	-
2	T11702	550	75	175	90	50	0.43	-	1110	-
3	T11703	1150	100	100	9	50	0.10	-	9310	-
4	T11704	1725	10000	650	10	<50	0.01	-	3480	-
5	T11705	23100	23700	850	269	16100	0.02	-	-	12.90
6	T11706	1775	28300	19200	261	1700	<0.01	-	-	1.15
7	T11707	10000	8500	1000	119	<50	0.01	-	-	2.05
8	T11708	7600	16200	3650	141	1400	0.01	-	-	4.25
9	T11709	5200	26500	1475	292	1300	0.01	-	-	11.30
10	T11710	450	575	1675	11	50	0.03	-	2200	-
11	T11711	100	225	175	7	50	0.05	-	2360	-
12	T11712	1750	100	175	119	<50	<0.01	<0.01	576	-
13	T11713	75	100	150	<2	<50	<0.01	-	436	-
14	T11714	6500	10500	175	194	150	0.01	-	7600	-
15	T11715	2575	50	250	349	50	0.01	-	468	-
16	T11716	50400	11500	175	3980	700	0.10	0.11	-	1.57
17	T11717	-	-	-	-	-	0.22	-	110	-
18	T11718	225	75	200	2	<50	<0.01	-	138	-
19	T11719	100	121500	39400	71	<50	<0.01	-	37	-
20	T11720	325	66500	192000	118	<50	<0.01	-	85	-
21	T11721	1200	32700	8600	147	<50	0.01	0.01	40	-
22	T11722	200	24700	5300	45	<50	0.12	-	1260	-
23	T11723	225	43500	1250	50	<50	0.10	-	1700	-
24	T11724	50	1600	1025	34	<50	20.6	-	73	-
25	T11725	4175	10500	8400	224	<50	0.13	-	300	-

Results in ppm unless otherwise specified
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ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	95.1.08.06070	13/04/89	0411	5 OF 8

Sb	Sb	Sn	Sn	W				
50	-	-	1.34	475				
21	-	1260	-	246				
99	-	-	2.24	197				
154	-	-	1.49	59				
-	1.66	145	-	61				
679	-	14	-	50				
2430	-	92	-	67				
3610	-	27	-	26				
4740	-	56	-	1100				
134	-	22	-	24				
82	-	31	-	102				
1720	-	23	-	<20				
190	-	11	-	<20				
9440	-	18	-	<20				
590	-	3	-	<20				
-	1.52	50	-	<20				
23	-	12	-	<20				
84	-	<3	-	<20				
62	-	<3	-	97				
181	-	6	-	548				
185	-	19	-	<20				
921	-	7	-	<20				
375	-	3	-	<20				
111	-	3	-	<20				
1910	-	26	-	<20				

...unless otherwise specified
...esent, but concentration too low to measure
...concentration is below detection limit
...t determined

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ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	95.1.08.06070	13/04/89	0611	2 OF 8

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Bi	Au	AuChk	As	As
1	T11726	250	65500	6200	67	<50	<0.01	-	112	-
2	T11727	50	6100	1050	17	<50	<0.01	-	356	-
3	T11728	100	4000	65000	25	<50	<0.01	-	39	-
4	T11729	800	360000	2050	460	<50	<0.01	-	270	-
5	T11730	5600	156500	1725	1070	300	<0.01	-	400	-
6	T11731	425	12500	3450	74	<50	0.01	-	1546	-
7	T11732	25	650	525	<2	<50	<0.01	-	-	3.31
8	T11733	-	-	-	-	0	0.63	-	2110	-
9	T11734	50	12800	10000	17	<50	0.01	-	99	-
10	T11735	875	155000	6600	460	<50	<0.01	-	94	-
11	T11736	175	28200	950	60	<50	<0.01	-	29	-
12	T11737	175	59500	6600	113	<50	<0.01	-	-	1.11
13	T11738	200	70000	5000	72	<50	<0.01	-	8	-
14	T11739	<25	325	100	<2	<50	<0.01	<0.01	36	-
15	T11740	<25	550	125	<2	<50	<0.01	-	4	-
16	T11741	75	150	75	<2	<50	<0.01	<0.01	23	-
17	T11742	175	100	75	<2	<50	<0.01	-	421	-
18	T11743	75	50	50	<2	<50	0.01	-	395	-
19	T11744	600	75	125	<2	<50	<0.01	-	1330	-
20	T11745	425	100	150	<2	<50	<0.01	-	1250	-
21	T11746	125	50	100	<2	<50	<0.01	-	507	-
22	T11747	50	50	75	<2	<50	<0.01	-	494	-
23	T11748	4000	50	175	5	50	0.21	-	1230	-
24	T11749	-	-	-	-	-	0.70	-	679	-
25	T11750	<25	<25	75	3	<50	0.02	-	322	-

Results in ppm unless otherwise specified
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ANALYTICAL DATA

FIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	95.1.08.06070	13/04/89	0611	6 OF 8

Sb	Sb	Sn	Sn	W				
343	-	19	-	<20				
260	-	33	-	<20				
69	-	17	-	72				
719	-	14	-	<20				
3530	-	42	-	<20				
405	-	34	-	<20				
30	-	3	-	<20				
10	-	<3	-	<20				
47	-	4	-	21				
768	-	15	-	<20				
306	-	3	-	<20				
105	-	<3	-	<20				
61	-	4	-	50				
4	-	<3	-	<20				
8	-	<3	-	<20				
8	-	7	-	<20				
<3	-	2380	-	61				
<3	-	3140	-	71				
7	-	1510	-	60				
8	-	442	-	59				
<3	-	2050	-	<20				
3	-	1410	-	34				
281	-	33	-	<20				
1	-	7	-	35				
51	-	29	-	<20				

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ANALYTICAL DATA

171 SAMPLE PREFIX | REPORT NUMBER 95.1.08.06070 | REPORT DATE 13/04/89 | CLIENT ORDER No. 0611 | PAGE 3 OF 8

TUBE No	SAMPLE No	Cu	Pb	Zn	Ag	Bi	Au	AuChk	As	As
1	T11751	850	175	325	<2	<50	0.08	0.06	1420	-
2	T11752	450	50	150	<2	50	0.05	-	2180	-
3	T11753	50	25	175	<2	<50	<0.01	-	29	-
4	T11754	225	25	150	<2	<50	<0.01	-	139	-
5	T11755	75	<25	175	<2	<50	<0.01	-	135	-
6	T11756	75	25	125	<2	<50	<0.01	-	372	-
7	T11757	12800	85000	550	1710	4900	0.38	-	-	9.75
8	T11758	2800	370000	2150	2000	100	0.07	0.07	2490	-
9	T11759	4100	370000	675	840	750	0.10	-	1080	-
10	T11760	1125	28200	150	295	100	0.01	-	5640	-
11	T11761	3075	148000	600	304	300	0.20	-	-	2.57
12	T11762	-	-	-	-	-	0.23	-	150	-
13	T11763	800	108500	275	450	450	0.05	-	-	11.80
14	T11764	1450	430000	1200	319	200	0.02	-	600	-
15	T11765	1800	97500	1300	258	200	0.06	-	18000	-
16	T11766	7100	19900	300	1280	1300	0.02	-	-	1.08
17	T11767	<25	500	250	<2	<50	<0.01	-	69	-
18	T11768	50	225	200	<2	50	<0.01	-	394	-
19	T11769	750	1000	1750	11	<50	<0.01	-	728	-
20	T11770	75	35300	38000	20	<50	0.64	-	50	-
21	T11771	200	125	450	<2	<50	<0.01	-	19	-
22	T11772	75	75	200	<2	<50	<0.01	<0.01	35	-
23	T11773	75	75	350	<2	<50	<0.01	-	44	-
24	T11774	<25	1800	3000	6	<50	<0.01	-	1640	-
25	T11775	50	25600	8300	40	<50	<0.01	-	7410	-

Results in ppm unless otherwise specified
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ANALYTICAL DATA

FIX | REPORT NUMBER 95.1.08.06070 | REPORT DATE 13/04/89 | CLIENT ORDER No. 0611 | PAGE 7 OF 8

Sb	Sb	Sn	Sn	W
159	-	46	-	648
386	-	71	-	86
10	-	30	-	<20
6	-	6	-	<20
12	-	7	-	<20
20	-	8	-	<20
-	2.86	62	-	<20
3870	-	38	-	<20
-	15.46	66	-	<20
1270	-	17	-	<20
-	5.54	84	-	<20
149	-	8	-	<20
-	1.31	45	-	<20
-	18.52	83	-	<20
-	2.82	70	-	21
-	1.27	84	-	<20
159	-	<3	-	<20
59	-	8	-	<20
110	-	<3	-	<20
468	-	<3	-	89
35	-	<3	-	<20
26	-	<3	-	<20
16	-	4	-	<20
164	-	12	-	<20
2510	-	10	-	29

unless otherwise specified
esent, but concentration too low to measure
concentration is below detection limit
t determined

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ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	95.1.08.06070	13/04/89	0611	4 OF 8

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Bi	Au	AuChk	As	As
1	T11776	22400	2200	875	1470	<50	0.09	-	8900	-
2	T11777	175	36100	155000	78	<50	0.02	-	28	-
3	T11778	< 50	125	200	<2	50	0.07	-	138	-
4	T11779	3875	118500	5200	1180	1500	0.11	-	-	1.40
5										
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21										
22										
23	DETECTION	25	25	25	2	50	0.01	0.01	2	0.01
24	UNITS	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	%
25	METHOD	104	104	104	104	104	305	305	401	404

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

PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	95.1.08.06070	13/04/89	0611	8 OF 8

Sb	Sb	Sn	Sn	W
-	1.20	26	-	79
219	-	11	-	263
63	-	22	-	<20
7240	-	39	-	<20
3	0.01	3	0.01	20
PPM	%	PPM	%	PPM
401	404	401	404	401

unless otherwise specified
esent, but concentration too low to measure
concentration is below detection limit
t determined

AUTHORISED OFFICER

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APPENDIX 4

Rock Chip Sample Descriptions and Assays

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GOLD FIELDS EXPLORATION PTY. LTD. **SAMPLE RECORD AND ANALYTICAL DATA SHEET**

PROJECT: E.L. 13/88 PROSPECT: Ring River Grid SAMPLE STORAGE REQ'D: LABORATORY: ANALABS COOEE COLLECTED BY: W. H.

1:250,000 SHEET: TYPE OF SAMPLE: Rock Chip. SAMPLE PREP. REQ'D: ANALYSIS REQ'D: DATE DISPATCHED: DATE RECEIVED: 13th March 1989. A199

SAMPLE NUMBER	LOCATION		DESCRIPTION	ANALYSES all ppm unless stated								
				Cu	Pb	Zn	Ag	Bi	Au	As	Sb	Sb/V
T07956	4400N	7075E	Strong carbonate/silica altered gabbro, minor fuchsite, and talc.	75	55	215	<0.5	<10	<0.01	25	16	12 / <2
T07957	4400N	7200E	Grey siliceous rhyolitic volc. breccia py = 0.5% (fine)	20	20	85	<0.5	<10	<0.01	32	11	5 / <2
T07958	5000N	Bather Creek (E)	Fault zone rock (Rosebery Fault) extensive qtz, carb veining, minor sph, Ga, py. veining.	325	7.91%	4.17%	126	10	<0.01	50	12	114 / <2
T07959	5400N	Bather Ck. (E)	Strongly sheared fault rock. - pale grey siltstone (dolomitic?/silicified) with lesser micaceous qtz lithwacke	35	265	485	1.0	<10	<0.01	74	19	8 / <2
T07960	5600N	7225E	Intensely brecciated and heavily iron stained fine sand/s semi-gossanous/cavernous. - goethite,	175	270	225	0.5	<10	<0.01	52	5	38 / <2
T07961	5600N	7530E	sheared argil. siltstone, patchy qtz veins, silicification and heavy limonite staining.	35	40	250	<0.5	<10	<0.01	39	3	11 / <2
T07962	6200N	Bather Ck. (E)	Strongly cleaved/transposed, f.g. sand/s + slatey calc? siltstone. 1-3% diss. py minor Qtz carb veins	155	160	755	<0.5	<10	<0.01	42	7	37 / <2

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GOLD FIELDS EXPLORATION PTY. LTD. **SAMPLE RECORD AND ANALYTICAL DATA SHEET**

PROJECT: E.L. 13/88 PROSPECTS: Wallaces, Everden SAMPLE STORAGE REQ'D: LABORATORY: ANALABS COLLECTED BY: M.W.

1:250.000 SHEET: TYPE OF SAMPLE: Rock Chip SAMPLE PREP. REQ'D: ANALYSIS REQ'D: DATE RECEIVED: 13/3/89 DATE DISPATCHED:

A199

SAMPLE NUMBER	LOCATION	DESCRIPTION	ANALYSES All ppm unless stated								
			Cu	Pb	Zn	Ag	Bi	Au	As	Sb	W
T07963	Wallaces Prospect open stope on scout track. north end of the stope.	Footwall rock, black shales with disseminated py (60%) also contains apy. Rock is fractured. Sample - 0.5m wide	780	12500	1800	42.5	10	0.45	4.17%	1490	3990 / <20
T07964	open stope on scout track	Sample of ore vein, 20-40cm wide, contains up to 80% Jamesonite with Qtz + minor py, apy.	3.62%	23.05%	1.97%	469	380	0.21	1.90%	2270	110600 / <20
T07965	open stope on track	Hanging wall rock, - black shale (slate) with Qtz veins, fractures infilled with py, minor apy. (sample 20cm wide)	1.08%	4.23%	2000	119	90	0.17	1.27%	907	23100 / <20
T07966	open stope on track, just south of last 3 samples.	30cm wide sample of ore vein and 10cm into either wall of largely jamesonite, + py, apy. and some Qtz, shale	3800	7.76%	5650	107	10	0.30	1.79%	1050	3770 / <20
T07967	up end of 30m long adit. south of the stope	Altered, mineralized slates. - massive jamesonite with apy, py and qtz. (40cm wide sample)	8900	6.22%	1.80%	4660	150	0.96	1.11%	3520	41800 / <20
T07968	West Wallaces on Frazer Creek. in open stope. North end.	Sample of ore vein 70cm wide on fault. (50-70% py, sph, gn, apy) in brecciated siltstone + Qtz	1350	5.65%	16.05%	175	<10	0.63	5.56%	366	709 / <20
T07969	in open stope - Sth end	Sample of ore vein, - 30cm wide, - (70% py, apy, sph in brecciated siltstone + qtz.	1020	2.10%	9.53%	160	<10	0.92	2.17%	637	335 / <20
T07970	Wallaces? next to scout hut. 3rd level.	Highly sheared black siltstones, containing diss. py. and qtz (80cm wide)	840	3500	555	27.5	<10	<0.01	1930	27	2141 / <20
T07971	Everden trench 90paces north of Carbine junction on Everden track.	Surface float of gossanous rock, contains limonite, goethite, shows boxworks.	3550	11.55%	1350	887	3900	<0.01	5.01%	69	1060 / <20
T07972	dump sample from Everden adit	Sample of ore?, rich Gn in siderite, Gn forms as planar veins in siderite, (minor qtz)	2900	20.00%	14.78%	548	60	<0.01	850	112	230 / <20
T07973	as above	Sample or ore?, minor cpy and sph in siderite within a qtz+silicified siltstone host.	2100	4400	5.30%	27.0	<10	<0.01	154	25	25 / <20

607176

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GOLD FIELDS EXPLORATION PTY. LTD. **SAMPLE RECORD AND ANALYTICAL DATA SHEET**

COLLECTED BY: MW

PROJECT: E.L. 13/88. PROSPECT: Ramsdale, Curtin Davis Consols, SAMPLE STORAGE REQ'D: LABORATORY: ANALABS DATE DISPATCHED:

1:250.000 SHEET: TYPE OF SAMPLE: Rock Chip SAMPLE PREP. REQ'D: ANALYSIS REQ'D: DATE RECEIVED: 13/3/89

A1996

SAMPLE NUMBER	LOCATION	DESCRIPTION	ANALYSES All ppm unless stated								
			Cu	Pb	Zn	Ag	Bi	Au	As	Sb	Sb/Cu
T07974	Ramsdale Lower adit on tramway.	Limonitic brecciated gossanous rock.	55	1950	2050	2·0	<10	<0·01	1530	12	180/<20
T07975	Curtin Davis Consols 50m north of shaft in trench	Altered black slatey siltstone (footwall) (siliceous) 10-20% pyrite, minor qtz, sph	1550	2500	7·61%	94	110	0·35	1·85%	843	307/<20
T07976	as above.	Siliceous black siltstone - pyrite, minor qtz and sph ((20-40%) pyrite)	400	2350	1·59%	38·5	30	0·08	1·13%	272	135/<20
T07977	Sample across adit face up end of adit	oxidised, almost gossanous rock contain 20-30% pyrite and some qtz with minor apy, sph	500	1·81%	400	285	30	0·40	2·70%	2520	7740/<2
T07978	Grab off mullock dump near shaft	Qtz-pyrite rock containing sph, apy, and possibly jamesonite.	2000	1·71%	4900	223	180	0·81	10·0%	2290	1820/<20
T07979	Curtin Davis No 1 near old helipad 615ON 3400E in open stope	Silicified tuff with sulfides disseminated thought - sample across 1m in face - sulfides are py, apy, sph, Gn.	2050	2·28%	9·69%	96	40	0·25	4·09%	1390	265/<20
T07980	Lower adit 50m further to the NE of 79.	Grab off mullock dump - Qtz/sulfide lode - mostly apy - and Gn, py, cpy, sph.	1·71%	6·37%	5100	769	1·09%	0·02	12·90%	61	29400/<20
T07981	Lower adit, as above	Grab off dump - Qtz/sulfide - mostly Gn + apy, py sph, cpy	2300	31·50%	0·95%	1226	100	0·02	2·34%	55	3050/<20
T07982	as above	Qtz/sulfide - mostly cpy, also cpy, gn, py, sph	2·61%	2·85%	2·18%	314	5500	<0·01	9·0%	39	23700/<20

607177

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GOLD FIELDS EXPLORATION PTY. LTD. **SAMPLE RECORD AND ANALYTICAL DATA SHEET** COLLECTED BY: M. W.

PROJECT: EL. 13/88 PROSPECT: South Curtin Davis / Curtin Davis Extended SAMPLE STORAGE REQ'D: LABORATORY: ANALABS DATE DISPATCHED:

1:250,000 SHEET: TYPE OF SAMPLE: Rock Chip SAMPLE PREP. REQ'D: ANALYSIS REQ'D: DATE RECEIVED: 13/3/89 A199

SAMPLE NUMBER	LOCATION	DESCRIPTION	ANALYSES All ppm unless stated. Cu	Pb	Zn	Ag	Bi	Au	As	Sb	Sn
T07983	South Curtin Davis Northern Pits, mullock dump	Black slatey shale, with quartz veins and 10% sulfides disseminated (py, apy)	2.02%	2.28%	655	1506	1.45%	0.01	5.95%	72	2170 / <20
T07984	mullock dump down hill to NW	Altered orthoconglomerate, (cherty fragments) Contains qtz and up to 60% - siderite, Cn, sph and minor pyrite	5000	6.97%	22.61%	212	180	<0.01	745	200	173 / <20
T07985	grab off mullock below the stoped adit	Sideritic ore rock, with qtz veins and Cn, sph, pyrite, (some malachite)	1700	2.15%	-	124	140	<0.01	735	107	123 / <20
T07986	grab off mullock from adit further west.	Sideritic ore, with qtz. - py, gn, cpy, (malachite) and high % of sph.	5350	7.57%	22.87%	426	590	0.01	3480	496	198 / <20
T07987	- West lode (upper adit) at porthole of adit.	oxidised lode material, vein about 30cm wide containing qtz, py, and jamesonite?	1.27	2.10%	1400	2949	1.55%	0.05	3.99%	68	1290 / <20
T07988	as above	sample of qtz lode material with apy and py,	1.48	1.00%	865	1136	1.64%	0.05	19.50%	58	3500 / <20
T07989	The "4 foot" trench, approx. 6200N 5075E. Monte grid	Vein in laminated silt/s + sand/s. = Qtz - sulfides with 10-20% py - trace of cpy?	130	3400	150	25.0	100	<0.01	2910	16	72 / <20
T07990	Curtin Davis Extended Adit No 2 - at stope. 6700N 5700E Montezuma Grid	Sideritic ore - 10% sulfides = cpy, py, apy, tetrahedrite? - (+ malachite)	7750	5800	3000	-	520	<0.01	1160	17	344 / <20
T07991	Adit No 2. - at stope Vein 50-60cm wide.	Sideritic ore - with 10% sulfides - apy? py cpy, sph, gn (+ malachite)	3005	1.02%	970	1274	960	<0.01	1850	59	9330 / <20
T07992	Adit No 2, grab off dump at porthole	Sideritic ore - - sulfides = apy, py cpy sph, gn	2.25%	6.09%	2.28%	790	1100	0.03	3720	34	388 / <20

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GOLD FIELDS EXPLORATION PTY. LTD. **SAMPLE RECORD AND ANALYTICAL DATA SHEET**

COLLECTED BY: M.W.

PROJECT: E.L. 13/88. PROSPECT: South-west Curtin Davis / Bonnie Dundee SAMPLE STORAGE REQ'D: LABORATORY: ANALABS DATE DISPATCHED:

1:250.000 SHEET: TYPE OF SAMPLE: Rock Chip SAMPLE PREP. REQ'D: ANALYSIS REQ'D: DATE RECEIVED: 13/3/89

A199

SAMPLE NUMBER	LOCATION	DESCRIPTION	ANALYSES All ppm unless stated								
			Cu	Pb	Zn	Ag	Bi	Au	As	Sn	Sb
TD7993	SW Curtin Davis 6600N 5325E Montezuma Grid Grab off mullock	Sideritic ore, with magnetite and minor po, cpy, apy and tetrahedrite?	6100	225	250	31·0	90	<0·01	1·21%	5	366 / <20
T07994	as above	Sideritic ore, with 50-70% of apy, cpy, tetrahedrite? and minor malachite	2·55%	2300	885	235	440	0·02	7·85%	29	5220 / <20
T07995	as above	Sideritic ore, (30-50% tetrahedrite?, cpy, magnetite, apy, malachite)	7·08%	310	1900	2965	2700	0·03	1·13%	67	33100 / <20
T07996	mullock off southern shaft.	Sideritic ore - (10-15% cpy, tetra? minor py, minor magnetite)	2·32%	200	925	917	480	<0·01	3·87%	36	14500 / <20
T07997	mullock near posthole of No 2 (lower) adit.	Lode material - Qtz, apy, py, sph, cpy with sheared country rock (no siderite)	5600	4000	355	32·5	570	<0·01	25·2%	14	4800 / <20
T07998	Bonnie Dundee in roof of adit near entrance	highly weathered, oxidised vein material, - visible qtz, - with brecciated texture.	485	120	80	17·0	160	<0·01	1270	29	200 / <20
T07999	Upper trench grab off mullock.	- Qtz/pyrite with country rock (silt/s, sand/s)	1550	215	70	41	70	<0·01	3·12%	84	429 / <20
T08000	Upper trench - grab	Sheared siltstone with minor qtz/py stringers. (rock slightly magnetic)	225	240	220	17·0	<10	<0·01	723	36	127 / <20
T0153	Upper trench - grab	Qtz and country rock with minor pyrite. brecciated appearance.	880	50	50	237	<10	<0·01	400	31	122 / <20

607179

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GOLD FIELDS EXPLORATION PTY. LTD.

SAMPLE RECORD AND ANALYTICAL DATA SHEET

COLLECTED BY: MW

PROJECT: EL. 13/88 PROSPECT: Svengali, SAMPLE STORAGE REQ'D: LABORATORY: ANALABS DATE DISPATCHED:

1:250.000 SHEET: TYPE OF SAMPLE: Rock Chip. SAMPLE PREP. REQ'D: ANALYSIS REQ'D: DATE RECEIVED: 13/3/89

A199

SAMPLE NUMBER	LOCATION	DESCRIPTION	ANALYSES All ppm unless stated								
			Cu	Pb	Zn	Ag	Bi	Au	As	Sb	Sb %
T10154	SVENGALI NE adit. - vein within adit -	White rock - Qtz/Carbonate vein 20 - 0 cm wide.	110	25	145	0.5	<10	<0.01	70	6	11/<20
T10155	NE adit -	Qtz - carbonate, 10 - 30cm wide. Situated up against planar fault	30	30	145	<0.5	<10	<0.01	79	5	5/<20
T10156	Station 2 adit (further south)	Qtz - carbonate vein material. 3-8 cm thick - at end of adit.	245	25	245	<0.5	<10	<0.01	72	8	18/<20
T10157	Station 2 adit	Qtz - carbonate lode - 1½ m wide. minor pyritised shale fragments.	200	35	430	1.0	<10	<0.01	61	6	96/<20
T10158	Shaft up hill. 6900N 7275E Montezuma Grid	Grab sample of lode material - Qtz carbonate with 10% py, cpy, tetrahed?	2950	670	200	17.5	50	<0.01	109	6	597/<20
T10159	Station 10 adit further up hill 6900N 7225E	Strongly sheared siltstone with milky white veins of barren qtz. - Sample in adit	85	40	50	1.0	<10	<0.01	177	11	26/<20
T10160	Station 14 adit further up	Slatey siltstones with Qtz veins and 5% py and 1% Gn. - Dump sample.	50	1550	865	4.5	<10	<0.01	138	53	25/<20

607180

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GOLD FIELDS EXPLORATION PTY. LTD. **SAMPLE RECORD AND ANALYTICAL DATA SHEET**

COLLECTED BY: MW

PROJECT: EL. 13/88 PROSPECT: Crown Curtin Davis SAMPLE STORAGE REQ'D: LABORATORY: ANALABS DATE DISPATCHED:

1:250,000 SHEET: TYPE OF SAMPLE: Rock Chip SAMPLE PREP REQ'D: ANALYSIS REQ'D: DATE RECEIVED: 13/3/89

A199

SAMPLE NUMBER	LOCATION	DESCRIPTION	ANALYSES All ppm unless stated								
			Cu	Pb	Zn	Ag	Bi	Au	As	Sn	Sb/Cu
T10161	Crown Curtin Davis open stope + shaft grab off southern dump	Disseminated sulfides in conglomerate host or massive sulfides associated with Q + country sulfides = apy, tetra, py, cpy	2.30%	2100	825	T79	2400	<0.01	10.9%	35	17700/<2
T10162	as above	sample of mineralized zone, 10% py in sericitised black siltstone. (20-30cm wide)	315	585	75	49	480	<0.01	3.6%	4	2360/<20
T10163	open stope near next dump north.	Brecciated mineralised conglomeratic rock, stringers of py + Qtz veining.	3200	2450	80	115	3900	<0.01	2.74%	27	4700/<20
T10164	NE adit + trench 30m north of last 2 samples	Sulfides within brecciated black siltstone + minor qtz - sulfides up to 60% = apy, cpy, py.	1.29%	885	305	170	660	0.02	20.4%	29	2900/<20
T10165	NE adit, 4m in adit	4 cm wide vein of apy rich ore - also cpy, py and tetrahedrite?	2.85%	1350	615	850	460	0.02	12.3%	60	5220/<20
T10166	Trech 10m NE of NE adit	Cussanous min zone, few cm's thick with visable sulfides (10%) = py apy, tetra?	5450	1.40%	390	286	580	0.31	6.25%	65	863/<20
T10167	End of cutting in adit	Apy rich brecciated ore zone + py black siltstone frags show brecciated texture.	510	260	120	10.0	30	0.02	1.98%	22	249/<20
T10168	Middle trench area 3cm wide →	Oxidised fault zone rock - lot of goethite, -visable py, tetra?	305	25	145	3.0	<10	<0.01	2380	9	887/<20
T10169	Middle trench area	Surface sample of Fault zone rock - brown brecciated rock.	255	30	335	<0.5	<10	<0.01	1000	14	451/<20

607181

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GOLD FIELDS EXPLORATION PTY. LTD.

SAMPLE RECORD AND ANALYTICAL DATA SHEET

COLLECTED BY: MW

PROJECT: E.L. 13/88 PROSPECT: Curtin Davis

SAMPLE STORAGE REQ'D: LABORATORY: ANALABS DATE DISPATCHED:

1:250.000 SHEET: TYPE OF SAMPLE: Rock Chip SAMPLE PREP. REQ'D: ANALYSIS REQ'D: DATE RECEIVED: 13/3/89

A199

SAMPLE NUMBER	LOCATION		DESCRIPTION	ANALYSES All ppm unless stated. Cu	Pb	Zn	Ag	Bi	Au	As	Sb	Sb u
T10170	Curtin Davis Top adit		semi-gossanous footwall ore, vein is few cm's wide = up to 50% cpy sph, py	1.38%	9.4%	3300	4315	1.95%	0.10	4.96%	107	1860 <2c
T10171	No 1 adit	100' level	Brecciated semi-gossanous rock with up to 70% sulfides = py, apy, cpy	3.05%	1.21%	4350	1288	2300	0.05	4.96%	106	1990 <2c
T10172	No 1 adit	- Grab off dump	Sideritic ore with up to 70% sulfides = cpy, apy, tetra, minor Gn.	2.31%	4300	1250	893	2200	0.02	3.71%	40	9870 <2c
T10173	No 2 adit		Oxidised gossanous rock - on Lanyingwall of open stope. 25cm wide. (limonite/goethite)	1.83%	1.08%	2150	827	370	0.01	1.70%	54	3070 <2c
T10174	No 3 adit Grab off	level dump	High grade ore sample of apy, cpy, tetra, py in brecciated siltstone, massive siderite with cpy, malachite and gn, sph in chloritised silt/s.	2.19%	2050	715	347	530	0.01	4.51%	44	1590 <2c
T10175	No 4 adit	level	Mineralised vein, 15-20cm wide of Qtz/py with minor apy - chlorite on wall rocks.	520	1500	120	36	70	0.01	7200	22	781 <2c
T10176	No 4 adit in adit.	level	Massive pyrite/Qtz vein - chl on wall rocks	1700	1200	115	432	70	<0.01	1.0%	23	394 <2c
T10177	No 4 adit grab on mullock	level	apy, py in brecciated siltstone with some jamesonite and minor siderite.	1150	1650	80	143	5600	<0.01	3.05%	10	1580 <2c
T10178	No 5 adit in adit	level	Qtz/py vein - with fragments of siltstone	85	545	190	7.0	80	<0.01	855	8	73 <2c
T10179	No 5 adit -	vein 0.3m wide	Massive milky qtz with up to 2% of chl, py, po, apy	65	35	85	2.5	40	<0.01	1100	7	78 <2c
T10180	last small adit	before tram	Siliceous/pyritic rock, brecciated and semi-gossanous.	1200	5250	600	115	2900	0.03	7.62%	87	3910 <2c

607182

GOLD FIELDS EXPLORATION PTY. LTD. **SAMPLE RECORD AND ANALYTICAL DATA SHEET**

COLLECTED BY: MW

PROJECT: E.L. 13/88 PROSPECT: Standards, Frazer Mine, Moores Pimple, Great Northern Ck. SAMPLE STORAGE REQ'D: LABORATORY: ANALABS DATE DISPATCHED:

1:250.000 SHEET: TYPE OF SAMPLE: Rock Chip. SAMPLE PREP. REQ'D: ANALYSIS REQ'D: DATE RECEIVED: 13/3/89

A199

SAMPLE NUMBER	LOCATION	DESCRIPTION	ANALYSES All ppm unless stated								
			Cu	Pb	Zn	Ag	Bi	Au	As	Sb	Sb/Cu
T10181	Standard	Standard	-	-	-	-	-	2·87			
T10182		Standard	-	-	-	-	-	4·10			
T10183		Standard	-	-	-	-	-	2·61			
T10184	Frazer Southern Adit	Sulfide ore within sandy silty host. Vein 10-30cm - 50% of apy, cpy, py? po in wall.	2·06%	2050	2380	118	640	0·34		747	240/<2
T10185	Moores Pimple trench on track	Siliceous rock containg 2% py, cpy.	1280	60	70	<0·5	50	0·01	206	<3	68/<2
T10186	trench on transmitter line	Siliceous rock with 1-5% of an unknown opaque min, possibly cassiterite.	130	50	60	0·5	10	0·01	321	7	4/<2
T10187	as above	Qtz/carbonate rock with py and unknown opaque.	15	50	65	<0·5	80	<0·01	25	5	<3/<2
T10188	Great Northern Ck. Mine Southern adit + trench	mineralised siltstone - 35cm wide vein of 5-20% Jamasonite,	265	3·30%	7·11%	135	320	<0·01	9730	94	716
T10189	2nd caved adit, 50m further north.	30cm wide vein of mineralisation, (20-90%) sulfides = Jamasonite, Gn, sph Rock has a brecciated appearance.	280	14·95%	4·93%	330	80	<0·01	<5	40	294/36
T10190	Mullock dump, near shaft	Brecciated siltstone ore (50-80% sulfides) sph, gn, jam, minor py, apy, siderite	980	21·60%	28·00%	435	50	0·01		167	713
T10191	Lower trench, mullock near shaft.	Qtz/pyrite (50-90% py) - minor Gn.	60	7650	5980	22·0	80	0·01		26	138/34
T10192		Standard.	-					0·13			

607183

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GOLD FIELDS EXPLORATION PTY. LTD. **SAMPLE RECORD AND ANALYTICAL DATA SHEET** COLLECTED BY: MW

PROJECT: E.L. 13/88 PROSPECT: Frazer Mine SAMPLE STORAGE REQ'D: LABORATORY: ANALABS DATE DISPATCHED:

1:250,000 SHEET: TYPE OF SAMPLE: Rock Chip SAMPLE PREP. REQ'D: ANALYSIS REQ'D: DATE RECEIVED: 13/3/89 A199

SAMPLE NUMBER	LOCATION	DESCRIPTION	ANALYSES All ppm unless stated								
			Cu	Pb	Zn	Ag	Bi	Au	As	Sb	Sb/Cu
T10193	Frazer Mine No 3 adit Grab off dump	Milky qtz with 20% sulfides - blebs of apy and lesser cpy.	1.25%	565	<5	80	410	0.15		6520	199/<2
T10194	No 3 adit - Grab off dump	Qtz/sulfide ore - 60-70% - po, cpy, apy, cassiterite?	4.46%	1550	9280	182	1300	0.30		5350	165/<2
T10195	No 2 adit, in adit	Qtz vein, 8cm wide with 10-20% of apy, cpy, py.	1.51%	330	290	96	590	0.19		4470	126/<2
T10196	Shaft 20m W of No 2 at top of shaft.	Qtz/sulfide rock - apy, cpy	4980	160	70	-	440	0.11		194	79/<2
T10197	No 1 adit	Qtz vein, 30-40cm wide with 10-30% apy, cpy.	4.53%	75	265	175	570	0.23		3020	71/<2
T10198	No 5 adit	Qtz vein 30cm wide, with up to 60% coarse grained apy with minor cpy.	3180	55	40	6.5	230	0.10		49	177/<2
T10199	No 4 adit Grab off dump	Qtz/sulfide rock, with cpy, po. also frags of siltstone wall rocks.	1.77%	45	365	60	160	0.06		282	132/<2
T10200		Standard.						0.95			

607184

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GOLD FIELDS EXPLORATION PTY. LTD. — **SAMPLE RECORD AND ANALYTICAL DATA SHEET** — COLLECTED BY: M.W.

PROJECT: E.L. 13/88 — PROSPECT: Greens Hecla — SAMPLE STORAGE REQ'D: — LABORATORY: ANALABS — DATE DISPATCHED:

1:250.000 SHEET: — TYPE OF SAMPLE: Rock Chip — SAMPLE PREP. REQ'D: — ANALYSIS REQ'D: — DATE RECEIVED: 13/4/89

A199

SAMPLE NUMBER	LOCATION	DESCRIPTION	ANALYSES All ppm unless stated								
			Cu	Pb	Zn	Ag	Bi	Au	As	Sn	Sb / W
T11701	Greens Prospect Adit on Tramway	Milky white quartz lode, with weathered out sulfides? and dark min. possibly cassiterite	250	175	125	2	100	0·26	1150	1·39%	50 / 47
T11702	Long adit + cross cut	As above.	550	75	175	90	50	0·43	1110	1260	21 / 29
T11703	As above	Qtz, pyrite (30%) in lode 10-20cm	1150	100	100	9	50	0·10	9310	2·24%	99 / 19
T11704	Upper (western) adit Hecla	Highly oxidised lode (gossan)	1725	10000	650	10	<50	0·01	3480	1·49%	154 / 54
T11705	North Adit	Brecciated ore vein rock with 60% sulfides (apy, cpy, py) in qtz + country.	23100	23700	850	269	16100	0·02	12·9%	145	1·06 % / 6
T11706	North Adit	Sideritic ore with 30% sulfides (Cu, sph, cpy, bismuthinite?)	1775	23800	19200	261	1700	<0·01	1·15%	19	679 / 50
T11707	Southern Adit	Sideritic ore, oxidised with py, apy and cpy + fuksite	10000	8500	1000	119	<50	0·01	2·05%	92	2935 / 67
T11708	Southern Adit	Sideritic ore with bismuthinite?	7600	16200	3650	191	1450	0·01	4·25%	27	3610 / 21
T11709	Southern Adit	Ore rock with 70% sulfide (bismuth, apy, py) + country rock.	5200	26500	1475	292	1300	0·01	11·3%	56	4790 / 110

607185

185 C 18

GOLD FIELDS EXPLORATION PTY. LTD. — **SAMPLE RECORD AND ANALYTICAL DATA SHEET** — COLLECTED BY: M.W

PROJECT: E.L. 13/88 — PROSPECT: ~~Fahl~~ Rich P.A. — SAMPLE STORAGE REQ'D: — LABORATORY: ANALABS — DATE DISPATCHED:

1:250.000 SHEET: — TYPE OF SAMPLE: Rock Chip — SAMPLE PREP. REQ'D: — ANALYSIS REQ'D: — DATE RECEIVED: 13/4/89

A199

SAMPLE NUMBER	LOCATION	DESCRIPTION	ANALYSES All ppm unless stated. Cu	Pb	Zn	Ag	Bi	Au	As	Sn	Sb
	Fahl, Rich P.A.		~~450~~								
T11710 ~~T11709~~	Southern Adit end of adit in cut.	Mineralised rock, weathered with py, sidetite and cpy?	450	575	1875	11	50	0.03	2200	22	134 / 2
T11711	Adit on south bank of Ring River	Min. rock with Py in quartz + siderite	100	225	175	7	50	0.03	2360	31	82 / 10
T11712	10m north of shaft	Fine grained sachroidal silica, with 20% disseminated + stringer vein py.	1750	100	175	119	<50	<0.01	576	23	1720 / <2
T11713	Shaft in horseshoe of the Ring R.	Siderite or with qtz + py	75	100	150	<2	<50	<0.01	436	11	180 / <2
T11714	Northern Dump	Mineralised ore, —(po, cpy, py, qtz + tetrahedrite — 80%) in shale.	5500	10500	175	194	150	0.01	7600	18	9440 / <2
T11715	Northern Dump	Siderite ore with cpy, py (20%)	2575	50	250	349	50	0.01	486	3	540 / <2
T11716	North Adit + shaft	Brecciated ore with tetra, cpy, jamesonite, siderite, py, minor Qtz	50400	11500	775	3980	700	0.10	1.57%	59	1.52% / <2
T11717		Standard (0.21 g/t)	—	—				0.22	—		
T11718	North Adit + shaft	Siderite ore with py + minor cpy.	225	75	200	2	<50	<0.01	156	<3	89 / <2
T11776	North Adit + shaft	Siderite ore with py, cpy, up to 70%	22900	2200	875	1470	<50	0.09	8400	26	1.2% / 7

607186

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GOLD FIELDS EXPLORATION PTY. LTD. **SAMPLE RECORD AND ANALYTICAL DATA SHEET**

PROJECT: E.L. 13/88 PROSPECT: Kosminski, West Comet Platt COLLECTED BY: M.W.

1:250.000 SHEET: TYPE OF SAMPLE: Rock Chip SAMPLE PREP. REQ'D: ANALYSIS REQ'D: DATE RECEIVED: 13/4/89

SAMPLE STORAGE REQ'D: LABORATORY: ANALABS DATE DISPATCHED: 13/3/89

A199

SAMPLE NUMBER	LOCATION	DESCRIPTION	ANALYSES All ppm unless stated								
			Cu	Pb	Zn	Ag	Bi	Au	As	Sn	Sb
T11719	Kosminski Prospect No 3 Adit	Siderite ore on dump containing Gn and minor sph.	100	121500	39400	71	<50	<0.01	37	<3	62 / 9
T11720	No 3 adit	Siderite ore with weathered siltstone containing sph + minor gn	325	66500	199000	115	<50	<0.01	89	6	181 / 54
T11721	West Comet Open cut	Gossanous rock with limonite, gentle + crocoite?	1200	32700	8600	147	<50	0.01	90	19	185 / <2
T11722	Platt Mine Eastern upper adit	Limonitic mud with 60% crocoite	200	268500	5300	45	<50	0.12	1290	7	921 / <2
T11723	as above	Crocoite ore	225	435000	1250	98	<50	0.10	1900	3	875 / <2
T11724	as above	weathered limonitic vein with green Cu or Ni secondary.	50	12600	1025	37	<50	<0.01	73	3	111 / <2
T11725	Southern-west adit	Oxidised gossan with crocoite	4175	121500	8400	294	<50	0.13	300	34	1910 / <2
T11726	as above	Oxidised gossan with pyromorphite + crocoite	250	65500	6200	67	<50	<0.01	112	19	343 / <2
[illegible]	[illegible]	" " " " "									
T11727	Top dump at road	Gossan with silvery mineral? possibly Cerargyrite	50	6100	1050	17	<50	<0.01	336	33	260 / <2

607187

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GOLD FIELDS EXPLORATION PTY. LTD. — **SAMPLE RECORD AND ANALYTICAL DATA SHEET**

PROJECT: E.L. 13/88 PROSPECT: Comet — SAMPLE STORAGE REQ'D: — LABORATORY: ANALABS — COLLECTED BY:

1:250,000 SHEET: — TYPE OF SAMPLE: — SAMPLE PREP. REQ'D: — ANALYSIS REQ'D: — DATE DISPATCHED: — DATE RECEIVED:

A199

SAMPLE NUMBER	LOCATION	DESCRIPTION	ANALYSES All ppm Unless stated								
			Cu	Pb	Zn	Ag	Bi	Au	As	Sn	Sb
T11728	~~Comet~~ Dump on Hill	Siderite ore, minor sph, gn, sample to high grade siderite	100	4000	65000	25	<50	<0.01	39	17	69 / 4
T11729	Dump	Siderite ore, to high grade gn (50%) minor sph, py.	800	300000	2050	460	<50	<0.01	270	14	919 / <2
T11730	Dump	Siderite ore, with py (40%) + or gn (10%)	5600	156500	1725	1070	300	<0.01	400	42	3530 / <2
T11731	Dump	Siderite ore with 50% py.	425	12500	3450	74	<50	0.01	1596	34	485 / <2
T11732	Dump	Calcite/Siderite ore with veins of qpy + other metallic sulfide? (10%)	25	650	525	<2	<50	<0.01	3.31%	3	30 / <2
T11733		Standard 0.54 g/t.	-	-				0.63	2110	<3	10 / <2
~~T11734~~											
T11777		Siderite ore with 50% sph + minor py.	175	36100	155000	78	<50	0.02	28	11	219 / 26

607188

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GOLD FIELDS EXPLORATION PTY. LTD. — **SAMPLE RECORD AND ANALYTICAL DATA SHEET**

COLLECTED BY: M.W.

PROJECT: E.L. 13/88 | PROSPECT: Maestries, Rogers show, Propietry. | SAMPLE STORAGE REQ'D: | LABORATORY: ANALABS | DATE DISPATCHED:

1:250.000 SHEET: | TYPE OF SAMPLE: | SAMPLE PREP. REQ'D: | ANALYSIS REQ'D: | DATE RECEIVED: 13/4/84

A1996

SAMPLE NUMBER	LOCATION	DESCRIPTION	ANALYSES All ppm unless stated								
			Cu	Pb	Zn	Ag	Bi	Au	As	Sn	Sb / W
T11734	Maestries Shaft area, dump	Gossanous ore with Cu, sph 10% sulfide	50	12800	10000	19	<50	0.01	99	4	47 / 21
T11735	West of shaft + dump	Sideritic ore with 10% Cu.	875	155000	6600	460	<50	<0.01	94	15	766 / <2
T11736	West dump	Sideritic ore with 1% Cu 1% gpy.	175	26200	950	60	<50	<0.01	29	3	306 / <2
T11737	West dump	Gossanous ironstone with Qtz + trace of Cu	275	59500	6600	113	<50	<0.01	1.17%	<3	105 / <2
T11738	Road over creek	Gossanous ironstone + trace of Cu + unknown silver secondary mineral	200	70000	5000	77	<50	<0.01	5	4	61 / 5
T11739	East of Nth Comet Shaft + adit on Rogers map.	Quartz with 5% py.	<25	325	100	<2	<50	<0.01	38	<3	4 / <2
T11740	as above	Quartz with weathered out py.	<25	550	125	<2	<50	<0.01	4	<3	5 / <2
T11741	as above	Weathered shear zone rock.	75	150	75	<2	<50	<0.01	23	7	8 / <2
T11742	Propietry In adit 42m	Qtz lode (semi gossanous, cavernous) + banded blades of tourmaline?	175	100	75	<2	<50	<0.01	421	2380	<3 / 61
T11743	In adit 41m.	As above.	75	50	50	<2	<50	0.01	395	3140	<3 / 71
T11744	In adit 41m,	Gossanous, altered canty rock, veins of qtz + fibrous grey mineral.	600	75	125	<2	<50	<0.01	1330	1510	7 / 60
T11745	In adit 42m	Gossanous, altered canty rock.	425	100	150	<2	<50	<0.01	1250	442	8 / 59
T11746	In adit (end)	Gossanous + cavernous milky qtz.	125	50	100	<2	<50	<0.01	587	2050	<3 / <2
T11747	Dump	Qtz, pyrite + tourmaline? + cassiterite?	50	50	75	<2	<50	<0.01	494	1410	3 / 39

607189

GOLD FIELDS EXPLORATION PTY. LTD.

SAMPLE RECORD AND ANALYTICAL DATA SHEET

COLLECTED BY: M.W.

PROJECT: E.L. 13/88 PROSPECT: Karlson Riley. DATE DISPATCHED:

1:250,000 SHEET: TYPE OF SAMPLE: Rock Chip SAMPLE STORAGE REQ'D: LABORATORY: ANALABS

SAMPLE PREP. REQ'D: ANALYSIS REQ'D: DATE RECEIVED: 13/4/89

A199

SAMPLE NUMBER	LOCATION	DESCRIPTION	ANALYSES All ppm Unless stated								
			Cu	Pb	Zn	Ag	Bi	Au	As	Sn	Sb
T11748	Karlson Riley Next to 3m adit	Gossan with boxworks + qtz and Cassiterite?	600	50	175	<2	50	0·11	1235	33	251 / <2
~~T11748a~~	~~Next to 3m adit~~	~~Gossan with boxworks and Cassiterite~~									
T11750	Big SE trench	Massive silica/pyrite (10% py)	<25	75	75	9	<50	0·16	162	29	91 / <2
T11751	Next adit north	Gossan with boxworks ~~py~~	850	175	325	<2	<50	0·08	1420	48	159 / 64
T11752	Adit near big gossan bluff	Gossan with boxworks	450	50	150	<2	50	0·05	2180	71	366 / 81
T11753	Dump at long adit near big bluff.	Silica/pyrite - po altered fine grained rock.	50	25	175	<2	<50	<0·01	29	30	10 / <2
T11754	lower NE adits two crossing over	Green grey carbonate with 5% cpy, apy	225	25	150	<2	<50	<0·01	139	6	6 / <2
T11755	as above	Green grey carbonate with 5% apy? or bismuthinite?	75	<25	175	<2	<50	<0·01	135	7	12 / <2
T11756	as above	Green grey carbonate with po (<5%)	75	25	125	<2	<50	<0·01	372	8	20 / <2
~~T11757~~											
~~T11758~~											
T11749		Standard A18 0·75	-					0·89			
T11778	Next to 3m adit	Ote ironstone with metallic min Cassiterite or tourmaline??	50	125	200	<2	50	0·07	138	22	63 / <2

607190

GOLD FIELDS EXPLORATION PTY. LTD. — SAMPLE RECORD AND ANALYTICAL DATA SHEET

PROJECT: E.L. 13/88 | PROSPECT: Block 291 | SAMPLE STORAGE REQ'D: | LABORATORY: ANALABS | COLLECTED BY: MW

1:250.000 SHEET: | TYPE OF SAMPLE: | SAMPLE PREP. REQ'D: | ANALYSIS REQ'D: | DATE DISPATCHED: | DATE RECEIVED: 13/4/89

A199

SAMPLE NUMBER	LOCATION	DESCRIPTION	ANALYSES All ppm unless stated								
			Cu	Pb	Zn	Ag	Bi	Au	As	Sn	Sb
T11757	Block 291 Central Dump	Ore, 70% sulfides in green silicified country - (Jamesonite, py, apy, minor-tetra) Sample high grades apy.	12800	85000	550	1710	4900	0.38	9.75%	65	2.86% / <2
T11758	as above	Ore - high grading Cu (30-70%) in siderite	2800	370000	2150	2000	100	0.07	2490	28	3870 / <2
T11759	as above	Ore - high grades Jamesonite - 70% + py 10% + siderite 20%	4100	370000	675	890	750	0.10	1080	68	15.46% / <2
[illegible]	[illegible]										
T11760	North adit	Qtz/py (60%) + country rock.	1125	28200	150	295	100	0.01	5690	17	1270 / <2
T11761	Pyrite dump	Ore - 50% Jamesonite / 50% py	1875	148000	600	304	300	0.20	2.57%	84	5.54% / <2
T11762	Standard D2 (0.21)		–					0.23	[illegible]		
T11779	Pyrite dump	Massive sulfide ore - 70% py 30% Cu + minor siderite.	3875 [illegible]	118500	5200	1180	1500	0.11	1.4%	39	7240 / <2
T11763	as above	Py, gn, apy ore in silicified country	800	108500	275	450	450	0.05	11.8%	45	1.31% / <20
T11764	as above	Ore - Jam 80% + py, gn, siderite	1450	430000	1800	319	200	0.03	606	83	18.52% / <2
T11765	Ne adit	78m in Ore - 50-70% sulfides dom. py + Jam, gn in siderite & qtz, country.	1850	97500	1300	258	200	0.08	18000	70	2.82% / 21
T11766	Ne adit	78m in Ore 50% py + 5% jam in Qtz, country rock.	7100	19900	300	1280	1300	0.02	1.08%	84	1.29% / <2

607191

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GOLD FIELDS EXPLORATION PTY. LTD. — **SAMPLE RECORD AND ANALYTICAL DATA SHEET**

COLLECTED BY: MW

PROJECT: 13/88 | PROSPECT: Moores Pimple (also see T10185 – 87) Near Bamboo Creek Ainslie Area | SAMPLE STORAGE REQ'D: | LABORATORY: ANAL ABS | DATE DISPATCHED:

1:250.000 SHEET: | TYPE OF SAMPLE: Rock Chip | SAMPLE PREP. REQ'D: | ANALYSIS REQ'D: | DATE RECEIVED: 13/4/89

A199

SAMPLE NUMBER	LOCATION	DESCRIPTION	ANALYSES All ppm unless stated Cu	Pb	Zn	Ag	Bi	Au	As	Sn	Sb
T11767	Moores Pimple Adit Dump	Crystalline Barren Carbonate, (dolomite?)	225	500	250	<2	<50	<0.01	69	<3	159/<2
T11768	as above	as above	50	225	200	<2	50	<0.01	394	8	99/<2
T11769	as above	white silicified rock with 5% sulfides (Cn, sph, cpy)	750	1800	1750	11	<50	<0.01	728	<3	110/<2
T11770	as above	10% Cn in siderite with minor white carbonate	75	35300	38000	28	<50	0.04	50	<3	968/89
T11771	as above	Green rock with fuchsite (60-70%) with carbonate and 1% cpy.	200	125	450	<2	<50	<0.01	19	<3	35/<2
T11772	Near Bamboo Creek Big ant hill	Qtz vein - carvernous with Fe	75	75	200	<2	<50	<0.01	35	<3	28/<2
T11773	as above	Carbonate with 1% py.	75	75	350	<2	<50	<0.01	44	4	16/<2
[illegible]						4		*			
T11774	Ainslie Area Trench at bottom of water race	Siliceous rock with 5% py on fault.	<25	1800	3000	6	<50	<0.01	1690	12	684/<2
T11775	below as above	Siliceous ore with 20% py, 10% Cn and 5% sph.	50	23600	8500	40	<50	<0.01	3910	10	2510/2

607192

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GOLD FIELDS EXPLORATION PTY. LTD. **SAMPLE RECORD AND ANALYTICAL DATA SHEET** COLLECTED BY: AJC

PROJECT: EL 101/87 PROSPECT: MONTEZUMA GRID SAMPLE STORAGE REQ'D: LABORATORY: ANALABS DATE DISPATCHED: 4/89.

1:250.000 SHEET: TYPE OF SAMPLE: ROCK CHIP SAMPLE PREP. REQ'D: ANALYSIS REQ'D: DATE RECEIVED:

A199

SAMPLE NUMBER	LOCATION		DESCRIPTION	ANALYSES all ppm.								
				Au	Ag	As	Cu	Pb	Zn	Bi	Sn	Sb/W
T5670	4700N	4780E	Unweathered dark/light grey, hard, fractured quartz veined quartzite.	<0.008	<0.5	<2	20	10	15	<10	6	5/<2
T 5671	4655N	6000E	Float. Hard, silicified, weathered siltstone, with a possible minor carbonate component. Pale blue-grey with disseminated pyrite (<1%)	"	"	"	115	"	145	"	7	<3/"
T 5672	4200N	5330E	Medium grey, sl. weathered, altered siltstone (Ser-qtz-py altn.) Quartz-carbonate veined.	"	"	"	10	<5	135	"	"	4/"
T 5673	4400N	5375E	Purple silty sandstone with rounded clasts of siltstone. Finely interbedded; some cross-bedding.	"	"	"	"	5	125	"	<3	3/"
T 5674	4700N	5040E	Laminated, pale grey, weathered, very fine siltstone.	"	"	"	80	"	40	"	"	9/"
T 5675	4700N	5175E	Purple, silty-sandstone.	"	"	"	5	10	195	"	4	<3/"
T 5676	4500N	4565E	Hard, limonitic, pyritic conglomerate. Grit-sized clasts of siltstone and sandstone in a silicified sandy matrix. Disseminated py (~10%).	"	"	55	25	20	115	"	15	10/"

607193

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GOLD FIELDS EXPLORATION PTY. LTD. **SAMPLE RECORD AND ANALYTICAL DATA SHEET** COLLECTED BY: AJC

PROJECT: EL 101/87 PROSPECT: MONTEZUMA GRID SAMPLE STORAGE REQ'D: LABORATORY: ANALABS DATE DISPATCHED: 4/89.

1:250.000 SHEET: TYPE OF SAMPLE: ROCK CHIP SAMPLE PREP. REQ'D: ANALYSIS REQ'D: DATE RECEIVED:

A199

SAMPLE NUMBER	LOCATION		DESCRIPTION	ANALYSES (all ppm)								
				Au	Ag	As	Cu	Pb	Zn	Bi	Sn	Sb/W
T 5677	4500N	4565E	Interbedded phyllites and hard sandstones. Weathered schistose phyllite.	<0·008	<0·5	<2	10	15	35	10	5	<3/<2
T 5678	4200N	4750E	Silphide stained, fractured, green-grey quartzite.	"	"	65	5	605	50	<10	25	5/"
T 5679	4200N	4525E	Strongly altered (sericitic) phyllitic schist near mineralised quartz veins.	"	0·5	35	35	205	75	10	3	20/"
T 5680	4200N	4525E	Quartz-sulphide boudins in vein, in phyllites.	"	4·0	30	20	2,075	4,500	<10	15	7/"
T 5681	4200N	4525E	Metamorphic veins cutting above sequence.	"	<0·5	10	10	50	40	10	6	6/"
T 5682	4200N	4510E	Unaltered, phyllitic, micaceous schist.	"	"	2	5	20	45	<10	<3	3/"
T 5683	4500N	5115E	Strongly altered and silicified grey fine sandstone and siltstones. Quartz-pyrite stockworked.	"	"	4	10	10	110	10	5	<3/"
T 5684	4500N	5370E	Hematitic interbedded sandstone and siltstone. Cross-bedding and rip-up-clast structures.	"	"	<2	45	5	115	<10	8	6/"
T 5685	5385N	5000E	Unaltered, dark grey, finely laminated siltstone.	"	"	"	10	<5	45	10	6	20/"

607194

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GOLD FIELDS EXPLORATION PTY. LTD.

SAMPLE RECORD AND ANALYTICAL DATA SHEET

COLLECTED BY: ASC

PROJECT: EL 101/87 | PROSPECT: MONTEZUMA GRID | SAMPLE STORAGE REQ'D: | LABORATORY: ANALABS | DATE DISPATCHED: 4/89

1:250,000 SHEET: | TYPE OF SAMPLE: ROCK CHIP | SAMPLE PREP. REQ'D: | ANALYSIS REQ'D: | DATE RECEIVED:

A199

SAMPLE NUMBER	LOCATION		DESCRIPTION	ANALYSES								
				Au	Ag	As	Cu	Pb	Zn	Bi	Sn	St/W
T5686	4900N	5340E	Foliated, medium grained, quartzose sandstone. Weakly silicified and sericitic.	<0·008	<0·5	<2	50	10	130	<10	<3	<3/<20
T5687	5200N	5575E	Weathered conglomerate. Sub-rounded pebbles of pale brown chert in a pale green sandy-silt matrix.	"	"	"	60	<5	160	"	9	"/"
T5688	6600N	5510E	Chloritic altered, medium grained volcaniclastic. Probably a pyroclastic/tuff.	"	"	3	35	30	110	"	6	5/"
T5689	5900N	5020E	Interbedded siltstone/conglomerate. Possibly a dolomitic matrix.	"	"	<2	40	<5	85	"	7	<3/"
T5690	7200N	5250E	Jarosite stained black siltstone containing clasts of pyritic, altered rock.	"	51	40	1,600	400	100	10	230	8/25
T5691	5900N	5225E	From E.Z. Pit. A siltstone hosting py-gn-sp-jgn-tt mineralisation.	0·276	151	33,200	2,300	13,000	193,000	90	720	360/<20
T5692	6300N	5825E	Float. Weakly altered conglomerate. Sericite-matrix-rich, with limonitic clasts.	0·011	1·0	70	105	185	425	<10	10	<3/"

607195

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GOLD FIELDS EXPLORATION PTY. LTD. **SAMPLE RECORD AND ANALYTICAL DATA SHEET**

PROJECT: EL 101/87 PROSPECT: MONTEZUMA GRID SAMPLE STORAGE REQ'D: LABORATORY: ANALABS COLLECTED BY: ASC

1:250.000 SHEET: TYPE OF SAMPLE: ROCK CHIP SAMPLE PREP. REQ'D: ANALYSIS REQ'D: DATE DISPATCHED: 4/89 DATE RECEIVED:

A199

SAMPLE NUMBER	LOCATION		DESCRIPTION	ANALYSES (all ppm)								
				Au	Ag	As	Cu	Pb	Zn	Bi	Sn	Sb/W
~~T5692~~	~~6300N~~	~~5825E~~	~~Float. Weakly altered conglomerate. Matrix rich (sericitic) and lithomic weathered clasts.~~	<0·008	1·0	55	15	145	195	<10	25	15/<2
T5693	6300N	5200E	Interbedded fine gritty sandstone and laminated black shale.	<0·008	1·0	55	15	145	195	<10	25	15/<20
T5694	6800N	5700E	Coarse agglomeratic volcaniclastic.	"	<0·5	10	95	100	190	"	10	4/"
T5695	9200N	4825E	Unaltered, dark green, medium grained gabbro.	"	"	<2	5	5	70	"	9	"/"
T5697	7000N	5330E	Basaltic pillow lava with interpillow grit/silt.	0·010	"	9	160	"	190	"	<3	<3/"
T5698	9000N	4800E?	Green-black serpentinised Ultramafic.	<0·008	"	25	10	<5	110	"	860	"/"
T5699	9600N	4715E	Fine grained, actinolitic, mafic volcanic. Pyritic?	"	"	20	170	20	105	"	35	15/"
T5700	9600N	4785E	Weathered, grey, fine grained volcanic. Brecciated, silicified and sulphidic.	"	"	400	320	85	115	"	350	10/"
T11545	8800N	4700E	Weathered conglomerate; sulphide alteration.	0·010	2·0	700	775	30	400	"	320	6/50

607196

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GOLD FIELDS EXPLORATION PTY. LTD. **SAMPLE RECORD AND ANALYTICAL DATA SHEET** COLLECTED BY: ASC

PROJECT: 101/87 PROSPECT: MONTEZUMA GRID SAMPLE STORAGE REQ'D: LABORATORY: ANALABS DATE DISPATCHED: 4/89

1:250.000 SHEET: TYPE OF SAMPLE: ROCK CHIP SAMPLE PREP. REQ'D: ANALYSIS REQ'D: DATE RECEIVED:

A199

SAMPLE NUMBER	LOCATION		DESCRIPTION	ANALYSES (all ppm)								
				Au	Ag	As	Cu	Pb	Zn	Bi	Sn	Sb/W
T11546	8600N	4530E	Weathered dark grey conglomerate.	<0·008	<0·5	35	485	20	120	<10	170	15/<20
T11547	7800N	4900E	Coarse grained, medium green gabbro with abundant muscovite? crystals.	"	"	<2	10	<5	80	"	8	<3/"
T11548	7600N	5390E	Dark grey-black, fine grained siltstone with thin pyritic horizons.	"	"	"	20	"	35	"	7	"/"
T11549	7400N	5310E	Strongly altered and silicified, very fine grained tuff.	"	"	20	95	10	160	"	3	"/"

607197

APPENDIX 5

Soil Sample Assays

ANALABS

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

607199

ANALYTICAL DATA

(196 — SAMPLE PREFIX | REPORT NUMBER: 95.1.08.05999 | REPORT DATE: 20/02/89 | CLIENT ORDER No.: 0605 | PAGE: 1 OF 16

E No.	SAMPLE No.	Cu	Pb	Zn	Ag	Ag	Bi	As	Sn	L.47N
1	T10501	10	40	205	<0.5	–	<10	3	<3	5175N
2	T10502	<5	35	180	<0.5	–	<10	3	9	
3	T10503	45	55	125	<0.5	–	<10	6	9	
4	T10504	115	60	190	<0.5	–	<10	6	3	
5	T10505	65	30	135	<0.5	–	<10	2	11	
6	T10506	90	45	130	<0.5	–	<10	6	<3	
7	T10507	35	35	200	<0.5	–	<10	1	3	
8	T10508	10	30	355	<0.5	–	<10	2	5	
9	T10509	50	40	265	<0.5	–	<10	3	6	
10	T10510	15	35	230	<0.5	–	<10	3	4	
11	T10511	<5	35	190	<0.5	–	<10	2	9	
	T10512	105	35	160	<0.5	–	<10	10	<3	
13	T10513	50	35	50	<0.5	–	<10	2	4	
14	T10514	95	40	70	<0.5	–	<10	12	6	
15	T10515	90	50	190	<0.5	–	<10	7	7	
16	T10516	60	80	130	<0.5	–	<10	9	9	
17	T10517	35	40	125	<0.5	–	<10	4	5	5575N
18	T10518	15	40	135	<0.5	–	10	3	7	5150N
19	T10519	95	40	175	<0.5	–	<10	3	5	
20	T10520	50	45	135	<0.5	–	<10	4	7	
21	T10521	25	50	140	<0.5	–	<10	5	4	
22	T10522	60	45	65	<0.5	–	<10	6	7	
23	T10523	35	65	65	<0.5	–	<10	12	8	
24	T10524	75	5950	235	<0.5	–	<10	37	6	
	T10525	15	130	105	<0.5	–	<10	13	7	4975N

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.

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ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	95.1.08.05999	20/02/89	0605	2 OF 16

SAMPLE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Ag	Bi	As	Sn	L.47N
1	T10526	10	65	35	<0.5	–	<10	5	<3	4950N
2	T10527	20	95	65	<0.5	–	<10	16	4	
3	T10528	<5	25	10	<0.5	–	<10	2	11	
4	T10529	<5	15	5	<0.5	–	<10	<1	6	
5	T10530	<5	5	<5	<0.5	–	<10	<1	5	
6	T10531	<5	55	10	<0.5	–	10	<1	7	
7	T10532	<5	35	5	<0.5	–	<10	<1	6	
8	T10533	<5	40	10	<0.5	–	<10	6	9	
9	T10534	<5	55	10	<0.5	–	<10	2	6	
10	T10535	<5	15	5	<0.5	–	<10	<1	<3	
11	T10536	<5	15	5	<0.5	–	<10	2	<3	
12	T10537	<5	50	25	<0.5	–	<10	9	7	
13	T10538	<5	25	5	<0.5	–	<10	4	5	
14	T10539	10	55	60	<0.5	–	<10	30	7	
15	T10540	<5	85	5	<0.5	–	<10	6	4	
16	T10541	<5	40	35	<0.5	–	<10	5	9	4575E
17	T10542	245	55	180	<0.5	–	<10	4	3	L.19N 5225E
18	T10543	80	45	245	<0.5	–	<10	5	<3	
19	T10544	85	65	180	<0.5	–	<10	7	4	
20	T10545	30	45	120	<0.5	–	<10	16	7	
21	T10546	40	40	125	<0.5	–	<10	2	4	
22	T10547	130	45	140	<0.5	–	<10	5	9	
23	T10548	90	100	200	<0.5	–	<10	12	9	
24	T10549	80	35	195	<0.5	–	10	2	5	
25	T10550	140	85	275	<0.5	–	<10	9	3	5425E

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

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ANALABS

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

607201

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	95.1.08.05999	20/02/89	0605	3 OF 16

SAMPLE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Ag	Bi	As	Sn	L.49N
1	T10551	65	50	165	<0.5	-	<10	5	8	5450E
2	T10552	75	30	75	<0.5	-	<10	3	9	
3	T10553	85	45	140	<0.5	-	<10	6	6	
4	T10554	90	40	185	<0.5	-	10	8	<3	
5	T10555	80	65	170	<0.5	-	10	<1	6	
6	T10556	90	80	65	<0.5	-	<10	38	4	
7	T10557	150	90	105	<0.5	-	<10	13	6	
8	T10558	75	35	160	<0.5	-	10	3	8	↓
9	T10559	110	35	105	<0.5	-	<10	2	5	5650E
10	T10560	45	55	135	<0.5	-	10	5	<3	5200E
11	T10561	105	70	310	<0.5	-	<10	9	<3	
12	T10562	45	90	190	<0.5	-	<10	6	6	
13	T10563	60	100	210	<0.5	-	<10	8	5	
14	T10564	105	95	475	<0.5	-	<10	9	6	
15	T10565	85	75	220	<0.5	-	<10	7	9	
16	T10566	65	80	300	<0.5	-	<10	9	8	
17	T10567	45	110	200	<0.5	-	<10	57	9	
18	T10568	40	115	205	<0.5	-	<10	95	31	
19	T10569	30	55	130	<0.5	-	<10	35	8	
20	T10570	30	80	150	<0.5	-	<10	38	8	
21	T10571	45	150	170	<0.5	-	<10	54	10	
22	T10572	25	55	60	<0.5	-	<10	24	4	
23	T10573	20	75	80	<0.5	-	10	11	7	
24	T10574	5	20	5	<0.5	-	<10	3	<3	↓
25	T10575	5	15	10	<0.5	-	<10	2	9	4825E

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

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A Division of Macdonald Hamilton & Co. Pty Ltd

ANALYTICAL DATA

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SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	95.1.08.05999	20/02/89	0605	4 OF 16

No.	SAMPLE No.	Cu	Pb	Zn	Ag	Ag	Bi	As	Sn	L. 49N
1	T10576	<5	15	10	<0.5	–	<10	<1	8	4800E
2	T10577	5	25	10	<0.5	–	<10	2	7	
3	T10578	5	15	15	<0.5	–	<10	6	7	
4	T10579	5	5	5	<0.5	–	<10	<1	6	
5	T10580	5	25	10	<0.5	–	10	19	7	
6	T10581	5	10	10	<0.5	–	<10	7	<3	
7	T10582	5	20	10	<0.5	–	<10	2	3	4650E
8	T10583	30	30	165	<0.5	–	20	2	7	L. 45N 5225E
9	T10584	25	25	75	<0.5	–	<10	<1	5	
10	T10585	55	55	75	<0.5	–	<10	6	6	
11	T10586	25	45	75	<0.5	–	<10	3	6	
12	T10587	10	30	90	<0.5	–	<10	<1	5	
13	T10588	10	35	125	<0.5	–	<10	<1	10	
14	T10589	30	35	105	<0.5	–	20	2	11	
15	T10590	5	35	120	<0.5	–	<10	2	8	
16	T10591	70	30	150	<0.5	–	<10	4	8	
17	T10592	20	35	90	<0.5	–	<10	3	8	
18	T10593	40	40	175	<0.5	–	<10	10	7	
19	T10594	105	30	145	<0.5	–	<10	3	7	
20	T10595	150	25	60	<0.5	–	<10	<1	13	5525E
21	T10596	125	25	210	<0.5	–	<10	<1	10	5200E
22	T10597	60	80	180	<0.5	–	<10	14	8	
23	T10598	30	30	80	<0.5	–	<10	2	10	
24	T10599	10	30	140	<0.5	–	<10	3	6	
25	T10600	145	45	250	<0.5	–	<10	8	9	5100E

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

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

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ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	95.1.08.05999	20/02/89	0605	5 OF 16

SAMPLE No.	SAMPLE No.	Cu	Pb	Zn %	Ag	Ag	Bi	As %	Sn	L.45N
1	T10601	65	70	95	<0.5	–	<10	35	7	5075E
2	T10602	25	55	75	<0.5	–	<10	8	8	
3	T10603	10	45	25	<0.5	–	<10	10	10	
4	T10604	35	115	260	<0.5	–	<10	48	13	
5	T10605	<5	25	10	<0.5	–	<10	4	31	
6	T10606	5	25	15	<0.5	–	<10	14	6	
7	T10607	10	15	15	<0.5	–	<10	5	13	
8	T10608	10	35	20	<0.5	–	<10	15	6	
9	T10609	<5	30	10	<0.5	–	<10	4	6	
10	T10610	<5	25	15	<0.5	–	<10	4	6	
11	T10611	5	20	10	<0.5	–	10	5	3	
12	T10612	5	35	15	<0.5	–	<10	7	8	
13	T10613	20	20	15	<0.5	–	<10	4	8	
14	T10614	25	50	30	<0.5	–	<10	9	6	
15	T10615	5	20	10	<0.5	–	<10	3	5	
16	T10616	<5	35	10	<0.5	–	<10	3	4	
17	T10617	<5	40	10	<0.5	–	<10	4	6	
18	T10618	5	30	35	<0.5	–	<10	3	8	
19	T10619	50	215	160	<0.5	–	10	39	8	
20	T10620	30	155	95	<0.5	–	<10	39	8	
21	T10621	30	235	280	<0.5	–	<10	20	8	
22	T10622	170	120	185	<0.5	–	<10	60	5	↓
23	T10623	20	125	160	<0.5	–	<10	37	4	4525E
24	T10624	5	15	10	<0.5	–	<10	<1	7	L44N 5000E
25	T10625	10	30	15	<0.5	–	<10	8	10	5025E

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.

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ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	95.1.08.05999	20/02/89	0605	6 OF 16

...GE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Ag	Bi	As	Sn	L44N
1	T10626	10	45	10	<0.5	–	<10	5	9	5050E
2	T10627	15	20	15	<0.5	–	<10	3	9	
3	T10628	365	45	110	<0.5	–	<10	28	7	
4	T10629	125	25	150	<0.5	–	<10	6	10	
5	T10630	30	15	145	<0.5	–	<10	<1	8	
6	T10631	25	15	145	<0.5	–	<10	2	6	
7	T10632	60	45	165	<0.5	–	<10	3	6	
8	T10633	95	50	175	<0.5	–	<10	3	5	
9	T10634	95	35	85	<0.5	–	<10	3	10	
10	T10635	70	40	80	<0.5	–	<10	5	7	
11	T10636	115	25	140	<0.5	–	<10	2	6	
12	T10637	90	115	125	<0.5	–	<10	16	8	
13	T10638	10	30	70	<0.5	–	<10	<1	6	
14	T10639	215	60	125	<0.5	–	<10	15	11	
15	T10640	80	45	180	<0.5	–	<10	11	<3	
16	T10641	110	105	200	<0.5	–	<10	25	8	
17	T10642	385	45	105	<0.5	–	<10	7	5	
18	T10643	445	170	135	<0.5	–	<10	18	11	↓
19	T10644	30	30	165	<0.5	–	<10	2	9	5500E
20	T10645	5	275	15	1.0	–	<10	16	882	4975E
21	T10646	10	80	10	2.0	–	<10	8	374	
22	T10647	10	55	20	<0.5	–	<10	6	7	
23	T10648	10	180	10	<0.5	–	<10	8	13	
24	T10649	10	45	25	<0.5	–	<10	8	7	↓
25	T10650	5	25	10	<0.5	–	<10	<1	8	4850E

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

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SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	95.1.08.05999	20/02/89	0605	7 OF 16

BE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Ag	Bi	As	Sn	L.44N
1	T10651	20	60	20	<0.5	-	<10	27	14	4825E
2	T10652	<5	45	10	<0.5	-	<10	<1	10	
3	T10653	10	175	25	<0.5	-	<10	6	9	
4	T10654	260	2700	565	<0.5	-	<10	1050	11	
5	T10655	610	175	140	<0.5	-	<10	210	6	
6	T10656	10	115	15	<0.5	-	<10	11	10	
7	T10657	30	45	75	<0.5	-	<10	23	8	
8	T10658	30	30	95	<0.5	-	<10	36	11	
9	T10659	35	20	15	<0.5	-	<10	21	7	
10	T10660	30	65	55	<0.5	-	<10	24	7	
11	T10661	30	40	35	<0.5	-	<10	9	7	
12	T10662	35	35	25	<0.5	-	<10	9	10	
13	T10663	10	95	70	<0.5	-	<10	15	7	↓
14	T10664	60	70	210	<0.5	-	<10	38	6	4500E
15	T10665	100	70	220	<0.5	-	<10	21	4	L.52N 5225E
16	T10666	35	35	95	<0.5	-	<10	4	8	
17	T10667	45	35	145	<0.5	-	<10	3	5	
18	T10668	10	40	85	<0.5	-	<10	4	8	
19	T10669	35	25	230	<0.5	-	<10	3	8	
20	T10670	45	40	115	<0.5	-	<10	10	5	
21	T10671	90	55	275	<0.5	-	<10	12	7	
22	T10672	125	25	195	<0.5	-	<10	<1	10	
23	T10673	100	55	440	<0.5	-	<10	8	7	
24	T10674	15	20	60	<0.5	-	<10	<1	4	↓
25	T10675	15	35	160	<0.5	-	<10	2	7	5475E

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

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205 SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	95.1.08.05999	20/02/89	0605	8 OF 16

E	SAMPLE No.	Cu	Pb	Zn	Ag	Ag	Bi	As	Sn	L·S2N
1	T10676	130	170	40	<0.5	–	<10	14	8	5500E
2	T10677	70	30	110	<0.5	–	<10	4	7	
3	T10678	360	65	45	<0.5	–	<10	30	7	
4	T10679	105	20	100	<0.5	–	<10	2	6	
5	T10680	75	25	115	<0.5	–	<10	9	8	
6	T10681	105	35	195	<0.5	–	<10	4	6	
7	T10682	115	140	180	<0.5	–	<10	15	6	
8	T10683	140	145	25	<0.5	–	<10	11	7	
9	T10684	40	35	50	<0.5	–	<10	12	9	
10	T10685	90	35	75	<0.5	–	10	18	5	
11	T10686	25	25	140	<0.5	–	<10	6	8	5750E
12	T10687	135	60	110	<0.5	–	<10	12	4	5200E
13	T10688	115	45	120	<0.5	–	<10	11	9	
14	T10689	65	60	90	<0.5	–	10	9	3	
15	T10690	75	75	185	1.0	–	<10	11	<3	
16	T10691	75	75	190	<0.5	–	<10	14	5	
17	T10692	50	65	120	<0.5	–	20	37	8	
18	T10693	15	70	25	<0.5	–	<10	18	7	
19	T10694	<5	60	10	<0.5	–	<10	11	13	
20	T10695	<5	25	15	<0.5	–	<10	4	9	
21	T10696	130	240	225	<0.5	–	<10	140	13	
22	T10697	135	60	130	<0.5	–	<10	420	4	
23	T10698	5	25	10	<0.5	–	<10	4	6	
24	T10699	<5	15	5	<0.5	–	<10	6	9	
25	T10700	30	45	30	<0.5	–	10	26	9	4875E

Results in ppm unless otherwise specified
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X = element concentration is below detection limit
– = element not determined

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ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	95.1.08.05999	20/02/89	0605	9 OF 16

BASE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Ag	Bi	As	Sn	L52N
1	T10701	55	10	20	<0.5	–	<10	19	<3	4850E
2	T10702	<5	10	10	<0.5	–	<10	12	4	
3	T10703	20	<5	20	<0.5	–	<10	5	7	
4	T10704	<5	10	10	<0.5	–	<10	11	10	
5	T10705	10	<5	40	<0.5	–	<10	10	5	4750E
6	T10706	10	95	30	<0.5	–	<10	13	11	L54N 5000E
7	T10707	<5	50	10	<0.5	–	<10	7	11	
8	T10708	<5	5	10	<0.5	–	<10	8	6	
9	T10709	25	50	65	2.5	–	<10	340	298	
10	T10710	<5	<5	5	<0.5	–	<10	4	11	
11	T10711	<5	15	10	<0.5	–	<10	5	4	
	T10712	<5	155	10	<0.5	–	<10	6	16	
13	T10713	<5	30	10	<0.5	–	<10	3	7	
14	T10714	<5	10	10	<0.5	–	<10	<1	4	
15	T10715	<5	30	10	<0.5	–	<10	<1	7	
16	T10716	5	25	10	<0.5	–	<10	4	9	
17	T10717	<5	30	10	<0.5	–	<10	4	6	
18	T10718	40	35	10	<0.5	–	<10	4	8	
19	T10719	25	30	15	<0.5	–	<10	7	7	
20	T10720	30	20	15	<0.5	–	<10	8	7	
21	T10721	<5	5	10	<0.5	–	<10	2	6	
22	T10722	<5	30	10	<0.5	–	<10	<1	8	
23	T10723	95	35	40	<0.5	–	<10	21	7	
24	T10724	20	20	35	<0.5	–	<10	4	12	
	T10725	280	55	185	<0.5	–	<10	7	<3	S475E

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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ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	95.1.08.05999	20/02/89	0605	10 OF 16

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Ag	Bi	As	Sn	L54N
1	T10726	50	20	15	<0.5	-	<10	2	10	5500E
2	T10727	30	30	20	<0.5	-	<10	4	5	
3	T10728	105	20	145	<0.5	-	<10	11	3	
4	T10729	10	10	15	<0.5	-	<10	2	5	
5	T10730	10	5	75	<0.5	-	<10	<1	9	
6	T10731	<5	<5	30	<0.5	-	<10	<1	6	
7	T10732	100	10	120	<0.5	-	<10	5	7	
8	T10733	<5	10	60	<0.5	-	<10	3	12	
9	T10734	<5	<5	5	<0.5	-	<10	2	6	
10	T10735	45	<5	90	<0.5	-	<10	3	10	
11	T10736	10	20	105	<0.5	-	<10	5	5	
12	T10737	<5	<5	45	<0.5	-	<10	5	7	↓
13	T10738	10	70	90	<0.5	-	<10	12	7	5800E
14	T10739	5	40	35	<0.5	-	<10	170	13	4975E
15	T10740	<5	25	10	<0.5	-	<10	13	7	
16	T10741	<5	<5	15	<0.5	-	<10	16	4	
17	T10742	<5	60	10	<0.5	-	<10	8	6	
18	T10743	<5	<5	10	<0.5	-	<10	11	<3	
19	T10744	<5	<5	10	<0.5	-	<10	2	5	
20	T10745	<5	<5	10	<0.5	-	<10	4	5	↓
21	T10746	<5	<5	10	<0.5	-	<10	9	7	4800E
22	T10747	<5	5	10	<0.5	-	<10	4	8	L56N 5000E
23	T10748	<5	15	10	<0.5	-	<10	2	3	↓
24	T10749	<5	440	10	<0.5	-	<10	3	8	↓
25	T10750	<5	20	20	<0.5	-	<10	18	11	4925E

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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ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	95.1.08.05999	20/02/89	0605	11 OF 16

ABE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Ag	Bi	As	Sn	L56N
1	T10751	10	<5	15	<0.5	–	<10	42	11	4900N
2	T10752	<5	35	10	<0.5	–	<10	23	7	
3	T10753	<5	<5	5	<0.5	–	<10	2	4	
4	T10754	<5	<5	15	<0.5	–	<10	15	5	
5	T10755	<5	10	15	<0.5	–	<10	2	6	4800N
6	T10756	55	475	10	12.0	–	30	25	11	5025N
7	T10757	5	15	5	<0.5	–	<10	<1	5	
8	T10758	<5	30	10	<0.5	–	<10	2	3	
9	T10759	<5	25	10	<0.5	–	<10	3	16	
10	T10760	<5	50	10	<0.5	–	<10	2	10	
11	T10761	<5	25	10	<0.5	–	<10	3	11	
[illegible]	T10762	<5	30	10	<0.5	–	<10	2	12	
13	T10763	<5	40	10	<0.5	–	<10	5	20	
14	T10764	5	445	190	<0.5	–	<10	35	13	
15	T10765	10	15	15	<0.5	–	<10	3	5	
16	T10766	<5	10	10	<0.5	–	<10	13	<3	
17	T10767	<5	5	5	<0.5	–	<10	7	10	
18	T10768	<5	50	10	<0.5	–	<10	3	8	
19	T10769	<5	10	15	<0.5	–	<10	7	10	
20	T10770	<5	5	30	<0.5	–	<10	7	5	
21	T10771	5	15	40	<0.5	–	<10	7	7	
22	T10772	<5	25	65	<0.5	–	<10	2	7	
23	T10773	55	5	45	<0.5	–	<10	12	6	
24	T10774	150	15	85	<0.5	–	<10	29	<3	
[illegible]25	T10775	5	5	15	<0.5	–	<10	3	9	5500E

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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ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
209	95.1.08.05999	20/02/89	0605	12 OF 16

JBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Ag	Bi	As	Sn	L56N
1	T10776	15	10	10	<0.5	–	<10	4	7	5525E
2	T10777	35	5	125	<0.5	–	<10	12	4	
3	T10778	45	30	105	<0.5	–	<10	43	5	
4	T10779	85	15	85	<0.5	–	<10	18	7	
5	T10780	55	10	65	<0.5	–	<10	8	<3	
6	T10781	25	10	35	<0.5	–	<10	10	10	
7	T10782	70	<5	70	<0.5	–	<10	10	4	
8	T10783	50	30	90	<0.5	–	<10	15	10	
9	T10784	25	15	50	<0.5	–	<10	11	9	
10	T10785	10	<5	115	<0.5	–	<10	10	5	
11	T10786	40	10	100	<0.5	–	<10	11	8	↓
12	T10787	25	10	80	<0.5	–	<10	15	8	5800E
13	T10788	60	10	160	<0.5	–	<10	2	6	L.66N 5800E
14	T10789	30	50	130	<0.5	–	<10	14	10	
15	T10790	90	15	110	<0.5	–	<10	10	10	
16	T10791	<5	255	135	<0.5	–	<10	3	27	
17	T10792	35	25	110	<0.5	–	<10	2	9	
18	T10793	145	70	180	<0.5	–	<10	10	11	↓
19	T10794	60	25	140	<0.5	–	<10	3	9	5650E
20	T10795	15	10	20	<0.5	–	<10	9	5	L59N 5100E
21	T10796	<5	50	15	<0.5	–	<10	3	18	
22	T10797	<5	80	15	<0.5	–	<10	3	18	
23	T10798	<5	70	15	<0.5	–	<10	3	55	
24	T10799	<5	190	15	1.0	–	<10	8	45	↓
25	T10800	750	2150	32500	–	30	20	1050	546	5225E

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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ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	95.1.08.05999	20/02/89	0605	13 OF 16

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Ag	Bi	As	Sn	L59N
1	T10801	<5	50	40	4.0	–	<10	44	68	5250E
2	T10802	45	110	65	2.0	–	<10	38	27	
3	T10803	<5	150	25	<0.5	–	<10	16	6	
4	T10804	<5	25	20	<0.5	–	<10	4	8	
5	T10805	<5	<5	45	<0.5	–	<10	3	5	
6	T10806	<5	20	25	<0.5	–	<10	2	3	
7	T10807	<5	<5	15	<0.5	–	<10	<1	5	
8	T10808	<5	<5	15	<0.5	–	<10	2	3	
9	T10809	30	35	45	<0.5	–	<10	15	7	
10	T10810	<5	<5	20	<0.5	–	<10	<1	7	
11	T10811	<5	<5	15	<0.5	–	<10	<1	5	
12	T10812	<5	<5	15	<0.5	–	<10	4	4	
13	T10813	15	10	40	<0.5	–	<10	4	9	
14	T10814	25	10	60	<0.5	–	<10	5	7	
15	T10815	60	20	65	<0.5	–	<10	14	9	
16	T10816	190	15	190	<0.5	–	<10	14	5	
17	T10817	85	30	80	<0.5	–	<10	67	6	
18	T10818	90	35	160	<0.5	–	<10	15	6	
19	T10819	105	15	140	<0.5	–	<10	34	7	
20	T10820	130	15	105	<0.5	–	<10	40	4	
21	T10821	55	15	70	<0.5	–	<10	38	<3	
22	T10822	<5	15	50	<0.5	–	<10	15	11	
23	T10823	25	30	35	<0.5	–	<10	98	7	
24	T10824	<5	10	20	<0.5	–	<10	7	7	
25	T10825	10	65	40	<0.5	–	<10	10	<3	5850E

Results in ppm unless otherwise specified
T = element present, but concentration too low to measure
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ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	95.1.08.05999	20/02/89	0605	14 OF 16

UBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Ag	Bi	As	Sn	L59N
1	T10826	70	15	110	<0.5	–	<10	40	6	5875E
2	T10827	330	10	125	<0.5	–	<10	3	4	5900E
3	T10828	<5	15	15	<0.5	–	<10	<1	3	5075E
4	T10829	<5	40	15	<0.5	–	<10	3	8	
5	T10830	40	30	50	<0.5	–	<10	23	8	
6	T10831	15	5	45	<0.5	–	<10	4	9	
7	T10832	<5	10	25	<0.5	–	<10	7	9	
8	T10833	115	1550	225	9.0	–	<10	170	22	
9	T10834	20	65	50	<0.5	–	<10	13	5	
10	T10835	50	95	170	<0.5	–	<10	66	7	4900E
11	T10836	65	25	280	<0.5	–	<10	4	6	L.66N 5025E
12	T10837	115	35	190	<0.5	–	<10	14	8	
13	T10838	70	15	195	<0.5	–	<10	2	8	
14	T10839	190	90	775	<0.5	–	<10	13	4	5550E
15	T10840	20	50	40	<0.5	–	<10	15	6	L.61N 5050E
16	T10841	15	45	30	<0.5	–	<10	10	6	
17	T10842	10	25	50	<0.5	–	<10	8	5	
18	T10843	10	10	925	<0.5	–	<10	3	<3	
19	T10844	<5	100	25	<0.5	–	<10	21	7	
20	T10845	<5	145	20	<0.5	–	<10	3	4	
21	T10846	<5	115	20	<0.5	–	<10	5	23	
22	T10847	<5	50	15	1.5	–	<10	7	200	
23	T10848	10	80	15	<0.5	–	<10	34	86	
24	T10849	<5	55	15	1.5	–	<10	4	168	
25	T10850	<5	90	15	<0.5	–	<10	2	19	5300E

Results in ppm unless otherwise specified
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607213

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	95.1.08.05999	20/02/89	0605	15 OF 16

PROBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Ag	Bi	As	Sn	LOIN
1	T10851	5	95	15	<0.5	-	<10	3	16	5325E
2	T10852	15	180	20	<0.5	-	<10	20	17	
3	T10853	5	85	15	1.0	-	20	9	33	
4	T10854	30	90	165	<0.5	-	<10	17	7	
5	T10855	5	<5	25	<0.5	-	<10	2	5	
6	T10856	20	15	60	<0.5	-	<10	8	<3	
7	T10857	5	<5	10	<0.5	-	<10	3	3	
8	T10858	20	10	75	<0.5	-	10	13	3	
9	T10859	15	<5	35	<0.5	-	<10	6	6	
10	T10860	45	20	60	<0.5	-	<10	26	<3	
11	T10861	<5	15	10	<0.5	-	<10	<1	8	
12	T10862	5	<5	25	<0.5	-	<10	<1	9	
13	T10863	25	10	20	<0.5	-	<10	7	6	
14	T10864	20	20	25	<0.5	-	<10	5	6	
15	T10865	<5	5	10	<0.5	-	<10	5	8	
16	T10866	<5	20	10	<0.5	-	<10	3	3	
17	T10867	55	25	20	<0.5	-	<10	37	6	
18	T10868	15	45	15	<0.5	-	<10	9	<3	
19	T10869	5	20	15	<0.5	-	<10	5	<3	
20.	T10870	15	15	15	<0.5	-	<10	4	6	
21	T10871	<5	<5	15	<0.5	-	<10	3	<3	↓
22	T10872	5	15	15	<0.5	-	<10	2	5	5850E
23	T10873	5	15	25	<0.5	-	<10	4	5	5025E
24	T10874	10	<5	30	<0.5	-	<10	<1	3	↓
25	T10875	<5	60	10	<0.5	-	<10	<1	4	4975E

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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ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	95.1.08.05999	20/02/89	0605	16 OF 16

BE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Ag	Bi	As	Sn	L6IN
1	T10876	5	90	25	<0.5	-	<10	3	4	4950E
2	T10877	15	100	10	<0.5	-	<10	3	6	
3	T10878	<5	40	10	<0.5	-	<10	<1	7	
4	T10879	40	115	210	<0.5	-	<10	30	10	
5	T10880	15	145	30	<0.5	-	<10	12	5	4850E
6										
7										
8										
9										
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
23	DETECTION	5	5	5	0.5	2	10	1	3	
24	UNITS	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	
25	METHOD	101	101	101	101	104	101	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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607215

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	95.1.08.0604O	21/03/85	0609	1 OF 12

	SAMPLE No.	Cu	Pb	Zn	Ag	Bi	As	Sn	L.72N
	10942	<5	20	20	<0.5	<10	32	9	5025E
	10943	15	35	85	<0.5	<10	17	<3	
3	10944	55	95	270	<0.5	10	65	11	
4	10945	<5	55	20	<0.5	<10	13	6	
5	10946	25	155	75	<0.5	<10	10	35	
6	10947	75	180	200	<0.5	10	37	10	
7	10948	40	80	115	<0.5	<10	18	30	
8	10949	245	1350	80	0.5	30	910	2770	
9	10950	20	1200	25	1.0	<10	23	70	
10	10951	310	1650	125	<0.5	20	98	619	
11	10952	900	2000	250	0.5	80	1790	2690	
12	10953	350	75	445	<0.5	<10	50	8	
13	10954	285	265	310	9.0	100	490	257	
14	10955	130	40	130	<0.5	<10	97	115	5350E (5014)
15	10956	1550	15	55	2.5	<10	22	<3	5350E (01C)
16	10957	60	10	210	<0.5	<10	14	<3	
17	10958	25	25	55	<0.5	<10	13	6	
18	10959	35	15	45	<0.5	<10	<9	<3	
19	10960	15	20	45	<0.5	<10	10	51	
20	10961	55	40	85	<0.5	10	29	30	
21	10962	40	25	60	<0.5	20	11	16	
22	10963	40	65	30	<0.5	10	31	4	
23	10964	20	30	30	<0.5	<10	19	4	
24	10965	65	15	115	<0.5	<10	<9	6	
25	10966	65	10	120	<0.5	<10	12	<3	5600E

Results in ppm unless otherwise specified
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ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	95.1.08.06040	21/03/95	0609	2 OF 12

	SAMPLE No.	Cu	Pb	Zn	Ag	Bi	As	Sn	L.72N
	10967	115	15	200	<0.5	<10	<9	<3	5650E (25)
	10968	55	13	45	<0.5	<10	9	3	↓
3	10969	55	25	75	<0.5	<10	<9	<3	5675E
4	10970	20	15	50	<0.5	<10	<9	<3	5000E
5	10971	50	25	60	<0.5	<10	40	<3	
6	10972	90	50	150	<0.5	<10	41	<3	
7	10973	10	25	55	<0.5	<10	76	<3	
8	10974	5	25	70	<0.5	<10	13	<3	
9	10975	40	30	60	<0.5	<10	24	3	
10	10976	45	40	105	<0.5	<10	25	<3	
11	10977	85	70	115	<0.5	<10	19	<3	
12	10978	100	90	140	<0.5	<10	23	<3	
13	10979	65	260	120	<0.5	<10	38	4	
14	10980	80	370	90	0.5	<10	36	5	
15	10981	75	170	145	<0.5	<10	44	<3	
16	10982	80	135	255	<0.5	<10	32	<3	↓
17	10983	80	255	375	<0.5	<10	63	14	4675E
18	10984	170	5	150	<0.5	<10	247	1530	L.80N 5550E
19	10985	165	15	115	<0.5	<10	589	609	↓
20	10986	85	5	60	<0.5	<10	140	548	
21	10987	95	10	45	<0.5	<10	156	276	
22	10988	85	15	55	<0.5	<10	256	254	
23	10989	35	25	45	<0.5	<10	129	70	
24	10990	100	345	65	<0.5	<10	176	17	↓
25	10991	30	80	35	<0.5	<10	21	10	5725E

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

607217

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
216	95.1.08.06040	21/03/89	0609	3 OF 12

	SAMPLE No.	Cu	Pb	Zn	Ag	Bi	As	Sn	L.80N
	10992	50	125	40	<0.5	<10	88	50	5750E
	10993	10	40	20	<0.5	<10	28	6	↓
3	10994	15	15	45	<0.5	<10	19	3	5800E
4	10995	125	<5	65	<0.5	<10	222	420	5525E
5	10996	80	5	95	<0.5	<10	68	130	
6	10997	30	10	35	<0.5	<10	36	285	
7	10998	140	10	105	<0.5	<10	17	18	↓
8	10999	50	10	65	<0.5	<10	46	77	5425E
9	11062	30	75	105	<0.5	<10	23	<3	L.70N 4725E
10	11063	270	5	130	<0.5	<10	405	1040	L.82N 5500E
11	11064	95	15	95	<0.5	<10	19	41	
12	11065	35	15	70	<0.5	<10	17	14	
13	11066	40	15	85	<0.5	<10	<9	12	
14	11067	55	15	95	<0.5	<10	10	5	
15	11068	25	10	90	<0.5	<10	<9	73	
16	11069	40	10	135	<0.5	<10	9	<3	
17	11070	30	10	115	<0.5	<10	<9	20	
18	11071	30	10	85	<0.5	<10	10	66	
19	11072	45	15	85	<0.5	<10	13	24	
20	11073	130	5	130	<0.5	<10	39	12	
21	11074	65	5	90	<0.5	<10	24	72	
22	11075	40	10	115	<0.5	<10	21	35	
23	11076	25	15	55	<0.5	<10	30	26	
	11077	30	10	60	<0.5	<10	23	20	↓
25	11078	25	15	50	<0.5	<10	24	25	5125E

Results in ppm unless otherwise specified
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607218

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	95.1.08.06040	21/03/85	0609	4 OF 12

SAMPLE No.	Cu	Pb	Zn	Ag	Bi	As	Sn	L.82N
11079	25	10	50	<0.5	<10	27	39	5100E
11080	30	20	60	<0.5	<10	36	23	
3 11081	65	10	70	<0.5	<10	19	9	
4 11082	55	120	70	<0.5	<10	32	24	
5 11083	75	10	65	<0.5	<10	25	21	
6 11084	95	60	85	<0.5	<10	28	11	
7 11085	145	15	190	<0.5	<10	26	5	
8 11086	95	15	85	<0.5	<10	30	13	
9 11087	100	10	75	<0.5	<10	22	7	
10 11088	35	10	45	<0.5	<10	25	6	
11 11089	65	10	70	<0.5	<10	33	9	
11090	30	15	45	<0.5	<10	22	18	
13 11091	190	<5	205	<0.5	<10	46	25	
14 11092	60	35	120	<0.5	<10	53	84	
15 11093	40	65	160	<0.5	<10	99	60	
16 11094	110	340	270	<0.5	<10	49	65	
17 11095	105	95	150	<0.5	<10	73	76	4700E
18 11096	30	10	50	<0.5	<10	31	102	5525E
19 11097	95	<5	95	<0.5	<10	30	81	
20 11098	160	<5	90	<0.5	<10	370	60	
21 11099	85	<5	115	<0.5	<10	74	100	
22 11100E	35	40	115	<0.5	<10	11	72	5625E - Rock/c.
23 11100W	75	<5	95	<0.5	<10	93	207	5625E - Soil
24 11101	110	90	170	0.5	10	42	44	L.80N 5375E
11102	45	35	130	<0.5	<10	15	4	5350E

Results in ppm unless otherwise specified
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607219

2/8

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	85.1.08.06040	21/03/85	0609	5 OF 12

	SAMPLE No.	Cu	Pb	Zn	Ag	Bi	As	Sn	L 80N.
	11103	90	15	180	<0.5	<10	<9	<3	5325E
	11104	60	45	135	<0.5	<10	14	27	
3	11105	80	15	155	<0.5	<10	34	13	
4	11106	5	40	70	<0.5	<10	25	23	
5	11107	15	55	70	<0.5	<10	35	6	
6	11108	5	40	60	<0.5	<10	18	3	
7	11109	70	120	150	<0.5	<10	41	6	
8	11110	20	45	130	<0.5	<10	76	5	
9	11111	75	20	255	<0.5	<10	48	<3	
10	11112	40	5	55	<0.5	<10	19	6	
11	11113	50	10	65	<0.5	<10	19	<3	
12	11114	75	15	100	<0.5	<10	16	6	
13	11115	65	15	85	<0.5	<10	17	4	
14	11116	70	10	85	<0.5	<10	14	<3	
15	11117	65	5	95	<0.5	<10	14	5	
16	11118	50	30	85	<0.5	<10	20	13	
17	11119	70	25	90	<0.5	<10	22	9	
18	11120	65	25	90	<0.5	<10	26	6	
19	11121	85	10	70	<0.5	<10	20	<3	
20	11122	110	10	115	<0.5	<10	16	4	
21	11123	75	95	175	<0.5	<10	94	12	
22	11124	55	75	145	<0.5	<10	61	8	4800E
23	11125	160	10	230	<0.5	<10	34	8	L.84N 5425E
24	11126	65	5	105	<0.5	<10	22	16	↓
25	11127	105	5	95	<0.5	<10	83	110	5475E

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607220

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	95.1.08.06040	21/03/85	0609	6 OF 12

	SAMPLE No.	Cu	Pb	Zn	Ag	Bi	As	Sn	
	11128	60	10	110	<0.5	<10	26	124	L.84N 5500E
2	11129	50	5	100	<0.5	<10	14	109	↓
3	11130	55	10	90	<0.5	<10	25	81	5550E L.68N
4	11195	5	<5	20	<0.5	<10	<9	<3	4725E
5	11196	5	10	125	<0.5	<10	<9	<3	↓
6	11197	<5	35	25	0.5	<10	14	4	
7	11198	10	30	75	<0.5	<10	50	<3	
8	11199	5	40	25	0.5	<10	<9	6	↓
9	11200	<5	25	20	<0.5	<10	<9	<3	4850E L.82N
10	11201	60	15	60	<0.5	<10	49	72	5650E
11	11202	55	25	85	<0.5	<10	48	52	↓
12	11203	115	10	60	<0.5	<10	331	76	5700E L.88N
13	11204	135	<5	125	<0.5	<10	44	30	5550E
14	11205	95	15	105	<0.5	<10	61	240	↓
15	11206	75	10	75	<0.5	<10	58	90	
16	11207	65	10	65	<0.5	<10	42	47	
17	11208	60	15	70	<0.5	<10	39	28	
18	11209	60	15	80	<0.5	<10	49	22	
19	11210	90	25	95	<0.5	<10	44	16	
20	11211	65	20	85	<0.5	<10	54	20	
21	11212	40	15	65	<0.5	<10	37	36	
22	11213	65	75	115	<0.5	<10	33	31	
23	11214	100	50	90	<0.5	<10	63	38	
24	11215	275	25	105	<0.5	<10	116	61	↓
25	11216	535	30	65	1.0	<10	59	96	5250E

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ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	95.1.08.06040	21/03/89	0609	7 OF 12

	SAMPLE No.	Cu	Pb	Zn	Ag	Bi	As	Sn	L.88N
	11217	105	110	80	<0.5	<10	27	65	5225E
2	11218	115	40	100	<0.5	<10	13	4	
3	11219	80	20	55	<0.5	<10	23	8	
4	11220	85	20	65	<0.5	<10	39	17	
5	11221	190	25	116	<0.5	<10	24	10	
6	11222	160	70	115	<0.5	<10	23	14	
7	11223	100	30	105	<0.5	<10	38	77	
8	11224	65	30	110	<0.5	<10	157	74	
9	11225	100	40	120	<0.5	<10	265	74	
10	11226	145	35	170	<0.5	<10	233	110	
11	11227	70	35	105	<0.5	<10	260	69	
12	11228	85	30	130	<0.5	<10	196	67	
13	11229	75	40	275	<0.5	<10	374	129	
14	11230	105	25	210	<0.5	10	283	80	
15	11231	100	25	195	<0.5	<10	282	183	
16	11232	150	30	145	<0.5	<10	211	60	
17	11233	160	55	95	<0.5	<10	1300	189	
18	11234	75	85	165	<0.5	<10	166	238	
19	11235	705	150	710	<0.5	10	1430	736	
20	11236	180	265	170	<0.5	<10	147	118	
21	11237	200	210	190	<0.5	<10	99	162	↓
22	11238	370	40	235	<0.5	20	294	256	4700E
23	11239	85	15	105	<0.5	<10	42	29	5575E
24	11240	75	10	75	<0.5	<10	60	56	↓
	11241	70	15	75	<0.5	<10	49	48	5625E

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

ANALYTICAL DATA

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SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	95.1.08.06040	21/03/89	0609	8 OF 12

	SAMPLE No.	Cu	Pb	Zn	Ag	Bi	As	Sn	
	11242	70	15	70	<0.5	<10	47	39	L 80N 560E
2	11351	40	20	55	<0.5	<10	<5	<3	L 76N 512SE
3	11352	40	15	75	<0.5	<10	10	<3	
4	11353	115	15	115	<0.5	<10	14	9	
5	11354	45	20	85	<0.5	<10	7	<3	
6	11355	75	20	90	<0.5	<10	20	12	
7	11356	70	20	65	<0.5	<10	37	18	
8	11357	125	30	140	<0.5	<10	23	14	
9	11358	105	15	90	<0.5	<10	19	5	
10	11359	115	20	60	<0.5	<10	13	6	
11	11360	190	15	80	<0.5	10	632	10	
	11361	205	15	95	<0.5	<10	280	11	
13	11362	135	240	235	<0.5	<10	23	<3	
14	11363	90	35	85	<0.5	<10	57	10	
15	11364	40	55	45	<0.5	<10	197	8	
16	11365	545	190	900	<0.5	<10	697	<3	
17	11366	65	50	50	<0.5	<10	31	8	
18	11367	30	50	155	<0.5	<10	82	7	
19	11368	40	15	145	<0.5	<10	13	<3	
20	11369	115	30	400	<0.5	<10	<5	<3	
21	11370	50	5	50	<0.5	<10	10	<3	
22	11371	115	15	60	<0.5	<10	<5	5	
23	11372	40	5	25	<0.5	<10	10	<3	
24	11373	85	10	35	<0.5	<10	<5	<3	
	11374	85	10	60	<0.5	<10	<5	8	574[illegible]00E

Results in ppm unless otherwise specified
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A Division of Macdonald Hamilton & Co. Pty. Ltd.

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	95.1.08.06040	21/03/89	0607	9 OF 12

	SAMPLE No.	Cu	Pb	Zn	Ag	Bi	As	Sn	
	11375	10	105	25	0.5	<10	<9	<3	L.76N 4875E
2	11376	65	20	60	<0.5	<10	<9	3	
3	11377	15	30	55	<0.5	<10	<9	<3	
4	11378	25	110	65	<0.5	<10	<9	<3	
5	11379	115	90	205	<0.5	<10	<9	<3	
6	11380	10	45	25	<0.5	<10	<9	<3	
7	11381	60	75	90	<0.5	<10	23	<3	
8	11382	15	50	45	<0.5	<10	16	<3	4700E
9	11601	900	35	165	<0.5	<10	148	200	L.901N 5200E
10	11602	100	50	110	<0.5	<10	54	79	
11	11603	70	175	135	<0.5	<10	34	31	
12	11604	135	60	290	0.5	<10	149	54	
13	11605	75	175	120	<0.5	10	103	95	
14	11606	150	755	265	0.5	<10	25	45	
15	11607	170	635	260	<0.5	<10	52	40	
16	11608	65	410	80	<0.5	<10	24	54	
17	11609	50	360	175	<0.5	<10	110	210	
18	11610	120	5550	450	1.5	<10	162	152	
19	11611	75	9150	865	1.5	<10	69	160	
20	11612	70	2750	440	1.0	<10	226	105	
21	11613	35	75	105	0.5	<10	58	36	
22	11614	50	65	95	<0.5	<10	74	72	
23	11615	25	45	80	0.5	<10	61	143	
24	11616	85	65	110	<0.5	<10	67	93	
	11617	25	45	115	<0.5	<10	59	86	4800E

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

607224

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	95.1.08.06040	21/03/89	0609	10 OF 12

	SAMPLE No.	Cu	Pb	Zn	Ag	Bi	As	Sn	
	11618	85	210	1350	0.5	10	165	257	L 90N 4775E
2	11619	40	45	80	<0.5	10	83	476	
3	11620	35	10	45	<0.5	<10	57	611	
4	11621	55	5	55	<0.5	<10	<9	153	
5	11622	45	25	65	<0.5	10	27	619	
6	11623	35	25	60	<0.5	30	52	394	
7	11624	60	55	100	<0.5	10	87	314	4625E
8	11625	95	15	80	<0.5	<10	17	4	5650E
9	11626	185	60	375	<0.5	30	360	216	L 96N 5000E
10	11627	175	50	405	<0.5	30	282	207	
11	11628	10	5	60	<0.5	10	15	45	
12	11629	<5	10	75	<0.5	<10	<9	12	
13	11630	265	35	250	<0.5	120	476	86	
14	11631	135	50	130	<0.5	<10	101	92	
15	11632	120	40	100	<0.5	<10	88	128	
16	11633	110	40	115	<0.5	<10	81	91	
17	11634	105	55	95	<0.5	10	88	140	
18	11635	95	45	140	<0.5	10	76	38	
19	11636	150	45	80	<0.5	20	75	83	
20	11637	185	45	75	<0.5	<10	45	36	
21	11638	160	40	100	<0.5	<10	58	54	
22	11639	135	25	85	<0.5	20	66	184	
23	11640	240	45	285	<0.5	10	85	51	
24	11641	225	20	190	<0.5	<10	57	508	
25	11642	60	55	135	<0.5	<10	35	4	4600E

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607225

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	95.1.08.06040	21/03/89	0609	11 OF 12

	SAMPLE No.	Cu	Pb	Zn	Ag	Bi	As	Sn	
	11643	385	30	105	<0.5	<10	52	98	2.9%N 4575E
2	11644	190	125	150	<0.5	10	69	514	
3	11645	120	15	95	<0.5	<10	65	73	
4	11646	25	15	235	<0.5	<10	27	715	4500N
5	11647	<5	25	165	<0.5	10	47	11	5025E
6	11648	<5	45	165	<0.5	<10	19	3	
7	11649	75	35	355	<0.5	10	185	129	
8	11650	10	10	90	<0.5	<10	18	<3	
9	11651	<5	50	155	<0.5	10	20	6	
10	11652	<5	25	295	<0.5	<10	50	<3	
11	11653	55	35	360	<0.5	<10	68	6	
12	11654	20	20	170	<0.5	<10	20	6	
13	11655	15	15	115	<0.5	<10	16	4	
14	11656	25	35	160	<0.5	<10	52	13	
15	11657	15	25	155	<0.5	<10	19	14	
16	11658	<5	10	80	<0.5	<10	11	4	
17	11659	50	55	110	<0.5	<10	14	<3	
18	11660	15	35	400	<0.5	<10	91	9	
19	11661	30	55	75	<0.5	<10	36	71	
20	11662	85	70	140	<0.5	<10	24	26	
21	11663	125	35	130	<0.5	<10	<9	17	
22	11664	200	16	220	<0.5	<10	39	19	
23	11665	90	80	220	<0.5	<10	62	20	
24	11666	85	75	265	<0.5	<10	123	14	5500E
25									

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607226

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
223	95.1.08.06051	30/03/89	0610	1 OF 19

JBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Bi	As	Sn
1	10881	75	45	20	<0.5	<10	20	7
2	10882	15	190	20	2.0	<10	32	5
3	10883	50	90	75	<0.5	<10	96	8
4	10884	20	525	35	<0.5	<10	71	12
5	10885	10	1015	50	2.5	<10	41	6
6	10886	45	260	330	1.0	<10	49	5
7	10887	5	255	20	<0.5	<10	14	10
8	10888	5	20	10	<0.5	<10	12	4
9	10889	5	20	15	<0.5	<10	6	5
10	10890	5	75	30	<0.5	<10	11	23
11	10891	5	45	15	<0.5	<10	8	9
12	10892	5	25	30	<0.5	<10	12	<3
13	10893	20	25	35	<0.5	<10	14	9
14	10894	25	25	85	<0.5	<10	14	10
15	10895	75	15	95	<0.5	<10	15	<3
16	10896	35	20	45	<0.5	<10	9	<3
17	10897	10	25	20	<0.5	<10	7	5
18	10898	175	45	155	<0.5	<10	36	6
19	10899	5	315	60	<0.5	<10	8	<3
20	10900	<5	50	25	<0.5	<10	9	4
21	10901	5	90	40	<0.5	<10	12	6
22	10902	35	1550	45	1.0	<10	59	11
23	10903	15	45	40	<0.5	<10	13	3
24	10904	40	4200	45	3.0	<10	56	9
25	10905	255	55	420	<0.5	<10	33	9

L 63N

525CE

585CE

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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607227

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ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	95.1.08.06051	30/03/89	0610	2 OF 19

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Bi	As	Sn	
									L63N
1	10906	5	25	35	<0.5	<10	11	94	5225E
2	10907	10	90	25	0.5	<10	19	35	
3	10908	15	1350	30	<0.5	<10	25	12	
4	10909	10	265	25	<0.5	<10	18	31	
5	10910	10	160	20	<0.5	<10	9	11	
6	10911	5	270	10	<0.5	<10	9	17	
7	10912	30	60	75	<0.5	10	37	13	
8	10913	15	255	20	1.5	<10	36	13	
9	10914	30	600	20	4.5	<10	81	17	
10	10915	15	175	130	<0.5	<10	27	13	
11	10916	60	1650	150	4.0	<10	24	25	
	10917	<5	25	5	2.5	<10	12	5	
13	10918	10	40	5	<0.5	<10	16	10	
14	10919	30	115	30	3.0	<10	75	5	
15	10920	10	150	15	<0.5	<10	11	4	
16	10921	10	85	35	<0.5	<10	14	<3	4850E
17	10922	25	50	270	<0.5	<10	18	5	~~L42N~~ 5025E
18	10923	35	50	55	<0.5	<10	16	9	
19	10924	15	25	190	<0.5	<10	14	<3	
20	10925	10	20	180	<0.5	<10	8	3	
21	10926	75	20	125	<0.5	<10	26	6	
22	10927	35	45	245	<0.5	<10	13	<3	
23	10928	65	25	225	<0.5	<10	7	<3	
24	10929	10	20	160	<0.5	<10	9	<3	
	10930	25	20	260	<0.5	<10	10	8	5225E

Results in ppm unless otherwise specified
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ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	95.1.08.06051	30/03/89	0610	3 OF 19

CODE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Bi	As	Sn	L42N
1	10931	440	35	265	<0.5	<10	13	5	525OE
2	10932	125	20	160	<0.5	<10	13	5	
3	10933	25	25	150	<0.5	<10	9	4	
4	10934	5	10	155	<0.5	<10	7	6	
5	10935	55	30	180	<0.5	<10	7	<3	
6	10936	5	10	235	<0.5	<10	8	5	
7	10937	15	15	180	<0.5	<10	14	6	
8	10938	40	15	190	<0.5	<10	6	3	
9	10939	90	30	135	<0.5	<10	7	10	
10	10940	5	15	220	<0.5	<10	8	4	
11	10941	205	15	195	<0.5	<10	7	7	550OE
12	11001	10	1300	20	2.0	<10	200	315	L42N 482SE
13	11002	25	1300	25	3.0	<10	270	195	
14	11003	10	35	15	1.0	<10	14	76	
15	11004	25	250	15	7.0	<10	200	24	
16	11005	10	165	20	0.5	<10	71	29	
17	11006	35	1450	215	4.5	<10	940	125	
18	11007	20	60	50	<0.5	<10	18	15	
19	11008	10	95	25	<0.5	<10	24	11	500OE
20	11009	240	4150	405	2.5	<10	150	13	480OE
21	11010	40	1750	735	1.5	<10	108	6	
22	11011	15	430	105	<0.5	<10	21	<3	
23	11012	20	530	60	<0.5	<10	22	8	
24	11013	25	575	125	<0.5	<10	29	7	
25	11014	60	210	60	<0.5	<10	15	6	467SE

Results in ppm unless otherwise specified
T = element present; but concentration too low to measure
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607229

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
228	95.1.08.06051	30/03/89	0610	4 OF 19

ABE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Bi	As	Sn	L42N
1	11015	20	145	30	<0.5	<10	35	7	46SCE
2	11016	25	80	30	<0.5	<10	46	10	
3	11017	30	205	90	<0.5	<10	100	77	
4	11018	<5	10	15	<0.5	<10	10	8	
5	11019	5	20	20	<0.5	<10	10	10	
6	11020	10	20	45	<0.5	<10	11	9	
7	11021	10	10	50	<0.5	<10	12	4	45SCE
8	11022	10	115	40	0.5	<10	14	17	L7SN 50SCE
9	11023	35	405	110	1.0	<10	19	27	
10	11024	<5	10	25	<0.5	<10	6	6	
11	11025	20	50	130	<0.5	<10	22	5	
12	11026	25	25	40	<0.5	<10	21	6	
13	11027	45	35	285	<0.5	<10	20	8	
14	11028	40	40	235	<0.5	<10	20	4	
15	11029	35	40	255	<0.5	<10	18	12	
16	11030	35	60	150	<0.5	<10	15	5	
17	11031	140	40	100	<0.5	<10	13	4	
18	11032	115	25	305	<0.5	<10	23	8	
19	11033	5	<5	15	<0.5	<10	6	5	
20	11034	35	45	60	<0.5	<10	140	3	
21	11035	70	105	110	<0.5	<10	130	15	
22	11036	25	5	105	<0.5	<10	33	18	
23	11037	55	5	125	<0.5	<10	18	9	
24	11038	70	10	55	<0.5	<10	570	773	
25	11039	35	<5	155	<0.5	<10	52	5	54SE

Results in ppm unless otherwise specified
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607230

ANALYTICAL DATA

229 | SAMPLE PREFIX | REPORT NUMBER 95.1.08.06051 | REPORT DATE 30/03/89 | CLIENT ORDER No. 0610 | PAGE 5 OF 19

PE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Bi	As	Sn	LINE
1	11040	15	20	35	<0.5	<10	60	25	5450E
2	11041	45	30	80	<0.5	<10	74	15	
3	11042	10	115	90	<0.5	<10	6	6	
4	11043	35	10	80	<0.5	<10	13	8	
5	11044	60	35	40	<0.5	<10	20	<3	
6	11045	15	<5	50	<0.5	<10	8	4	
7	11046	10	15	20	<0.5	<10	13	6	
8	11047	50	25	65	<0.5	<10	110	5	
9	11048	10	75	20	<0.5	<10	15	12	
10	11049	25	65	30	<0.5	<10	17	3	
11	11050	15	35	65	<0.5	<10	40	4	
12	11051	25	15	40	<0.5	<10	43	6	5725E
13	11052	10	110	25	<0.5	<10	7	6	4975E
14	11053	15	90	40	<0.5	<10	7	8	
15	11054	5	35	15	<0.5	<10	4	3	
16	11055	5	50	20	<0.5	20	22	7	
17	11056	15	35	20	<0.5	10	55	7	
18	11057	30	20	55	<0.5	<10	120	9	
19	11058	5	25	40	<0.5	<10	78	4	
20	11059	15	10	25	<0.5	<10	18	<3	
21	11060	70	45	465	<0.5	<10	120	3	
22	11061	55	35	275	<0.5	10	20	4	4700E
23	11131	55	10	65	<0.5	<10	16	65	684N 5575E
24	11132	65	10	110	<0.5	<10	14	17	
25	11133	55	10	95	<0.5	<10	14	26	5625E

Results in ppm unless otherwise specified
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ANALYTICAL DATA

607231

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
230	95.1.08.06051	30/03/89	0610	6 OF 19

PBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Bi	As	Sn	L&N
1	11134	50	10	65	<0.5	<10	12	22	565E
2	11135	60	20	75	<0.5	<10	10	21	
3	11136	45	15	65	<0.5	<10	11	27	
4	11137	45	25	80	<0.5	<10	12	10	
5	11138	85	20	130	<0.5	<10	13	8	578OE
6	11139	120	20	115	<0.5	<10	220	44	540OE
7	11140	80	10	80	<0.5	<10	25	980	
8	11141	40	10	65	<0.5	<10	13	48	
9	11142	40	5	60	<0.5	<10	14	67	
10	11143	30	5	50	<0.5	<10	13	35	
11	11144	20	<5	35	<0.5	<10	10	52	
12	11145	45	10	55	<0.5	<10	11	34	
13	11146	80	20	100	<0.5	<10	18	27	
14	11147	10	15	80	<0.5	<10	66	79	
15	11148	35	25	70	<0.5	<10	31	67	
16	11149	40	45	75	<0.5	<10	48	36	
17	11150	35	15	65	<0.5	<10	35	23	
18	11151	50	25	75	<0.5	<10	25	24	
19	11152	55	45	85	<0.5	<10	27	23	
20	11153	40	20	70	<0.5	<10	26	23	
21	11154	70	30	105	<0.5	<10	33	17	
22	11155	70	30	165	<0.5	<10	110	56	
23	11156	75	15	110	<0.5	<10	160	52	
24	11157	170	35	115	<0.5	<10	760	26	
25	11158	135	25	135	<0.5	<10	180	481	492SE

Results in ppm unless otherwise specified
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A Division of Macdonald Hamilton & Co. Pty. Ltd.

607232

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	95.1.08.06051	30/03/89	0610	7 OF 19

PROBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Bi	As	Sn	L.84N
1	11159	190	10	110	<0.5	<10	110	65	490E
2	11160	670	15	105	<0.5	<10	110	62	
3	11161	245	10	85	<0.5	<10	100	55	
4	11162	450	20	105	<0.5	<10	140	81	
5	11163	525	20	105	<0.5	10	160	91	
6	11164	500	35	125	<0.5	20	370	94	
7	11165	90	30	100	<0.5	<10	26	24	475E
8	11166	50	75	165	<0.5	<10	103	25	L.68N 532SE
9	11167	65	400	150	<0.5	<10	140	14	
10	11168	45	95	180	<0.5	<10	40	60	
11	11169	15	30	45	<0.5	<10	11	5	
12	11170	35	155	135	<0.5	<10	104	48	
13	11171	20	5	30	<0.5	<10	11	5	
14	11172	85	35	90	<0.5	<10	170	22	
15	11173	105	530	190	0.5	<10	74	14	
16	11174	255	35	180	<0.5	<10	42	10	
17	11175	110	170	180	0.5	<10	21	9	
18	11176	25	15	95	<0.5	<10	10	8	
19	11177	145	265	195	<0.5	<10	19	5	
20	11178	95	180	140	<0.5	<10	11	7	
21	11179	115	185	170	1.0	<10	11	5	
22	11180	120	85	285	0.5	<10	13	9	
23	11181	55	810	1750	3.0	<10	1430	21	570OE
24	11182	65	15	130	<0.5	<10	17	124	530OE
25	11183	60	135	145	<0.5	<10	52	7	527SE

Results in ppm unless otherwise specified
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A Division of Macdonald Hamilton & Co. Pty. Ltd.

607233

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	95.1.08.06051	30/03/89	0610	8 OF 19

TBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Bi	As	Sn	L 68N
1	11184	35	40	150	<0.5	<10	15	3	5250E
2	11185	35	20	90	<0.5	<10	8	5	
3	11186	65	5	40	<0.5	<10	8	6	
4	11187	50	60	150	<0.5	<10	15	<3	
5	11188	130	425	250	1.5	20	310	20	
6	11189	45	50	115	<0.5	<10	10	7	
7	11190	35	80	180	0.5	<10	10	8	
8	11191	35	155	145	<0.5	<10	11	4	
9	11192	10	55	40	<0.5	<10	8	4	
10	11193	15	35	80	<0.5	<10	10	<3	
11	11194	15	30	85	<0.5	<10	8	<3	5000E
12	11243	80	15	85	<0.5	<10	47	37	L.88N 5675E
13	11244	90	55	175	<0.5	<10	99	39	5700E
14	11245	5	105	30	<0.5	<10	6	5	L.66N 5025E
15	11246	<5	25	15	<0.5	<10	4	7	
16	11247	<5	50	10	<0.5	<10	4	4	
17	11248	80	85	40	<0.5	<10	160	13	
18	11249	20	85	85	<0.5	<10	12	26	
19	11250	25	95	45	<0.5	<10	8	3	40 52
20	11251	15	105	140	<0.5	<10	14	11	
21	11253	5	<5	65	<0.5	<10	8	5	
22	11254	5	<5	120	<0.5	<10	4	6	
23	11255	5	55	170	<0.5	<10	14	56	
24	11256	90	90	100	5.5	<10	110	12	
25	11257	70	405	180	<0.5	<10	180	9	5275E

Results in ppm unless otherwise specified
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607234

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	95.1.08.06051	30/03/89	0610	9 OF 19

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Bi	As	Sn	L 66N
1	11258	20	<5	65	<0.5	<10	12	5	5300E
2	11259	70	50	135	<0.5	<10	150	25	
3	11260	35	15	135	<0.5	<10	15	4	
4	11261	25	90	100	<0.5	<10	24	7	
5	11262	35	25	270	<0.5	<10	14	3	
6	11263	5	10	50	<0.5	<10	4	6	
7	11264	30	70	185	<0.5	<10	8	6	
8	11265	80	<5	175	<0.5	<10	3	<3	5525E
9	11266	10	200	25	<0.5	<10	9	<3	5000E
10	11267	15	60	15	<0.5	<10	6	5	
11	11268	5	65	15	<0.5	<10	6	5	
12	11269	5	80	25	<0.5	<10	4	7	
13	11270	5	45	10	<0.5	<10	3	28	
14	11271	20	325	185	<0.5	<10	19	5	
15	11272	10	135	50	<0.5	<10	5	39	
16	11273	25	20	150	<0.5	<10	19	11	
17	11274	10	80	25	<0.5	<10	5	4	4800E
18	11275	10	50	55	<0.5	<10	9	5	L 68N 4975E
19	11276	5	45	40	<0.5	<10	6	6	
20	11277	20	155	145	1.0	<10	330	23	
21	11278	5	5	15	<0.5	<10	7	3	
22	11279	5	55	25	<0.5	<10	9	7	4875E
23	11280	100	<5	125	<0.5	<10	25	11	L 86N 5400E
24	11281	50	10	65	<0.5	<10	53	420	
25	11282	55	<5	55	<0.5	<10	18	19	5300E

Results in ppm unless otherwise specified
T = element present; but concentration too low to measure
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A Division of Macdonald Hamilton & Co. Pty. Ltd.

607235

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	95.1.08.06051	30/03/89	0610	10 OF 19

PROBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Bi	As	Sn	L 86N
1	11283	40	<5	60	<0.5	<10	16	20	5325E
2	11284	45	<5	50	<0.5	<10	23	33	
3	11285	30	<5	45	<0.5	<10	27	137	
4	11286	30	<5	70	<0.5	<10	170	185	
5	11287	60	<5	110	<0.5	<10	32	16	
6	11288	55	<5	75	<0.5	<10	60	26	
7	11289	45	<5	65	<0.5	<10	60	27	
8	11290	35	5	55	<0.5	<10	72	29	
9	11291	40	<5	55	<0.5	<10	32	19	
10	11292	50	10	65	<0.5	<10	20	16	
11	11293	70	5	80	<0.5	<10	24	18	
12	11294	90	10	100	<0.5	<10	110	368	
13	11295	75	<5	50	<0.5	<10	62	39	
14	11296	230	20	90	<0.5	<10	70	56	
15	11297	185	15	110	<0.5	<10	62	62	
16	11298	200	30	95	<0.5	<10	72	60	
17	11299	205	30	125	<0.5	<10	71	66	
18	11300	50	10	105	<0.5	<10	99	64	4900E
19	11301	30	65	95	<0.5	<10	11	12	L 78N 4900E
20	11302	20	55	60	<0.5	<10	11	8	
21	11303	75	25	415	<0.5	<10	14	7	
22	11304	10	45	1750	<0.5	<10	200	86	
23	11305	15	75	85	<0.5	<10	10	4	
24	11306	20	30	220	<0.5	<10	15	<3	
25	11307	20	65	55	<0.5	<10	51	7	4750E

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ANALYTICAL DATA

235 — SAMPLE PREFIX

REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
95.1.08.06051	30/03/89	0610	11 OF 19

L.78N

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Bi	As	Sn	
1	11308	20	85	45	<0.5	<10	22	9	475E
2	11309	10	40	25	<0.5	<10	10	12	480E
3	11310	25	75	115	<0.5	<10	9	7	495E
4	11311	30	30	55	<0.5	<10	10	4	
5	11312	35	45	55	<0.5	<10	11	14	
6	11313	55	30	55	<0.5	<10	13	11	
7	11314	75	5	75	<0.5	<10	11	<3	
8	11315	80	5	115	<0.5	<10	7	5	
9	11316	70	<5	85	<0.5	<10	11	9	
10	11317	80	<5	145	<0.5	<10	17	3	
11	11318	120	<5	175	<0.5	<10	14	9	
12	11319	35	<5	65	<0.5	<10	8	10	
13	11320	45	<5	70	<0.5	<10	8	9	
14	11321	50	<5	80	<0.5	<10	10	11	
15	11322	50	<5	95	<0.5	<10	95	45	
16	11323	35	<5	60	<0.5	<10	17	12	
17	11324	45	<5	75	<0.5	<10	14	31	
18	11325	80	10	65	<0.5	<10	34	43	
19	11326	185	5	85	<0.5	<10	110	8	
20	11327	130	<5	90	<0.5	<10	71	16	
21	11328	60	<5	65	<0.5	<10	11	10	
22	11329	165	<5	175	<0.5	<10	14	8	
23	11330	70	<5	95	<0.5	<10	13	10	
24	11331	105	<5	185	<0.5	<10	14	8	V
25	11332	130	<5	125	<0.5	<10	130	54	545E

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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ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
236	95.1.08.06051	30/03/89	0610	12 OF 19

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Bi	As	Sn	
1	11333	135	25	135	<0.5	<10	44	16	L. 78N 550SE
2	11334	40	<5	90	<0.5	<10	71	47	
3	11335	130	5	105	<0.5	<10	180	14	
4	11336	140	20	140	<0.5	<10	1020	15	
5	11337	75	5	70	<0.5	<10	120	23	
6	11338	55	10	75	<0.5	<10	101	70	
7	11339	15	<5	15	<0.5	<10	21	57	
8	11340	20	65	65	<0.5	<10	52	24	
9	11341	10	40	35	<0.5	<10	12	19	570SE
10	11342	30	20	85	<0.5	<10	7	6	L 76N 490SE
11	11343	30	15	40	<0.5	<10	12	6	
12	11344	40	<5	90	<0.5	<10	5	3	
13	11345	65	5	65	<0.5	<10	6	6	
14	11346	45	<5	70	<0.5	<10	59	14	
15	11347	45	<5	55	<0.5	<10	19	7	
16	11348	70	<5	180	<0.5	<10	10	5	
17	11349	70	<5	75	<0.5	<10	7	4	
18	11350	65	5	55	<0.5	<10	7	5	510SE
19	11383	10	10	105	<0.5	<10	6	<3	467SE
20	11384	65	30	105	<0.5	<10	9	3	L 90N 562.5E
21	11385	60	20	80	<0.5	<10	11	11	
22	11386	<5	<5	35	<0.5	<10	19	100	
23	11387	55	<5	100	<0.5	<10	13	13	
24	11388	50	<5	60	<0.5	<10	18	23	
25	11389	40	5	70	<0.5	<10	15	22	550SE

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ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	95.1.08.06051	30/03/89	0610	13 OF 19

BE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Bi	As	Sn	
									L90N
1	11390	85	<5	85	<0.5	<10	16	17	5475E
2	11391	40	<5	70	<0.5	<10	7	15	
3	11392	50	<5	105	<0.5	<10	19	8	
4	11393	65	10	95	<0.5	<10	14	34	
5	11394	65	10	165	<0.5	<10	18	42	
6	11395	125	30	125	<0.5	<10	57	48	
7	11396	220	75	165	<0.5	20	108	494	
8	11397	105	45	130	<0.5	10	97	2280	
9	11398	55	25	120	<0.5	<10	59	201	
10	11399	75	50	310	<0.5	<10	18	78	
11	11400	15	<5	135	<0.5	<10	15	<3	522SE
12	11401	30	<5	120	<0.5	<10	120	74	L84N 487SE
13	11402	35	<5	115	<0.5	<10	130	99	
14	11403	35	10	120	<0.5	<10	120	107	
15	11404	110	20	155	<0.5	<10	120	84	
16	11405	80	15	205	<0.5	<10	107	136	
17	11406	5	<5	170	<0.5	<10	7	32	
18	11407	15	<5	150	<0.5	<10	13	54	472SE
19	11408	90	<5	85	<0.5	<10	8	12	542SE
20	11409	55	<5	70	<0.5	<10	8	12	
21	11410	50	40	55	<0.5	<10	19	589	
22	11411	85	25	170	<0.5	<10	14	395	
23	11412	45	30	70	<0.5	<10	17	94	
24	11413	55	20	70	<0.5	10	23	72	
	11414	55	15	60	<0.5	<10	41	91	557SE

Results in ppm unless otherwise specified
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ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	95.1.08.06051	30/03/89	0610	14 OF 19

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Bi	As	Sn	
									L86N
1	11415	45	15	65	<0.5	<10	30	130	560E
2	11416	40	10	80	<0.5	<10	20	130	
3	11417	40	10	155	<0.5	<10	9	7	
4	11418	35	5	110	<0.5	<10	10	22	
5	11419	40	35	95	<0.5	<10	18	103	
6	11420	45	10	65	<0.5	<10	10	11	572.5E
7	11421	85	20	95	<0.5	<10	10	5	L74N 572.5E
8	11422	60	25	75	<0.5	<10	13	6	
9	11423	55	25	65	<0.5	<10	11	6	
10	11424	75	30	120	<0.5	<10	10	3	
11	11425	115	15	100	<0.5	<10	8	5	
12	11426	70	15	75	<0.5	<10	10	9	
13	11427	100	15	85	<0.5	<10	12	8	
14	11428	130	20	110	<0.5	<10	13	7	
15	11429	200	5	105	<0.5	<10	13	15	
16	11430	60	5	80	<0.5	<10	7	7	
17	11431	90	10	70	<0.5	<10	8	5	
18	11432	25	20	35	<0.5	<10	23	8	
19	11433	180	50	170	<0.5	<10	42	29	
20	11434	235	5	125	<0.5	10	13	20	
21	11435	210	5	120	<0.5	<10	8	17	
22	11436	145	705	200	1.5	<10	23	27	
23	11437	20	40	100	<0.5	<10	18	8	
24	11438	25	60	55	<0.5	10	52	7	
25	11439	60	70	305	<0.5	<10	99	6	547.5E

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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ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	95.1.08.06051	30/03/89	0610	15 OF 19

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Bi	As	Sn	L74N
1	11440	25	5	70	<0.5	<10	4	5	5500E
2	11441	115	<5	180	<0.5	<10	6	10	
3	11442	35	5	60	<0.5	<10	4	5	
4	11443	25	5	110	<0.5	<10	4	4	
5	11444	20	<5	45	<0.5	<10	3	6	
6	11445	45	5	55	<0.5	<10	4	3	
7	11446	95	<5	120	<0.5	<10	4	<3	
8	11447	45	5	120	<0.5	<10	2	8	
9	11448	65	<5	210	<0.5	<10	1	4	
10	11449	85	5	170	<0.5	<10	2	4	5725E
11	11450	30	25	70	<0.5	<10	7	5	5000E
12	11451	95	5	100	<0.5	<10	12	8	
13	11452	115	20	90	<0.5	<10	10	5	
14	11453	60	60	110	<0.5	<10	13	7	
15	11454	70	20	85	<0.5	<10	11	7	
16	11455	90	420	170	<0.5	<10	26	11	
17	11456	80	110	95	<0.5	<10	17	11	
18	11457	85	25	90	<0.5	<10	19	7	
19	11458	30	25	95	<0.5	<10	10	6	
20	11459	40	55	165	<0.5	<10	17	5	
21	11460	70	65	230	<0.5	<10	21	5	
22	11461	15	20	55	<0.5	<10	6	6	
23	11462	20	40	65	<0.5	<10	13	3	4700E
24	11463	15	10	185	<0.5	<10	22	52	L92N 5000E
25	11464	30	245	250	<0.5	<10	190	625	5075E

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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607241

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	95.1.08.06051	30/03/89	0610	16 OF 19

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Bi	As	Sn	L92N
1	11465	40	725	180	<0.5	<10	150	134	50S0E
2	11466	75	185	175	<0.5	<10	94	73	
3	11467	85	700	465	<0.5	<10	120	66	
4	11468	310	115	425	<0.5	<10	58	203	
5	11469	105	50	110	<0.5	<10	46	85	
6	11470	115	45	75	<0.5	<10	23	59	
7	11471	140	35	90	<0.5	<10	29	31	
8	11472	50	35	145	<0.5	<10	53	14	
9	11473	255	620	170	<0.5	20	37	162	
10	11474	255	155	160	<0.5	30	72	112	
11	11475	110	70	55	<0.5	30	200	218	
12	11476	70	20	60	<0.5	<10	110	36	
13	11477	75	20	70	<0.5	<10	97	33	
14	11478	25	20	80	<0.5	<10	51	35	
15	11479	30	50	120	<0.5	<10	71	48	
16	11480	20	20	190	<0.5	<10	13	22	
17	11481	30	20	150	<0.5	<10	19	12	
18	11482	70	25	150	<0.5	<10	27	8	
19	11483	80	20	115	<0.5	<10	17	8	
20	11484	100	20	120	<0.5	<10	10	5	
21	11485	65	170	380	<0.5	<10	32	16	
22	11486	55	20	150	<0.5	<10	20	4	
23	11487	90	180	465	<0.5	<10	44	32	5600E
24	11488	25	20	225	3.0	<10	29	187	4975E
25	11489	15	20	235	<0.5	<10	84	195	4950E

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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607242

ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
241	95.1.08.06051	30/03/89	0610	17 OF 19

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Bi	As	Sn	L92N
1	11490	<5	10	55	<0.5	<10	8	<3	492SE
2	11491	10	10	220	<0.5	<10	27	61	
3	11492	10	15	405	<0.5	<10	38	189	
4	11493	5	5	95	<0.5	<10	7	5	
5	11494	5	45	90	<0.5	<10	10	8	
6	11495	5	10	130	<0.5	<10	8	6	
7	11496	<5	10	105	<0.5	<10	16	24	
8	11497	5	<5	65	<0.5	<10	24	19	
9	11498	<5	15	100	<0.5	<10	14	6	
10	11499	245	10	300	<0.5	<10	360	527	
11	11500	5	20	115	<0.5	<10	20	10	467SE
12	11501	25	<5	90	<0.5	<10	63	14	
13	11502	90	15	210	<0.5	<10	240	433	
14	11503	30	10	235	<0.5	<10	24	158	460E
15	11504	<5	<5	75	<0.5	<10	12	8	L94N 500E
16	11505	5	<5	65	<0.5	<10	12	15	
17	11506	5	<5	70	<0.5	<10	50	16	
18	11507	<5	<5	55	<0.5	<10	7	7	
19	11508	<5	<5	60	<0.5	<10	11	8	
20	11509	45	<5	45	<0.5	<10	12	25	
21	11510	10	15	200	<0.5	<10	42	73	
22	11511	10	15	170	<0.5	<10	53	10	
23	11512	15	20	75	<0.5	<10	160	4	
24	11513	<5	<5	75	<0.5	<10	20	<3	
25	11514	<5	5	90	<0.5	<10	13	3	525OE

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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ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	95.1.08.06051	30/03/89	0610	18 OF 19

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Bi	As	Sn	
									L 94N
1	11515	75	55	175	<0.5	<10	58	308	5275E
2	11516	165	5	65	<0.5	<10	21	23	
3	11517	125	10	55	<0.5	<10	17	24	
4	11518	260	45	125	<0.5	<10	190	39	
5	11519	105	5	60	<0.5	<10	25	21	
6	11520	35	<5	45	<0.5	<10	13	27	
7	11521	38500	110	800	12.0	<10	38	168	
8	11522	90	<5	70	<0.5	<10	6	<3	
9	11523	80	<5	75	<0.5	<10	17	19	
10	11524	35	<5	120	<0.5	<10	24	14	
11	11525	55	<5	100	<0.5	<10	39	21	
12	11526	165	<5	105	<0.5	<10	29	22	5550E
13	11527	115	10	85	<0.5	<10	47	82	4975E
14	11528	55	20	200	<0.5	<10	260	210	
15	11529	50	15	135	<0.5	<10	560	198	
16	11530	55	70	110	<0.5	<10	800	172	
17	11531	25	<5	95	<0.5	<10	190	256	
18	11532	90	30	160	<0.5	<10	1340	731	
19	11533	5	<5	80	<0.5	<10	480	12	
20	11534	105	30	190	<0.5	<10	1050	289	
21	11535	95	85	150	<0.5	<10	900	348	
22	11536	160	50	210	<0.5	<10	1160	369	
23	11537	180	50	220	<0.5	<10	1300	301	
24	11538	5	<5	120	<0.5	<10	29	11	
25	11539	25	<5	70	<0.5	<10	11	22	4675E

Results in ppm unless otherwise specified
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ANALYTICAL DATA

SAMPLE PREFIX	REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
	95.1.08.06051	30/03/89	0610	19 OF 19

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Bi	As	Sn	L.94N
1	11540	45	<5	80	<0.5	<10	32	104	460E
2	11541	60	10	115	<0.5	<10	103	43	↓
3	11542	70	25	160	<0.5	<10	870	286	↓
4	11543	130	35	100	<0.5	<10	82	37	↓
5	11544	35	30	70	<0.5	<10	11	82	455OE
6									
7									
8									
9									
10									
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									
21									
22									
23	DETECTION	5	5	5	0.5	10	1	3	
24	UNITS	PPM	PPM	PPM	PPM	PPM	PPM	PPM	
25	METHOD	101	101	101	101	101	114	401	

Results in ppm unless otherwise specified
T = element present; but concentration too low to measure
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APPENDIX 6

Memorandum on the Godkin Prospect,
by P. Roberts.

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GOLD FIELDS EXPLORATION PTY. LIMITED

MEMORANDUM

607246

To L.A. Newnham

From P.A. Roberts

Subject Godkin Mining Lease - Joint Venture Opportunity

Date 26th August, 1985. PAR/1050/4

1. INTRODUCTION

We have been aware for some time that Paringa is interested in Joint Venturing their Godkin prospect, south-east of Renison Bell. This property is held as a mining lease (M.L. 62M/75) and covers an area of 50 ha (Figure 1).

Although the Godkin area has been held for several decades under various exploration tenements (including one of our own), the majority of work on the property has been completed by Comstaff since 1979. Until 1984, Comstaff was in Joint Venture with Minops/Paringa on the mining lease. However, after "defining" a resource of 300,000 tonnes of 0.9% Sn, Comstaff concluded that the potential there was too limited to be of interest to them and withdrew from the project.

On August 8th, 1985, I visited the Paringa office in Melbourne in order to inspect the data on this area. Owing to pressure of time commitments I had elsewhere in Melbourne at the time, I only spent a few hours examining the data. However I did obtain copies of one report and several plans, which were sufficient to gain an overall impression of the prospect.

2. WORK COMPLETED TO DATE

During the late 1960's, the Consolidated Syndicate explored this area as part of S.P.L.20 and covered it with programs of geological mapping, geochemical sampling and ground magnetics. This work defined tin-arsenic anomalies in the northern part of the area as well as at the southern end, over the old Fraser Mine (Figure 2).

Minops acquired the area in the early 1970's. They carried out further soil geochemistry over the northern anomaly and followed this up with some IP, costeaning and two short diamond drill holes. By 1975, Minops had decided that this was the only area worth retaining within their - then larger - tenement and so they applied for a mining lease.

Comstaff's work on the property in the last six years or so has consisted of geological mapping, geochemically re-sampling the entire prospect area, Crone pulse EM and six diamond drill holes. Down-hole geophysical surveys were carried out in at least two holes.

3. RESULTS AND DISCUSSION

3.1 Geology and Mineralization (Figure 3)

Lithologies exposed in the area consist of siltstones, sandstones and minor conglomerates which have been intruded by one or more gabbro dykes. Comstaff regarded the sedimentary rocks as being part of the Crimson Creek Formation. However, extrapolation from the Grand Prize area, and an interpretation of the descriptive information in their reports indicates that these rocks are all part of the Dundas Group. For instance, the conglomerate is described as containing clasts of

quartz, chert, pelite and minor carbonate lithologies; this sounds very much like a variant of either the Red Lead or Razorback Conglomerates.

The structure of the area is poorly known, however there are at least two N.N.W. trending mineralized faults, both of which probably dip steeply east. In addition, Comstaff have interpreted a number of anticlines and synclines in the northern part of the lease area.

The Godkin prospect occupies part of the North Dundas mineral field. This comprises a series of old mines which are characterized by complex polymetallic, fracture-controlled sulfide mineralization, which is commonly stanniferous. It would appear that the most significant tin prospects in the area lie in the vicinity of or within the Godkin mining lease, i.e. Fraser Mine, Green's prospect (just south of Fraser) and the northern tin anomaly. The other workings are better known for their copper-silver or lead-silver contents (Forsythe, 1969). Thus, it may be that the Godkin prospect lies at the "heart" of the North Dundas tin system with the other small base metal-rich deposits forming a (typical) halo around it.

Two major styles of mineralization are observed within the Godkin area:

(1) Veins of arsenopyrite or pyrite/pyrrhotite ± quartz ± cassiterite ± Pb, Sb sulfosalts.

(2) Pyrrhotite-bearing fracture-fill and replacement mineralization carrying some tin, arsenic and copper values. Evidence for replacement has been observed particularly in the conglomerate and the gabbro. An example of the former was intersected in GDK3, viz. 160.0-172.3m (12.3m) at 0.22% Sn.

The second style is the one identified by Comstaff as having the most economic potential and as present in the four recognized "intersections" in their drill holes (see below). However it would appear that there area a number of thin examples of the first type of vein in the northern part of the M.L. (Carl Layden, pers. comm.).

3.2 Geochemistry (Figure 2)

Two major geochemically anomalous zones have been identified in the Godkin prospect:

(1) **Northern Zone.** This is anomalous in tin and arsenic. Values greater than 210 ppm have been obtained in soil samples over an area 450m long by 50 to 150m wide.

(2) **Fraser Mine Area.** This is anomalous in tin, arsenic, copper and zinc, however tin values are lower in soil samples compared with the northern zone.

Comstaff claim to have identified hornfelsing near both the northern and southern boundaries of theM.L. as well as at depth in hole GDK8. As Comstaff thought that the potential for Renison-style tin mineralization is poor where the sediments are homfelsed, they saw this homfelsing

as a physical boundary to the mineralized system. Given the "hornfelsing" or silicification that is observed around the Grand Prize Fault, Comstaff's theory may well be wrong.

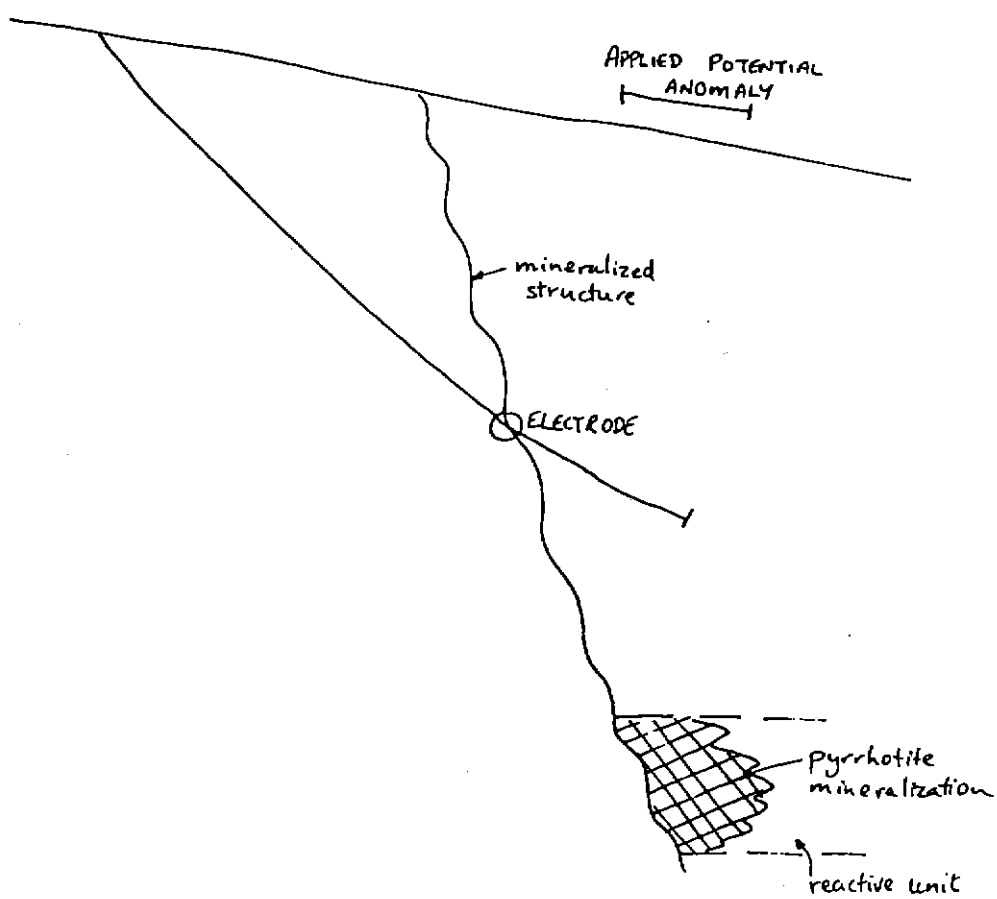
3.3 Geophysics

Two pulse EM anomalous zones are shown on Comstaff's summary plan (Thynne and Shaw, 1983). One is at least 230m long, trends N.N.W. and is open to the north; it lies parallel and to the east of the northern mineralized structure. The second is about 500m long and trends N.N.E.; this anomaly was obtained over the Fraser Mine workings on the southern-most line on which it was recorded.

Interesting results were obtained from two down-hole geophysical surveys:

(1) An applied potential survey was completed around hole GDK5. The current electrode was apparently placed at "approximately 205m", a perplexing feature, as the recorded mineralization in the drill hole is located at 209.4-210.0m. The anomaly obtained from this survey lies east of the intersection, an unusual result for an applied potential survey and one which implies that the intersection is electrically connected with a much larger body of conductive mineralization east of the electrode. Since the structure dips to the east, one interpretation of this result is that there is a substantial body of pyrrhotite mineralization in contact with the structure down-dip from the GDK5 intersection, viz:

GDK5 - SCHEMATIC SECTION



(2) A three array, down-hole IP survey was conducted down hole GDK7 and obtained a response at 275-285m, coincident with the applied potential anomaly axis.

The above anomalies which also coincide with the northern PEM anomalous zone may all be responding to a substantial body of pyrrhotite mineralization 200 to 300m below the surface. I have not seen the geophysical result details nor a geophysicist's interpretation of them, however given the depth limitations of PEM surveys and the high applied potential gradients recorded on the surface, it is more likely that the source of all these anomalies is shallower than 200m. It may well be the sediment-gabbro contact.

3.4 Drilling

Comstaff and Paringa have completed eight diamond drill holes within the M.L. for a total of about 2000m. Unfortunately, all of these holes were unfavourably oriented with respect to the major mineralized structures because both the structures and the holes dip eastwards; this is because of the steep topography east of where the structures outcrop.

All but one of the holes were directed at the northern mineralized zone (Figures 3). Comstaff considered that there were four, correlatable intersections of the main mineralized structure, viz:

GDK3 163.0-166.0m (1.4m true width) at 0.40% Sn
GDK4 87.4- 88.9m (0.7m true width) at 6.94% Sn
GDK5 209.0-212.0m (1.2m true width) at 1.50% Sn
GDK8 257.5-260.7m (1.5m true width) at 0.42% Sn.

There appears to be some confusion about the GDK5 intersection, which is also quoted as 209.4-210.0m (0.2m true width?) at 1.5% Sn.

In addition, holes GDK3 and 5 intersected an apparently concealed mass of partly altered conglomerate containing sub-economic tin values.

A longitudinal projection of the northern mineralized structure is given in Figure 4. Given the dimensions of mineralization on comparable structures (e.g. Federal, Grand Prize Faults), it is possible that the mineralization here could improve both in thickness and grade with depth.

I have not read a log of the one hole completed in the vicinity of Frasers Mine, however it is evident that the results of this hole were not encouraging.

Comstaff's tonnage calculation was based on the "ore" block outline shown on Figure 4. Even accepting the assumed "ore" block dimensions, there is some doubt whether the 300,000 tonne figure is correct because of the previously expressed doubts about the GDK5 intersection.

4. CONCLUSIONS AND RECOMMENDATIONS

The Godkin prospect is of exploration interest for two major reasons:

(1) It lies near the tin-mineralized centre of the North Dundas mineral field, a collection of partly tin-bearing base metal vein deposits comparable to the Zeehan field.

(2) The stratigraphy includes several possible carbonate-bearing lithologies within the Dundas Group, including a calcareous conglomerate and possible, dolomitic sediments of the kind seen in the Great Northern Mine area just to the south-west.

The prospect therefore has potential for Renison- or Queen Hill-style fracture-controlled and carbonate-replacement tin mineralization.

Negative features about the prospect are:

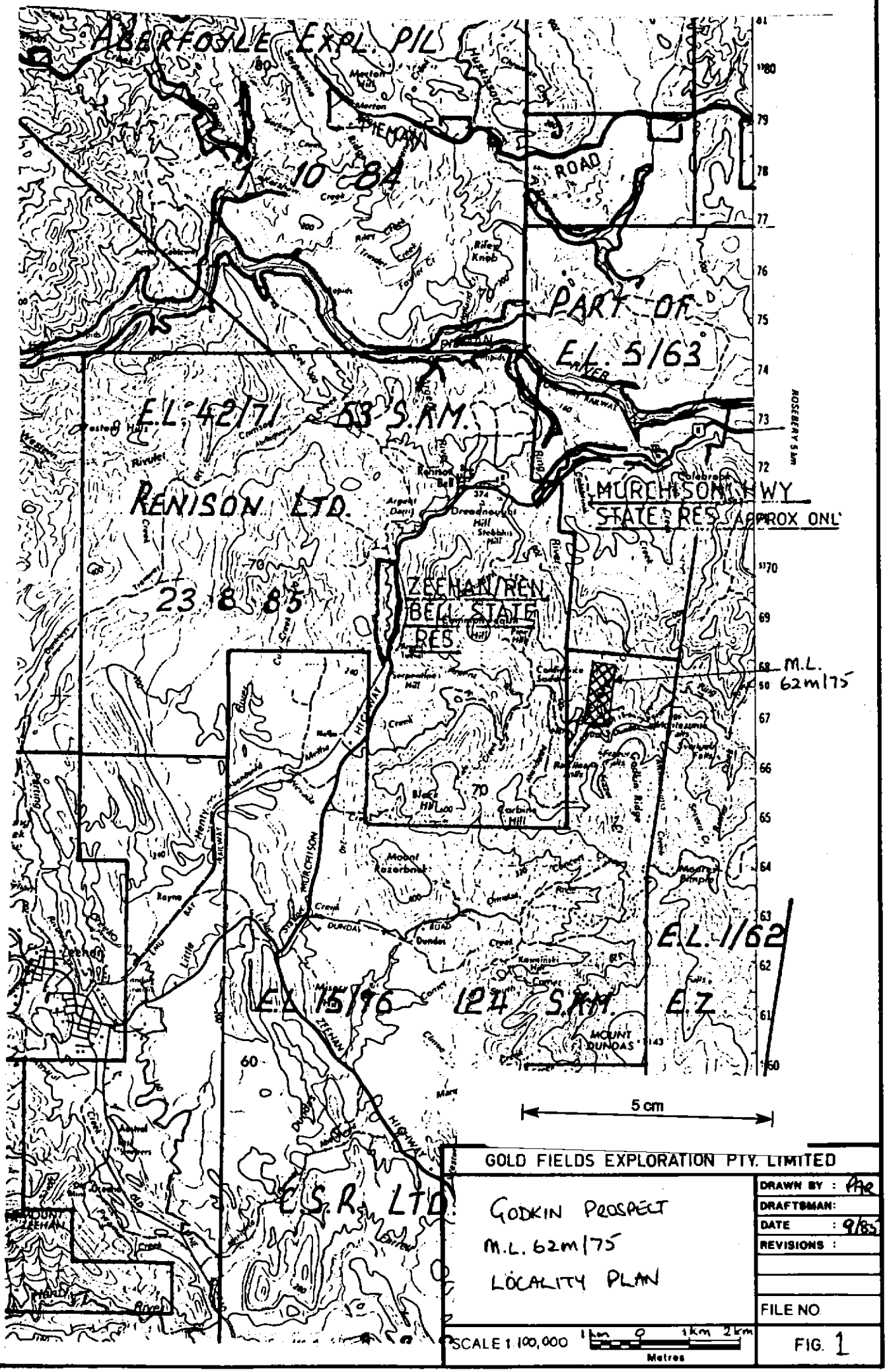
(1) The thinness of the known mineralized structures.

(2) The lack of room within the M.L. for a deposit sufficiently large to attract GFEL.

It is conceivable that a moderate tonnage of acceptable grade mineralization could be found on this prospect, say 1 million tonnes at 1-2% Sn. However GFEL's target of 5 million tonnes at greater than 1% Sn is almost certainly unattainable. It would therefore be preferable to postpone an interest in this area until such time as the surrounding E.L. (CSR's E.L.15/76) is relinquished in August 1987. It seems quite likely that Paringa will do nothing with this area for the next few years - while tin quotas continue, they are obtaining labour exemptions quite easily. Thus it may be possible to deal with Paringa on Godkin and acquire the surrounding ground as well in 1987. Consequently, I recommend that we do not pursue a Joint Venture on this area at this stage.

P.A. Roberts

Encl:



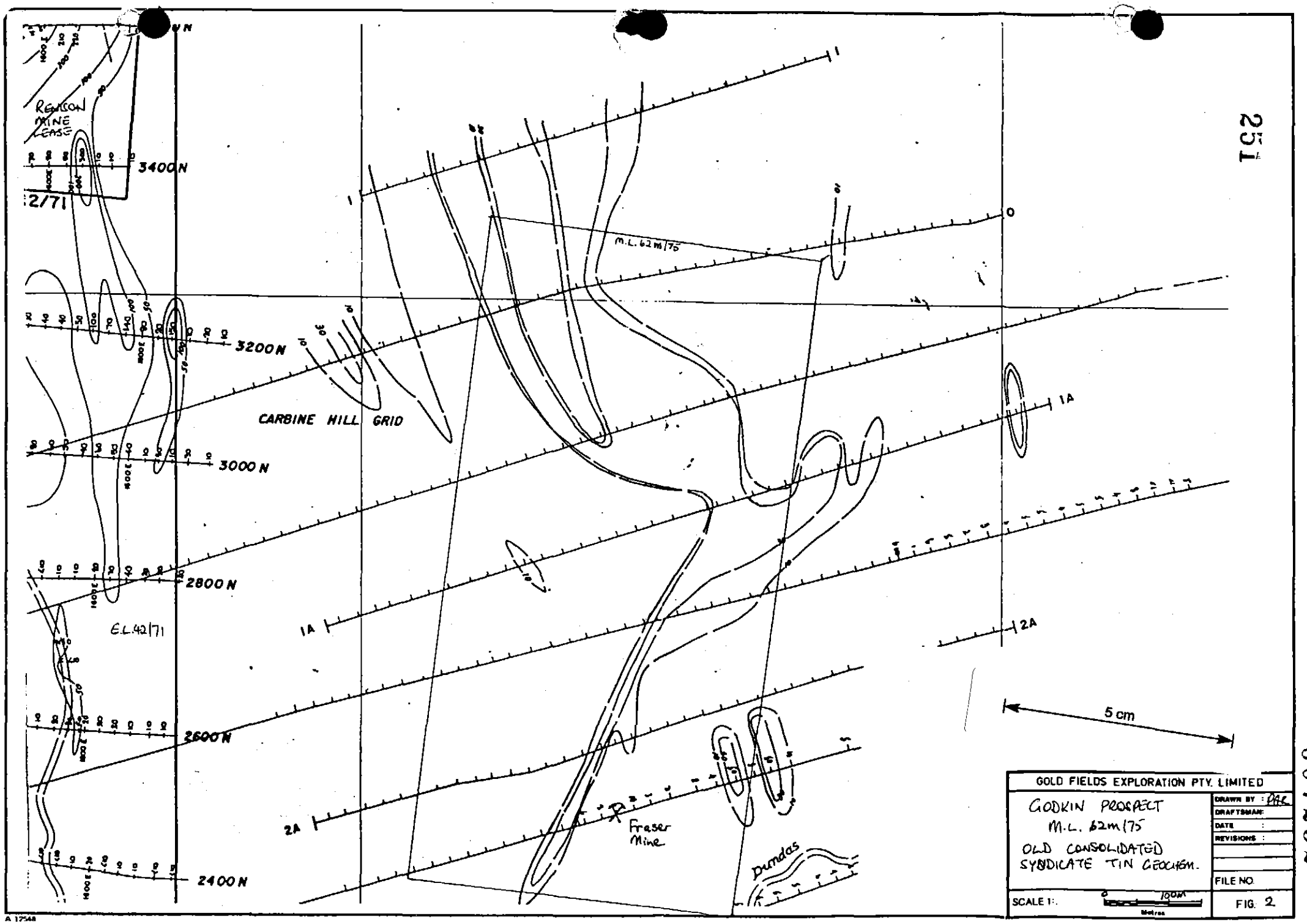
GOLD FIELDS EXPLORATION PTY. LIMITED

GODKIN PROSPECT
M.L. 62m/75
LOCALITY PLAN

DRAWN BY : PAE
DRAFTSMAN:
DATE : 9/85
REVISIONS :
FILE NO
FIG. 1

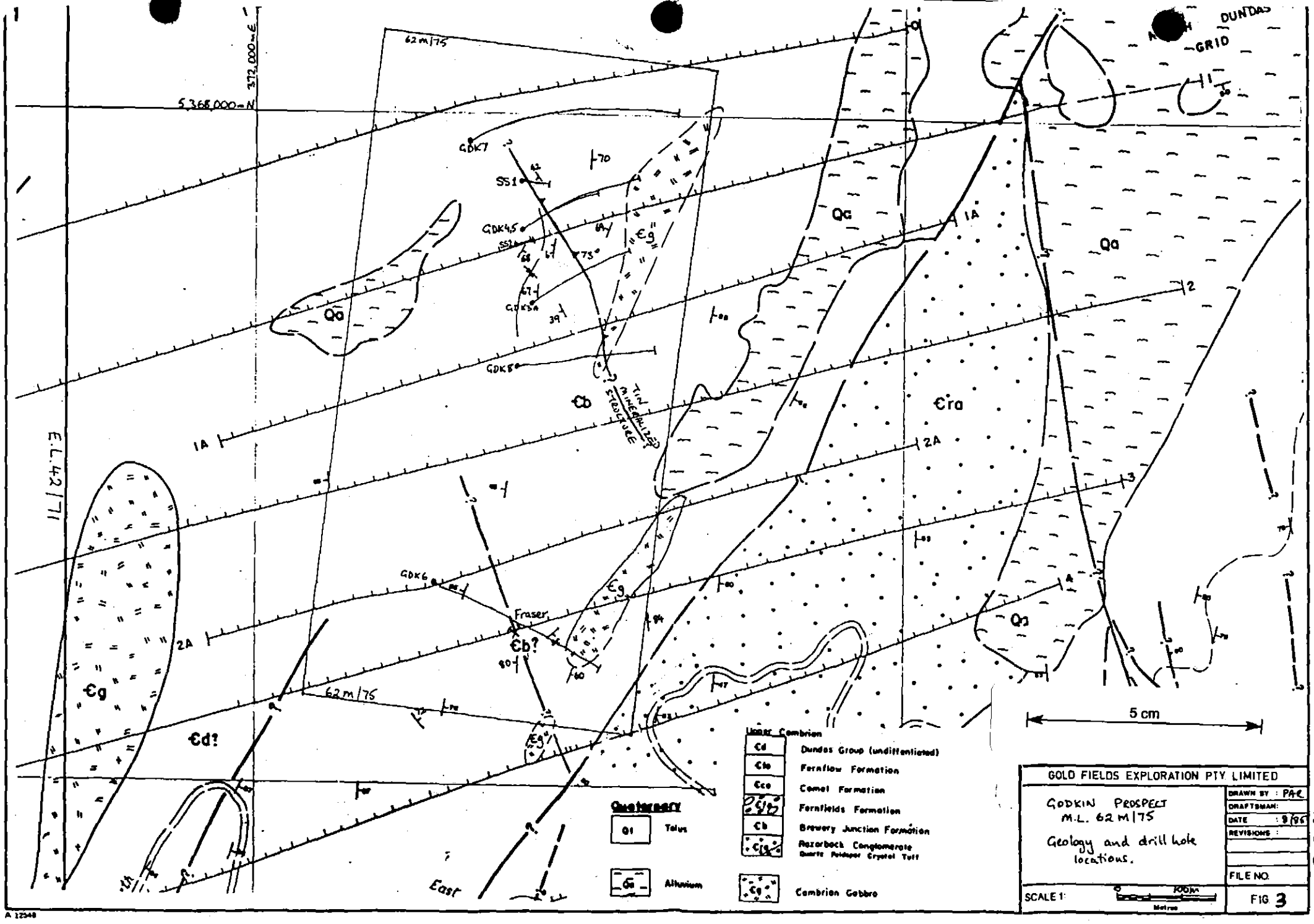
SCALE 1:100,000 1km 0 1km 2km Metres

A 12548


RENISON MINE LEASE
2/71
3400N
3200N
3000N
2800N
2600N
2400N
CARBINE HILL GRID
M.L. 62m/75
EL 42/71
1A
2A
Fraser Mine
Dundas
5 cm
GOLD FIELDS EXPLORATION PTY. LIMITED
GODKIN PROSPECT
M.L. 62m/75
OLD CONSOLIDATED SYNDICATE TIN GEOCHEM.
DRAWN BY : PAK
DRAFTSMAN:
DATE :
REVISIONS :
FILE NO.
SCALE 1:
100M
Metres
FIG. 2

251

607252



GOLD FIELDS EXPLORATION PTY LIMITED

GODKIN PROSPECT
M.L. 62m/75
Geology and drill hole locations.

DRAWN BY : PAC
DRAFTSMAN:
DATE : 9/86
REVISIONS :
FILE NO.

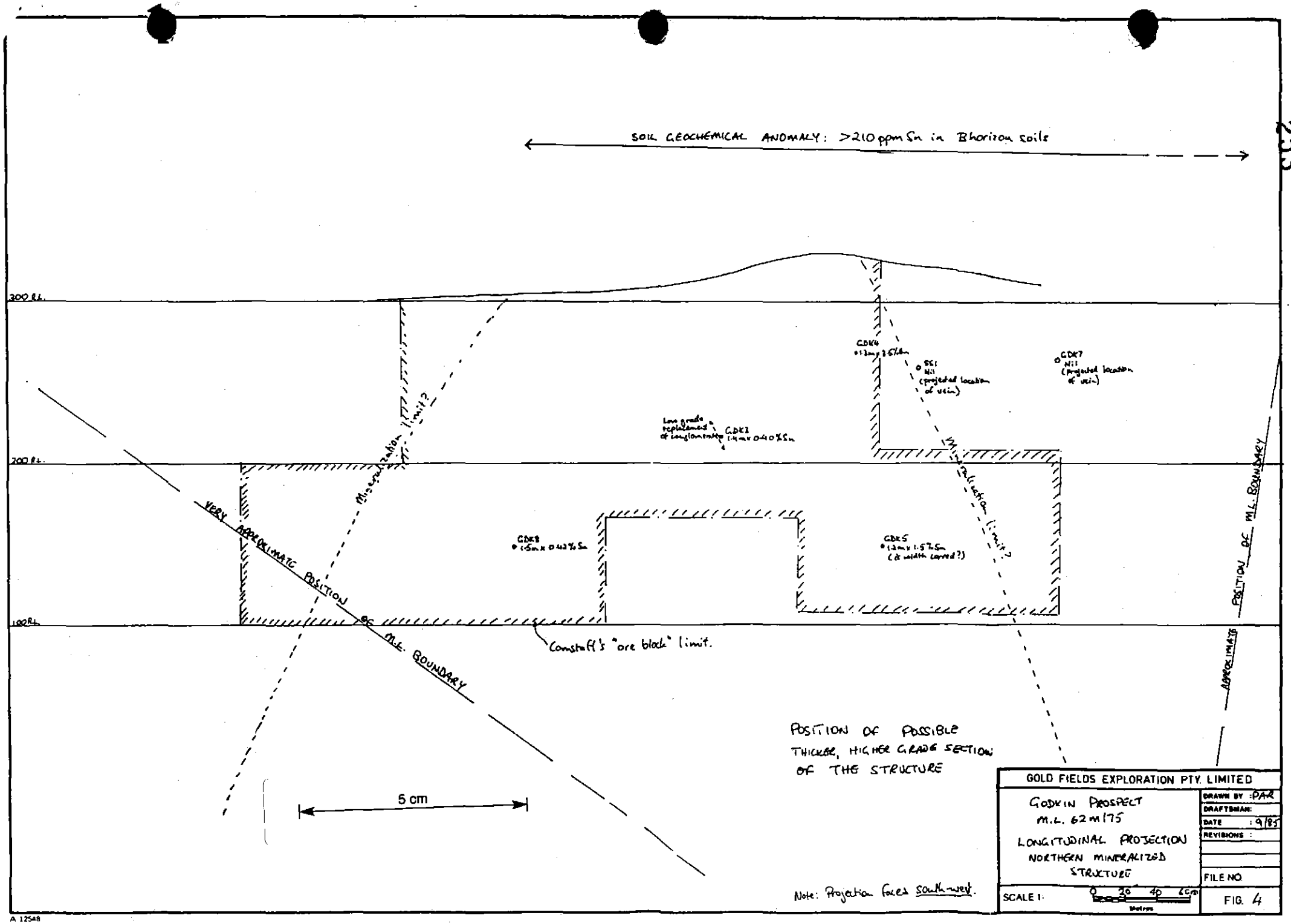
SCALE 1: 500m Metres

FIG 3

A 12548

252

607253



GOLD FIELDS EXPLORATION PTY. LIMITED

GODKIN PROSPECT
M.L. 62 M 175
LONGITUDINAL PROJECTION
NORTHERN MINERALIZED STRUCTURE

DRAWN BY : PAR
DRAFTSMAN:
DATE : 9/85
REVISIONS :
FILE NO.
SCALE 1:
FIG. 4

A 12548

8462

LEGEND

DUNDAS GROUP

BREWERY FORMATION

- Ebg — Interbedded purple fine sandstone and siltstone Minor green siltstone and polymictic conglomerate
- Ebt — Felsic - Intemediate volcaniclastics, probably tuffaceous pyroclastics. Minor gritty sandstone
- Ebm — Fine grained laminated siltstones, fine sandstone and polymictic conglomerates with monor tuffs
- Ebc — Polymictic conglomerate with ubundant chert and quartzite clasts. Minor siltstone and tuffs
- Ebs — Fine grained laminated siltstones. Minor sandstones and polymictic conglomerates
- Era — Razorback Conglomerate. Conglomerates with ubundent mafic volcanic clasts. Minor greywackes

- Po / Poq — Oonah Formation. Interbedded quartzites and black shales. Thick quartzite beds (Poq) are shown
- Pod — Mastries Dolomitic Conglomerate. Dolomites and dolomitic conglomerates
- Pos — Consert Schist. Fine grained pyhittes and psammites

- Eg — Fine to medium grained gabbro and ultramfic rocks variably altered to serpentinite

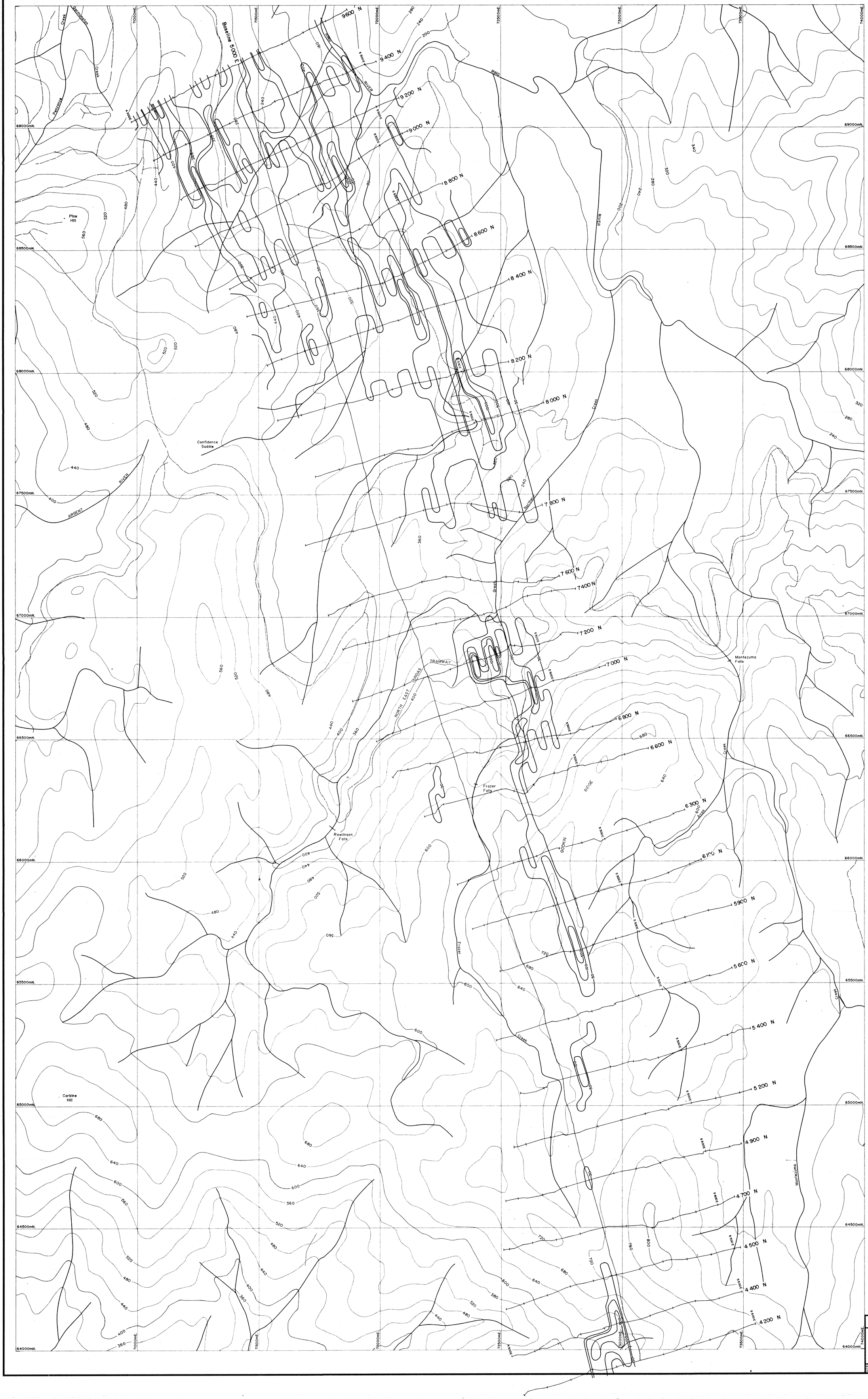
5 cm

607255

89-2994

RGC EXPLORATION PTY. LIMITED (INC. IN N.S.W.)		
COMPILED		MONTEZUMA GRID
DRAWN		
DATE		INTERPRETIVE GEOLOGY
CHECKED		
1:25,000 Reference		
BASE PLAN No.	SCALE: 1:5,000 (100 50 0 100 200 METRES)	FIG. 2
OVERLAY PLAN No.		

8462



CONTOUR INTERVALS

- > 1000 p.p.m.
- 500 - 1000
- 100 - 500
- 30 - 100
- < 30 p.p.m.

8463

607256

5 cm

89-2994

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

COMPILED	
DRAWN	
DATE	
CHECKED	
1:25,000 Reference	
BASE PLAN No.	
OVERLAY PLAN No.	

MONTEZUMA GRID
SOIL GEOCHEMISTRY
Sn CONTOURS

SCALE: 1:5,000 (100 50 0 100 200 METRES)

FIG. 3

8464

Baseline 5000 E

9 800 N
9 400 N
9 200 N
9 000 N
8 800 N
8 600 N
8 400 N
8 200 N
8 000 N
7 800 N
7 600 N
7 400 N
7 200 N
7 000 N
6 800 N
6 600 N
6 300 N
6 100 N
5 900 N
5 600 N
5 400 N
5 200 N
4 900 N
4 700 N
4 500 N
4 400 N
4 200 N

5 500E
5 000E
4 500E

7000mE.
71500mE.
72000mE.
72500mE.
73000mE.
73500mE.
74000mE.

69000mN.
68500mN.
68000mN.
67500mN.
67000mN.
66500mN.
66000mN.
65500mN.
65000mN.
64500mN.
64000mN.

Pine Hill
Confidence Saddle
Rawlinson Falls
Carbine Hill
Montezuma Falls

Germanston Creek
Penzance Creek
RING RIVER
ARGENT RIVER
TRAMWAY
NORTH EAST — SOUTH WEST RIDGE
Fraser Flat
RIDGE
GODKIN
Fraser
Montezuma

8464

CONTOUR INTERVALS

- >1000 p.p.m.
- 500 - 1000
- 100 - 500
- 30 - 100
- < 30 p.p.m.

8464

607257

5 cm

89-2994 1

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

COMPILED
DRAWN
DATE
CHECKED
1:25,000 Reference

MONTEZUMA GRID
SOIL GEOCHEMISTRY
As CONTOURS

BASE PLAN No.
OVERLAY PLAN No.

SCALE: 1:5,000 (100 50 0 100 200 METRES)

FIG. 4

8465

Baseline 5000 E

9600 N
9400 N
9200 N
9000 N
8800 N
8600 N
8400 N
8200 N
8000 N
7800 N
7600 N
7400N
7200 N
7000 N
6800 N
6600 N
6300 N
6100 N
5900 N
5600 N
5400 N
5200 N
4900 N
4700 N
4500 N
4400 N
4200 N

Garmeston Creek
Penrose Creek
Pine Hill
Confidence Saddle
ARGENT RIVER
Rawlinson Falls
Carbine Hill
Frazer Falls
Montezuma Falls
RING RIVER
Frodsley Creek
Northern Creek
Great Creek
NORTH EAST RIDGE
TRAMWAY
Frazer Creek
Montezuma Creek
Avon Creek

69000mN.
68500mN.
68000mN.
67500mN.
67000mN.
66500mN.
66000mN.
65500mN.
65000mN.
64500mN.
64000mN.
7000mE.
7150mE.
7200mE.
7250mE.
7300mE.
7350mE.
7400mE.

CONTOUR INTERVALS

- >1000 p.p.m.
- 500 - 1000
- 100 - 500
- 50 - 100
- < 50 p.p.m.

607258

5 cm

89-2994

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

COMPILED
DRAWN
DATE
CHECKED
1:25,000 Reference
BASE PLAN No.
OVERLAY PLAN No.

MONTEZUMA GRID
SOIL GEOCHEMISTRY
Cu CONTOURS

SCALE: 1:5,000 (100 50 0 100 200 METRES)

FIG. 5

8465

8466

Baseline 5000 E

9600 N
9400 N
9200 N
9000 N
8800 N
8600 N
8400 N
8200 N
8000 N
7800 N
7600 N
7400 N
7200 N
7000 N
6800 N
6600 N
6300 N
6100 N
5900 N
5600 E
5400 E
5200 E
5000 E
4900 N
4700 N
4500 N
4400 N
4200 N
5400 N
5200 N

Pine Hill
Confidence Saddle
Carbine Hill
Rawlinson Falls
Frazer Falls
Montezuma Falls

Germanton Creek
Pandora Creek
ARGENT RIVER
RING RIVER
NORTH EAST RIDGE
TRAMWAY RIDGE
Frazer Creek
Montezuma Creek

69000mN.
68500mN.
68000mN.
67500mN.
67000mN.
66500mN.
66000mN.
65500mN.
65000mN.
64500mN.
64000mN.
71000mE.
71500mE.
72000mE.
72500mE.
73000mE.
73500mE.
74000mE.

CONTOUR INTERVALS

- >1000 p.p.m.
- 500 - 1000
- 100 - 500
- 50 - 100
- < 50 p.p.m.

607259

5 cm

89-2994

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

COMPILED
DRAWN
DATE
CHECKED
1:25,000 Reference

MONTEZUMA GRID
SOIL GEOCHEMISTRY
Pb CONTOURS

BASE PLAN No.
OVERLAY PLAN No.
SCALE: 1:5,000
FIG. 6

8466

8466

8467

Baseline 5000 E

9600 N
9400 N
9200 N
9000 N
8800 N
8600 N
8400 N
8200 N
8000 N
7800 N
7600 N
7400 N
7200 N
7000 N
6800 N
6600 N
6300 N
6100 N
5900 N
5600 N
5400 N
5200 N
4900 N
4700 N
4500 N
4400 N
4200 N

5500E
4500E
3500E

71000mE.
71500mE.
72000mE.
72500mE.
73000mE.
73500mE.
74000mE.

69000mN.
68500mN.
68000mN.
67500mN.
67000mN.
66500mN.
66000mN.
65500mN.
65000mN.
64500mN.
64000mN.

Pine Hill
Confidence Saddle
Carbine Hill
Rowlinson Falls
Frazer Falls
Montezuma Falls

Formation Creek
Creek
Peridotite
RING
COPPER
RIVER
ARGENT
NORTH EAST
TRAMWAY
Northern
Creek
Frazer
Creek
Montezuma
Creek

CONTOUR INTERVALS

- > 1000 p.p.m.
- 500 - 1000
- 200 - 500
- 100 - 200
- < 100 p.p.m.

8467

607260

5 cm

89-2994

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

COMPILED
DRAWN
DATE
CHECKED
1:25,000 Reference

MONTEZUMA GRID
SOIL GEOCHEMISTRY
Zn CONTOURS

BASE PLAN No.
OVERLAY PLAN No.

SCALE: 1:5,000 (100 50 0 100 200 METRES)

Fig. 7

~~8467~~

8468

Baseline 5000 E

9600 N
9400 N
9200 N
9000 N
8800 N
8600 N
8400 N
8200 N
8000 N
7800 N
7600 N
7400N
7200 N
7000 N
6800 N
6600 N
6300 N
6100 N
5900 N
5600 N
5400 N
5200 N
4900 N
4700 N
4500 N
4400 N
4200 N

7000mE
7150mE
7200mE
7250mE
7300mE
7350mE
7400mE
7500mE
7000mE

69000mN.
68500mN.
68000mN.
67500mN.
67000mN.
66500mN.
66000mN.
65500mN.
65000mN.
64500mN.
64000mN.

Pine Hill
Confidence Saddle
Rawlinson Falls
Frazer Falls
Montezuma Falls
Carbine Hill

Creek
RING
RIVER
ARGENT
TRAMWAY
RIDGE
FLINDERS
Frazer
Montezuma

Ag CONTOUR INTERVALS

- >5 p.p.m.
- 2 - 5
- 0.5 - 2
- < 0.5 p.p.m.

Bi CONTOUR INTERVALS

- > 100 p.p.m.
- 50 - 100
- 20 - 50
- 10 - 20
- < 10 p.p.m.

607261

8468

5 cm

89-2994

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

COMPILED	
DRAWN	
DATE	
CHECKED	
1:25,000 Reference	
BASE PLAN No.	
OVERLAY PLAN No.	

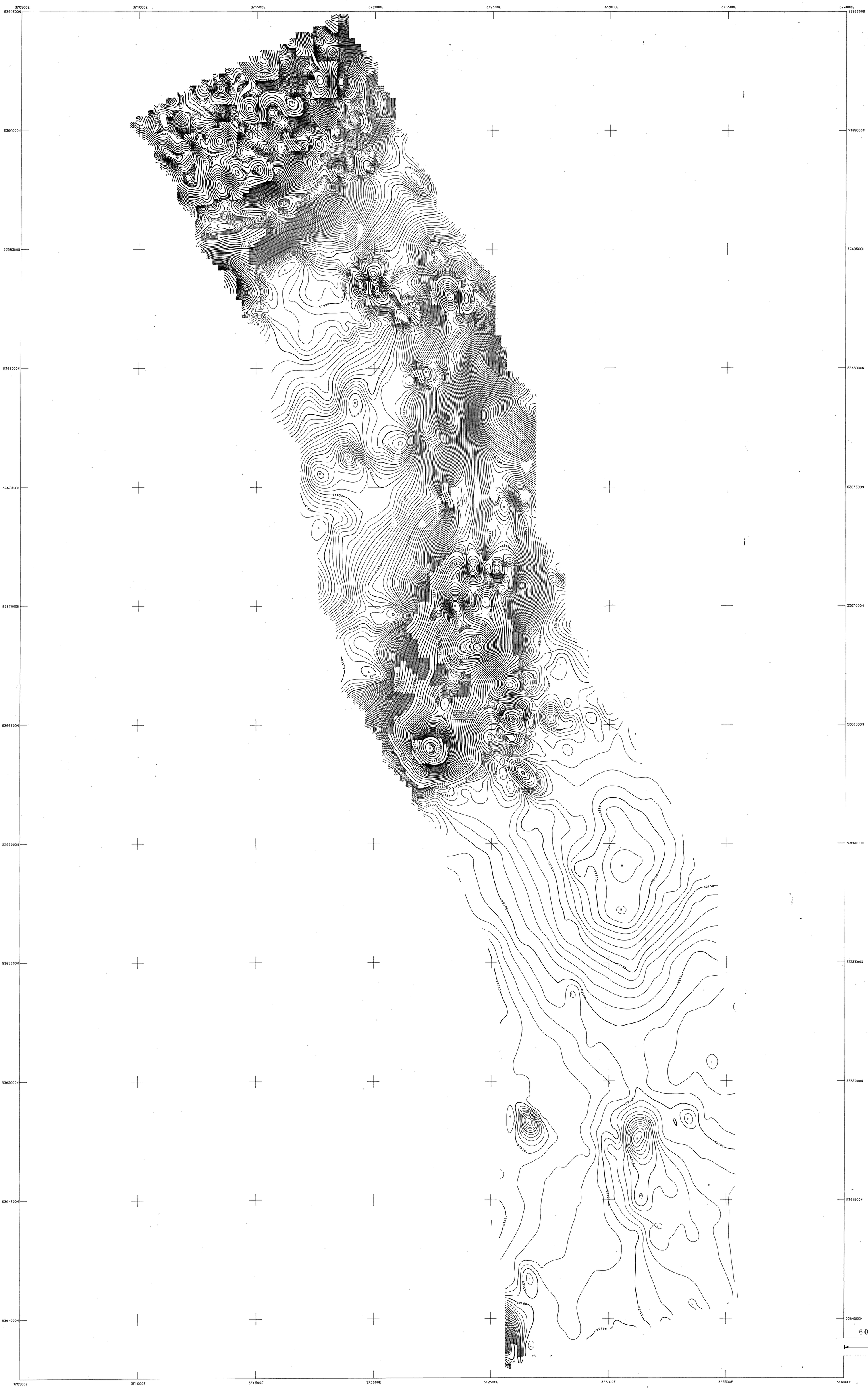
MONTEZUMA GRID
SOIL GEOCHEMISTRY
Bi & Ag CONTOURS

SCALE: 1:5,000 (200 0 200 400 600 METRES)

FIG 5

8468

8469



8469

CROUND SURVEY SPECIFICATIONS

MAGNETOMETER :	Geometrics G856 proton precession Sensitivity : 0.1 nT
STATION SPACING :	25 and 12.5 metres
DATA RECORDING :	Digitally within the magnetometer
LINE SPACING :	200 metres
BASE STATION :	Geometrics G856 proton precession Sensitivity : 0.1 nT
DATA RECORDING :	Digitally within the magnetometer every 120 seconds (Lines 4700N - 5600N) and 30 seconds (Lines 5900N - 9600N)

TOTAL MAGNETIC INTENSITY CONTOURS

Grid notation refers to Australian Map Grid Zone 55
Magnetics :Diurnally levelled
Grid mesh size :25 x 25 metres
Grid filter :Polynomial, radius 50 metres
Contour interval 10.50, and 250 nT

GN MN

MN = GN + 10.5 degrees

0.0 0.5 Km

SCALE 1:5000

JOB NO : 4-100
Surveyed by GEOTERREX PTY LTD : FEBRUARY 1989
Compiled by Geoterrex Pty Ltd., Sydney, NSW.
Processed using the GEONET time sharing system

Fig. 9

RGC EXPLORATION PTY LTD

GEOLOGIST:	
DRAWN:	GTX
DATE:	APR 1989
CHECKED:	STM
1:25,000 REFERENCE:	DUNDAS

EL 13/88 TAS 89-2994

TOTAL MAGNETIC INTENSITY CONTOURS

MONTEZUMA GRID

DATE: 6-JUN-89

8470

SOIL GEOCHEMISTRY (ppm)

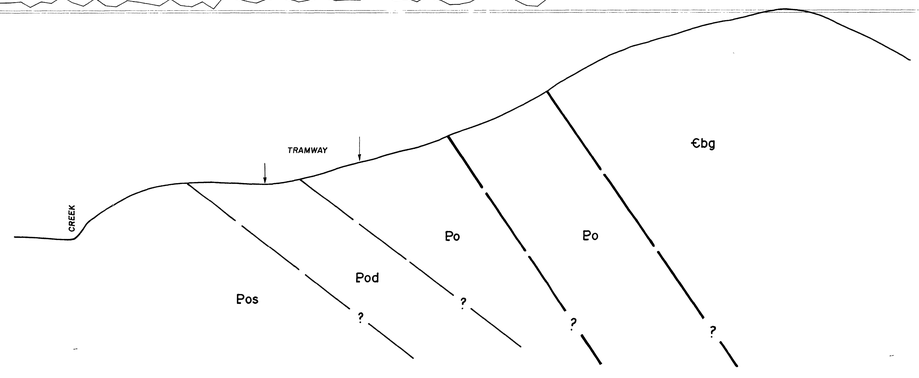
10 000
1 000
100

MAGNETICS (gammas)

62 560
62 400
62 240
62 080

TOPOGRAPHY & GEOLOGY (height above sea level)

800 m
700 m
600 m
500 m
400 m
300 m
200 m
100 m



4 500 E
4 700 E
4 900 E
5 100 E
5 300 E
5 500 E
5 700 E
5 900 E

SOIL GEOCHEMISTRY (ppm)
10 000
1 000
100
MAGNETICS (gammas)
62 560
62 400
62 240
62 080
TOPOGRAPHY & GEOLOGY (height above sea level)
800 m
700 m
600 m
500 m
400 m
300 m
200 m
100 m

5 cm

8470

607263

GEOLOGY

DUNDAS GROUP
BREWERY JUNCTION FORMATION

- Cbg — INTERBEDDED PURPLE FINE SANDSTONES AND SILTSTONES. MINOR GREEN SILTSTONES AND POLYMICTIC CONGLOMERATE.
- Cbt — FELSIC - INTERMEDIATE VULCANICLASTICS, PROBABLY TUFFACEOUS PYROCLASTICS. MINOR GRITTY SANDSTONES.
- Cbm — FINE GRAINED LAMINATED SILTSTONES, FINE SANDSTONES AND POLYMICTIC CONGLOMERATES WITH MINOR TUFFS.
- Cbc — POLYMICTIC CONGLOMERATE WITH ABUNDANT CHERT AND QUARTZITE CLASTS. MINOR SILTSTONES AND TUFFS.
- Cbs — FINE GRAINED LAMINATED SILTSTONES. MINOR SANDSTONES AND POLYMICTIC CONGLOMERATES.
- Cro — RAZORBACK CONGLOMERATES. CONGLOMERATES WITH ABUNDANT MAFIC VOLCANIC CLASTS. MINOR GREYWACKES.

- Poq — OONAH FORMATION. INTERBEDDED QUARTZITES AND BLACK SHALES. THICK QUARTZITE BEDS (P_{Oq}) ARE SHOWN.
- Pod — MAESTRIES DOLOMITIC CONGLOMERATE. DOLOMITES AND DOLOMITIC CONGLOMERATES.
- Pos — CONCERT SCHIST. FINE GRAINED PHYLLITES AND PSAMMITES.
- Eg — FINE TO MEDIUM GRAINED GABBRO AND ULTRAMAFIC ROCKS VARIABLY ALTERED TO SERPENTINITE.

- GEOLOGICAL BOUNDARY, APPROXIMATE
- FAULT
- INFERRED FAULT
- FOLD AXIS, INFERRED

GEOCHEMISTRY

- TIN – Sn
- COPPER – Cu
- LEAD – Pb
- ZINC – Zn
- ARSENIC – As
- BISMUTH – Bi

MAGNETICS

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

COMPILED	A.C.	MONTEZUMA GRID
DRAWN	T.G.D.S.	LINE PROFILE
DATE	JUNE '89	**4200N.**
CHECKED		
1:25,000 REFERENCE		

BASE PLAN No.
OVERLAY PLAN No.
SCALE 1:2500 (0 50 100)
FIG. 10

8471

SOIL GEOCHEMISTRY (ppm)

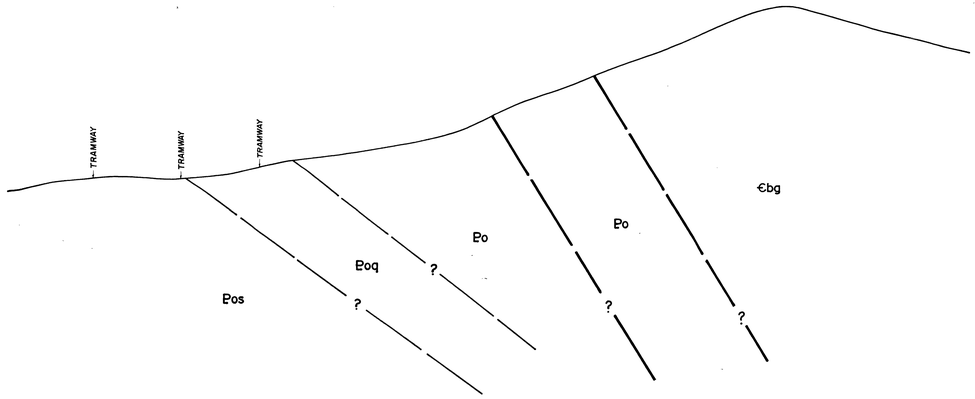
10 000
1 000
100

MAGNETICS (gammas)

62 480
62 320
62 160
62 000

TOPOGRAPHY & GEOLOGY (height above sea level)

800 m
700 m
600 m
500 m
400 m
300 m
200 m
100 m



4 500 E
4 700 E
4 900 E
5 100 E
5 300 E
5 500 E
5 700 E
5 900 E

SOIL GEOCHEMISTRY (ppm)
10 000
1000
100
MAGNETICS (gammas)
62 480
62 320
62 160
62 000
TOPOGRAPHY & GEOLOGY (height above sea level)
800m
700m
600 m
500 m
400 m
300 m
200 m
100 m

5 cm

607264
8471

GEOLOGY

DUNDAS GROUP
BREWERY JUNCTION FORMATION

- Cbg — INTERBEDDED PURPLE FINE SANDSTONES AND SILTSTONES. MINOR GREEN SILTSTONES AND POLYMICTIC CONGLOMERATE.
- Cbt — FELSIC - INTERMEDIATE VULCANICLASTICS, PROBABLY TUFFACEOUS PYROCLASTICS. MINOR GRITTY SANDSTONES.
- Cbm — FINE GRAINED LAMINATED SILTSTONES, FINE SANDSTONES AND POLYMICTIC CONGLOMERATES WITH MINOR TUFFS.
- Cbc — POLYMICTIC CONGLOMERATE WITH ABUNDANT CHERT AND QUARTZITE CLASTS. MINOR SILTSTONES AND TUFFS.
- Cbs — FINE GRAINED LAMINATED SILTSTONES. MINOR SANDSTONES AND POLYMICTIC CONGLOMERATES.
- Cro — RAZORBACK CONGLOMERATES. CONGLOMERATES WITH ABUNDANT MAFIC VOLCANIC CLASTS. MINOR GREYWACKES.

- Poq — OONAH FORMATION. INTERBEDDED QUARTZITES AND BLACK SHALES. THICK QUARTZITE BEDS (Poq) ARE SHOWN.
- Pod — MAESTRIES DOLOMITIC CONGLOMERATE, DOLOMITES AND DOLOMITIC CONGLOMERATES.
- Pos — CONCERT SCHIST. FINE GRAINED PHYLLITES AND PSAMMITES.
- Eg — FINE TO MEDIUM GRAINED GABBRO AND ULTRAMAFIC ROCKS VARIABLY ALTERED TO SERPENTINITE.

- GEOLOGICAL BOUNDARY, APPROXIMATE
- FAULT
- INFERRED FAULT
- FOLD AXIS, INFERRED

GEOCHEMISTRY

- TIN — Sn
- COPPER — Cu
- LEAD — Pb
- ZINC — Zn
- ARSENIC — As
- BISMUTH — Bi

MAGNETICS

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

COMPILED	A.C.
DRAWN	T.G.D.S.
DATE	JUNE '89
CHECKED	
1:25,000 REFERENCE	

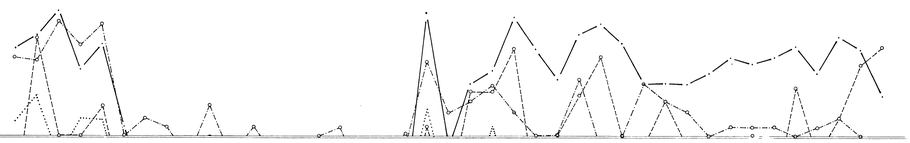
MONTEZUMA GRID
LINE PROFILE
4400 N.

BASE PLAN No.
OVERLAY PLAN No.
SCALE 1:2500 (0 50 100)
FIG. 11

8472

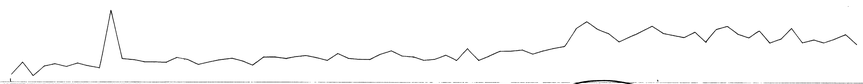
SOIL GEOCHEMISTRY (ppm)

10 000
1 000
100



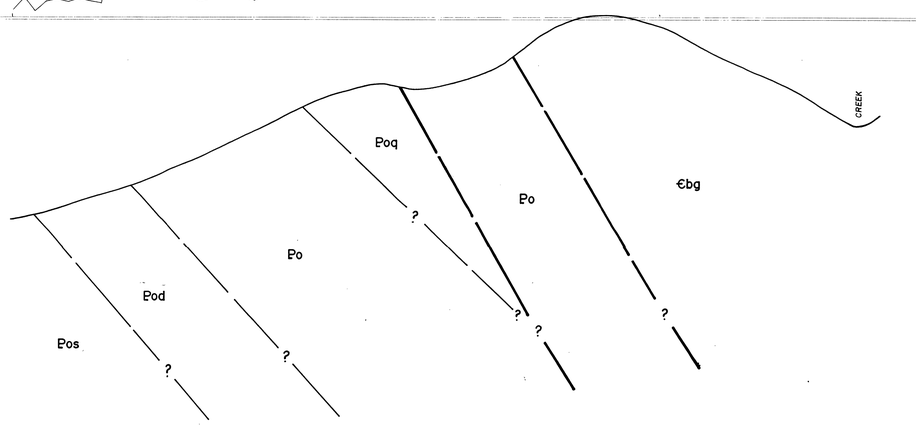
MAGNETICS (gammas)

62 520
62 360
62 200
62 040



TOPOGRAPHY & GEOLOGY (height above sea level)

800m
700m
600m
500m
400m
300m
200m
100m



4 500 E
4 700 E
4 900 E
5 100 E
5 300 E
5 500 E
5 700 E
5 900 E

8472

SOIL GEOCHEMISTRY (ppm)
10 000
1000
100
MAGNETICS (gammas)
62 520
62 360
62 200
62 040
TOPOGRAPHY & GEOLOGY (height above sea level)
800m
700m
600m
500m
400m
300m
200m
100m

5 cm

607265

GEOLOGY

DUNDAS GROUP
BREWERY JUNCTION FORMATION

- Cbg — INTERBEDDED PURPLE FINE SANDSTONES AND SILTSTONES, MINOR GREEN SILTSTONES AND POLYMICTIC CONGLOMERATE.
- Cbt — FELSIC - INTERMEDIATE VULCANICLASTICS, PROBABLY TUFFACEOUS PYROCLASTICS. MINOR GRITTY SANDSTONES.
- Cbm — FINE GRAINED LAMINATED SILTSTONES, FINE SANDSTONES AND POLYMICTIC CONGLOMERATES WITH MINOR TUFFS.
- Cbc — POLYMICTIC CONGLOMERATE WITH ABUNDANT CHERT AND QUARTZITE CLASTS. MINOR SILTSTONES AND TUFFS.
- Cbs — FINE GRAINED LAMINATED SILTSTONES, MINOR SANDSTONES AND POLYMICTIC CONGLOMERATES.
- Crg — RAZORBACK CONGLOMERATES. CONGLOMERATES WITH ABUNDANT MAFIC VOLCANIC CLASTS. MINOR GREYWACKES.

- Po (Poq) — OONAH FORMATION. INTERBEDDED QUARTZITES AND BLACK SHALES. THICK QUARTZITE BEDS (Poq) ARE SHOWN.
- Pod — MAESTRIES DOLOMITIC CONGLOMERATE, DOLOMITES AND DOLOMITIC CONGLOMERATES.
- Pos — CONCERT SCHIST. FINE GRAINED PHYLLITES AND PSAMMITES.
- Eg — FINE TO MEDIUM GRAINED GABBRO AND ULTRAMAFIC ROCKS VARIABLY ALTERED TO SERPENTINITE.

- GEOLOGICAL BOUNDARY, APPROXIMATE
- FAULT
- INFERRED FAULT
- FOLD AXIS, INFERRED

GEOCHEMISTRY

- TIN — Sn
- COPPER — Cu
- LEAD — Pb
- ZINC — Zn
- ARSENIC — As
- BISMUTH — Bi

MAGNETICS

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

COMPILED	A.C.	MONTEZUMA GRID
DRAWN	T.G.D.S.	LINE PROFILE
DATE	JUNE '89	4500 N.
CHECKED		
1:25,000 REFERENCE		

BASE PLAN No.
OVERLAY PLAN No.
SCALE 1:2500 (0 50 100)
FIG. 12

8473

SOIL GEOCHEMISTRY (ppm)

10 000
1 000
100

MAGNETICS (gammas)

62 520
62 360
62 200
62 040

TOPOGRAPHY & GEOLOGY (height above sea level)

800 m
700 m
600 m
500 m
400 m
300 m
200 m
100 m

Po
Poq
Po
Po
€bg

4 500 E
4 700 E
4 900 E
5 100 E
5 300 E
5 500 E
5 700 E
5 900 E

5 cm

607266

8473

89-2994

GEOLOGY

DUNDAS GROUP — BREWERY JUNCTION FORMATION

- €bg — INTERBEDDED PURPLE FINE SANDSTONES AND SILTSTONES. MINOR GREEN SILTSTUNES AND POLYMICTIC CONGLOMERATE.
- €st — FELSIC - INTERMEDIATE VULCANICLASTICS, PROBABLY TUFFACEOUS PYROCLASTICS. MINOR GRITTY SANDSTONES.
- €sm — FINE GRAINED LAMINATED SILTSTONES, FINE SANDSTONES AND POLYMICTIC CONGLOMERATES WITH MINOR TUFFS.
- €tc — POLYMICTIC CONGLOMERATE WITH ABUNDANT CHERT AND QUARTZITE CLASTS. MINOR SILTSTONES AND TUFFS.
- €ts — FINE GRAINED LAMINATED SILTSTONES. MINOR SANDSTONES AND POLYMICTIC CONGLOMERATES.
- €rg — RAZORBACK CONGLOMERATES. CONGLOMERATES WITH ABUNDANT MAFIC VOLCANIC CLASTS. MINOR GREYWACKES.

- Po, Poq — OONAH FORMATION. INTERBEDDED QUARTZITES AND BLACK SHALES. THICK QUARTZITE BEDS (Poq) ARE SHOWN.
- Pod — MAESTRIES DOLOMITIC CONGLOMERATE. DOLOMITES AND DOLOMITIC CONGLOMERATES.
- Pus — CONCERT SCHIST. FINE GRAINED PHYLLITES AND PSAMMITES.
- Eg — FINE TO MEDIUM GRAINED GABBRO AND ULTRAMAFIC ROCKS VARIABLY ALTERED TO SERPENTINITE.

- GEOLOGICAL BOUNDARY, APPROXIMATE
- FAULT
- INFERRED FAULT
- FOLD AXIS, INFERRED

GEOCHEMISTRY

- TIN — Sn
- COPPER — Cu
- LEAD — Pb
- ZINC — Zn
- ARSENIC — As
- BISMUTH — Bi

MAGNETICS

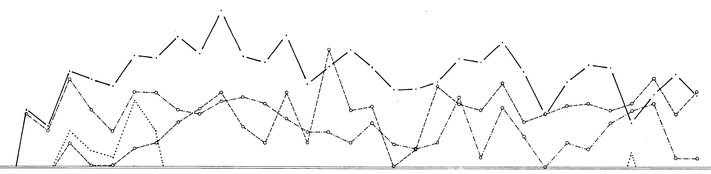
RGC EXPLORATION PTY. LIMITED
(INC. IN N.S.W.)

COMPILED	A.C.	MONTEZUMA GRID
DRAWN	T.G.D.S.	LINE PROFILE
DATE	JUNE '89	4700 N.
CHECKED		
1:25,000 REFERENCE		
BASE PLAN No.	SCALE 1:2500	0 50 100
OVERLAY PLAN No.		FIG. 13

8474

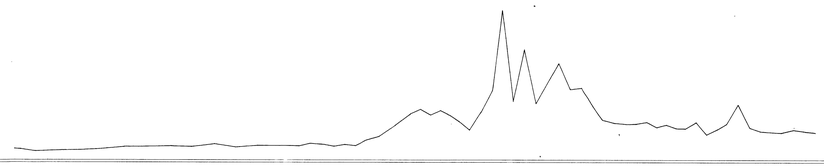
SOIL GEOCHEMISTRY (ppm)

10 000
1000
100



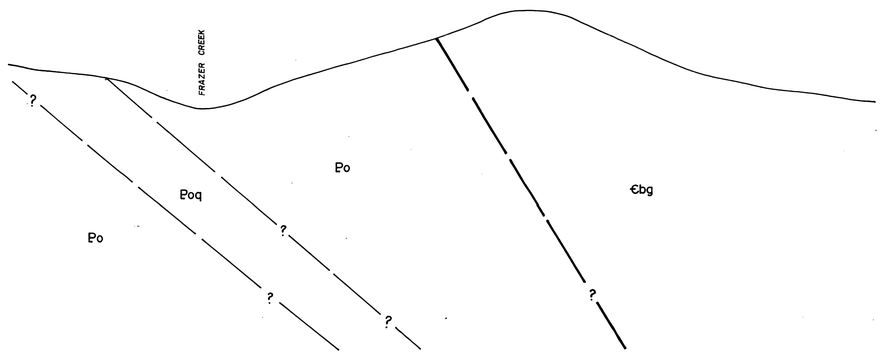
MAGNETICS (gammas)

62 520
62 360
62 200
62 040



TOPOGRAPHY & GEOLOGY (height above sea level)

800 m
700 m
600 m
500 m
400 m
300 m
200 m
100 m



4 500 E
4 700 E
4 900 E
5 100 E
5 300 E
5 500 E
5 700 E
5 900 E

5 cm

607267

8474

89-2994

GEOLOGY

DUNDAS GROUP
BREWERY JUNCTION FORMATION

- Cbg — INTERBEDDED PURPLE FINE SANDSTONES AND SILTSTONES. MINOR GREEN SILTSTONES AND POLYMICTIC CONGLOMERATE.
- Cbt — FELSIC - INTERMEDIATE VULCANICLASTICS, PROBABLY TUFFACEOUS PYROCLASTICS. MINOR GRITTY SANDSTONES.
- Cbm — FINE GRAINED LAMINATED SILTSTONES, FINE SANDSTONES AND POLYMICTIC CONGLOMERATES WITH MINOR TUFFS.
- Cbc — POLYMICTIC CONGLOMERATE WITH ABUNDANT CHERT AND QUARTZITE CLASTS. MINOR SILTSTONES AND TUFFS.
- Cbs — FINE GRAINED LAMINATED SILTSTONES. MINOR SANDSTONES AND POLYMICTIC CONGLOMERATES.
- Cro — RAZORBACK CONGLOMERATES. CONGLOMERATES WITH ABUNDANT MAFIC VOLCANIC CLASTS. MINOR GREYWACKES.

- Po, Poq — OONAH FORMATION. INTERBEDDED QUARTZITES AND BLACK SHALES. THICK QUARTZITE BEDS (Poq) ARE SHOWN.
- Pod — MAESTRIES DOLOMITIC CONGLOMERATE. DOLOMITES AND DOLOMITIC CONGLOMERATES.
- Pos — CONCERT SCHIST. FINE GRAINED PHYLLITES AND PSAMMITES.
- Eg — FINE TO MEDIUM GRAINED GABBRO AND ULTRAMAFIC ROCKS VARIABLY ALTERED TO SERPENTINITE.

- GEOLOGICAL BOUNDARY, APPROXIMATE
- FAULT
- INFERRED FAULT
- FOLD AXIS, INFERRED

GEOCHEMISTRY

- TIN — Sn
- COPPER — Cu
- LEAD — Pb
- ZINC — Zn
- ARSENIC — As
- BISMUTH — Bi

MAGNETICS

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

COMPILED	A.C	MONTEZUMA GRID
DRAWN	T.G.D.S.	LINE PROFILE
DATE	JUNE '89	4900 N.
CHECKED		
1:25,000 REFERENCE		

BASE PLAN No.
OVERLAY PLAN No.
SCALE 1:2500 (0 50 100)
FIG. 14

8475

SOIL GEOCHEMISTRY (ppm)

10 000
1 000
100

MAGNETICS (gammas)

62 360
62 200
62 040
61 880

TOPOGRAPHY & GEOLOGY (height above sea level)

800m
700m
600m
500m
400m
300m
200m
100m

FRAZER CREEK

Po

€bg

?

4 500 E
4 700 E
4 900 E
5 100 E
5 300 E
5 500 E
5 700 E
5 900 E

5 cm

607268

8475

89-2994

GEOLOGY

DUNDAS GROUP
BREAKERY JUNCTION FORMATION

- €bg — INTERBEDDED PURPLE FINE SANDSTONES AND SILTSTONES. MINOR GREEN SILTSTONES AND POLYMICTIC CONGLOMERATE.
- €bt — FELSIC - INTERMEDIATE VULCANICLASTICS, PROBABLY TUFFACEOUS PYROCLASTICS. MINOR GRITTY SANDSTONES
- €bm — FINE GRAINED LAMINATED SILTSTONES, FINE SANDSTONES AND POLYMICTIC CONGLOMERATES WITH MINOR TUFFS.
- €bc — POLYMICTIC CONGLOMERATE WITH ABUNDANT CHERT AND QUARTZITE CLASTS. MINOR SILTSTONES AND TUFFS.
- €bs — FINE GRAINED LAMINATED SILTSTONES. MINOR SANDSTONES AND POLYMICTIC - CONGLOMERATES.
- €ro — RAZORBACK CONGLOMERATES. CONGLOMERATES WITH ABUNDANT MAFIC VOLCANIC CLASTS. MINOR GREYWACKES.

- Po / €po — OONAH FORMATION. INTERBEDDED QUARTZITES AND BLACK SHALES. THICK QUARTZITE BEDS (€pq) ARE SHOWN.
- Pod — MAESTRIES DOLOMITIC CONGLOMERATE. DOLOMITES AND DOLOMITIC CONGLOMERATES.
- Pos — CONCERT SCHIST. FINE GRAINED PHYLLITES AND PSAMMITES.
- Eg — FINE TO MEDIUM GRAINED GABBRO AND ULTRAMAFIC ROCKS VARIABLY ALTERED TO SERPENTINITE.

- GEOLOGICAL BOUNDARY, APPROXIMATE
- FAULT
- INFERRED FAULT
- FOLD AXIS, INFERRED

GEOCHEMISTRY

- TIN — Sn
- COPPER — Cu
- LEAD — Pb
- ZINC — Zn
- ARSENIC — As
- BISMUTH — Bi

MAGNETICS

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

COMPILED	A.C.	MONTEZUMA GRID
DRAWN	T.G.D.S.	LINE PROFILE
DATE	JUNE '89	5200 N.
CHECKED		
1:25,000 REFERENCE		

BASE PLAN No.
OVERLAY PLAN No.

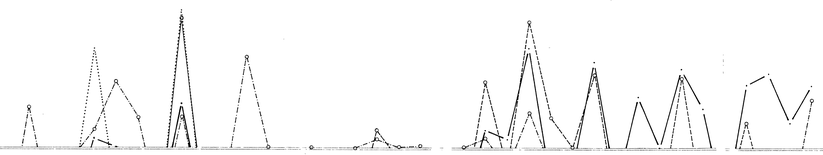
SCALE 1: 2500 (0, 50, 100)

FIG. 15

8476

SOIL GEOCHEMISTRY (ppm)

10 000
1 000
100



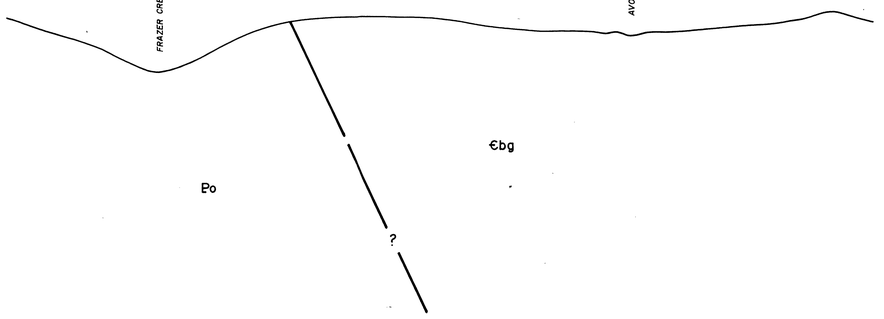
MAGNETICS (gammas)

62 520
62 360
62 200
62 040



TOPOGRAPHY & GEOLOGY (height above sea level)

800m
700m
600m
500m
400m
300m
200m
100m



4 500 E
4 700 E
4 900 E
5 100 E
5 300 E
5 500 E
5 700 E
5 900 E

5 cm

607269

8476

SOIL GEOCHEMISTRY (ppm)
10 000
1000
100
MAGNETICS (gammas)
62 520
62 360
62 200
62 040
TOPOGRAPHY & GEOLOGY (height above sea level)
900m
700m
600m
500m
400m
300m
200m
100 m

89-2994

GEOLOGY

DUNDAS GROUP
BREWERY JUNCTION FORMATION

- €bg — INTERBEDDED PURPLE FINE SANDSTONES AND SILTSTONES. MINOR GREEN SILTSTONES AND POLYMICTIC CONGLOMERATE.
- €bt — FELSIC - INTERMEDIATE VULCANICLASTICS, PROBABLY TUFFACEOUS PYROCLASTICS. MINOR GRITTY SANDSTONES.
- €bm — FINE GRAINED LAMINATED SILTSTONES, FINE SANDSTONES AND POLYMICTIC CONGLOMERATES WITH MINOR TUFFS.
- €bc — POLYMICTIC CONGLOMERATE WITH ABUNDANT CHERT AND QUARTZITE CLASTS. MINOR SILTSTONES AND TUFFS.
- €bs — FINE GRAINED LAMINATED SILTSTONES. MINOR SANDSTONES AND POLYMICTIC - CONGLOMERATES.
- €rc — RAZORBACK CONGLOMERATES. CONGLOMERATES WITH ABUNDANT MAFIC VOLCANIC CLASTS. MINOR GREYWACKES.

- Po — OONAH FORMATION. INTERBEDDED QUARTZITES AND BLACK SHALES. THICK QUARTZITE BEDS (Pos) ARE SHOWN.
- Pod — MAESTRIES DOLOMITIC CONGLOMERATE. DOLOMITES AND DOLOMITIC CONGLOMERATES.
- Pus — CONCERT SCHIST. FINE GRAINED PHYLLITES AND PSAMMITES.
- Eg — FINE TO MEDIUM GRAINED GABBRO AND ULTRAMAFIC ROCKS VARIABLY ALTERED TO SERPENTINITE.

- GEOLOGICAL BOUNDARY, APPROXIMATE
- FAULT
- INFERRED FAULT
- FOLD AXIS, INFERRED

GEOCHEMISTRY

- TIN - Sn
- COPPER - Cu
- LEAD - Pb
- ZINC - Zn
- ARSENIC - As
- BISMUTH - Bi

MAGNETICS

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

COMPILED	A.C.
DRAWN	T.G.D.S.
DATE	JUNE '89
CHECKED	
1:25,000 REFERENCE	

MONTEZUMA GRID
LINE PROFILE
5400 N.

BASE PLAN No.
OVERLAY PLAN No.
SCALE 1:2500
0 50 100
FIG. 16

8477

SOIL GEOCHEMISTRY (ppm)

10 000
1 000
100

MAGNETICS (gammas)

62 520
62 360
62 200
62 040

TOPOGRAPHY & GEOLOGY (height above sea level)

800 m
700 m
600 m
500 m
400 m
300 m
200 m
100 m

FRAZER CREEK

AVON CREEK

€bg

€bt

Po

4 500 E
4 700 E
4 900 E
5 100 E
5 300 E
5 500 E
5 700 E
5 900 E

607270

5 cm

8477

89-2994

GEOLOGY

DUNDAS GROUP

BREWERY JUNCTION FORMATION

- €bg — INTERBEDDED PURPLE FINE SANDSTONES AND SILTSTONES. MINOR GREEN SILTSTONES AND POLYMICTIC CONGLOMERATE.
- €bt — FELSIC - INTERMEDIATE VULCANICLASTICS, PROBABLY TUFFACEOUS PYROCLASTICS. MINOR GRITTY SANDSTONES.
- €bm — FINE GRAINED LAMINATED SILTSTONES, FINE SANDSTONES AND POLYMICTIC CONGLOMERATES WITH MINOR TUFFS.
- €bc — POLYMICTIC CONGLOMERATE WITH ABUNDANT CHERT AND QUARTZITE CLASTS. MINOR SILTSTONES AND TUFFS.
- €bs — FINE GRAINED LAMINATED SILTSTONES. MINOR SANDSTONES AND POLYMICTIC -CONGLOMERATES.
- €rs — RAZORBACK CONGLOMERATES. CONGLOMERATES WITH ABUNDANT MAFIC VOLCANIC CLASTS. MINOR GREYWACKES.

- €Pq / €Pq — OONAH FORMATION. INTERBEDDED QUARTZITES AND BLACK SHALES. THICK QUARTZITE BEDS (€Pq) ARE SHOWN.
- Pod — MAESTRIES DOLOMITIC CONGLOMERATE. DOLOMITES AND DOLOMITIC CONGLOMERATES.
- Pus — CONCERT SCHIST. FINE GRAINED PHYLLITES AND PSAMMITES.
- Eg — FINE TO MEDIUM GRAINED GABBRO AND ULTRAMAFIC ROCKS VARIABLY ALTERED TO SERPENTINITE.

- GEOLOGICAL BOUNDARY, APPROXIMATE
- FAULT
- INFERRED FAULT
- FOLD AXIS, INFERRED

GEOCHEMISTRY

- TIN — Sn
- COPPER — Cu
- LEAD — Pb
- ZINC — Zn
- ARSENIC — As
- BISMUTH — Bi

MAGNETICS

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

COMPILED	A.C.
DRAWN	T.G.D.S.
DATE	JUNE '89
CHECKED	
1:25,000 REFERENCE	

MONTEZUMA GRID
LINE PROFILE
5600 N.

BASE PLAN No.
OVERLAY PLAN No.

SCALE 1: 2500 (0, 50, 100)

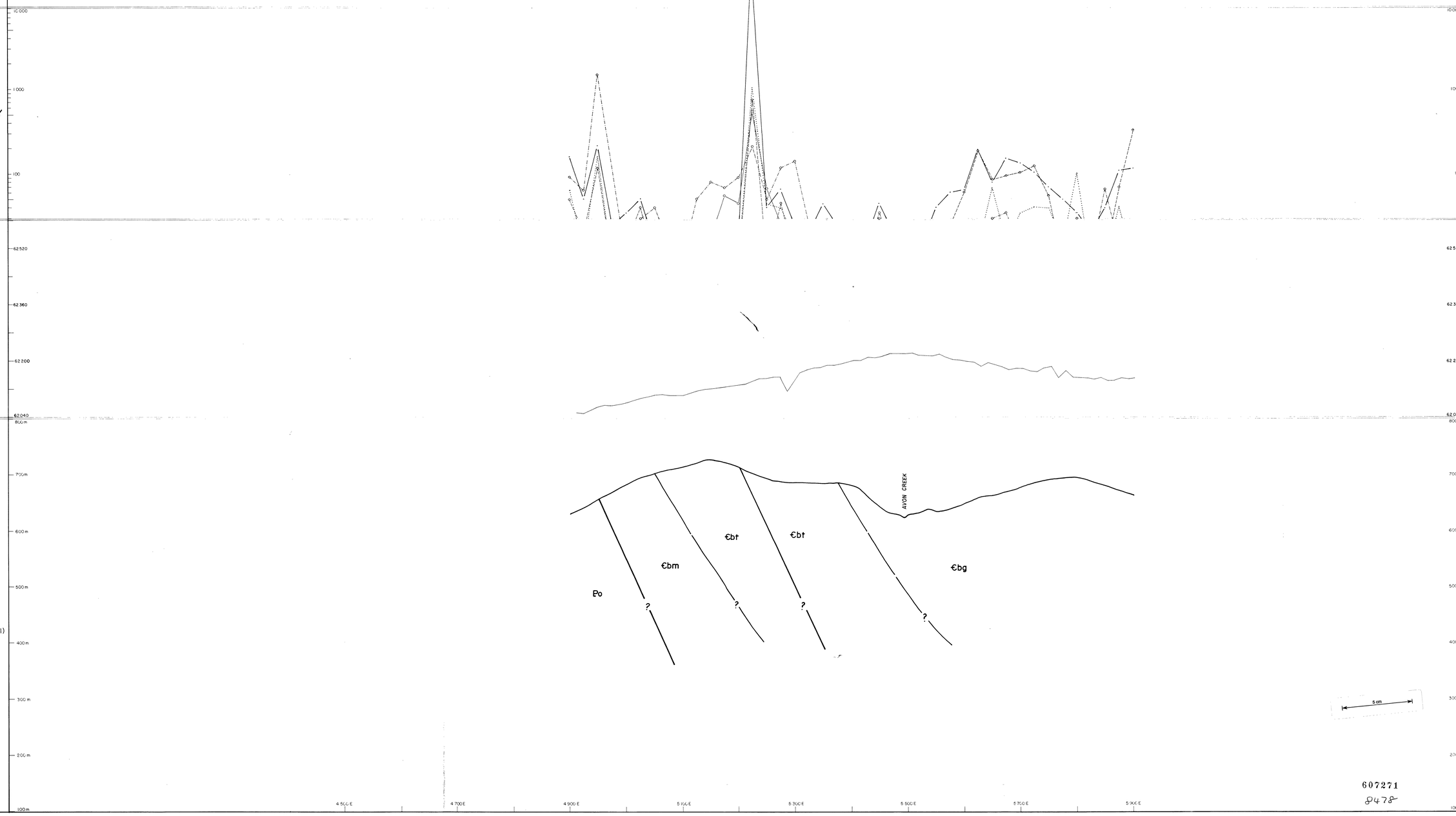
FIG. 17

8478

SOIL GEOCHEMISTRY (ppm)

MAGNETICS (gammas)

TOPOGRAPHY & GEOLOGY (height above sea level)



607271

8478

89-2994

GEOLOGY

DUNDAS GROUP

BREWERY JUNCTION FORMATION

- €cg — INTERBEDDED PURPLE FINE SANDSTONES AND SILTSTONES. MINOR GREEN SILTSTONES AND POLYMICTIC CONGLOMERATE.
- €bf — FELSIC - INTERMEDIATE VULCANICLASTICS, PROBABLY TUFFACEOUS PYROCLASTICS. MINOR GRITTY SANDSTONES
- €bm — FINE GRAINED LAMINATED SILTSTONES, FINE SANDSTONES AND POLYMICTIC CONGLOMERATES WITH MINOR TUFFS
- €bc — POLYMICTIC CONGLOMERATE WITH ABUNDANT CHERT AND QUARTZITE CLASTS. MINOR SILTSTONES AND TUFFS
- €bs — FINE GRAINED LAMINATED SILTSTONES. MINOR SANDSTONES AND POLYMICTIC CONGLOMERATES
- €rg — RAZORBACK CONGLOMERATES. CONGLOMERATES WITH ABUNDANT MAFIC VOLCANIC CLASTS. MINOR GREYWACKES.

- Po / Pcg — GONAH FORMATION. INTERBEDDED QUARTZITES AND BLACK SHALES. THICK QUARTZITE BEDS (Pcg) ARE SHOWN
- Pod — MAESTRIES DOLOMITIC CONGLOMERATE. FOLOMITES AND DOLOMITIC CONGLOMERATES
- Pus — CONCERT SCHIST. FINE GRAINED PHYLLITES AND PSAMMITES
- Fg — FINE TO MEDIUM GRAINED GABBRO AND ULTRAMAFIC ROCKS VARIABLY ALTERED TO SERPENTINITE

- GEOLOGICAL BOUNDARY, APPROXIMATE
- FAULT
- INFERRED FAULT
- FOLD AXIS, INFERRED

GEOCHEMISTRY

- TIN – Sn
- COPPER – Cu
- LEAD – Pb
- ZINC – Zn
- ARSENIC – As
- BISMUTH – Bi

MAGNETICS

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

COMPILED	A.C.
DRAWN	T.G.D.S.
DATE	JUNE '89
CHECKED	
1:25,000 REFERENCE	

MONTEZUMA GRID
LINE PROFILE
5900 N.

BASE PLAN No.
OVERLAY PLAN No.

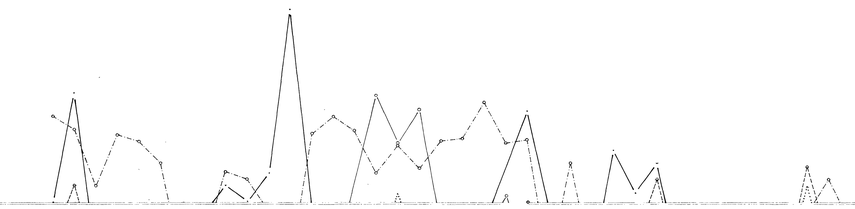
SCALE 1:2500 (0 50 100)

FIG. 18

8479

SOIL GEOCHEMISTRY (ppm)

10 000
1 000
100



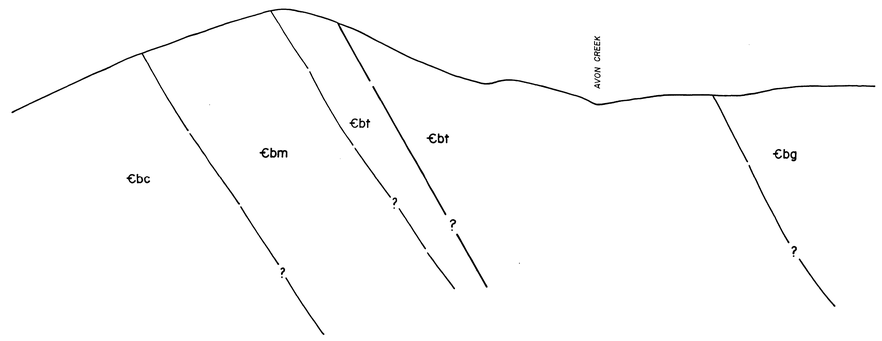
MAGNETICS (gammas)

62 520
62 360
62 200
62 040



TOPOGRAPHY & GEOLOGY (height above sea level)

800m
700m
600m
500m
400m
300m
200m
100m



4 500 E
4 700 E
4 900 E
5 100 E
5 300 E
5 500 E
5 700 E
5 900 E

5 cm

607272

8479

89-2994

GEOLOGY

DUNDAS GROUP — BREAKERY JUNCTION FORMATION

- €bg — INTERBEDDED PURPLE FINE SANDSTONES AND SILTSTONES. MINOR GREEN SILTSTUNES AND POLYMICTIC CONGLOMERATE.
- €bt — FELSIC - INTERMEDIATE VULCANICLASTICS, PROBABLY TUFFACEOUS PYROCLASTICS. MINOR GRITTY SANDSTONES
- €bm — FINE GRAINED LAMINATED SILTSTONES, FINE SANDSTONES AND POLYMICTIC CONGLOMERATES WITH MINOR TUFFS.
- €bc — POLYMICTIC CONGLOMERATE WITH ABUNDANT CHERT AND QUARTZITE CLASTS MINOR SILTSTONES AND TUFFS
- €bs — FINE GRAINED LAMINATED SILTSTONES. MINOR SANDSTONES AND POLYMICTIC CONGLOMERATES.
- €ro — RAZORBACK CONGLOMERATES CONGLOMERATES WITH ABUNDANT MAFIC VOLCANIC CLASTS. MINOR GREYWACKES.

- Pc (Pcq) — GONAH FORMATION INTERBEDDED QUARTZITES AND BLACK SHALES THICK QUARTZITE BEDS (Pcq) ARE SHOWN.
- Pod — MAESTRIES DOLOMITIC CONGLOMERATE DOLOMITES AND DOLOMITIC CONGLOMERATES
- Put — CONCERT SCHIST FINE GRAINED PHYLLITES AND PSAMMITES.
- Eg — FINE TO MEDIUM GRAINED GABBRO AND ULTRAMAFIC ROCKS VARIABLY ALTERED TO SERPENTINITE.

- GEOLOGICAL BOUNDARY, APPROXIMATE
- FAULT
- INFERRED FAULT
- FOLD AXIS, INFERRED

GEOCHEMISTRY

- TIN — Sn
- COPPER — Cu
- LEAD — Pb
- ZINC — Zn
- ARSENIC — As
- BISMUTH — Bi

MAGNETICS

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

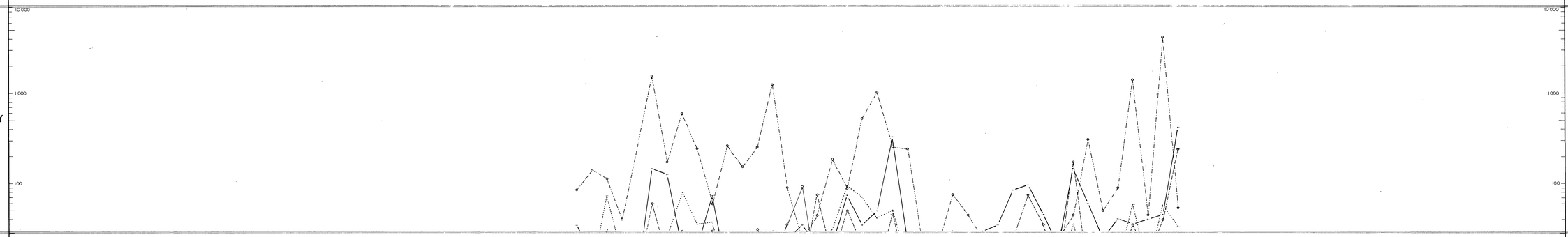
	COMPILED	A.C.
	DRAWN	T.G.D.S.
	DATE	JUNE '89
	CHECKED	
	1:25,000 REFERENCE	

MONTEZUMA GRID
LINE PROFILE
6100 N.

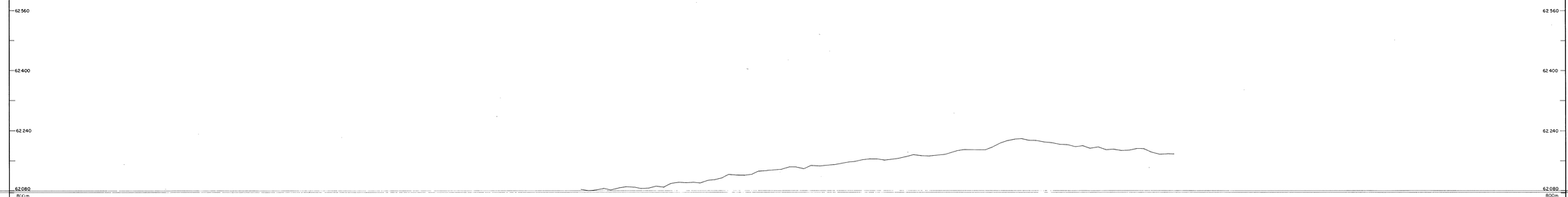
BASE PLAN No.
OVERLAY PLAN No.
SCALE 1:2500
0 50 100
FIG. 19

8480

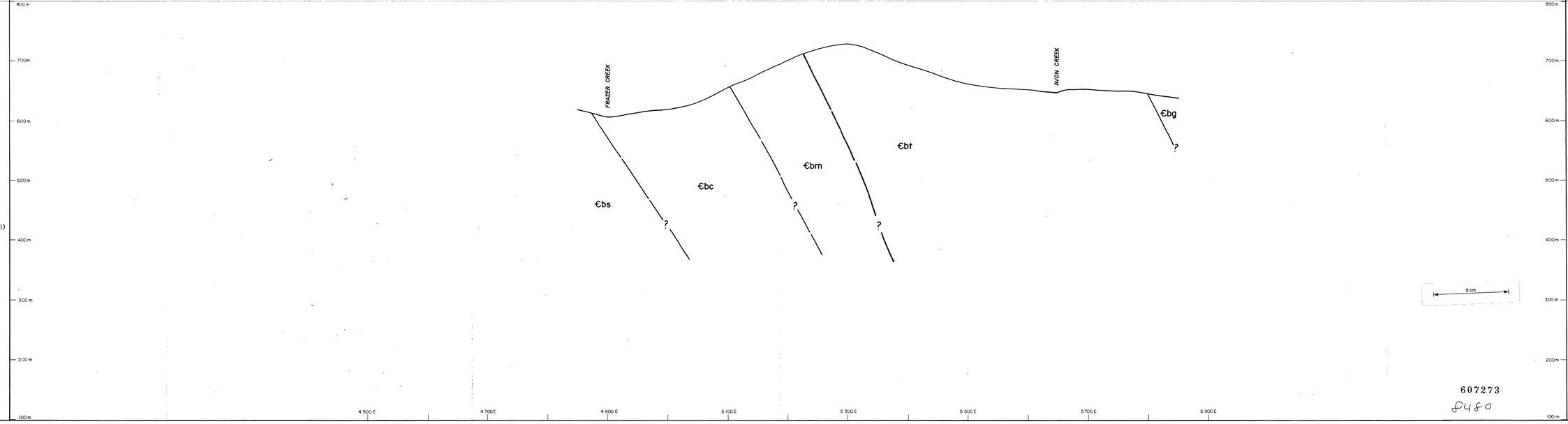
SOIL GEOCHEMISTRY (ppm)



MAGNETICS (gammas)



TOPOGRAPHY & GEOLOGY (height above sea level)



5 cm

607273

8480

89-2994

GEOLOGY

DUNDAS GROUP — BREWERY JUNCTION FORMATION

- €bg — INTERBEDDED PURPLE FINE SANDSTONES AND SILTSTONES. MINOR GREEN SILTSTONES AND POLYMICTIC CONGLOMERATE.
- €bt — FELSIC - INTERMEDIATE VULCANICLASTICS, PROBABLY TUFFACEOUS PYROCLASTICS. MINOR GRITTY SANDSTONES.
- €bm — FINE GRAINED LAMINATED SILTSTONES, FINE SANDSTONES AND POLYMICTIC CONGLOMERATES WITH MINOR TUFFS.
- €bc — POLYMICTIC CONGLOMERATE WITH ABUNDANT CHERT AND QUARTZITE CLASTS. MINOR SILTSTONES AND TUFFS.
- €bs — FINE GRAINED LAMINATED SILTSTONES. MINOR SANDSTONES AND POLYMICTIC - CONGLOMERATES.
- €ro — RAZORBACK CONGLOMERATES. CONGLOMERATES WITH ABUNDANT MAFIC VOLCANIC CLASTS. MINOR GREYWACKES.

- Do, €qg — OONAH FORMATION. INTERBEDDED QUARTZITES AND BLACK SHALES. THICK QUARTZITE BEDS (€qg) ARE SHOWN.
- Pod — MAESTRIES DOLOMITIC CONGLOMERATE, DOLOMITES AND DOLOMITIC CONGLOMERATES.
- Pos — CONCERT SCHIST. FINE GRAINED PHYLLITES AND PSAMMITES.
- Eg — FINE TO MEDIUM GRAINED GABBRO AND ULTRAMAFIC ROCKS VARIABLY ALTERED TO SERPENTINITE.

- GEOLOGICAL BOUNDARY, APPROXIMATE
- FAULT
- INFERRED FAULT
- FOLD AXIS, INFERRED

GEOCHEMISTRY

- TIN – Sn
- COPPER – Cu
- LEAD – Pb
- ZINC – Zn
- ARSENIC – As
- BISMUTH – Bi

MAGNETICS

RGC EXPLORATION PTY. LIMITED (N.C. N.S.W.)

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DRAWN	T.G.D.S.
DATE	JUNE '89
CHECKED	
1:25,000 REFERENCE	

MONTEZUMA GRID
LINE PROFILE
6300 N.

BASE PLAN No.
OVERLAY PLAN No.

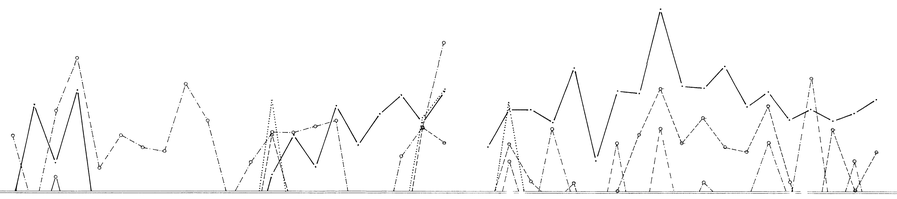
SCALE 1 : 2500 (0, 50, 100)

FIG. 20

8481

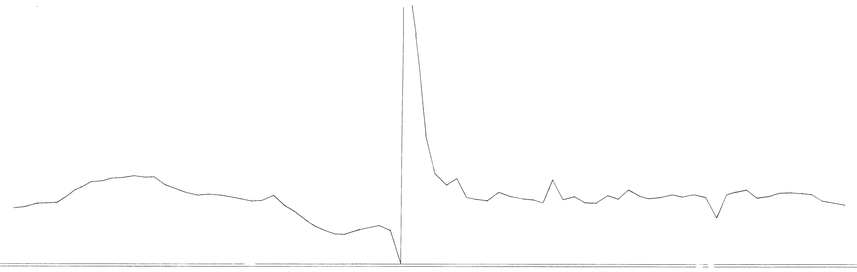
SOIL GEOCHEMISTRY (ppm)

10 000
1 000
100



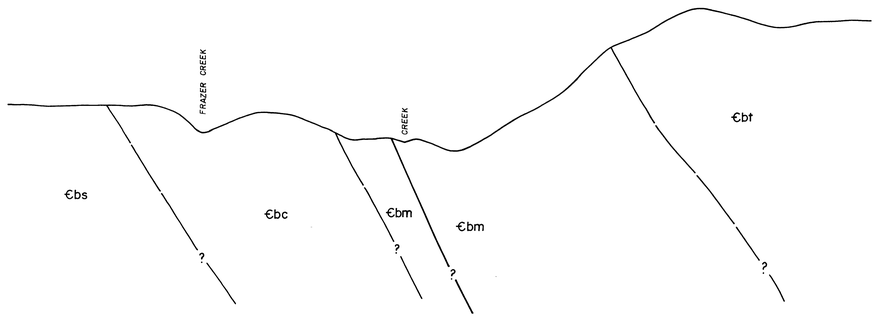
MAGNETICS (gammas)

62 520
62 360
62 200
62 040



TOPOGRAPHY & GEOLOGY (height above sea level)

800 m
700 m
600 m
500 m
400 m
300 m
200 m
100 m



4 500 E | 4 700 E | 4 900 E | 5 100 E | 5 300 E | 5 500 E | 5 700 E | 5 900 E

5 cm

607274

8481

89-2994

GEOLOGY

DUNDAS GROUP
BREWERY JUNCTION FORMATION

- €bg — INTERBEDDED PURPLE FINE SANDSTONES AND SILTSTONES. MINOR GREEN SILTSTONES AND POLYMICTIC CONGLOMERATE.
- €bt — FELSIC - INTERMEDIATE VULCANICLASTICS, PROBABLY TUFFACEOUS PYROCLASTICS. MINOR GRITTY SANDSTONES.
- €bm — FINE GRAINED LAMINATED SILTSTONES, FINE SANDSTONES AND POLYMICTIC CONGLOMERATES WITH MINOR TUFFS.
- €bc — POLYMICTIC CONGLOMERATE WITH ABUNDANT CHERT AND QUARTZITE CLASTS. MINOR SILTSTONES AND TUFFS
- €bs — FINE GRAINED LAMINATED SILTSTONES. MINOR SANDSTONES AND POLYMICTIC CONGLOMERATES.
- €ra — RAZORBACK CONGLOMERATES. CONGLOMERATES WITH ABUNDANT MAFIC VOLCANIC CLASTS. MINOR GREYWACKES.

- €Qu / €Qq — OONAH FORMATION. INTERBEDDED QUARTZITES AND BLACK SHALES. THICK QUARTZITE BEDS (€Qq) ARE SHOWN.
- Pod — MAESTRIES DOLOMITIC CONGLOMERATE. DOLOMITES AND DOLOMITIC CONGLOMERATES.
- Pos — CONCERT SCHIST. FINE GRAINED PHYLLITES AND PSAMMITES.
- Eg — FINE TO MEDIUM GRAINED GABBRO AND ULTRAMAFIC ROCKS VARIABLY ALTERED TO SERPENTINITE.

- GEOLOGICAL BOUNDARY, APPROXIMATE
- FAULT
- INFERRED FAULT
- FOLD AXIS, INFERRED

GEOCHEMISTRY

- TIN — Sn
- COPPER — Cu
- LEAD — Pb
- ZINC — Zn
- ARSENIC — As
- BISMUTH — Bi

MAGNETICS

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

COMPILED	A.C.
DRAWN	T.G.D.S.
DATE	JUNE '89
CHECKED	
1:25,000 REFERENCE	

MONTEZUMA GRID
LINE PROFILE
6600 N.

BASE PLAN No.
OVERLAY PLAN No.
SCALE 1:2500 (0 50 100)
FIG. 21

8482

SOIL GEOCHEMISTRY (ppm)

10 000
1000
100

MAGNETICS (gammas)

64 000
63 200
62 400
61 600

TOPOGRAPHY & GEOLOGY (height above sea level)

800m
700m
600m
500m
400m
300m
200m
100m



4500E 4700E 4900E 5100E 5300E 5500E 5700E 5900E

6cm

607275

8482

SOIL GEOCHEMISTRY (ppm)

10 000
1000
100

MAGNETICS (gammas)

64 000
63 200
62 400
61 600

TOPOGRAPHY & GEOLOGY (height above sea level)

800m
700m
600m
500m
400m
300m
200m
100m

89-2994

GEOLOGY

DUNDAS GROUP
BREWERY JUNCTION FORMATION

- €bg — INTERBEDDED PURPLE FINE SANDSTONES AND SILTSTONES MINOR GREEN SILTSTONES AND POLYMICTIC CONGLOMERATE
- €bt — FELSIC-INTERMEDIATE VOLCANICLASTICS, PROBABLY TUFFACEOUS PYROCLASTICS MINOR GRITTY SANDSTONES
- €bm — FINE GRAINED LAMINATED SILTSTONES, FINE SANDSTONES AND POLYMICTIC CONGLOMERATES WITH MINOR TUFFS
- €bc — POLYMICTIC CONGLOMERATE WITH ABUNDANT CHERT AND QUARTZITE CLASTS MINOR SILTSTONES AND TUFFS
- €bs — FINE GRAINED LAMINATED SILTSTONES MINOR SANDSTONES AND POLYMICTIC CONGLOMERATES
- €ra — RAZORBACK CONGLOMERATES CONGLOMERATES WITH ABUNDANT MAFIC VOLCANIC CLASTS MINOR GREYWACKES

- Pc-Pzq — DONAH FORMATION INTERBEDDED QUARTZITES AND BLACK SHALES THICK QUARTZITE BEDS (Pzq) ARE SHOWN
- Pod — MAESTRIES DOLOMITIC CONGLOMERATE DOLOMITES AND DOLOMITIC CONGLOMERATES
- Pus — CONCERT SCHIST FINE GRAINED PHYLLITES AND PSAMMITES
- Fg — FINE TO MEDIUM GRAINED GABBRO AND ULTRAMAFIC ROCKS VARIABLY ALTERED TO SERPENTINITE

- GEOLOGICAL BOUNDARY, APPROXIMATE
- FAULT
- INFERRED FAULT
- FOLD AXIS, INFERRED

GEOCHEMISTRY

- TIN – Sn
- COPPER – Cu
- LEAD – Pb
- ZINC – Zn
- ARSENIC – As
- BISMUTH – Bi

MAGNETICS

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

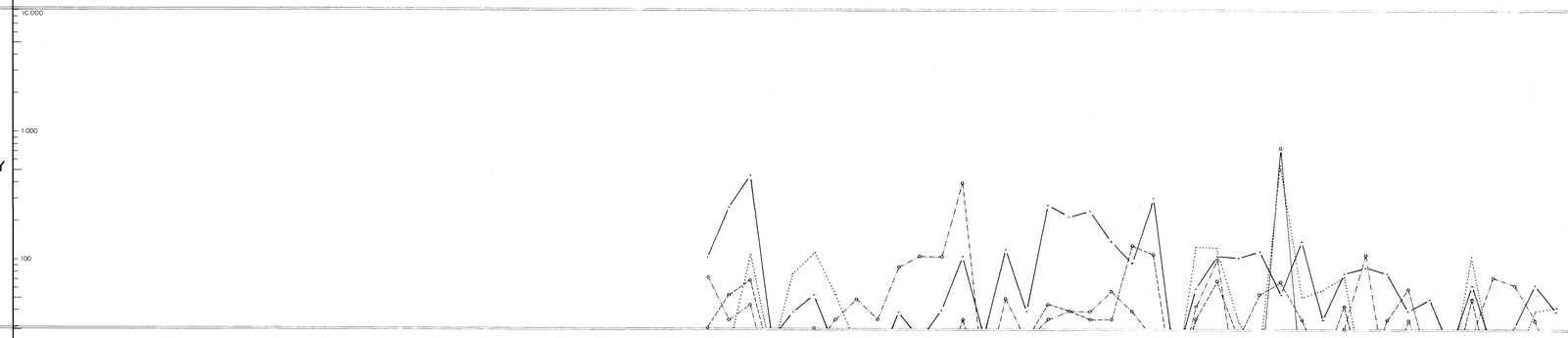
	COMPILED	A.C.
	DRAWN	T.G.D.S.
	DATE	JUNE '89
	CHECKED	
	1:25,000 REFERENCE	

MONTEZUMA GRID
LINE PROFILE
6800 N.

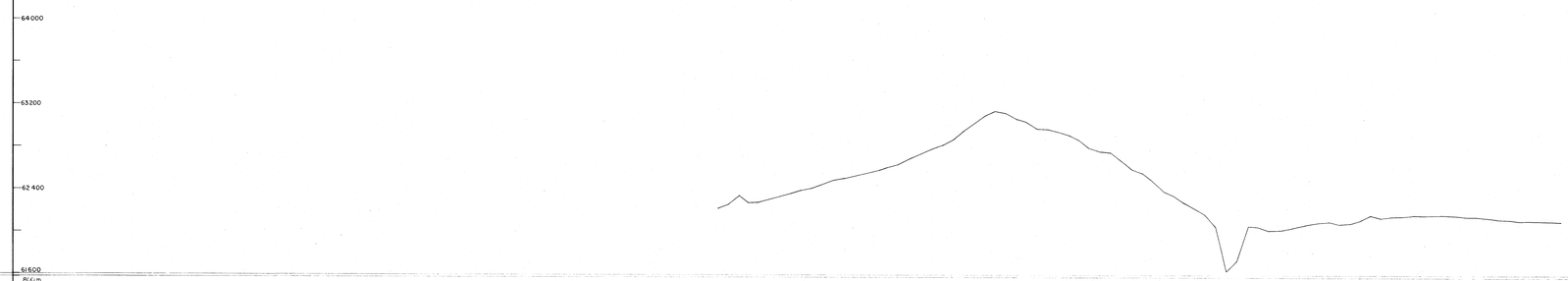
BASE PLAN No.
OVERLAY PLAN No.
SCALE 1:2500 (0 50 100)
FIG. 22

8483

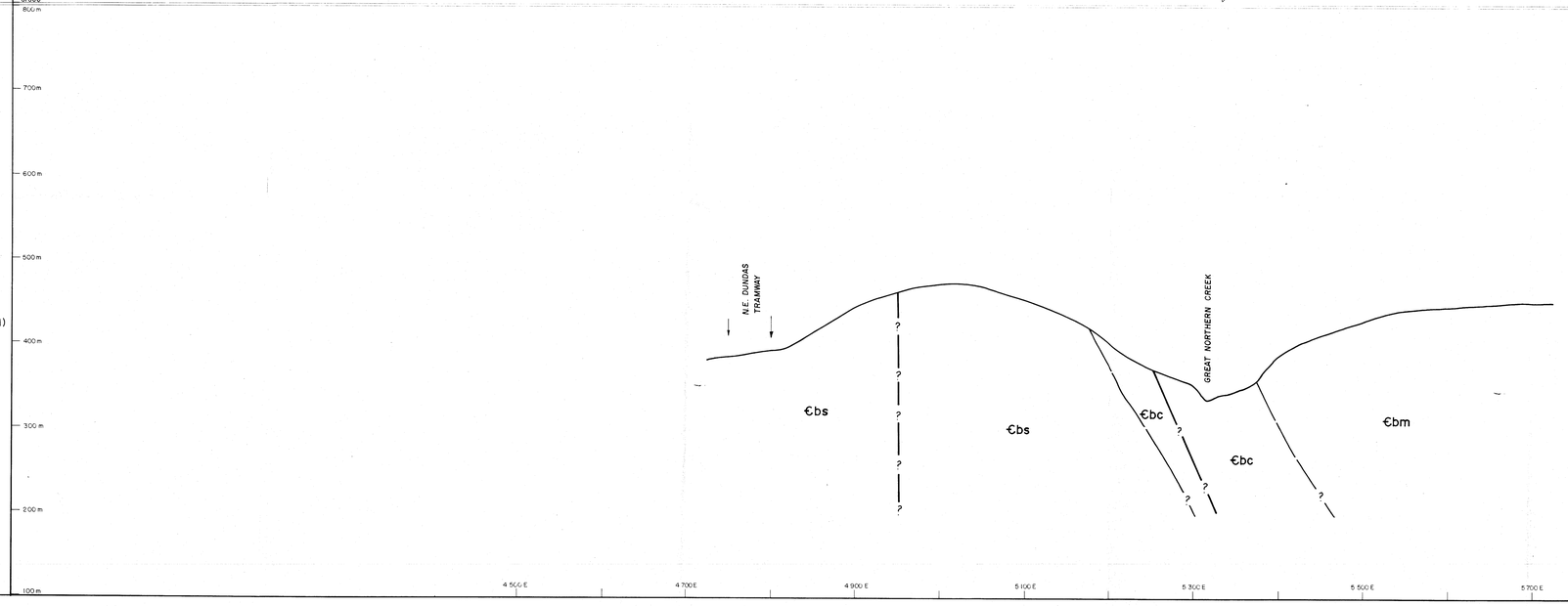
SOIL GEOCHEMISTRY (ppm)



MAGNETICS (gammas)



TOPOGRAPHY & GEOLOGY (height above sea level)



5cm

607276

8483

89-2994

GEOLOGY

DUNDAS GROUP

BREWERY JUNCTION FORMATION

- €bg — INTERBEDDED PURPLE FINE SANDSTONES AND SILTSTONES. MINOR GREEN SILTSTONES AND POLYMICTIC CONGLOMERATE.
- €bf — FELSIC - INTERMEDIATE VULCANICLASTICS, PROBABLY TUFFACEOUS PYROCLASTICS. MINOR GRITTY SANDSTONES.
- €bm — FINE GRAINED LAMINATED SILTSTONES, FINE SANDSTONES AND POLYMICTIC CONGLOMERATES WITH MINOR TUFFS.
- €bc — POLYMICTIC CONGLOMERATE WITH ABUNDANT CHERT AND QUARTZITE CLASTS. MINOR SILTSTONES AND TUFFS.
- €bs — FINE GRAINED LAMINATED SILTSTONES. MINOR SANDSTONES AND POLYMICTIC CONGLOMERATES.
- €ra — RAZORBACK CONGLOMERATES. CONGLOMERATES WITH ABUNDANT MAFIC VOLCANIC CLASTS. MINOR GREYWACKES.

- P_{Qz} / P_{Py} — OONAH FORMATION. INTERBEDDED QUARTZITES AND BLACK SHALES. THICK QUARTZITE BEDS (P_{Qz}) ARE SHOWN.
- Pod — MAESTRIES DOLOMITIC CONGLOMERATE, DOLOMITES AND DOLOMITIC CONGLOMERATES.
- Pus — CONCERT SCHIST. FINE GRAINED PHYLLITES AND PSAMMITES.
- Eg — FINE TO MEDIUM GRAINED GABBRO AND ULTRAMAFIC ROCKS VARIABLY ALTERED TO SERPENTINITE.

- GEOLOGICAL BOUNDARY, APPROXIMATE
- FAULT
- INFERRED FAULT
- FOLD AXIS, INFERRED

GEOCHEMISTRY

- TIN – Sn
- COPPER – Cu
- LEAD – Pb
- ZINC – Zn
- ARSENIC – As
- BISMUTH – Bi

MAGNETICS

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

COMPILED	A.C.
DRAWN	T.G.D.S.
DATE	JUNE '89
CHECKED	
125,000 REFERENCE	

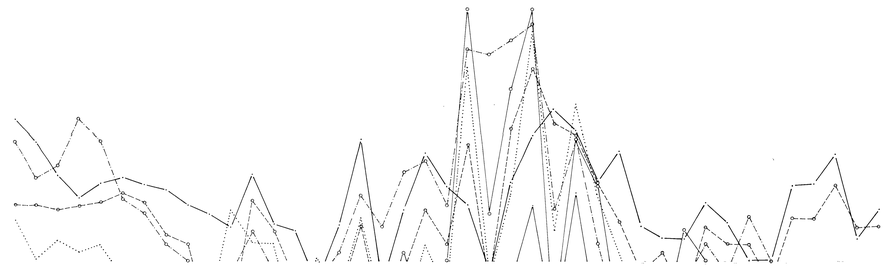
MONTEZUMA GRID
LINE PROFILE
7000 N.

BASE PLAN No.
OVERLAY PLAN No.
SCALE 1:2500 (0 50 100)
FIG. 23

8484

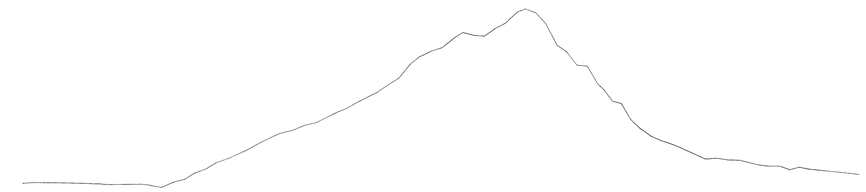
SOIL GEOCHEMISTRY (ppm)

10 000
1 000
100



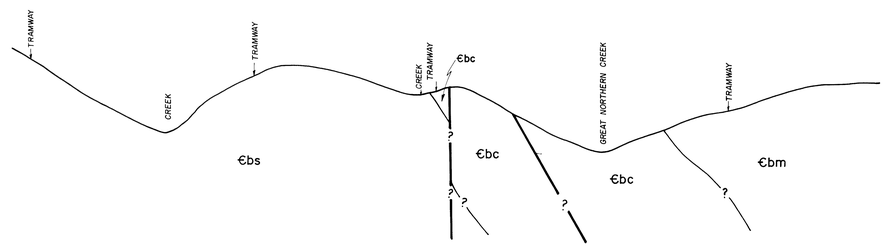
MAGNETICS (gammas)

64 200
63 400
62 600
61 800



TOPOGRAPHY & GEOLOGY (height above sea level)

800m
700m
600m
500m
400m
300m
200m
100m



4 500E 4 700E 4 900E 5 100E 5 300E 5 500E 5 700E 5 900E

5 cm

607277
8484

89-2994

GEOLOGY

DUNDAS GROUP
BREWERY JUNCTION FORMATION

- €bg — INTERBEDDED PURPLE FINE SANDSTONES AND SILTSTONES. MINOR GREEN SILTSTONES AND POLYMICTIC CONGLOMERATE
- €bt — FELSIC - INTERMEDIATE VULCANICLASTICS, PROBABLY TUFFACEOUS PYROCLASTICS. MINOR GRITTY SANDSTONES
- €bm — FINE GRAINED LAMINATED SILTSTONES, FINE SANDSTONES AND POLYMICTIC CONGLOMERATES WITH MINOR TUFFS
- €bc — POLYMICTIC CONGLOMERATE WITH ABUNDANT CHERT AND QUARTZITE CLASTS. MINOR SILTSTONES AND TUFFS
- €bs — FINE GRAINED LAMINATED SILTSTONES. MINOR SANDSTONES AND POLYMICTIC CONGLOMERATES.
- €rg — RAZORBACK CONGLOMERATES. CONGLOMERATES WITH ABUNDANT MAFIC VULCANIC CLASTS. MINOR GREYWACKES.

- €Dn / €Dq — DONAH FORMATION. INTERBEDDED QUARTZITES AND BLACK SHALES. THICK QUARTZITE BEDS (>m) ARE SHOWN.
- Pod — MAESTRIES FORMATION. POLYMICTIC CONGLOMERATE. LIMONITES AND DOLOMITIC CONGLOMERATES
- Pus — CONCERT SCHIST. FINE GRAINED PHYLLITES AND PSAMMITES
- Fg — FINE TO MEDIUM GRAINED GABBRO AND ULTRAMAFIC ROCKS VARIABLY ALTERED TO SERPENTINITE

- GEOLOGICAL BOUNDARY, APPROXIMATE
- FAULT
- INFERRED FAULT
- FOLD AXIS, INFERRED

GEOCHEMISTRY

- TIN - Sn
- COPPER - Cu
- LEAD - Pb
- ZINC - Zn
- ARSENIC - As
- BISMUTH - Bi

MAGNETICS

RGC EXPLORATION PTY. LIMITED

A.C.
DRAWN TG.D.S
JUNE '89
CHECKED
APPROVED

MONTEZUMA GRID
LINE PROFILE
7200 N.

BASE PLAN No.
COMPILATION No.

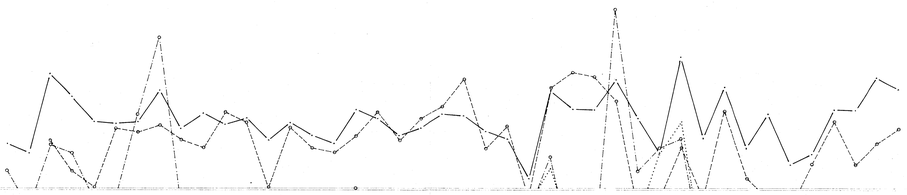
SCALE 1:2500
0 50 100 metres

FIG. 24

8485

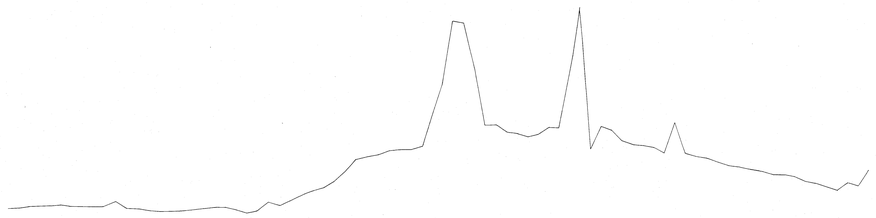
SOIL GEOCHEMISTRY (ppm)

10 000
1 000
100



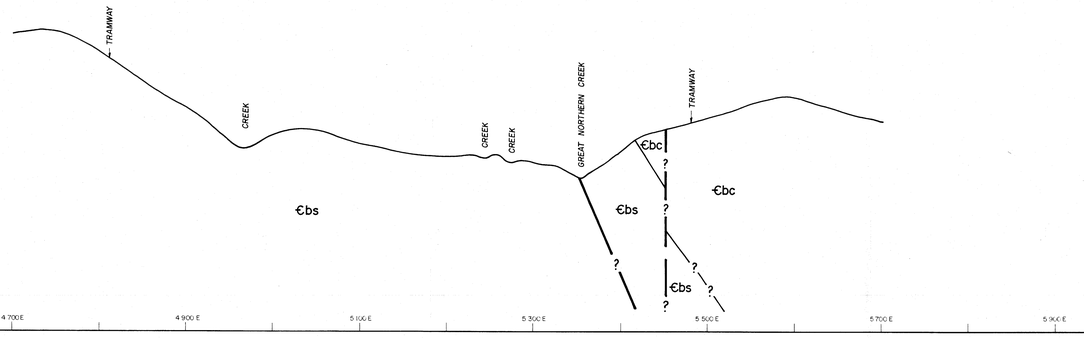
MAGNETICS (gammas)

64 200
63 400
62 600
61 800



TOPOGRAPHY & GEOLOGY (height above sea level)

800 m
700 m
600 m
500 m
400 m
300 m
200 m
100 m



4 500 E
4 700 E
4 900 E
5 100 E
5 300 E
5 500 E
5 700 E
5 900 E

607278
8485

89-2994

GEOLOGY

DUNDAS GROUP
BREWERY JUNCTION FORMATION

- €bg — INTERBEDDED PURPLE FINE SANDSTONES AND SILTSTONES. MINOR GREEN SILTSTONES AND POLYMICTIC CONGLOMERATE.
- €bt — FELSIC - INTERMEDIATE VULCANICLASTICS, PROBABLY TUFFACEOUS PYROCLASTICS. MINOR GRITTY SANDSTONES.
- €bm — FINE GRAINED LAMINATED SILTSTONES, FINE SANDSTONES AND POLYMICTIC CONGLOMERATES WITH MINOR TUFFS.
- €bc — POLYMICTIC CONGLOMERATE WITH ABUNDANT CHERT AND QUARTZITE CLASTS. MINOR SILTSTONES AND TUFFS.
- €bs — FINE GRAINED LAMINATED SILTSTONES. MINOR SANDSTONES AND POLYMICTIC CONGLOMERATES.
- €ra — RAZORBACK CONGLOMERATES. CONGLOMERATES WITH ABUNDANT MAFIC VOLCANIC CLASTS. MINOR GREYWACKES.

- €Pc / Pod — OONAH FORMATION. INTERBEDDED QUARTZITES AND BLACK SHALES. THICK QUARTZITE BEDS (Pod) ARE SHOWN.
- Pod — MAESTRIES DOLOMITIC CONGLOMERATE. DOLOMITES AND DOLOMITIC CONGLOMERATES.
- Pus — CONCERT SCHIST. FINE GRAINED PHYLLITES AND PSAMMITES.
- Eg — FINE TO MEDIUM GRAINED GABBRO AND ULTRAMAFIC ROCKS VARIABLY ALTERED TO SERPENTINITE.

- GEOLOGICAL BOUNDARY, APPROXIMATE
- FAULT
- INFERRED FAULT
- FOLD AXIS, INFERRED

GEOCHEMISTRY

- TIN — Sn
- COPPER — Cu
- LEAD — Pb
- ZINC — Zn
- ARSENIC — As
- BISMUTH — Bi

MAGNETICS

RGC EXPLORATION PTY. LIMITED

A.C.
T.G.D.S.
JUNE '89

MONTEZUMA GRID
LINE PROFILE
7400 N.

BASE PLAN No
DENISON PLAN No

SCALE 1 : 2 500
0 50 100 metres

FIG 25

8486

SOIL GEOCHEMISTRY (ppm)

10 000
1 000
100

MAGNETICS (gammas)

73 000
69 000
65 000
61 000

TOPOGRAPHY & GEOLOGY (height above sea level)

800m
700m
600m
500m
400m
300m
200m
100m

TRAMWAY
GREAT NORTHERN CREEK
TRAMWAY
TRAMWAY
€bc
€bc
€bs
€bs
€bs
?
?
?
?

4 500 E
4 700 E
4 900 E
5 100 E
5 300 E
5 500 E
5 700 E
5 900 E

5 cm

607279

8486

89-2994

GEOLOGY

DUNDAS GROUP
BREWERY JUNCTION FORMATION

- €bg — INTERBEDDED PURPLE FINE SANDSTONES AND SILTSTONES. MINOR GREEN SILTSTONES AND POLYMICTIC CONGLOMERATE
- €bt — FELSIC - INTERMEDIATE VOLCANICLASTICS, PROBABLY TUFFACEOUS PYROCLASTICS. MINOR GRITTY SANDSTONES
- €bm — FINE GRAINED LAMINATED SILTSTONES, FINE SANDSTONES AND POLYMICTIC CONGLOMERATES WITH MINOR TUFFS
- €bc — POLYMICTIC CONGLOMERATE WITH ABUNDANT CHERT AND QUARTZITE CLASTS. MINOR SILTSTONES AND TUFFS
- €bs — FINE GRAINED LAMINATED SILTSTONES MINOR SANDSTONES AND POLYMICTIC CONGLOMERATES.
- €ra — RAZORBACK CONGLOMERATES. CONGLOMERATES WITH ABUNDANT MAFIC VOLCANIC CLASTS. MINOR GREYWACKES.

- €Pc, €Pq — OONAH FORMATION. INTERBEDDED QUARTZITES AND BLACK SHALES. THICK QUARTZITE BEDS (€pq) ARE SHOWN
- Pca — MAESTRIES DOLOMITIC CONGLOMERATE. FOLOMITES AND DOLOMITIC CONGLOMERATES.
- Pus — CONCERT SCHIST. FINE GRAINED PHYLLITES AND PSAMMITES.
- Eg — FINE TO MEDIUM GRAINED GABBRO AND ULTRAMAFIC ROCKS VARIABLY ALTERED TO SERPENTINITE.

- GEOLOGICAL BOUNDARY, APPROXIMATE
- FAULT
- INFERRED FAULT
- FOLD AXIS, INFERRED

GEOCHEMISTRY

- TIN – Sn
- COPPER – Cu
- LEAD – Pb
- ZINC – Zn
- ARSENIC – As
- BISMUTH – Bi

MAGNETICS

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

COMPILED	A.C.
DRAWN	T.G.D.S.
DATE	JUNE '89
CHECKED	
1:25,000 REFERENCE	

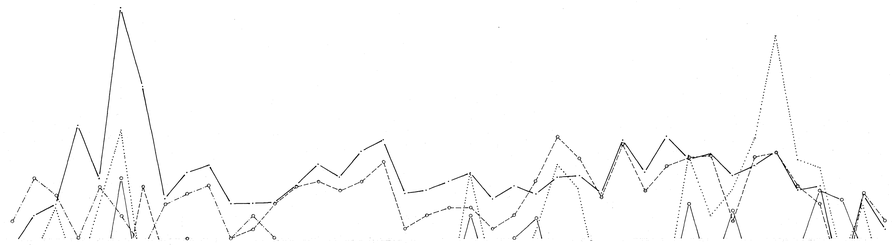
MONTEZUMA GRID
LINE PROFILE
7600 N.

BASE PLAN No.
OVERLAY PLAN No.
SCALE 1:2500
0 50 100
F.S. 26

8487

SOIL GEOCHEMISTRY (ppm)

10 000
1 000
100



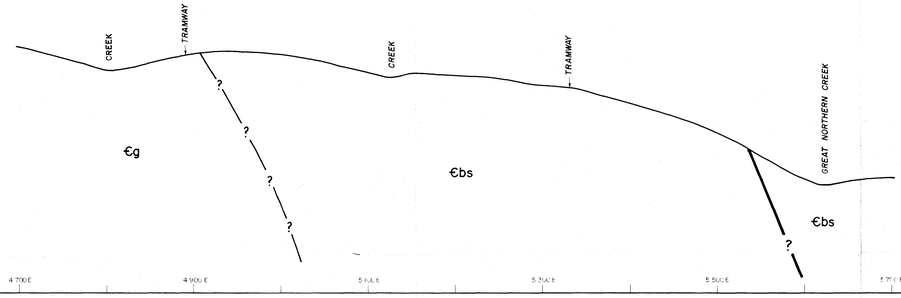
MAGNETICS (gammas)

64 000
63 200
62 400
61600



TOPOGRAPHY & GEOLOGY (height above sea level)

800m
700m
600m
500m
400m
300m
200m
100m



5 cm

607280

8487

SOIL GEOCHEMISTRY (ppm)

10000
1000
100

MAGNETICS (gammas)

64 000
63 200
62 400
61600

TOPOGRAPHY & GEOLOGY (height above sea level)

800m
700m
600m
500m
400m
300m
200m
100m

89-2994

GEOLOGY

DUNDAS GROUP
BREWERY JUNCTION FORMATION

- Cbg — INTERBEDDED PURPLE FINE SANDSTONES AND SILTSTONES, MINOR GREEN SILTSTONES AND POLYMICTIC CONGLOMERATE.
- Cbt — FELSIC-INTERMEDIATE VULCANOLASTICS, PROBABLY TUFFACEOUS PYRICLASTICS. MINOR GRITTY SANDSTONES.
- Cbm — FINE GRAINED LAMINATED SILTSTONES, FINE SANDSTONES AND POLYMICTIC CONGLOMERATES WITH MINOR TUFFS.
- Cbc — POLYMICTIC CONGLOMERATE WITH ABUNDANT CHERT AND QUARTZITE CLASTS. MINOR SILTSTONES AND TUFFS.
- Cbs — FINE GRAINED LAMINATED SILTSTONES. MINOR SANDSTONES AND POLYMICTIC CONGLOMERATES.
- Cro — RAZORBACK CONGLOMERATES. CONGLOMERATES WITH ABUNDANT MAFIC VULCANIC CLASTS. MINOR GREYWACKES.

- Pc, Pcq — DONAH FORMATION. INTERBEDDED QUARTZITES AND BLACK SHALES. THICK QUARTZITE BEDS (Peq) ARE SHOWN.
- Pot — MAESTRIES DOLOMITIC CONGLOMERATE. DOLOMITES AND DOLOMITIC CONGLOMERATES.
- Put — CONCERT SCHIST. FINE GRAINED PHYLLITES AND PSAMMITES.
- Eg — FINE TO MEDIUM GRAINED GABBRO AND ULTRAMAFIC ROCKS VARIABLY ALTERED TO SERPENTINITE.

- GEOLOGICAL BOUNDARY, APPROXIMATE
- FAULT
- INFERRED FAULT
- FOLD AXIS, INFERRED

GEOCHEMISTRY

- TIN – Sn
- COPPER – Cu
- LEAD – Pb
- ZINC – Zn
- ARSENIC – As
- BISMUTH – Bi

MAGNETICS

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

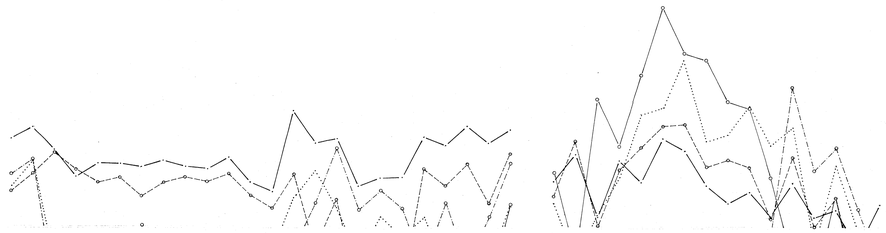
COMPILED	A.C.	MONTEZUMA GRID
DRAWN	TGDS.	LINE PROFILE
DATE	JUNE '89	7800 N.
CHECKED		
1:25,000 REFERENCE		

BASE PLAN No.
OVERLAY PLAN No.
SCALE 1:2500 (0 50 100)
FIG. 27

8488

SOIL GEOCHEMISTRY (ppm)

10 000
1 000
100



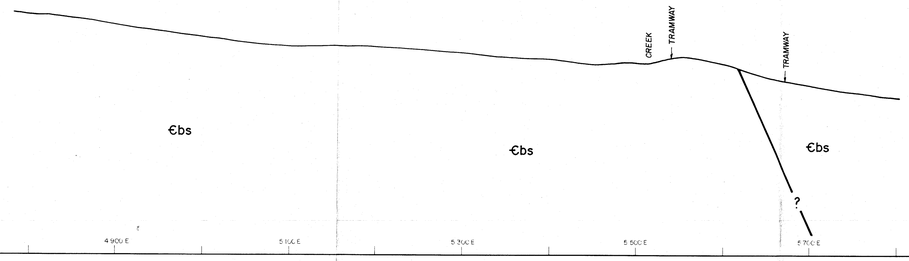
MAGNETICS (gammas)

64000
63200
62400
61600



TOPOGRAPHY & GEOLOGY (height above sea level)

800m
700m
600m
500m
400m
300m
200m
100m



5 cm

607281

8488

89-2994

GEOLOGY

DUNDAS GROUP — BREWERY JUNCTION FORMATION

- €bg — INTERBEDDED PURPLE FINE SANDSTONES AND SILTSTONES. MINOR GREEN SILTSTONES AND POLYMICTIC CONGLOMERATE.
- €bt — FELSIC - INTERMEDIATE VULCANICLASTICS, PROBABLY TUFFACEOUS PYROCLASTICS. MINOR GRITTY SANDSTONES.
- €bm — FINE GRAINED LAMINATED SILTSTONES, FINE SANDSTONES AND POLYMICTIC CONGLOMERATES WITH MINOR TUFFS.
- €bc — POLYMICTIC CONGLOMERATE WITH ABUNDANT CHERT AND QUARTZITE CLASTS. MINOR SILTSTONES AND TUFFS.
- €bs — FINE GRAINED LAMINATED SILTSTONES. MINOR SANDSTONES AND POLYMICTIC CONGLOMERATES.
- €ro — RAZORBACK CONGLOMERATES. CONGLOMERATES WITH ABUNDANT MAFIC VOLCANIC CLASTS. MINOR GREYWACKES.

- PCo / PCq — OONAH FORMATION. INTERBEDDED QUARTZITES AND BLACK SHALES. THICK QUARTZITE BLOCK (PCq) ARE SHOWN.
- Pod — MAESTRIES DOLOMITIC CONGLOMERATE. DOLOMITES AND DOLOMITIC CONGLOMERATES.
- Pus — CONCERT SCHIST. FINE GRAINED PHYLLITES AND PSAMMITES.
- Eg — FINE TO MEDIUM GRAINED GABBRO AND ULTRAMAFIC ROCKS. VARIABLY ALTERED TO SERPENTINITE.

- GEOLOGICAL BOUNDARY, APPROXIMATE
- FAULT
- INFERRED FAULT
- FOLD AXIS, INFERRED

GEOCHEMISTRY

- TIN = Sn
- COPPER = Cu
- LEAD = Pb
- ZINC = Zn
- ARSENIC = As
- BISMUTH = Bi

MAGNETICS

RGC EXPLORATION PTY. LIMITED

A.C.
T.G.B.S.
JUNE '89

MONTEZUMA GRID
LINE PROFILE
8000 N.

SCALE 1:2500 (0, 50, 100 metres)

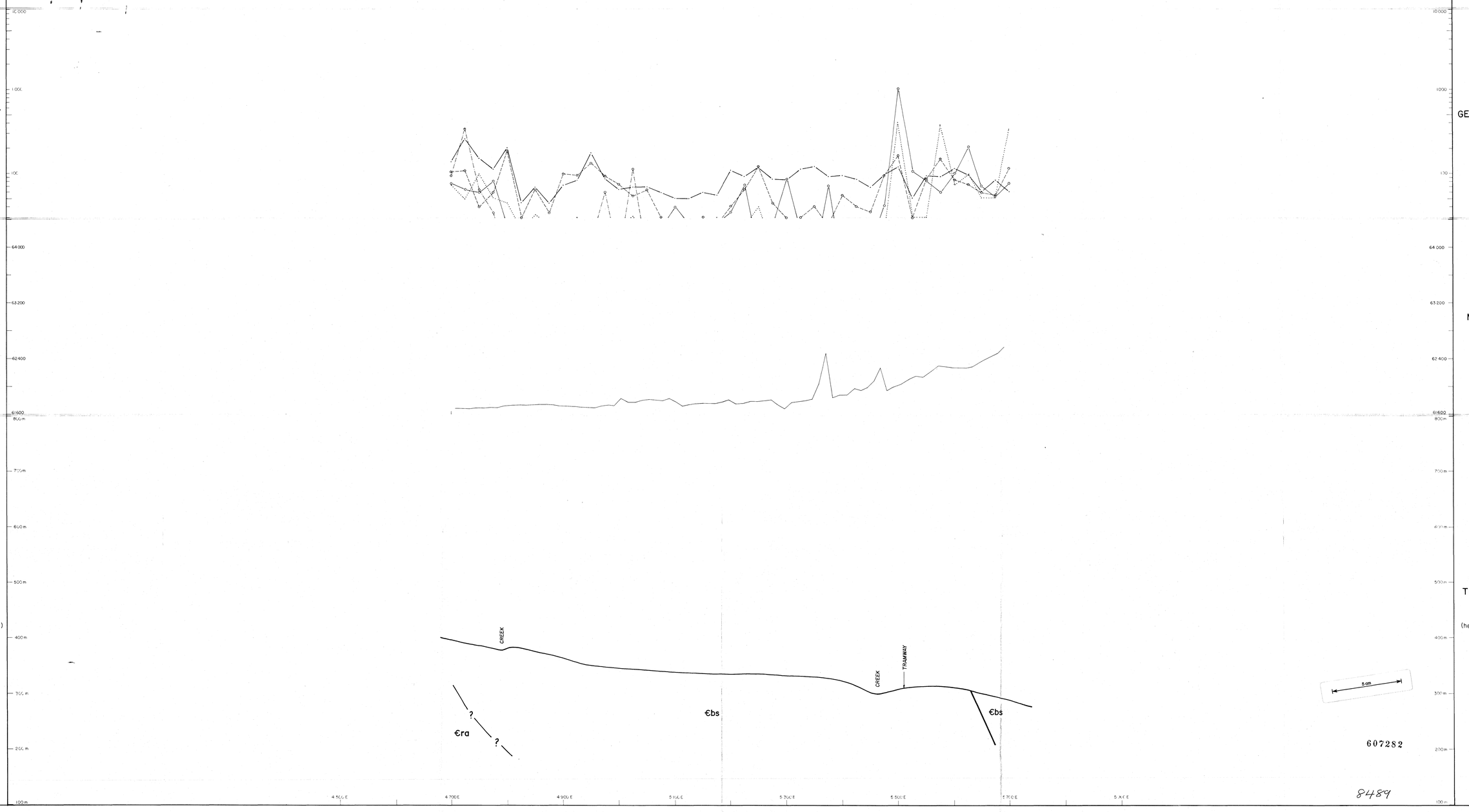
28

8489

SOIL GEOCHEMISTRY (ppm)

MAGNETICS (gammas)

TOPOGRAPHY & GEOLOGY (height above sea level)



607282

8489

89-2994

GEOLOGY

DUNDAS GROUP — BREMERY JUNCTION FORMATION

- €bg — INTERBEDDED PURPLE FINE SANDSTONES AND SILTSTONES, MINOR GREEN SILTSTONES AND POLYMICTIC CONGLOMERATE
- €bf — FELSIC-INTERMEDIATE VOLCANICLASTICS, PROBABLY TUFFACEOUS PYROCLASTICS, MINOR GRITTY SANDSTONES
- €bm — FINE GRAINED LAMINATED SILTSTONES, FINE SANDSTONES AND POLYMICTIC CONGLOMERATES WITH MINOR TUFFS
- €bc — POLYMICTIC CONGLOMERATE WITH ABUNDANT CHERT AND QUARTZITE CLASTS, MINOR SILTSTONES AND TUFFS
- €bs — FINE GRAINED LAMINATED SILTSTONES, MINOR SANDSTONES AND POLYMICTIC CONGLOMERATES
- €ra — RAZORBACK CONGLOMERATES, CONGLOMERATES WITH ABUNDANT MAFIC VOLCANIC CLASTS, MINOR GREYWACKES

- Pdn / Pzq — DONAH FORMATION, INTERBEDDED QUARTZITES AND BLACK SHALES. THICK QUARTZITE BEDS (Pzq) ARE SHOWN
- Pds — MAESTRIES DOLOMITIC CONGLOMERATE, DOLOMITES AND DOLOMITIC CONGLOMERATES
- Put — CONCERT SCHIST, FINE GRAINED PHYLLITES AND PSAMMITES
- Eg — FINE TO MEDIUM GRAINED GABBRO AND ULTRAMAFIC ROCKS VARIABLY ALTERED TO SERPENTINITE

- GEOLOGICAL BOUNDARY, APPROXIMATE
- FAULT
- INFERRED FAULT
- FOLD AXIS, INFERRED

GEOCHEMISTRY

- TIN – Sn
- COPPER – Cu
- LEAD – Pb
- ZINC – Zn
- ARSENIC – As
- BISMUTH – Bi

MAGNETICS

RGC EXPLORATION PTY. LIMITED

A.C.
T.G.D.S.
JUNE '89

MONTEZUMA GRID
LINE PROFILE
8200 N.

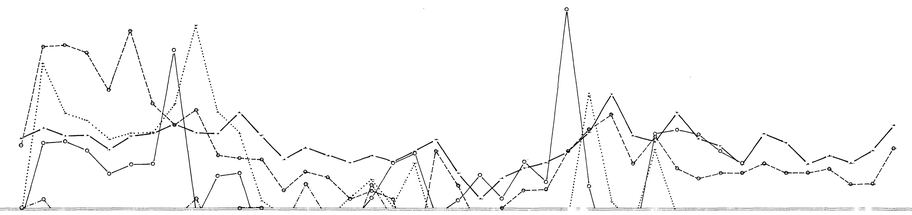
SCALE 1:2500 — 0 50 100 metres

29

8490

SOIL GEOCHEMISTRY (ppm)

10 000
1 000
100



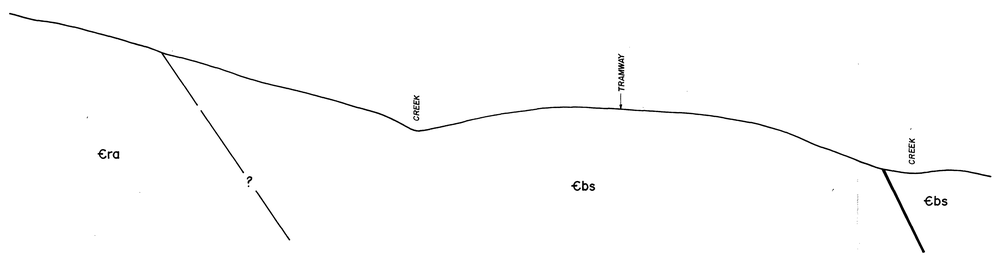
MAGNETICS (gammas)

63 800
63 000
62 200
61 400



TOPOGRAPHY & GEOLOGY (height above sea level)

800 m
700 m
600 m
500 m
400 m
300 m
200 m
100 m



4 500 E | 4 700 E | 4 900 E | 5 100 E | 5 300 E | 5 500 E | 5 700 E | 5 900 E

5 cm

607283

8490

89-294

GEOLOGY

DUNDAS GROUP — BREWERY JUNCTION FORMATION

- €bg — INTERBEDDED PURPLE FINE SANDSTONES AND SILTSTONES. MINOR GREEN SILTSTONES AND POLYMICTIC CONGLOMERATE.
- €bt — FELSIC - INTERMEDIATE VULCANICLASTICS, PROBABLY TUFFACEOUS PYROCLASTICS. MINOR GRITTY SANDSTONES.
- €bm — FINE GRAINED LAMINATED SILTSTONES, FINE SANDSTONES AND POLYMICTIC CONGLOMERATES WITH MINOR TUFFS.
- €bc — POLYMICTIC CONGLOMERATE WITH ABUNDANT CHERT AND QUARTZITE CLASTS. MINOR SILTSTONES AND TUFFS.
- €bs — FINE GRAINED LAMINATED SILTSTONES. MINOR SANDSTONES AND POLYMICTIC - CONGLOMERATES.
- €ra — RAZORBACK CONGLOMERATES. CONGLOMERATES WITH ABUNDANT MAFIC VOLCANIC CLASTS. MINOR GREYWACKES.

- €Oq / €Oq — OONAH FORMATION. INTERBEDDED QUARTZITES AND BLACK SHALES. THICK QUARTZITE BEDS (€Oq) ARE SHOWN.
- €od — MAESTRIES DOLOMITIC CONGLOMERATE. DOLOMITES AND DOLOMITIC CONGLOMERATES.
- €us — CONCERT SCHIST. FINE GRAINED PHYLLITES AND PSAMMITES.
- Eg — FINE TO MEDIUM GRAINED GABBRO AND ULTRAMAFIC ROCKS VARIABLY ALTERED TO SERPENTINITE.

- GEOLOGICAL BOUNDARY, APPROXIMATE
- FAULT
- INFERRED FAULT
- FOLD AXIS, INFERRED

GEOCHEMISTRY

- TIN – Sn
- COPPER – Cu
- LEAD – Pb
- ZINC – Zn
- ARSENIC – As
- BISMUTH – Bi

MAGNETICS

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

COMPILED	A.C.	MONTEZUMA GRID
DRAWN	T.G.D.S.	LINE PROFILE
DATE	JUNE '89	8400 'N.
CHECKED		
1:25,000 REFERENCE		

BASE PLAN No.
OVERLAY PLAN No.

SCALE 1:2500 (0 50 100)

FIG. 30

8491

SOIL GEOCHEMISTRY (ppm)

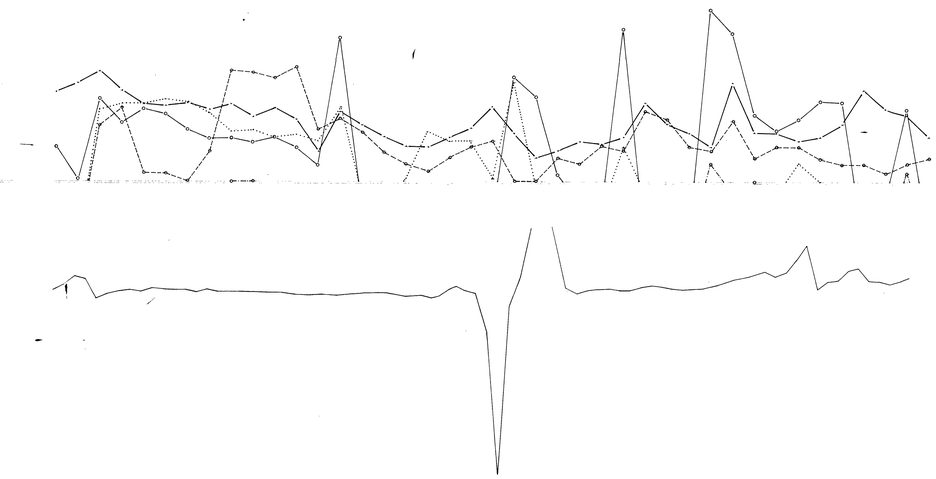
10 000
1 000
100

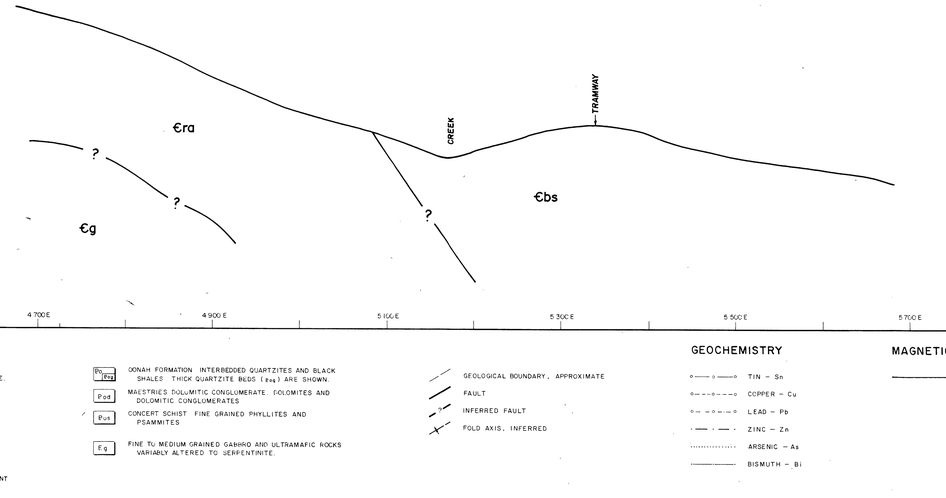
MAGNETICS (gammas)

62 200
61 400
60 600
59 800

TOPOGRAPHY & GEOLOGY (height above sea level)

800m
700m
600m
500m
400m
300m
200m
100m





4 500 E
4 700 E
4 900 E
5 100 E
5 300 E
5 500 E
5 700 E
5 900 E

5 cm

607284

8491

SOIL GEOCHEMISTRY (ppm)

10 000
1 000
100

MAGNETICS (gammas)

62 200
61 400
60 600
59 800

TOPOGRAPHY & GEOLOGY (height above sea level)

800m
700m
600m
500m
400m
300m
200m
100m

89-2994

GEOLOGY

DUNDAS GROUP
BREWERY JUNCTION FORMATION

- €bg — INTERBEDDED PURPLE FINE SANDSTONES AND SILTSTONES. MINOR GREEN SILTSTONES AND POLYMICTIC CONGLOMERATE.
- €bt — FELSIC - INTERMEDIATE VULCANICLASTICS, PROBABLY TUFFACEOUS PYROCLASTICS. MINOR GRITTY SANDSTONES.
- €bm — FINE GRAINED LAMINATED SILTSTONES, FINE SANDSTONES AND POLYMICTIC CONGLOMERATES WITH MINOR TUFFS.
- €bc — POLYMICTIC CONGLOMERATE WITH ABUNDANT CHERT AND QUARTZITE CLASTS. MINOR SILTSTONES AND TUFFS.
- €bs — FINE GRAINED LAMINATED SILTSTONES. MINOR SANDSTONES AND POLYMICTIC CONGLOMERATES.
- €ra — RAZORBACK CONGLOMERATES. CONGLOMERATES WITH ABUNDANT MAFIC VOLCANIC CLASTS. MINOR GREYWACKES.

- Pdq (Pzq) — DONAH FORMATION. INTERBEDDED QUARTZITES AND BLACK SHALES. THICK QUARTZITE BEDS (Pzq) ARE SHOWN.
- Pod — MAESTRIES DOLOMITIC CONGLOMERATE. DOLOMITES AND DOLOMITIC CONGLOMERATES
- Put — CONCERT SCHIST. FINE GRAINED PHYLLITES AND PSAMMITES
- Eg — FINE TO MEDIUM GRAINED GABBRO AND ULTRAMAFIC ROCKS VARIABLY ALTERED TO SERPENTINITE.

- GEOLOGICAL BOUNDARY, APPROXIMATE
- FAULT
- INFERRED FAULT
- FOLD AXIS, INFERRED

GEOCHEMISTRY

- TIN — Sn
- COPPER — Cu
- LEAD — Pb
- ZINC — Zn
- ARSENIC — As
- BISMUTH — Bi

MAGNETICS

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

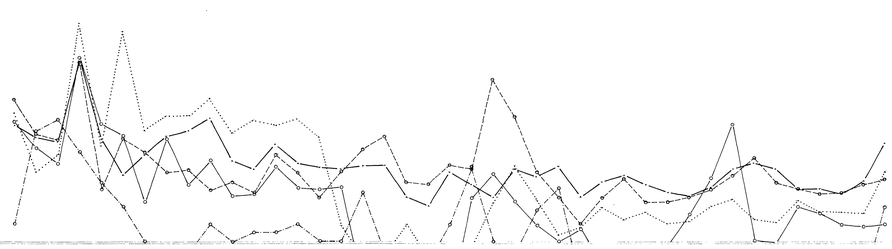
COMPILED	A.C.	MONTEZUMA GRID
DRAWN	T.G.D.S.	LINE PROFILE
DATE	JUNE '89	8600 N.
CHECKED		
1:25,000 REFERENCE		

BASE PLAN No.
OVERLAY PLAN No.
SCALE 1:2500 (0 50 100)
FIG. 31

8492

SOIL GEOCHEMISTRY (ppm)

10 000
1 000
100



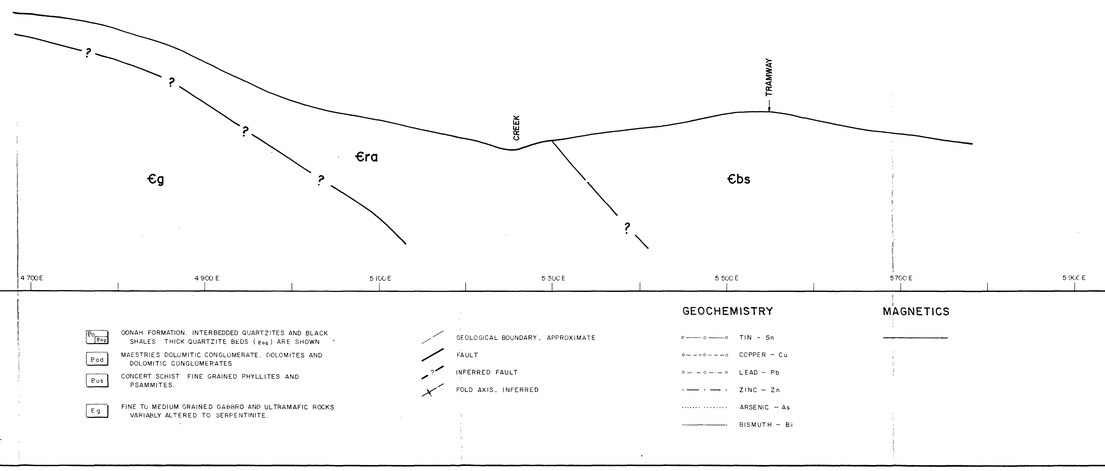
MAGNETICS (gammas)

63 600
62 800
62 000
61 200



TOPOGRAPHY & GEOLOGY (height above sea level)

800 m
700 m
600 m
500 m
400 m
300 m
200 m
100 m



4 500 E
4 700 E
4 900 E
5 100 E
5 300 E
5 500 E
5 700 E
5 900 E

607285

8492

89-2994

GEOLOGY

DUNDAS GROUP — BREWERY JUNCTION FORMATION

- €bg — INTERBEDDED PURPLE FINE SANDSTONES AND SILTSTONES. MINOR GREEN SILTSTONES AND POLYMICTIC CONGLOMERATE.
- €bf — FELSIC - INTERMEDIATE VULCANICLASTICS, PROBABLY TUFFACEOUS PYROCLASTICS. MINOR GRITTY SANDSTONES.
- €bm — FINE GRAINED LAMINATED SILTSTONES, FINE SANDSTONES AND POLYMICTIC CONGLOMERATES WITH MINOR TUFFS
- €bc — POLYMICTIC CONGLOMERATE WITH ABUNDANT CHERT AND QUARTZITE CLASTS. MINOR SILTSTONES AND TUFFS
- €bs — FINE GRAINED LAMINATED SILTSTONES. MINOR SANDSTONES AND POLYMICTIC - CONGLOMERATES.
- €ra — RAZORBACK CONGLOMERATES. CONGLOMERATES WITH ABUNDANT MAFIC VOLCANIC CLASTS. MINOR GREYWACKES.

- €o / €oq — OONAH FORMATION. INTERBEDDED QUARTZITES AND BLACK SHALES. THICK QUARTZITE BEDS (€oq) ARE SHOWN
- Pog — MAESTRIES DOLOMITIC CONGLOMERATE, DOLOMITES AND DOLOMITIC CONGLOMERATES.
- Pus — CONCERT SCHIST. FINE GRAINED PHYLLITES AND PSAMMITES.
- Eg — FINE TO MEDIUM GRAINED GABBRO AND ULTRAMAFIC ROCKS VARIABLY ALTERED TO SERPENTINITE.

- GEOLOGICAL BOUNDARY, APPROXIMATE
- FAULT
- INFERRED FAULT
- FOLD AXIS, INFERRED

GEOCHEMISTRY

- TIN – Sn
- COPPER – Cu
- LEAD – Pb
- ZINC – Zn
- ARSENIC – As
- BISMUTH – Bi

MAGNETICS

RGC EXPLORATION PTY. LIMITED

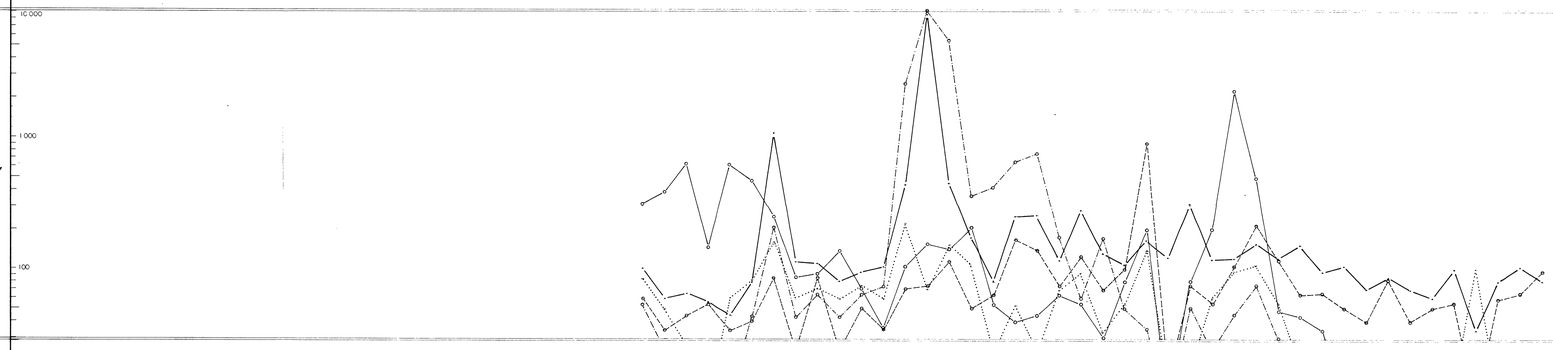
COMPILED	A.C.
DRAWN	T.G.D.S.
DATE	JUNE '89
CHECKED	
1:25,000 REFERENCE	

MONTEZUMA GRID
LINE PROFILE
8800 N.

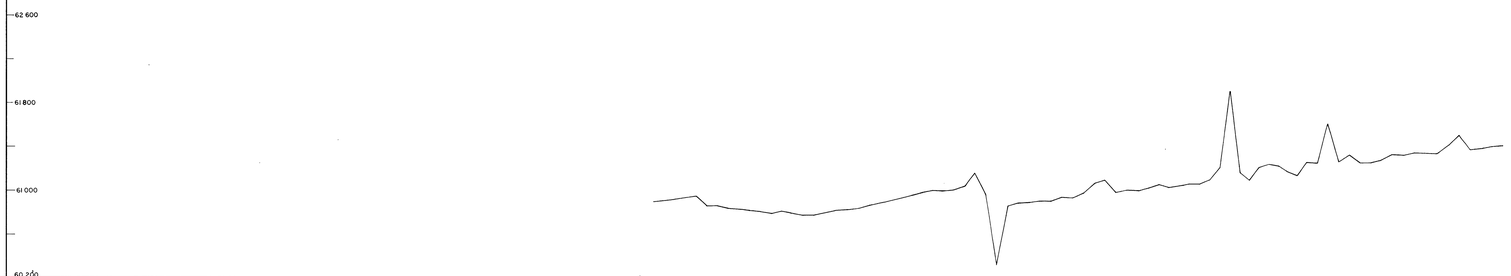
BASE PLAN No.
OVER. PLAN No.
SCALE 1:2500 (0 50 100 metres)
FIG. 32

8493

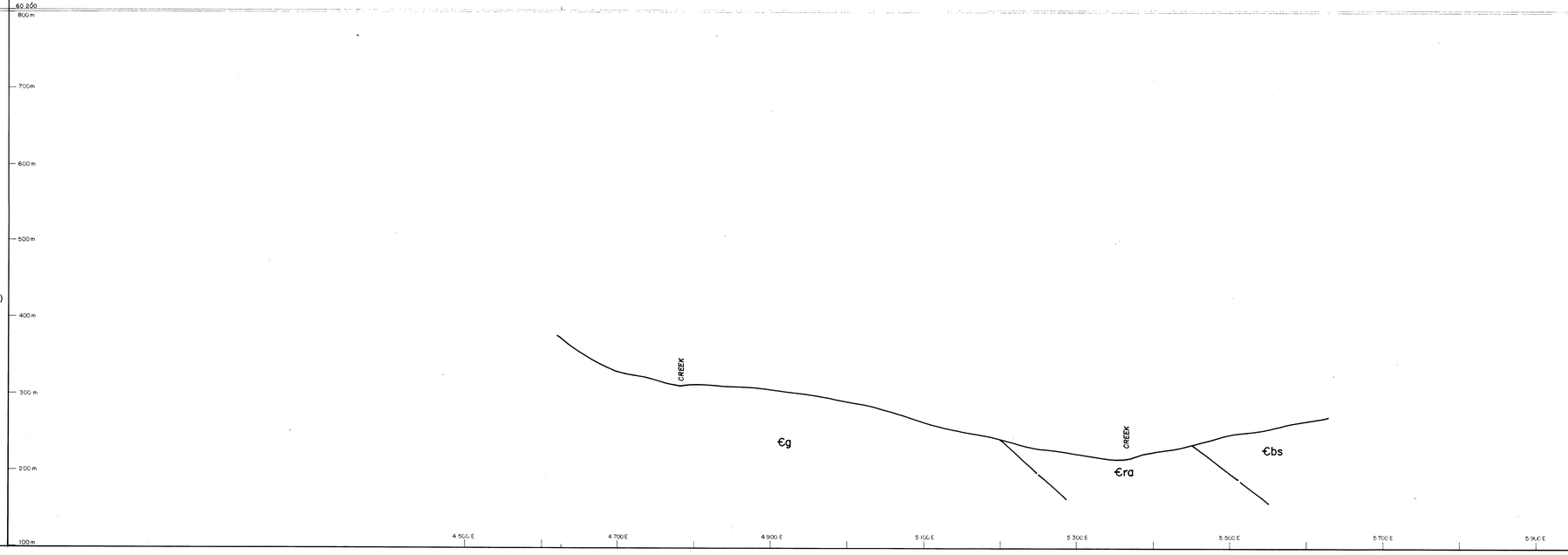
SOIL GEOCHEMISTRY (ppm)



MAGNETICS (gammas)



TOPOGRAPHY & GEOLOGY (height above sea level)



607286

SOIL GEOCHEMISTRY (ppm)

MAGNETICS (gammas)

TOPOGRAPHY & GEOLOGY (height above sea level)

89-2994

GEOLOGY

DUNDAS GROUP

BREWERY JUNCTION FORMATION

- €bg — INTERBEDDED PURPLE FINE SANDSTONES AND SILTSTONES. MINOR GREEN SILTSTONES AND POLYMICTIC CONGLOMERATE.
- €bf — FELSIC - INTERMEDIATE VULCANICLASTICS, PROBABLY TUFFACEOUS PYROCLASTICS. MINOR GRITTY SANDSTONES.
- €bm — FINE GRAINED LAMINATED SILTSTONES, FINE SANDSTONES AND POLYMICTIC CONGLOMERATES WITH MINOR TUFFS.
- €bc — POLYMICTIC CONGLOMERATE WITH ABUNDANT CHERT AND QUARTZITE CLASTS. MINOR SILTSTONES AND TUFFS.
- €bs — FINE GRAINED LAMINATED SILTSTONES. MINOR SANDSTONES AND POLYMICTIC CONGLOMERATES.
- €ra — RAZORBACK CONGLOMERATES. CONGLOMERATES WITH ABUNDANT MAFIC VOLCANIC CLASTS. MINOR GREYWACKES.

- €Pq / €Pq1 — OONAH FORMATION. INTERBEDDED QUARTZITES AND BLACK SHALES. THICK QUARTZITE BEDS (€Pq1) ARE SHOWN.
- €pd — MAESTRIES DOLOMITIC CONGLOMERATE, DOLOMITES AND DOLOMITIC CONGLOMERATES.
- €ps — CONCERT SCHIST. FINE GRAINED PHYLLITES AND PSAMMITES.
- €g — FINE TO MEDIUM GRAINED GABBRO AND ULTRAMAFIC ROCKS VARIABLY ALTERED TO SERPENTINITE.

- GEOLOGICAL BOUNDARY, APPROXIMATE
- FAULT
- INFERRED FAULT
- FOLD AXIS, INFERRED

GEOCHEMISTRY

- TIN — Sn
- COPPER — Cu
- LEAD — Pb
- ZINC — Zn
- ARSENIC — As
- BISMUTH — Bi

MAGNETICS

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

COMPILED	A.C.
DRAWN	T.G.D.S.
DATE	JUNE '89
CHECKED	
1:25,000 REFERENCE	

MONTEZUMA GRID
LINE PROFILE
9000 N.

BASE PLAN No.
OVERLAY PLAN No.

SCALE 1:2500 (0 50 100)

FIG. 33

8494

SOIL GEOCHEMISTRY (ppm)

10 000
1 000
100

MAGNETICS (gammas)

69000
65000
61000
57000

TOPOGRAPHY & GEOLOGY (height above sea level)

800m
700m
600m
500m
400m
300m
200m
100m

TRAMWAY CREEK

CREEK

€g

€ra

€bs

4 500E 4 700E 4 900E 5 100E 5 300E 5 500E 5 700E 5 900E

5 cm

607287

8494

89-2994

GEOLOGY

DUNDAS GROUP

BREWERY JUNCTION FORMATION

- €bg — INTERBEDDED PURPLE FINE SANDSTONES AND SILTSTONES, MINOR GREEN SILTSTONES AND POLYMICTIC CONGLOMERATE.
- €sr — FELSIC - INTERMEDIATE VULCANICLASTICS, PROBABLY TUFFACEOUS PYROCLASTICS. MINOR GRITTY SANDSTONES.
- €sm — FINE GRAINED LAMINATED SILTSTONES, FINE SANDSTONES AND POLYMICTIC CONGLOMERATES WITH MINOR TUFFS.
- €sc — POLYMICTIC CONGLOMERATE WITH ABUNDANT CHERT AND QUARTZITE CLASTS. MINOR SILTSTONES AND TUFFS.
- €s4 — FINE GRAINED LAMINATED SILTSTONES. MINOR SANDSTONES AND POLYMICTIC -CONGLOMERATES.
- €ra — RAZORBACK CONGLOMERATES. CONGLOMERATES WITH ABUNDANT MAFIC VOLCANIC CLASTS. MINOR GREYWACKES.

- €bq / €rq — OONAH FORMATION. INTERBEDDED QUARTZITES AND BLACK SHALES. THICK QUARTZITE BEDS (€rq) ARE SHOWN.
- €od — MAESTRIES DOLOMITIC CONGLOMERATE, DOLOMITES AND DOLOMITIC CONGLOMERATES.
- €us — CONCERT SCHIST. FINE GRAINED PHYLLITES AND PSAMMITES.
- Eg — FINE TO MEDIUM GRAINED GABBRO AND ULTRAMAFIC ROCKS VARIABLY ALTERED TO SERPENTINITE.

- GEOLOGICAL BOUNDARY, APPROXIMATE
- FAULT
- INFERRED FAULT
- FOLD AXIS, INFERRED

GEOCHEMISTRY

- TIN - Sn
- COPPER - Cu
- LEAD - Pb
- ZINC - Zn
- ARSENIC - As
- BISMUTH - Bi

MAGNETICS

RGC EXPLORATION PTY. LIMITED

DRAWN: A.C.
TRACED: T.G.D.S.
DATE: JUNE '89
CHECKED:
1:25 000 REFERENCE:

MONTEZUMA GRID
LINE PROFILE
9200 N.

BASE MAP PLAN No.
OUTLINE PLAN No.

SCALE 1:2500 0 50 100 metres

FIG. 34

8495

SOIL GEOCHEMISTRY (ppm)

10 000
1 000
100

MAGNETICS (gammas)

70 000
66 000
62 000
58 000

TOPOGRAPHY & GEOLOGY (height above sea level)

800m
700m
600m
500m
400m
300m
200m
100m

TRAMWAY

CREEK

RING RIVER

€g

€ra

4 500E
4 700E
4 900E
5 100E
5 300E
5 500E
5 700E
5 900E

5cm

607288

89-2994

GEOLOGY

DUNDAS GROUP / BREAKERY JUNCTION FORMATION

- €bg — INTERBEDDED PURPLE FINE SANDSTONES AND SILTSTONES. MINOR GREEN SILTSTONES AND POLYMICTIC CONGLOMERATE.
- €bt — FELSIC - INTERMEDIATE VULCANICLASTICS, PROBABLY TUFFACEOUS PYROCLASTICS. MINOR GRITTY SANDSTONES.
- €bm — FINE GRAINED LAMINATED SILTSTONES, FINE SANDSTONES AND POLYMICTIC CONGLOMERATES WITH MINOR TUFFS.
- €bc — POLYMICTIC CONGLOMERATE WITH ABUNDANT CHERT AND QUARTZITE CLASTS. MINOR SILTSTONES AND TUFFS.
- €bs — FINE GRAINED LAMINATED SILTSTONES. MINOR SANDSTONES AND POLYMICTIC CONGLOMERATES.
- €ra — RAZORBACK CONGLOMERATES. CONGLOMERATES WITH ABUNDANT MAFIC VOLCANIC CLASTS. MINOR GREYWACKES.

- PCq / Pqq — OONAH FORMATION. INTERBEDDED QUARTZITES AND BLACK SHALES. THICK QUARTZITE BEDS (Pqq) ARE SHOWN.
- Pod — MAESTRIES DOLOMITIC CONGLOMERATE. DOLOMITES AND DOLOMITIC CONGLOMERATES.
- Pus — CONCERT SCHIST. FINE GRAINED PHYLLITES AND PSAMMITES.
- Eg — FINE TO MEDIUM GRAINED GABBRO AND ULTRAMAFIC ROCKS VARIABLY ALTERED TO SERPENTINITE.

- GEOLOGICAL BOUNDARY, APPROXIMATE
- FAULT
- INFERRED FAULT
- FOLD AXIS, INFERRED

GEOCHEMISTRY

- TIN – Sn
- COPPER – Cu
- LEAD – Pb
- ZINC – Zn
- ARSENIC – As
- BISMUTH – Bi

MAGNETICS

RGC EXPLORATION PTY. LIMITED

COMP. : A.C.
DRAWN : T.G.D.S.
DATE : JUNE '89
CHECKED :
1:25,000 REFERENCE :

MONTEZUMA GRID
LINE PROFILE
9400 N.

BASE PLAN No.
OVERLAY PLAN No.

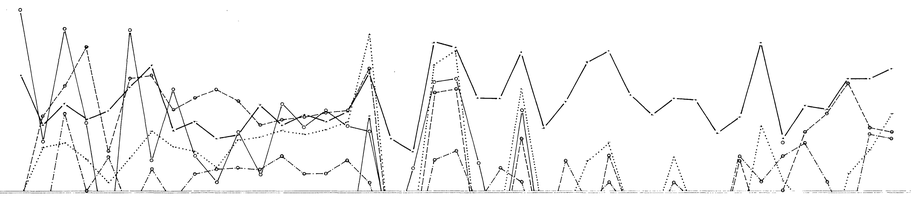
SCALE 1 : 2 500
0 50 100 metres

FIG. 35

8496

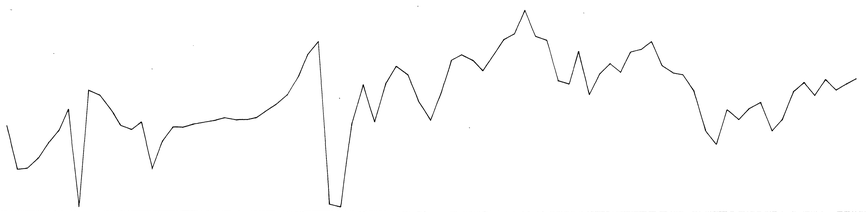
SOIL GEOCHEMISTRY (ppm)

10 000
1 000
100



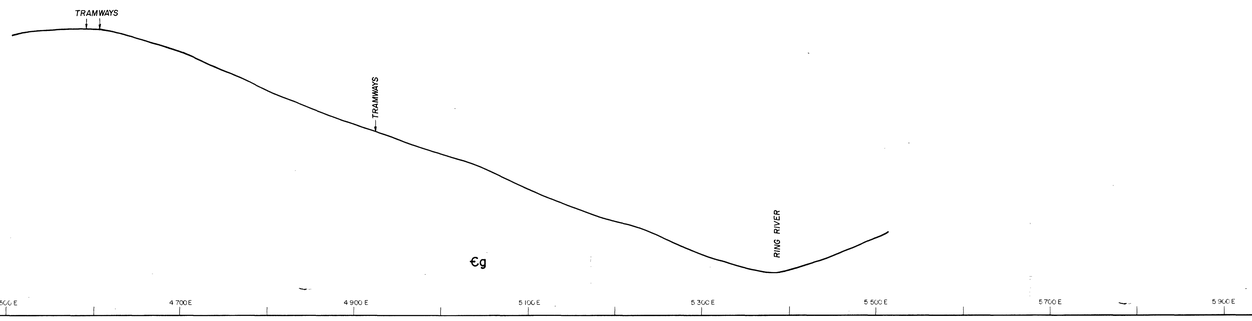
MAGNETICS (gammas)

70 000
66 000
62 000
58000



TOPOGRAPHY & GEOLOGY (height above sea level)

800 m
700 m
600 m
500 m
400 m
300 m
200 m
100 m



607289

5cm

SOIL GEOCHEMISTRY (ppm)

10 000
1 000
100

MAGNETICS (gammas)

70 000
66 000
62 000
58000

TOPOGRAPHY & GEOLOGY (height above sea level)

800 m
700 m
600 m
500 m
400 m
300 m
200 m
100 m

89-2994

GEOLOGY

DUNDAS GROUP
BREWERY JUNCTION FORMATION

- Ccg — INTERBEDDED PURPLE FINE SANDSTONES AND SILTSTONES. MINOR GREEN SILTSTONES AND POLYMICTIC CONGLOMERATE.
- Cbt — FELSIC - INTERMEDIATE VULCANICLASTICS, PROBABLY TUFFACEOUS PYROCLASTICS. MINOR GRITTY SANDSTONES.
- Cbm — FINE GRAINED LAMINATED SILTSTONES, FINE SANDSTONES AND POLYMICTIC CONGLOMERATES WITH MINOR TUFFS
- Cbc — POLYMICTIC CONGLOMERATE WITH ABUNDANT CHERT AND QUARTZITE CLASTS. MINOR SILTSTONES AND TUFFS
- Cbs — FINE GRAINED LAMINATED SILTSTONES MINOR SANDSTONES AND POLYMICTIC CONGLOMERATES.
- Cra — RAZORBACK CONGLOMERATES. CONGLOMERATES WITH ABUNDANT MAFIC VOLCANIC CLASTS. MINOR GREYWACKES.

- O_{cq} / O_{cg} — OONAH FORMATION INTERBEDDED QUARTZITES AND BLACK SHALES. THICK QUARTZITE BEDS (O_{cq}) ARE SHOWN.
- Pod — MAESTRIES DOLOMITIC CONGLOMERATE, DOLOMITES AND DOLOMITIC CONGLOMERATES
- Pus — CONCERT SCHIST FINE GRAINED PHYLLITES AND PSAMMITES
- Eg — FINE TO MEDIUM GRAINED GABBRO AND ULTRAMAFIC ROCKS VARIABLY ALTERED TO SERPENTINITE.

- GEOLOGICAL BOUNDARY, APPROXIMATE
- FAULT
- INFERRED FAULT
- FOLD AXIS, INFERRED

GEOCHEMISTRY

- TIN — Sn
- COPPER — Cu
- LEAD — Pb
- ZINC — Zn
- ARSENIC — As
- BISMUTH — Bi

MAGNETICS

RGC EXPLORATION PTY. LIMITED

MONTEZUMA GRID
LINE PROFILE
9600 N.

DRAWN: A.C.
TRACED: T.G.D.S.
DATE: JUNE 89
CHECKED:
GRID REFERENCE: AGD 1966

BASE PLAN No.
SURFACE PLAN No.

SCALE 1:2500 (0 50 100 metres)

FIG. 36

8497

73500mE. 72500mE. 73000mE. 73500mE. 73750mE.

65000mN. 64500mN. 64000mN. 63500mN. 63000mN.

5400N 5200N 4900N 4700N 4500N 4400N 4200N

Edbg Po Poq Pod Pos

720 760 800 680 640 600 580 520 480 440 400

Creek Montezuma Creek Concert DUNDAS RIVER

MZ 1 MZ 2 MZ 3 MZ 4 MZ 245 MZ 244 MZ 260

LEGEND

DUNDAS GROUP — BREWERY JUNCTION FORMATION

- Edbg — INTERBEDDED PURPLE FINE SANDSTONES AND SILTSTONES. MINOR GREEN SILTSTONES AND POLYMICTIC CONGLOMERATE.
- Eo [Poq] — OONAH FORMATION. INTERBEDDED QUARTZITES AND BLACK SHALES. THICK QUARTZITE BEDS (Poq) ARE SHOWN.
- Pod — MAESTRIES DOLOMITIC CONGLOMERATE. DOLOMITES AND DOLOMITIC CONGLOMERATES
- Pos — CONCERT SCHIST. FINE GRAINED PHYLLITE AND PSAMMITES.

- GEOLOGICAL BOUNDARY
- INFERRED GEOLOGICAL BOUNDARY
- FAULTS
- INFERRED FAULTS
- ADITS
- DIAMOND DRILL HOLES
- MONTEZUMA GRID (1988/89)
- ROAD

5 cm

GN TN MN

GRID DIVERGENCE 1.2°

GRID/MAGNETIC 11.6°

607290

89-2994

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

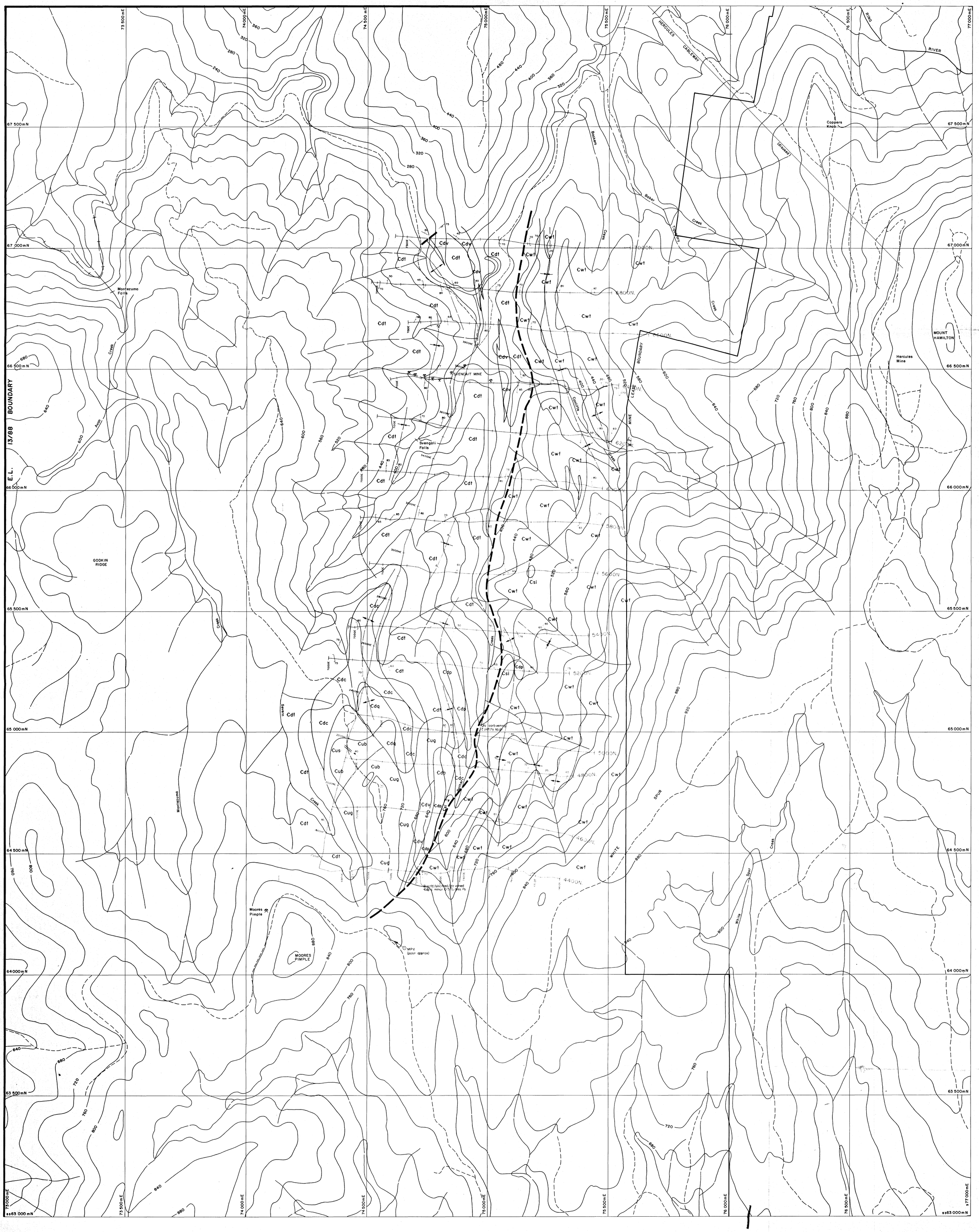
COMPILED :	A.J.C.
DRAWN :	T.G.D.S.
DATE :	MARCH '89
CHECKED :	
1:25,000 REFERENCE :	DUNDAS

MOORES PIMPLE – E.L. 13/88
DUCK CREEK PROJECT
INTERPRETATIVE GEOLOGY

BASE PLAN No. | OVERLAY PLAN No. | 250 0 250 500 1250m SCALE: 1: 2,500 | FIGURE No. 37

N.W. Coast Computer Aided Drafting Centre. Phone (004 354315) Fax. (004 354495)

8498



LEGEND

DUNDAS GROUP

- Cdv — Felsic vitric tuff and crytal vitric tuff
- Cdt — Interbedded Quartzwacke and Mudstone
- Cdg — Quartzwacke and conglomeratic Sandstone
- Cdc — Polymictic Conglomerate

WHITE SPUR FORMATION

- Cwf — Medium to coarse grained Felsic volcanic lithicwacke and felsic pumiceous mass flow tuff
- Cwt — Interbedded / turbiditic fine grained felsic lithlwacke and grey micaceous siltstone

- Cdp — Rhyolitic Quartz Porphyry, probably intrusive
- Csi — Pervasively silicified rocks
- CuS — Silicified / cherty mafic volcaniclastic siltstone
- Cub — Basalt: commonly amygdaloidal, pillowed intense pervasive qtz ± carbonate ± fuchsite alteration
- Cug — Gabbro, variably altered to qtz + carbonate ± fuchsite alteration

- Strike and Dip of Bedding, facing direction indicated
- Strike and Dip of cleavage
- Strike and Dip of fault plane
- Strike and Dip of prominent joints
- Geological Boundary, approximate, inferred
- Fault
- Fold axis, inferred
- Helipad
- Diamond Drill Hole

5 cm

607291

89-2994

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

COMPILED	WH/MW	MOORES PIMPLE - E.L. 13/88
DRAWN		RING RIVER GRID
DATE		INTERPRETATIVE GEOLOGY
CHECKED		
1:25,000 REFERENCE	DUNDAS	

BASE PLAN No.
OVERLAY PLAN No.
SCALE: 1:5000
50 0 50 100 200 METRES
FIG. 38

8499



373000E 373500E 374000E 374500E 375000E 375500E 376000E 376500E 377000E

5368000N 5367500N 5367000N 5366500N 5366000N 5365500N 5365000N 5364500N 5364000N 5363500N 5363000N

5 cm

CROUND SURVEY SPECIFICATIONS

MAGNETOMETER :	Geometrics G856 proton precession Sensitivity : 0.1 nT
STATION SPACING :	25 and 12.5 metres
DATA RECORDING :	Digitally within the magnetometer
LINE SPACING :	200 metres
BASE STATION :	Geometrics G856 proton precession Sensitivity : 0.1 nT
DATA RECORDING :	Digitally within the magnetometer every 120 seconds (Lines 4400N - 5800N) and 30 seconds (Lines 6000N - 7000N)

TOTAL MAGNETIC INTENSITY CONTOURS

Grid notation refers to Australian Map Grid Zone 55
Magnetics :Diurnally levelled
Grid mesh size :25 x 25 metres
Grid filter :Polynomial, radius 50 metres
Contour interval 5.25, and 100 nT

GN MN

MN = GN + 10.5 degrees

0.0 0.5 Km

SCALE 1:5000

607292 **89-2994**

JOB NO : 4-100
Surveyed by GEOTERREX PTY LTD : FEBRUARY 1989
Compiled by Geoterrex Pty Ltd., Sydney, NSW.
Processed using the GEONET time sharing system fig. 39

RGC EXPLORATION PTY LTD

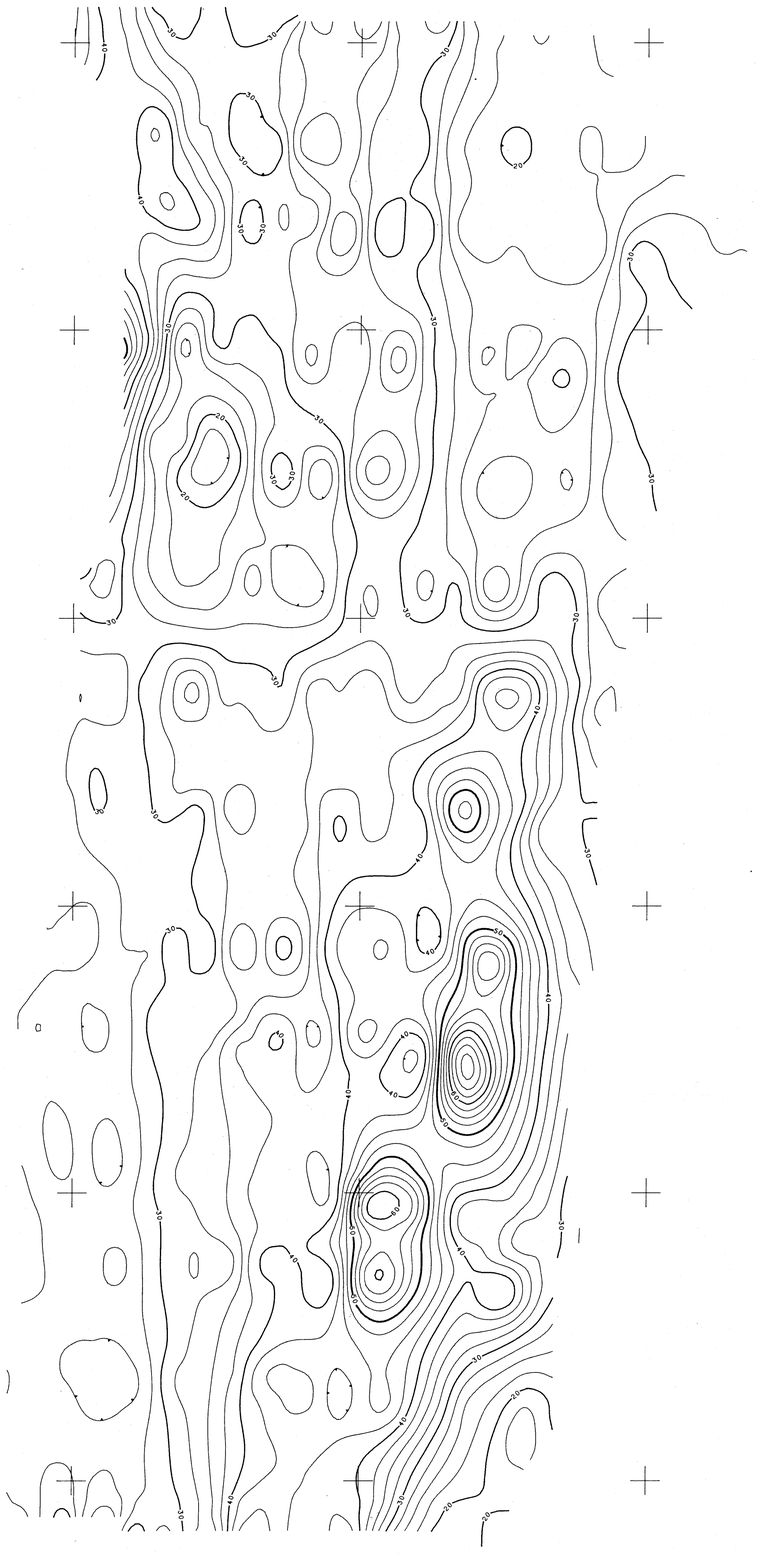
GEOLOGIST:	
DRAWN:	GTX
DATE:	APR 1989
CHECKED:	STM
1:25.000 REFERENCE:	DUNDAS

EL 13/88 TAS

TOTAL MAGNETIC INTENSITY CONTOURS

RING RIVER GRID

8500



373000E 373500E 374000E 374500E 375000E 375500E 376000E 376500E 377000E

5368000N 5367500N 5367000N 5366500N 5366000N 5365500N 5365000N 5364500N 5364000N 5363500N 5363000N

5 cm

CROUND SURVEY SPECIFICATIONS

IP TRANSMITTER :	Huntec 7.5 KVA
IP RECEIVER :	Huntec MK4
STATION SPACING :	25 metres
LINE SPACING :	200 metres
ARRAY TYPE :	Gradient
CURRENT ELECTRODES :	
LINES 4400N-5000N :	4700N.6500E-4700N.8500E
LINES 5200N-5809N :	5400N.6500E-5400N.8500E
LINES 6000N-7000N :	6500N.6525E-6500N.8525E
RECEIVER DIPOLE LENGTH :	50 metres

TOTAL CHARGEABILITY CONTOURS

Grid notation refers to Australian Map Grid Zone 55
Grid mesh size :25 x 25 metres
Grid filter :Polynomial, radius 50 metres
Contour interval 2.5.10 and 50 millivolts

GN MN

MN = GN + 10.5 degrees

0.0 0.5 Km

SCALE 1:5000

607293

JOB NO : 4-100
Surveyed by GEOTERREX PTY LTD : FEBRUARY 1989
Compiled by Geoterrex Pty Ltd.,Sydney, NSW.
Processed using the GEONET time sharing system

fig. 40

RGC EXPLORATION PTY LTD

GEOLOGIST:	
DRAWN:	GTX
DATE:	APR 1989
CHECKED:	STM
1:25,000 REFERENCE:	DUNDAS

EL 13/88 TAS

89-2994

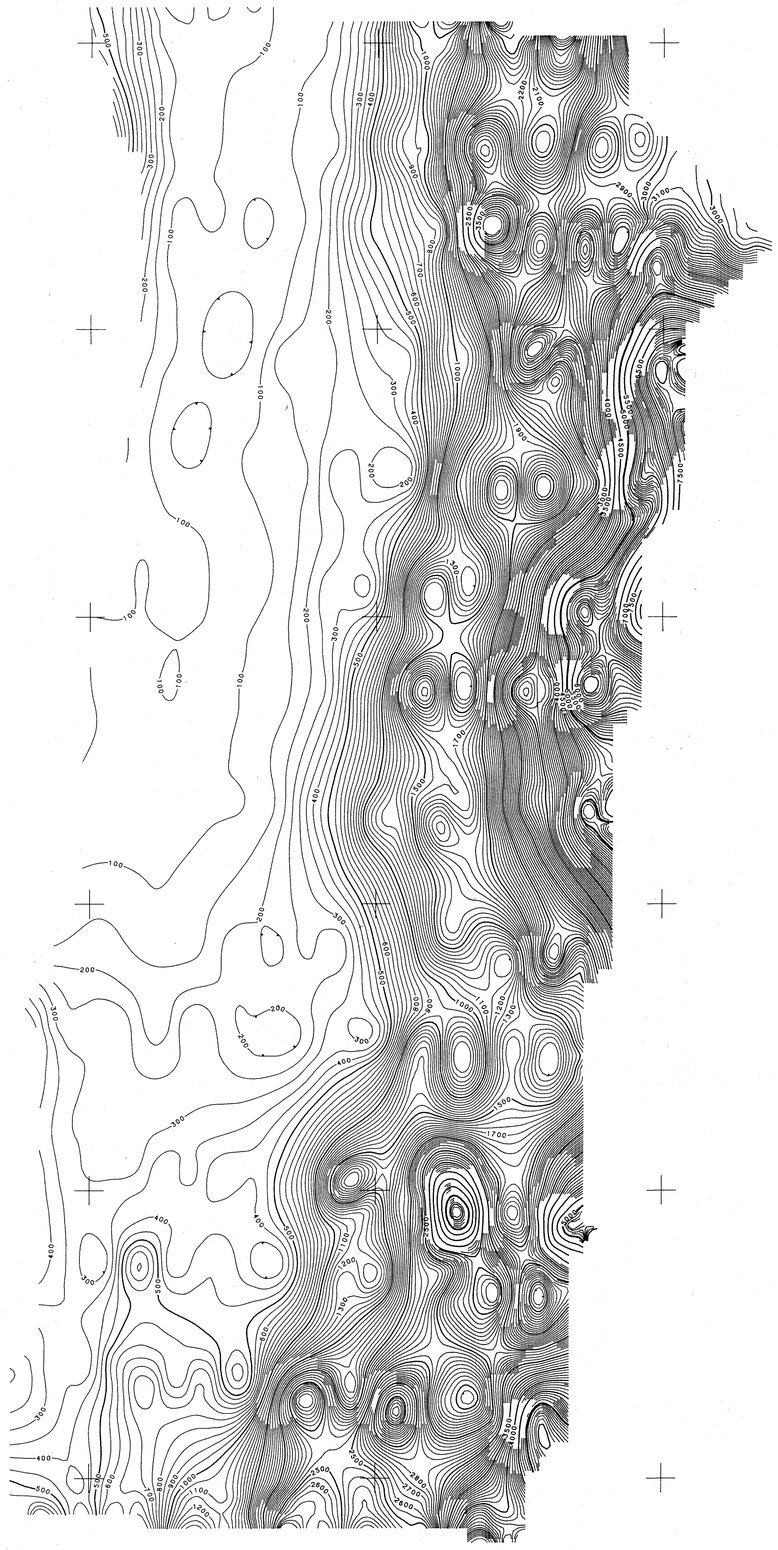
TOTAL CHARGEABILITY CONTOURS

RING RIVER GRID

1058

373000E 373500E 374000E 374500E 375000E 375500E 376000E 376500E 377000E

5368000N 5367500N 5367000N 5366500N 5366000N 5365500N 5365000N 5364500N 5364000N 5363500N 5363000N



CROUND SURVEY SPECIFICATIONS

IP TRANSMITTER :	Huntec 7.5 KVA
IP RECEIVER :	Huntec MK4
STATION SPACING :	25 metres
LINE SPACING :	200 metres
ARRAY TYPE :	Gradient
CURRENT ELECTRODES :	
LINES 4400N-5000N :	4700N.6500E-4700N.8500E
LINES 5200N-5809N :	5400N.6500E-5400N.8500E
LINES 6000N-7000N :	6500N.6525E-6500N.8525E
RECEIVER DIPOLE LENGTH :	50 metres

APPARENT RESISTIVITY CONTOURS

Grid notation refers to Australian Map Grid Zone 55
Grid mesh size :25 x 25 metres
Grid filter :Polynomial, radius 50 metres
Contour interval 50,500, and 5000 ohm metres

GN MN

MN = GN + 10.5 degrees

0.0 0.5 Km

SCALE 1:5000

5 cm

JOB NO : 4-100
Surveyed by GEOTERREX PTY LTD : FEBRUARY 1989
Compiled by Geoterrex Pty Ltd., Sydney, NSW.
Processed using the GEONET time sharing system. fig. 41

607294

RGC EXPLORATION PTY LTD

GEOLOGIST:	
DRAWN:	GTX
DATE:	APR 1989
CHECKED:	STM
1:25,000 REFERENCE:	DUNDAS

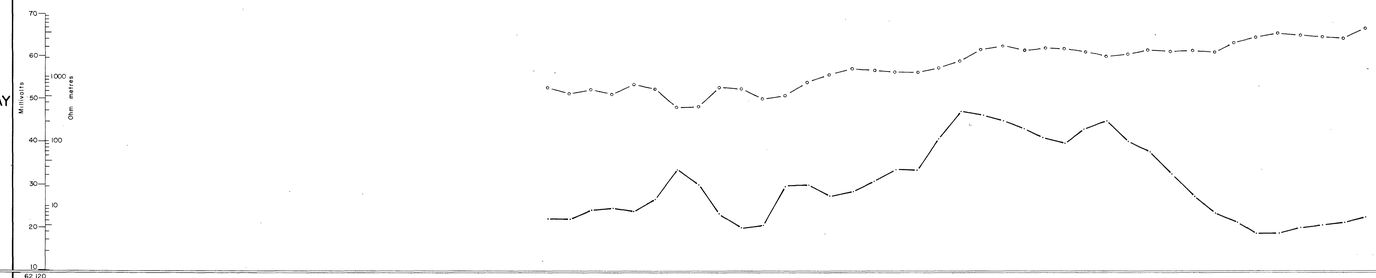
EL 13/88 TAS 89-2994

APPARENT RESISTIVITY CONTOURS

RING RIVER GRID

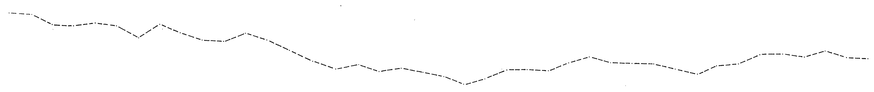
8502

GRADIENT ARRAY I.P.



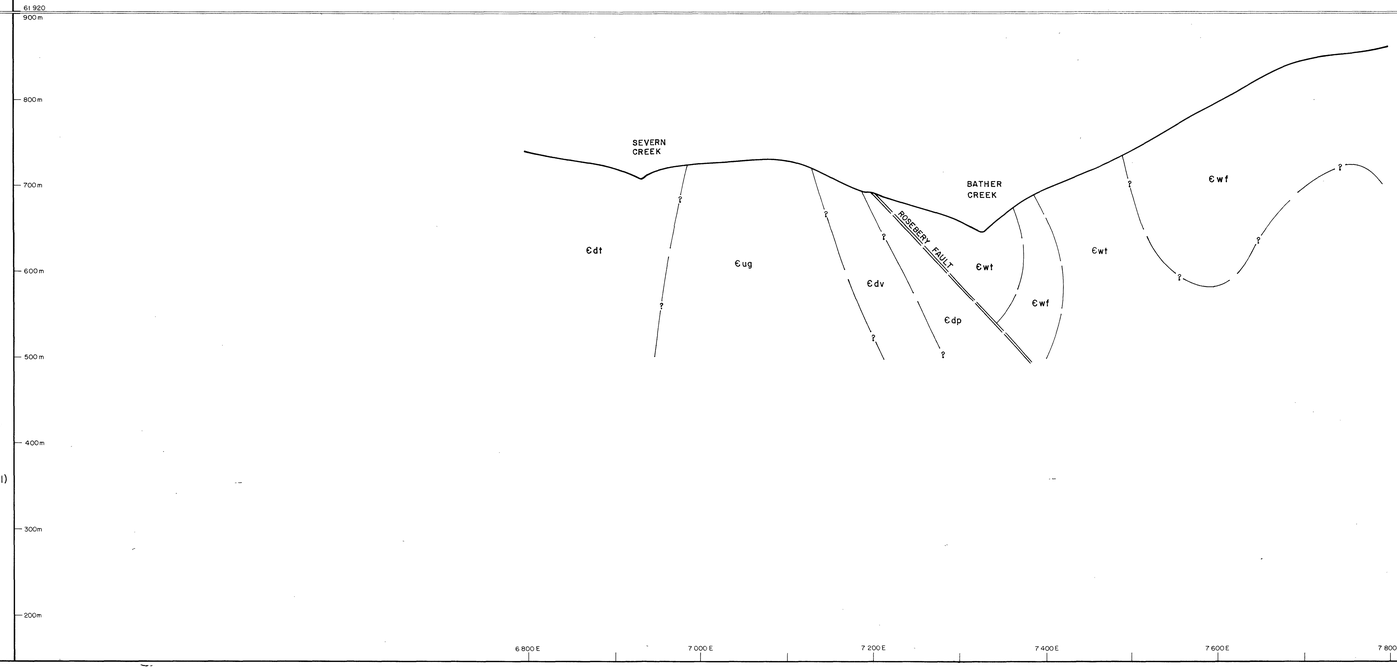
GRADIENT ARRAY I.P.

MAGNETICS (gammas)



MAGNETICS (gammas)

TOPOGRAPHY & GEOLOGY (height above sea level)



TOPOGRAPHY & GEOLOGY (height above sea level)

607295

89-2994

GEOLOGY

DUNDAS GROUP

WHITESPUR FORMATION

- Cdv — FELSIC VITRIC TUFF AND CRYSTAL TUFF
- Cdt — INTERBEDDED QUARTZWACKE AND MUDSTONE
- Cdq — QUARTZWACKE AND CONGLOMERATIC SANDSTONE
- Cdc — POLYMICTIC CONGLOMERATE
- Cwf — MEDIUM TO COARSE GRAINED FELSIC VOLCANIC LITHICWACKE AND FELSIC PUMICEOUS MASS FLOW TUFF
- Cwt — INTERBEDDED / TURBIDITIC FINE GRAINED FELSIC LITHICWACKE AND GREY MICAEOUS SILTSTONE
- Cdp — RHYOLITIC QUARTZ PORPHYRY, PROBABLY INTRUSIVE
- Csi — PERVASIVELY SILICIFIED ROCKS
- Cus — SILICIFIED/CHERTY MAFIC VOLCANICLASTIC
- Cub — BASALT, COMMONLY AMYGDALOIDAL, PILLOWED, INTENSE PERVASIVE QUARTZ + CARBONATE ± FUCHSITE ALTERATION
- Cug — GABBRO, VARIABLY ALTERED TO QUARTZ + CARBONATE ± FUCHSITE ASSEMBLAGE

GEOLOGICAL BOUNDARY, APPROXIMATE

INFERRED

FAULT

FOLD AXIS, INFERRED

MAGNETICS

GRADIENT ARRAY I.P.

Chargeability

Resistivity

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

COMPILED	A.J.C.	RING RIVER GRID
DRAWN	J.M.S.	LINE PROFILE
DATE	MAY 1989	L 4400N
CHECKED		
1:25,000 REFERENCE	DUNDAS	
BASE PLAN No.	SCALE 1 : 2500 (0 50 100 metres)	FIG. 42
OVERLAY PLAN No.		

8503

GRADIENT ARRAY I.P.

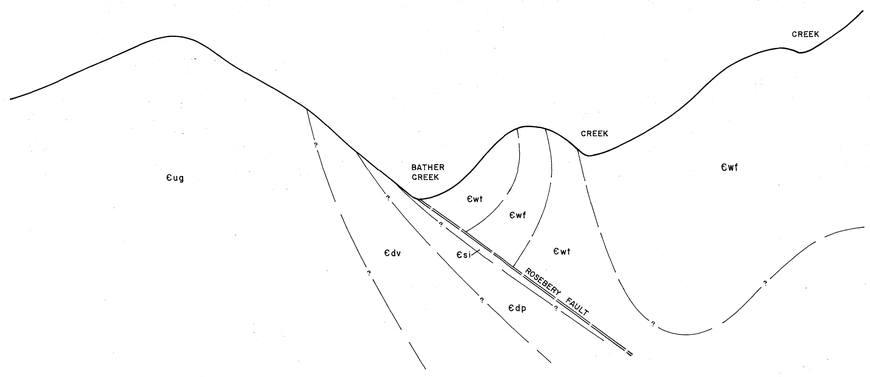
Millivolts: 70, 60, 50, 40, 30, 20, 10
Ohm. metres: 1000, 100, 10

MAGNETICS (gammas)

62 120
62 080
62 040
62 000
61 960
61 920

TOPOGRAPHY & GEOLOGY (height above sea level)

900m
800m
700m
600m
500m
400m
300m
200m



6 800 E
7 000 E
7 200 E
7 400 E
7 600 E
7 800 E
8 000 E
8 200 E

607296

89-2994

GEOLOGY

DUNDAS GROUP

PITTWATER FORMATION

- Cdv — FELSIC VITRIC TUFF AND CRYSTAL TUFF
- Cdt — INTERBEDDED QUARTZWACKE AND MUDSTONE
- Cdq — QUARTZWACKE AND CONGLOMERATIC SANDSTONE
- Cdc — POLYMICTIC CONGLOMERATE
- Cwf — MEDIUM TO COARSE GRAINED FELSIC VOLCANIC LITHICWACKE AND FELSIC PUMICEOUS MASS FLOW TUFF
- Cwt — INTERBEDDED / TURBIDITIC FINE GRAINED FELSIC LITHICWACKE AND GREY MICAEOUS SILTSTONE
- Cdp — RHYOLITIC QUARTZ PORPHYRY, PROBABLY INTRUSIVE
- Csl — PERVASIVELY SILICIFIED ROCKS
- Cus — SILICIFIED/CHERTY MAFIC VOLCANICLASTIC
- Cub — BASALT, COMMONLY AMYGDALOIDAL, PILLOWED, INTENSE PERVASIVE QUARTZ + CARBONATE ± FUCHSITE ALTERATION
- Cug — GABBRO, VARIABLY ALTERED TO QUARTZ + CARBONATE ± FUCHSITE ASSEMBLAGE

GEOLOGICAL BOUNDARY, APPROXIMATE

INFERRED

FAULT

FOLD AXIS, INFERRED

MAGNETICS

GRADIENT ARRAY I.P.

Chargeability

Resistivity

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

	COMPILED	A.J.C.
	DRAWN	J.M.S.
	DATE	MAY 1989
	CHECKED	
	1:25,000 REFERENCE	DUNDAS
BASE PLAN No.	SCALE	1 : 2500
OVERLAY PLAN No.		0 50 100 metres

RING RIVER GRID
LINE PROFILE
L 4600N

FIG. 43

8504

GRADIENT ARRAY I.P.

Millivolts: 70, 60, 50, 40, 30, 20, 10

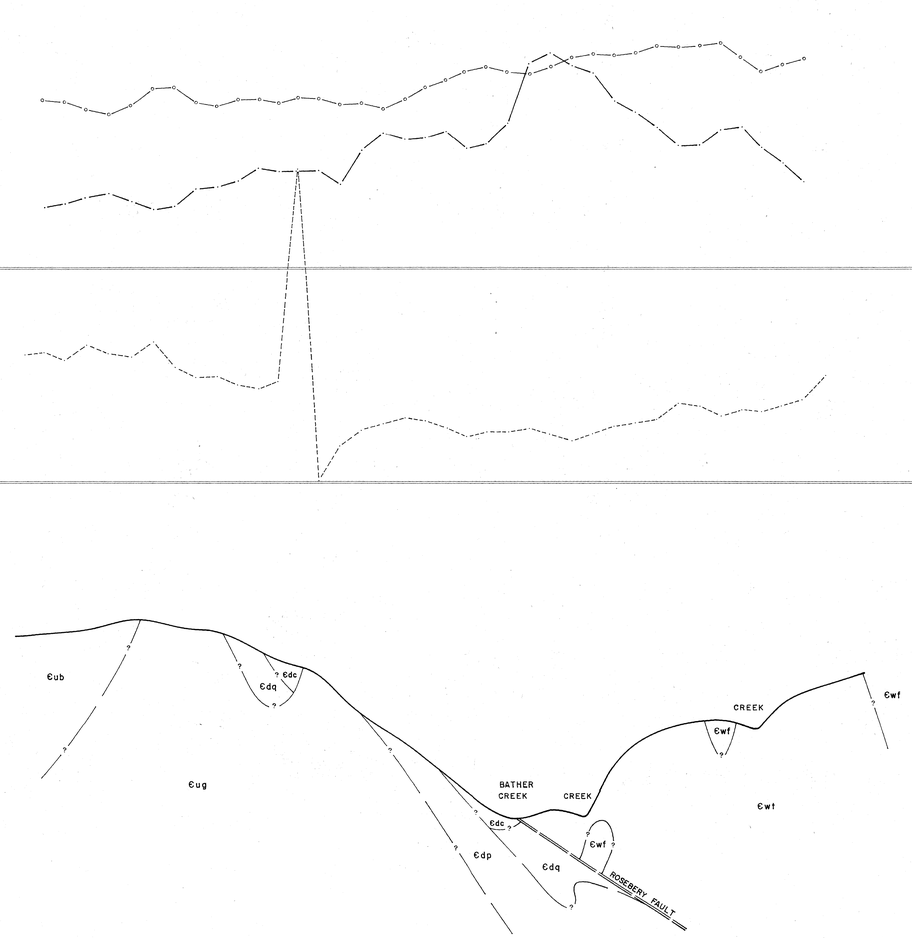
Ohm. metres: 1000, 100, 10

MAGNETICS (gammas)

62 120
62 080
62 040
62 000
61 960
61 920

TOPOGRAPHY & GEOLOGY (height above sea level)

900m
800m
700m
600m
500m
400m
300m
200m



5cm

6 800 E
7 000 E
7 200 E
7 400 E
7 600 E
7 800 E
8 000 E
8 200 E

607297

GRADIENT ARRAY I.P.

MAGNETICS (gammas)

TOPOGRAPHY & GEOLOGY (height above sea level)

GEOLOGY

DUNDAS GROUP

- Cdv — FELSIC VITRIC TUFF AND CRYSTAL TUFF
- Cdt — INTERBEDDED QUARTZWACKE AND MUDSTONE
- Cdq — QUARTZWACKE AND CONGLOMERATIC SANDSTONE
- Cdc — POLYMICTIC CONGLOMERATE

WHITESTON VOLCANICS

- Cwf — MEDIUM TO COARSE GRAINED FELSIC VOLCANIC LITHICWACKE AND FELSIC PUMICEOUS MASS FLOW TUFF
- Cwt — INTERBEDDED / TURBIDITIC FINE GRAINED FELSIC LITHICWACKE AND GREY MICAEOUS SILTSTONE

- Cdp — RHYOLITIC QUARTZ PORPHYRY, PROBABLY INTRUSIVE
- Csi — PERVASIVELY SILICIFIED ROCKS
- Cus — SILICIFIED/CHERTY MAFIC VOLCANICLASTIC
- Cub — BASALT, COMMONLY AMYGDALOIDAL, PILLOWED, INTENSE PERVASIVE QUARTZ + CARBONATE ± FUCHSITE ALTERATION
- Cug — GABBRO, VARIABLY ALTERED TO QUARTZ + CARBONATE ± FUCHSITE ASSEMBLAGE

GEOLOGICAL BOUNDARY, APPROXIMATE

INFERRED

FAULT

FOLD AXIS, INFERRED

MAGNETICS

GRADIENT ARRAY I.P.

Chargeability

Resistivity

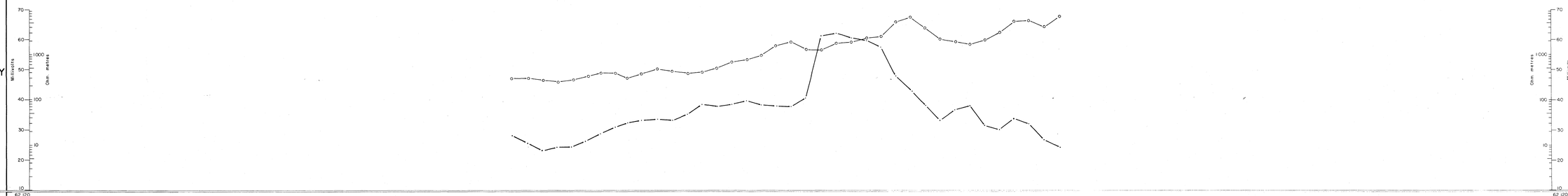
RGC EXPLORATION PTY. LIMITED
(INC. IN N.S.W.)

COMPILED	A.J.C.	RING RIVER GRID
DRAWN	J.M.S.	LINE PROFILE
DATE	MAY 1989	L 4800N
CHECKED		
1:25,000 REFERENCE	DUNDAS	
BASE PLAN No.	SCALE 1 : 2 500	0 50 100 metres
OVERLAY PLAN No.		FIG. 44

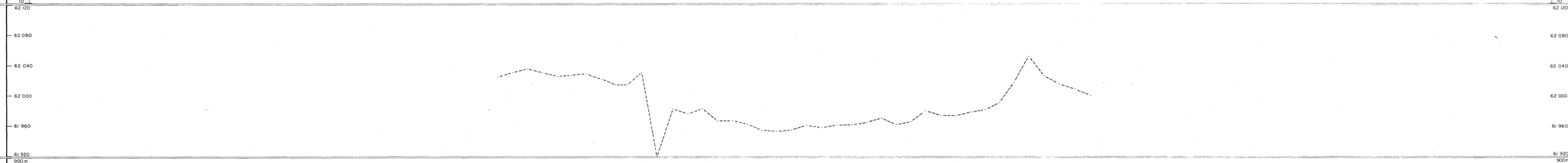
89-2994

8505

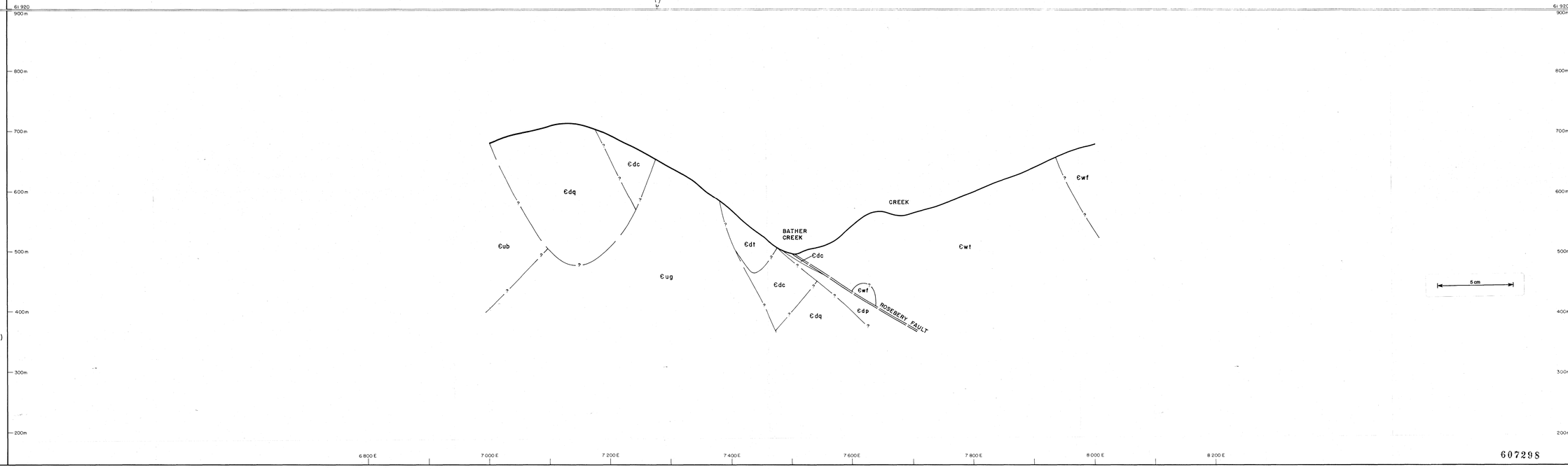
GRADIENT ARRAY I.P.



MAGNETICS (gammas)



TOPOGRAPHY & GEOLOGY (height above sea level)



607298

GEOLOGY

DUNDAS GROUP

- Edv — FELSIC VITRIC TUFF AND CRYSTAL TUFF
- Edt — INTERBEDDED QUARTZWACKE AND MUDSTONE
- Edq — QUARTZWACKE AND CONGLOMERATIC SANDSTONE
- Edc — POLYMICTIC CONGLOMERATE

WHITESPUR FORMATION

- Ewf — MEDIUM TO COARSE GRAINED FELSIC VOLCANIC LITHICWACKE AND FELSIC PUMICEOUS MASS FLOW TUFF
- Ewt — INTERBEDDED / TURBIDITIC FINE GRAINED FELSIC LITHICWACKE AND GREY MICAEOUS SILTSTONE

- Edp — RHYOLITIC QUARTZ PORPHYRY, PROBABLY INTRUSIVE
- Esi — PERVASIVELY SILICIFIED ROCKS
- Eus — SILICIFIED/CHERTY MAFIC VOLCANICLASTIC
- Eub — BASALT, COMMONLY AMYGDALOIDAL, PILLOWED, INTENSE PERVASIVE QUARTZ + CARBONATE ± FUCHSITE ALTERATION
- Eug — GABBRO, VARIABLY ALTERED TO QUARTZ + CARBONATE ± FUCHSITE ASSEMBLAGE

- GEOLOGICAL BOUNDARY, APPROXIMATE
- INFERRED
- FAULT
- FOLD AXIS, INFERRED

MAGNETICS

GRADIENT ARRAY I.P.

- Chargeability
- Resistivity

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

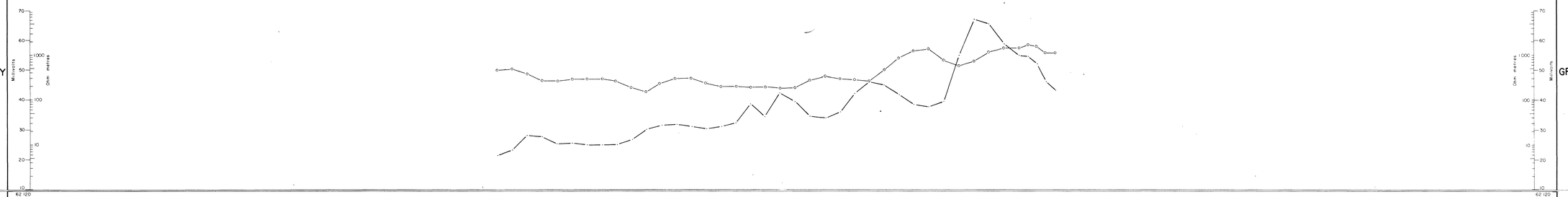
COMPILED	A.J.C.	RING RIVER GRID
DRAWN	J.M.S.	LINE PROFILE
DATE	MAY 1989	L 5000N
CHECKED		
1:25,000 REFERENCE	DUNDAS	

BASE PLAN No.
OVERLAY PLAN No.
SCALE 1 : 2 500 (0 50 100 metres)
FIG. 45

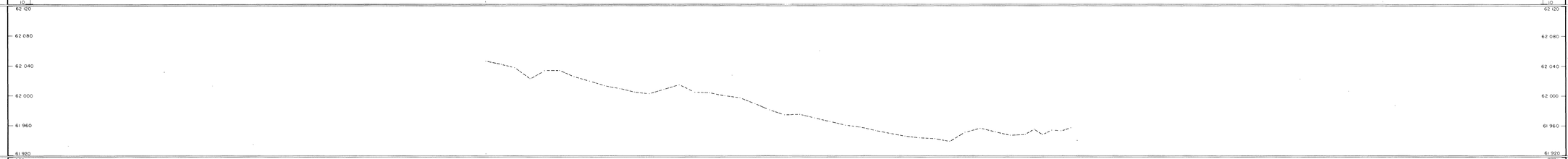
89-2994

8506

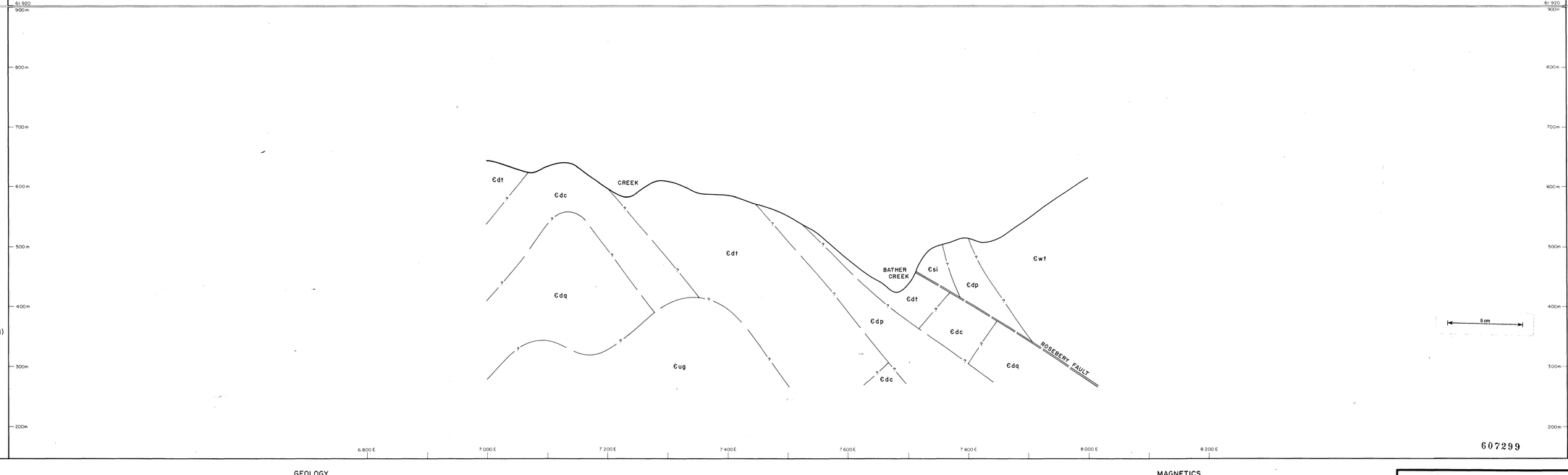
GRADIENT ARRAY I.P.



MAGNETICS (gammas)



TOPOGRAPHY & GEOLOGY (height above sea level)



607299

89-2994

GEOLOGY

DUNDAS GROUP

WHITESPUR FORMATION

- Edv — FELSIC VITRIC TUFF AND CRYSTAL TUFF
- Edt — INTERBEDDED QUARTZWACKE AND MUDSTONE
- Edq — QUARTZWACKE AND CONGLOMERATIC SANDSTONE
- Edc — POLYMICTIC CONGLOMERATE
- Ewf — MEDIUM TO COARSE GRAINED FELSIC VOLCANIC LITHICWACKE AND FELSIC PUMICEOUS MASS FLOW TUFF
- Ewt — INTERBEDDED / TURBIDITIC FINE GRAINED FELSIC LITHICWACKE AND GREY MICAEOUS SILTSTONE
- Edp — RHYOLITIC QUARTZ PORPHYRY, PROBABLY INTRUSIVE
- Esi — PERVASIVELY SILICIFIED ROCKS
- Eus — SILICIFIED/CHERTY MAFIC VOLCANICLASTIC
- Eub — BASALT, COMMONLY AMYGDALOIDAL, PILLOWED, INTENSE PERVASIVE QUARTZ + CARBONATE ± FUCHSITE ALTERATION
- Eug — GABBRO, VARIABLY ALTERED TO QUARTZ + CARBONATE ± FUCHSITE ASSEMBLAGE

GEOLOGICAL BOUNDARY, APPROXIMATE

INFERRED

FAULT

FOLD AXIS, INFERRED

MAGNETICS

GRADIENT ARRAY I.P.

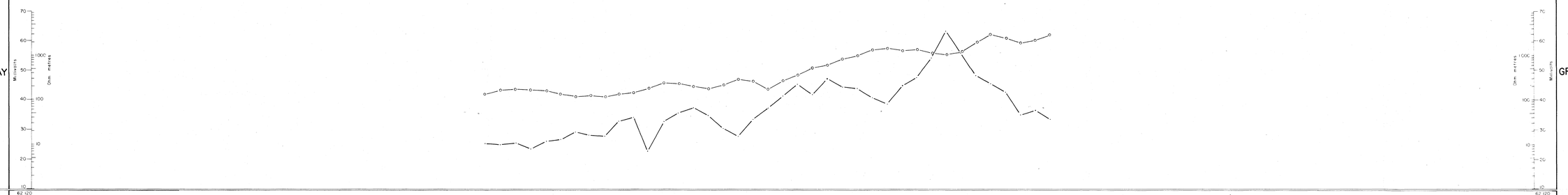
Chargeability

Resistivity

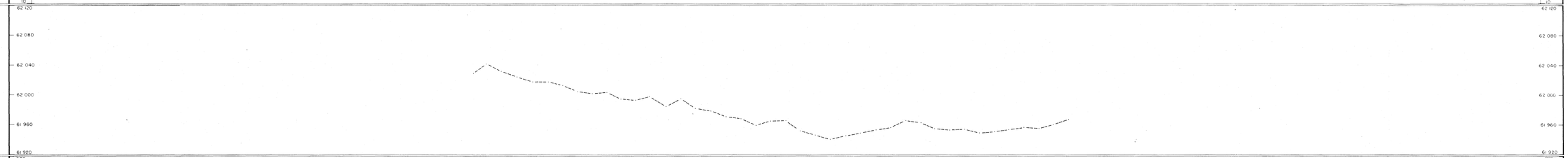
RGC EXPLORATION PTY. LIMITED (INC. IN N.S.W.)		
	COMPILED	A.J.C.
	DRAWN	J.M.S.
	DATE	MAY 1989
	CHECKED	
	1:25,000 REFERENCE	DUNDAS
RING RIVER GRID LINE PROFILE L 5200N		
BASE PLAN No.	SCALE	1 : 2 500 (0, 50, 100 metres)
OVERLAY PLAN No.	FIG.	46

8507

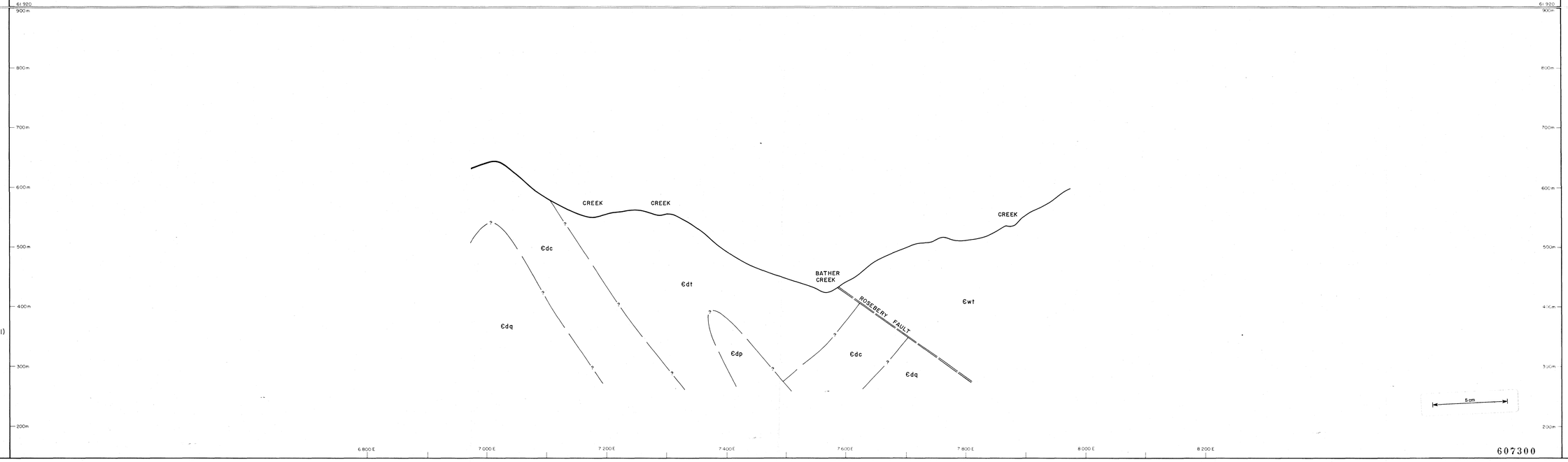
GRADIENT ARRAY I.P.



MAGNETICS (gammas)



TOPOGRAPHY & GEOLOGY (height above sea level)



607300

89-2994

GEOLOGY

DUNDAS GROUP

WHITESPUR FORMATION

- Edy — FELSIC VITRIC TUFF AND CRYSTAL TUFF
- Edt — INTERBEDDED QUARTZWACKE AND MUDSTONE
- Edq — QUARTZWACKE AND CONGLOMERATIC SANDSTONE
- Edc — POLYMICTIC CONGLOMERATE
- Ewf — MEDIUM TO COARSE GRAINED FELSIC VOLCANIC LITHICWACKE AND FELSIC PUMICEOUS MASS FLOW TUFF
- Ewt — INTERBEDDED / TURBIDITIC FINE GRAINED FELSIC LITHICWACKE AND GREY MICAEOUS SILTSTONE
- Edp — RHYOLITIC QUARTZ PORPHYRY, PROBABLY INTRUSIVE
- Esi — PERVASIVELY SILICIFIED ROCKS
- Eus — SILICIFIED/CHERTY MAFIC VOLCANICLASTIC
- Eub — BASALT, COMMONLY AMYGDALOIDAL, PILLOWED, INTENSE PERVASIVE QUARTZ + CARBONATE ± FUCHSITE ALTERATION
- Eug — GABBRO, VARIABLY ALTERED TO QUARTZ + CARBONATE ± FUCHSITE ASSEMBLAGE

GEOLOGICAL BOUNDARY, APPROXIMATE

INFERRED

FAULT

FOLD AXIS, INFERRED

MAGNETICS

GRADIENT ARRAY I.P.

Chargeability

Resistivity

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

COMPILED	A. J. C.	RING RIVER GRID
DRAWN	J. M. S.	LINE PROFILE
DATE	MAY 1989	L 5400N
CHECKED		
1:25,000 REFERENCE	DUNDAS	

BASE PLAN No.

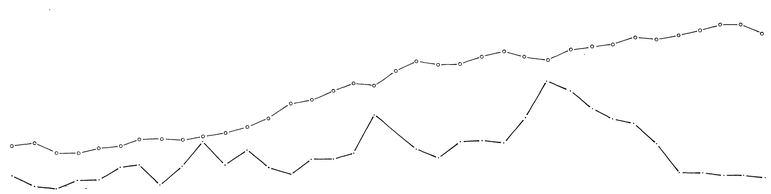
OVERLAY PLAN No.

SCALE 1 : 2500 (0 50 100 metres)

FIG. 47

GRADIENT ARRAY I.P.

Millivolts: 70, 60, 50, 40, 30, 20, 10
Ohm. metres: 1000, 100, 10



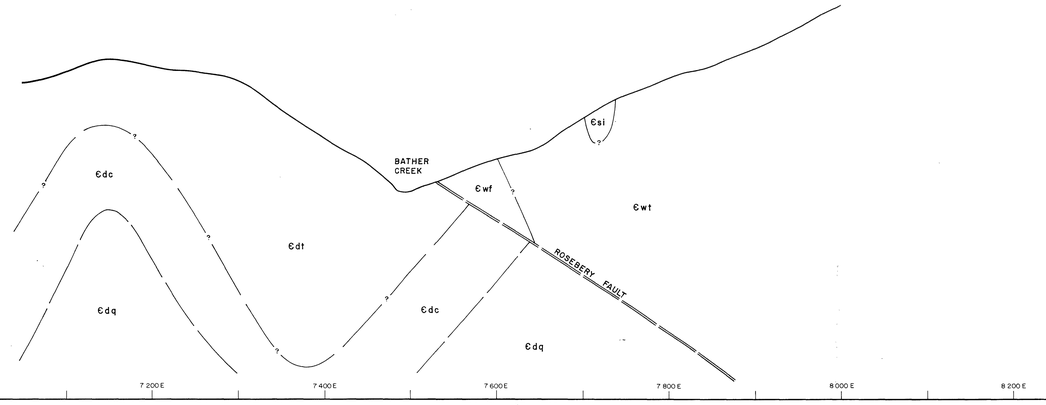
MAGNETICS (gammas)

62 120
62 080
62 040
62 000
61 960
61 920



TOPOGRAPHY & GEOLOGY (height above sea level)

900m
800m
700m
600m
500m
400m
300m
200m



6 800 E
7 000 E
7 200 E
7 400 E
7 600 E
7 800 E
8 000 E
8 200 E

607301

89-2994

GEOLOGY

DUNDAS GROUP

WHITESPUR FORMATION

- Cdv — FELSIC VITRIC TUFF AND CRYSTAL TUFF
- Cdt — INTERBEDDED QUARTZWACKE AND MUDSTONE
- Cdq — QUARTZWACKE AND CONGLOMERATIC SANDSTONE
- Cdc — POLYMICTIC CONGLOMERATE
- Cwf — MEDIUM TO COARSE GRAINED FELSIC VOLCANIC LITHICWACKE AND FELSIC PUMICEOUS MASS FLOW TUFF
- Cwt — INTERBEDDED / TURBIDITIC FINE GRAINED FELSIC LITHICWACKE AND GREY MICACEOUS SILTSTONE
- Cdp — RHYOLITIC QUARTZ PORPHYRY, PROBABLY INTRUSIVE
- Csi — PERVASIVELY SILICIFIED ROCKS
- Cus — SILICIFIED/CHERTY MAFIC VOLCANICLASTIC
- Cub — BASALT, COMMONLY AMYGDALOIDAL, PILLOWED; INTENSE PERVASIVE QUARTZ + CARBONATE ± FUCHSITE ALTERATION
- Cug — GABBRO, VARIABLY ALTERED TO QUARTZ + CARBONATE ± FUCHSITE ASSEMBLAGE

GEOLOGICAL BOUNDARY, APPROXIMATE
INFERRED
FAULT
FOLD AXIS, INFERRED

MAGNETICS

GRADIENT ARRAY I.P.

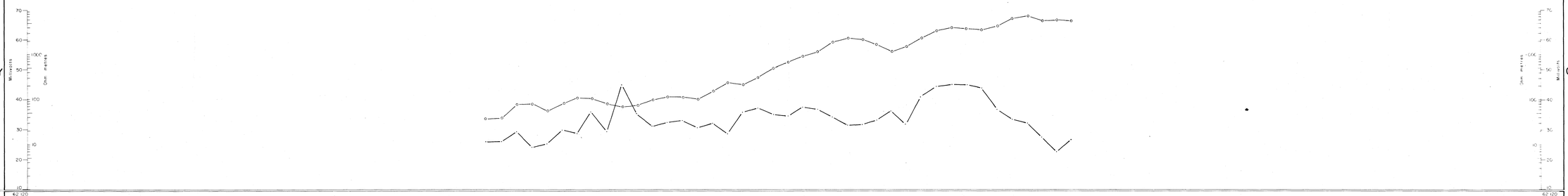
Chargeability
Resistivity

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

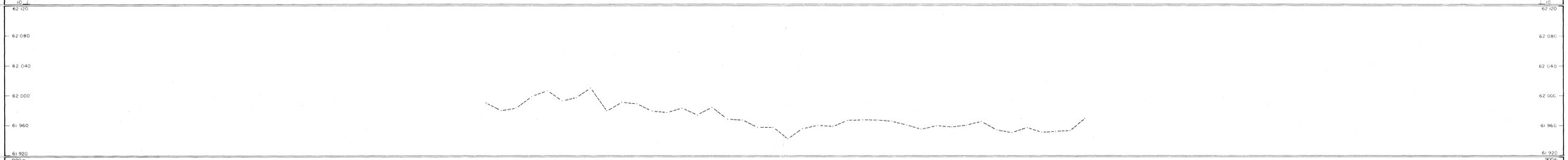
COMPILED	A.J.C.	RING RIVER GRID
DRAWN	J.M.S.	LINE PROFILE
DATE	MAY 1989	L 5600N
CHECKED		
1:25,000 REFERENCE	DUNDAS	
BASE PLAN No.	SCALE 1 : 2500 (0, 50, 100 metres)	FIG. 48
OVERLAY PLAN No.		

(8509

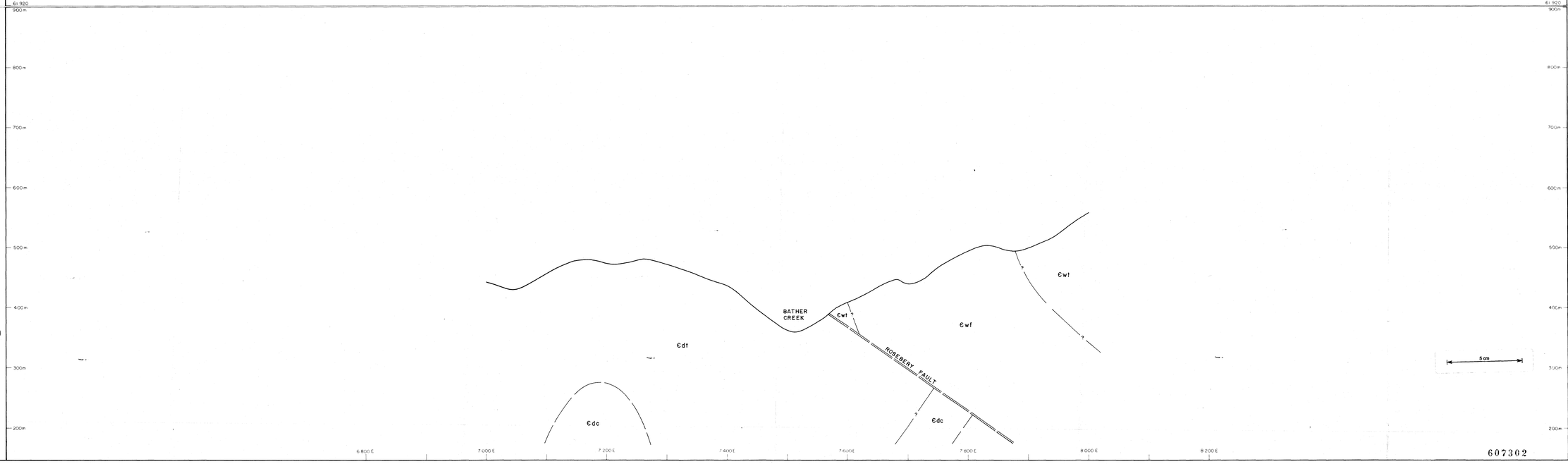
GRADIENT ARRAY I.P.



MAGNETICS (gammas)



TOPOGRAPHY & GEOLOGY (height above sea level)



607302

89-2994

GEOLOGY

DUNDAS GROUP

WHITESPUR FORMATION

- Eds — FELSIC VITRIC TUFF AND CRYSTAL TUFF
- Edt — INTERBEDDED QUARTZWACKE AND MUDSTONE
- Edq — QUARTZWACKE AND CONGLOMERATIC SANDSTONE
- Edc — POLYMICTIC CONGLOMERATE
- Ewf — MEDIUM TO COARSE GRAINED FELSIC VOLCANIC LITHICWACKE AND FELSIC PUMICEOUS MASS FLOW TUFF
- Ewt — INTERBEDDED / TURBIDITIC FINE GRAINED FELSIC LITHICWACKE AND GREY MICAEOUS SILTSTONE
- Edp — RHYOLITIC QUARTZ PORPHYRY, PROBABLY INTRUSIVE
- Esi — PERVASIVELY SILICIFIED ROCKS
- Eus — SILICIFIED/CHERTY MAFIC VOLCANICLASTIC
- Eub — BASALT, COMMONLY AMYGDALOIDAL, PILLOWED, INTENSE PERVASIVE QUARTZ + CARBONATE ± FUCHSITE ALTERATION
- Eug — GABBRO, VARIABLY ALTERED TO QUARTZ + CARBONATE ± FUCHSITE ASSEMBLAGE

GEOLOGICAL BOUNDARY, APPROXIMATE / INFERRED

FAULT

FOLD AXIS, INFERRED

MAGNETICS

GRADIENT ARRAY I.P.

Chargeability

Resistivity

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

COMPILED	A. J. C.	RING RIVER GRID
DRAWN	J. M. S.	LINE PROFILE
DATE	MAY 1989	L 5800 N
CHECKED		
1:25,000 REFERENCE	DUNDAS	

BASE PLAN No.

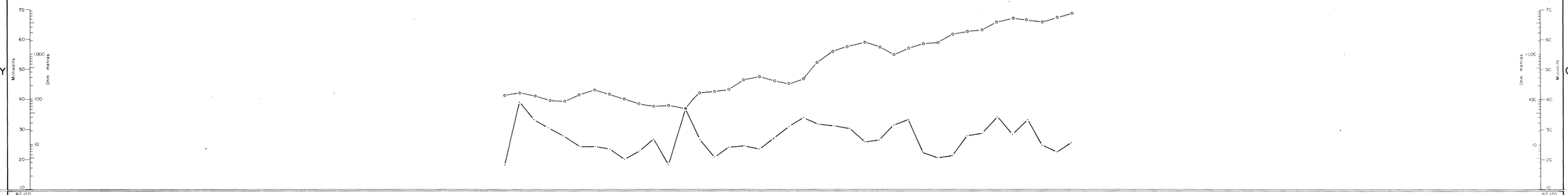
OVERLAY PLAN No.

SCALE 1 : 2500 (0 50 100 metres)

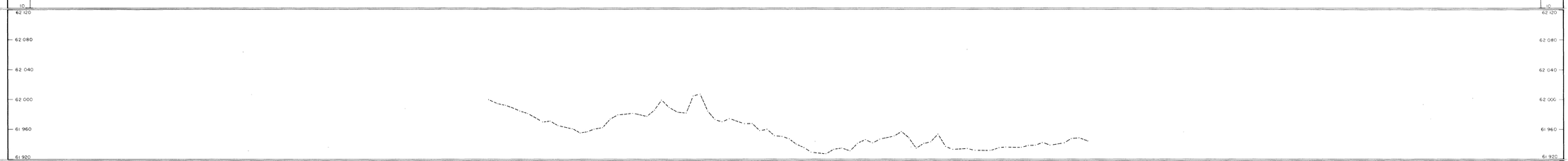
FIG. 49

8510

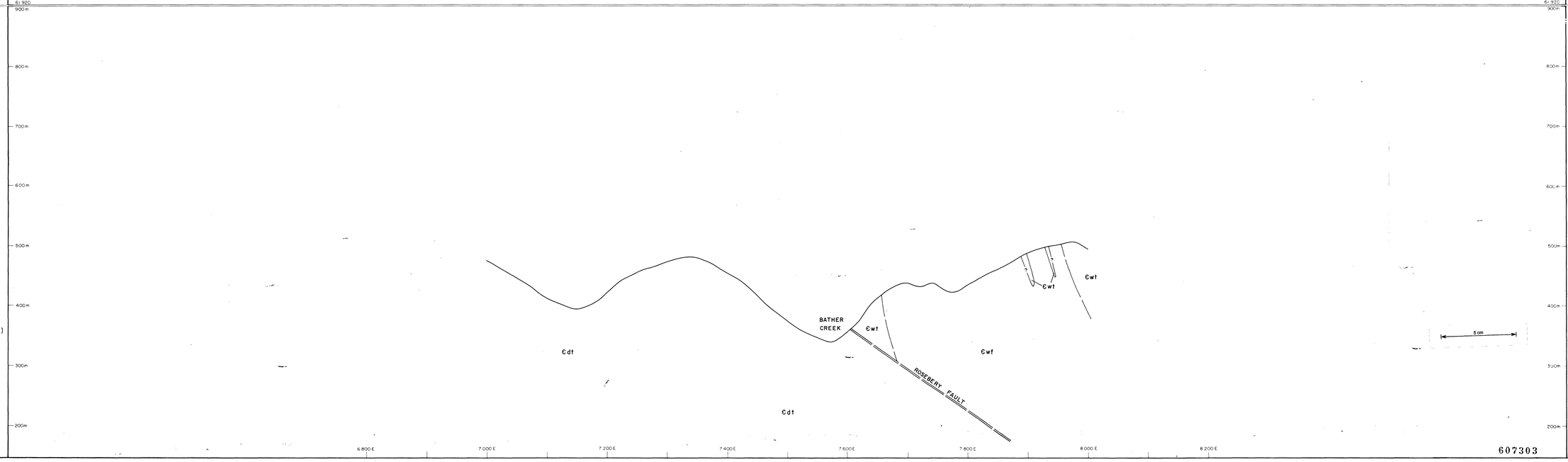
GRADIENT ARRAY I.P.



MAGNETICS (gammas)



TOPOGRAPHY & GEOLOGY (height above sea level)



607303

89-2994

GEOLOGY

DUNDAS GROUP

- Cdv — FELSIC VITRIC TUFF AND CRYSTAL TUFF
- Cdt — INTERBEDDED QUARTZWACKE AND MUDSTONE
- Cdq — QUARTZWACKE AND CONGLOMERATIC SANDSTONE
- Cdc — POLYMICTIC CONGLOMERATE

WHITESPUR FORMATION

- Cwf — MEDIUM TO COARSE GRAINED FELSIC VOLCANIC LITHICWACKE AND FELSIC PUMICEOUS MASS FLOW TUFF
- Cwt — INTERBEDDED / TURBIDITIC FINE GRAINED FELSIC LITHICWACKE AND GREY MICACEOUS SILTSTONE

- Cdp — RHYOLITIC QUARTZ PORPHYRY, PROBABLY INTRUSIVE
- Cs↓ — PERVASIVELY SILICIFIED ROCKS
- Cus — SILICIFIED/CHERTY MAFIC VOLCANICLASTIC
- Cub — BASALT, COMMONLY AMYGDALOIDAL, PILLOWED, INTENSE PERVASIVE QUARTZ + CARBONATE ± FUCHSITE ALTERATION
- Cug — GABBRO, VARIABLY ALTERED TO QUARTZ + CARBONATE ± FUCHSITE ASSEMBLAGE

- GEOLOGICAL BOUNDARY, APPROXIMATE
- INFERRED
- FAULT
- FOLD AXIS, INFERRED

MAGNETICS

GRADIENT ARRAY I.P.

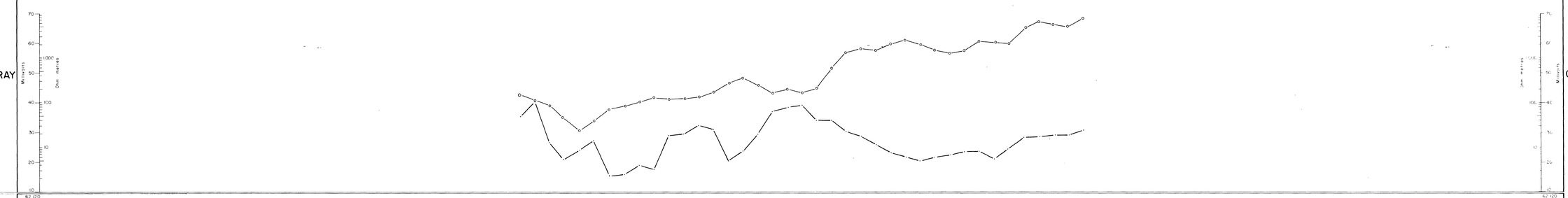
- Chargeability
- Resistivity

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

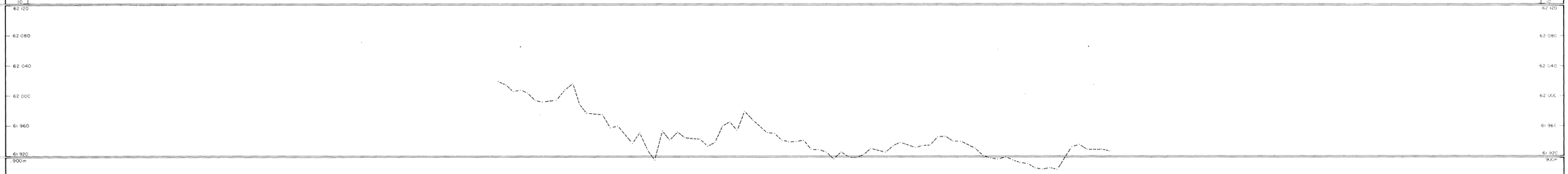
COMPILED	A.J.C.	RING RIVER GRID
DRAWN	J.M.S.	LINE PROFILE
DATE	MAY 1989	L 6000N
CHECKED		
1:25,000 REFERENCE	DUNDAS	
BASE PLAN No.		
OVERLAY PLAN No.		
SCALE 1 : 2500	0 50 100 metres	FIG. 50

3511

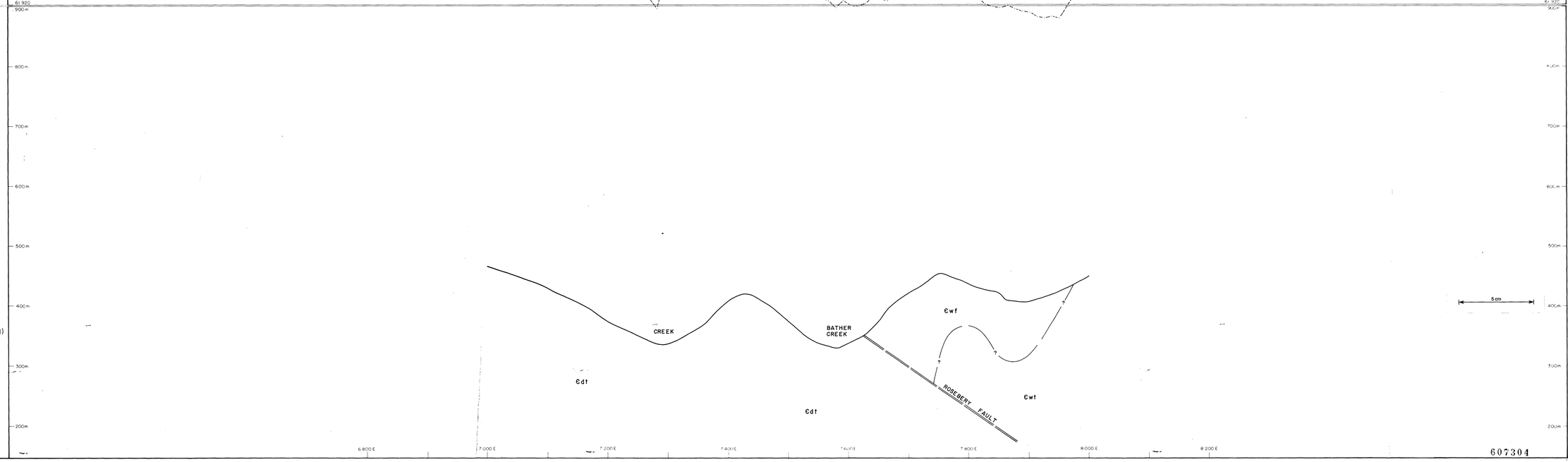
GRADIENT ARRAY I.P.



MAGNETICS (gammas)



TOPOGRAPHY & GEOLOGY (height above sea level)



607304

89-2994

GEOLOGY

DUNDAS GROUP
WHITESPUR FORMATION

- Cds — FELSIC VITRIC TUFF AND CRYSTAL TUFF
- Cdt — INTERBEDDED QUARTZWACKE AND MUDSTONE
- Cdg — QUARTZWACKE AND CONGLOMERATIC SANDSTONE
- Cdc — POLYMICTIC CONGLOMERATE
- Cwf — MEDIUM TO COARSE GRAINED FELSIC VOLCANIC LITHICWACKE AND FELSIC PUMICEOUS MASS FLOW TUFF
- Cwt — INTERBEDDED/TURBIDITIC FINE GRAINED FELSIC LITHICWACKE AND GREY MICACEOUS SILTSTONE
- Cqp — RHYOLITIC QUARTZ PORPHYRY, PROBABLY INTRUSIVE
- Csi — PERVASIVELY SILICIFIED ROCKS
- Cus — SILICIFIED/CHERTY MAFIC VOLCANICLASTIC
- Cub — BASALT, COMMONLY AMYGDALOIDAL, PILLOWED, INTENSE PERVASIVE QUARTZ + CARBONATE ± FUCHSITE ALTERATION
- Cug — GABBRO, VARIABLY ALTERED TO QUARTZ + CARBONATE ± FUCHSITE ASSEMBLAGE

GEOLOGICAL BOUNDARY, APPROXIMATE / INFERRED

FAULT

FOLD AXIS, INFERRED

MAGNETICS

GRADIENT ARRAY I.P.

Chargeability

Resistivity

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

COMPILED	A.J.C.	RING RIVER GRID
DRAWN	J.M.S.	LINE PROFILE
DATE	MAY 1989	L 6200N
CHECKED		
1:25,000 REFERENCE	DUNDAS	

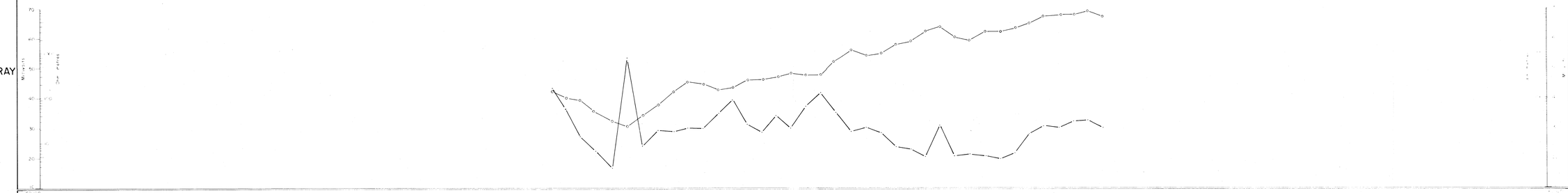
BASE PLAN No.
OVERLAY PLAN No.

SCALE 1 : 2500 (0 50 100 metres)

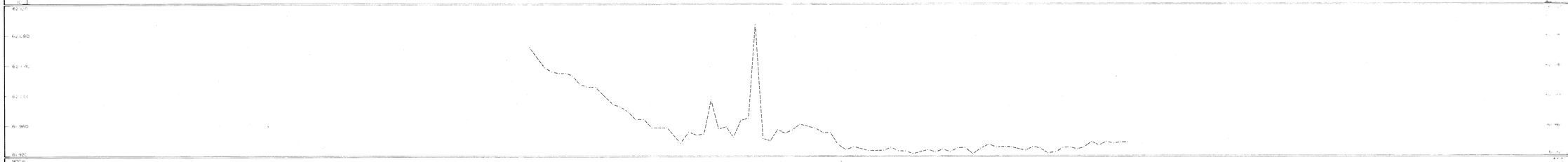
FIG. 5

8512

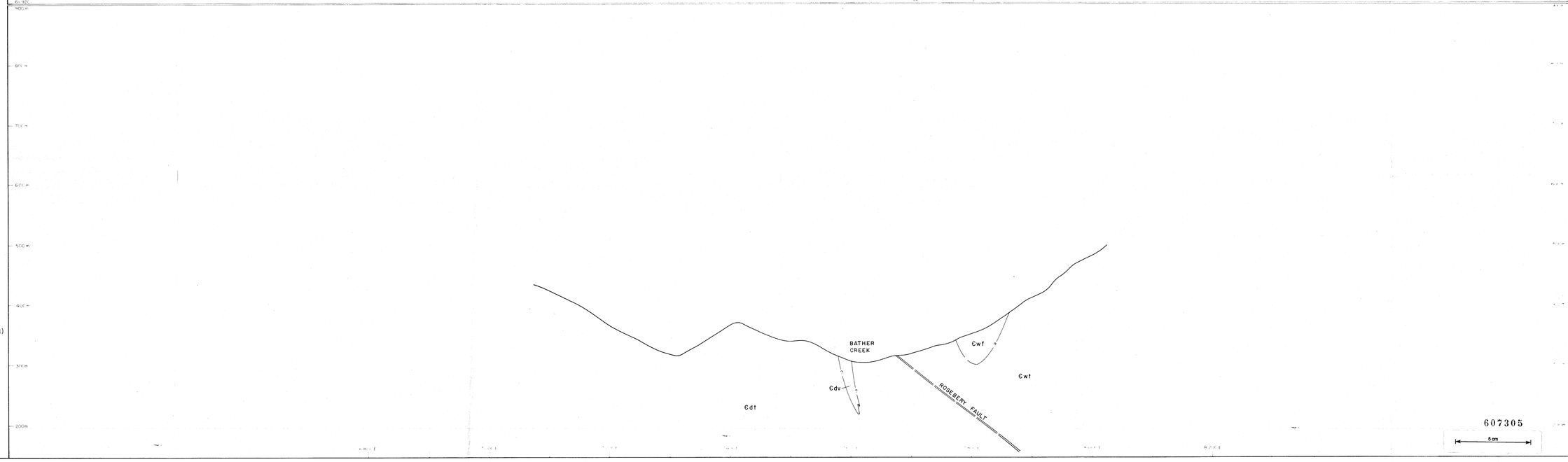
GRADIENT ARRAY I.P.



MAGNETICS (gammas)



TOPOGRAPHY & GEOLOGY (height above sea level)



GRADIENT ARRAY I.P.

MAGNETICS (gammas)

TOPOGRAPHY & GEOLOGY (height above sea level)

89-2994

GEOLOGY

- Cwf — FELSIC VITRIC TUFF AND CRYSTAL TUFF
- Cwi — INTERBEDDED QUARTZWACKE AND SILTSTONE
- Cws — QUARTZWACKE AND SUBLITHIC SANDSTONE
- Cwp — POLYMICTIC CONGLOMERATE
- Cwt — MEDIUM TO COARSE GRAINED FELSIC VOLCANIC THEWACKE AND FELSIC PUMICEOUS MUDSTONE & TUFF
- Cwt — INTERBEDDED FUNNOTIC FINE GRAINED FELSIC LITHWACKE AND GREY MICACEOUS SILTSTONE
- Cm — [illegible]
- Cs — [illegible]
- Cvs — [illegible]
- Cvl — BASALT, 2-5MM PLAGIOCLASE [illegible]
- Cvd — [illegible]
- FAULT
- [illegible]

MAGNETICS

GRADIENT ARRAY I.P.

— — — Chargeability

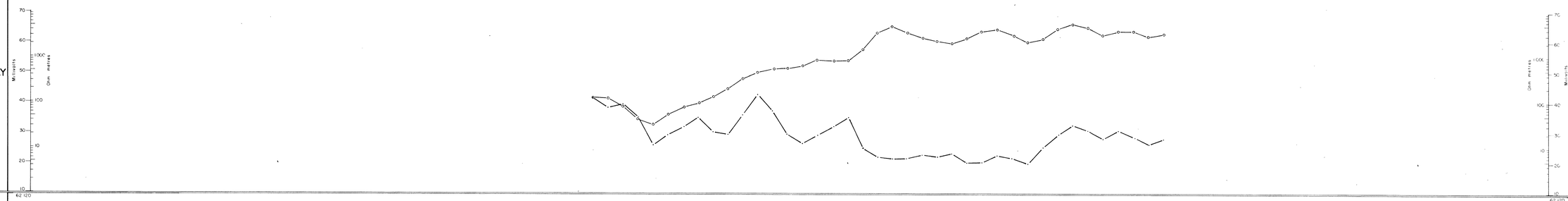
— — — Resistivity

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

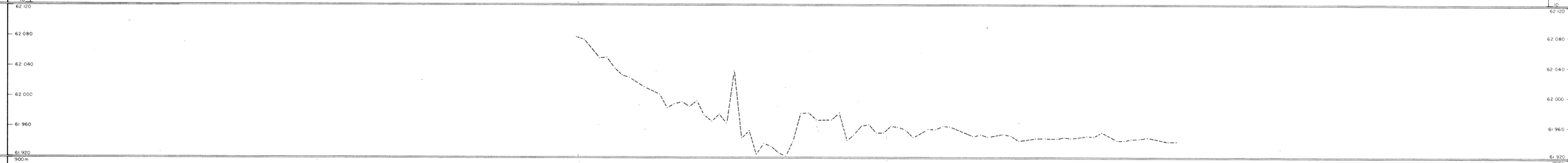
COMPILED	A.J.C.	RING RIVER GRID
DRAWN	J.M.S.	LINE PROFILE
DATE	MAY 1989	L 6400N
CHECKED		
1:25,000 REFERENCE	DUNDAS	
BASE PLAN No.		SCALE 1:2500 (0 50 100 metres)
OVERLAY PLAN No.		FIG. 52

8513

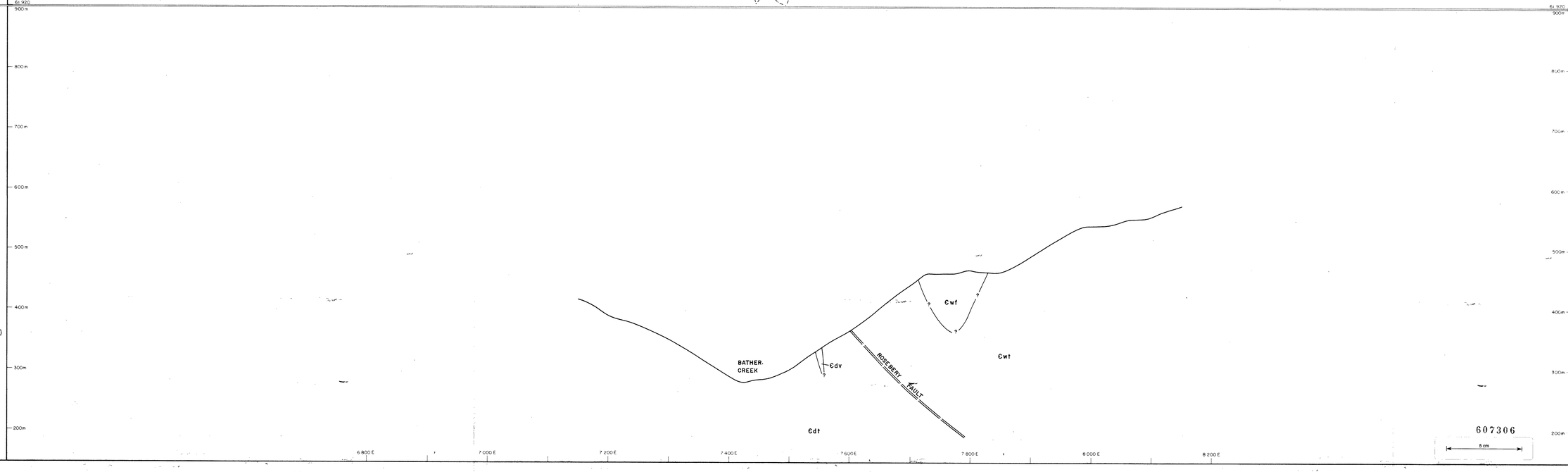
GRADIENT ARRAY I.P.



MAGNETICS (gammas)



TOPOGRAPHY & GEOLOGY (height above sea level)



607306

5 cm

GRADIENT ARRAY I.P.

MAGNETICS (gammas)

TOPOGRAPHY & GEOLOGY (height above sea level)

89-2994

GEOLOGY

DUNDAS GROUP

- Cdv — FELSIC VITRIC TUFF AND CRYSTAL TUFF
- Cdt — INTERBEDDED QUARTZWACKE AND MUDSTONE
- Cdq — QUARTZWACKE AND CONGLOMERATIC SANDSTONE
- Cdc — POLYMICTIC CONGLOMERATE

WHITESPOON FORMATION

- Cwf — MEDIUM TO COARSE GRAINED FELSIC VOLCANIC LITHICWACKE AND FELSIC PUMICEOUS MASS FLOW TUFF
- Cwt — INTERBEDDED / TURBIDITIC FINE GRAINED FELSIC LITHICWACKE AND GREY MICACEOUS SILTSTONE

- Cdp — RHYOLITIC QUARTZ PORPHYRY, PROBABLY INTRUSIVE
- Csi — PERVASIVELY SILICIFIED ROCKS
- Cus — SILICIFIED/CHERTY MAFIC VOLCANICLASTIC
- Cub — BASALT, COMMONLY AMYGDALOIDAL, PILLOWED, INTENSE PERVASIVE QUARTZ + CARBONATE ± FUCHSITE ALTERATION
- Cug — GABBRO, VARIABLY ALTERED TO QUARTZ + CARBONATE ± FUCHSITE ASSEMBLAGE

GEOLOGICAL BOUNDARY, APPROXIMATE / INFERRED

FAULT

FOLD AXIS, INFERRED

MAGNETICS

GRADIENT ARRAY I.P.

Chargeability

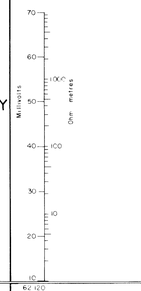
Resistivity

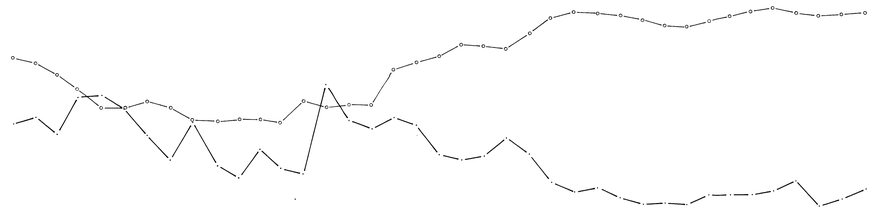
RGC EXPLORATION PTY. LIMITED
(INC. IN N.S.W.)

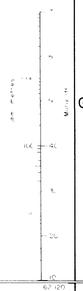
COMPILED	A.J.C.	RING RIVER GRID
DRAWN	J.M.S.	LINE PROFILE
DATE	MAY 1989	L 6600N
CHECKED		
1:25,000 REFERENCE	DUNDAS	
BASE PLAN No.		FIG. 53
OVERLAY PLAN No.		SCALE 1 : 2 500 (0 50 100 metres)

8514

ARRAY

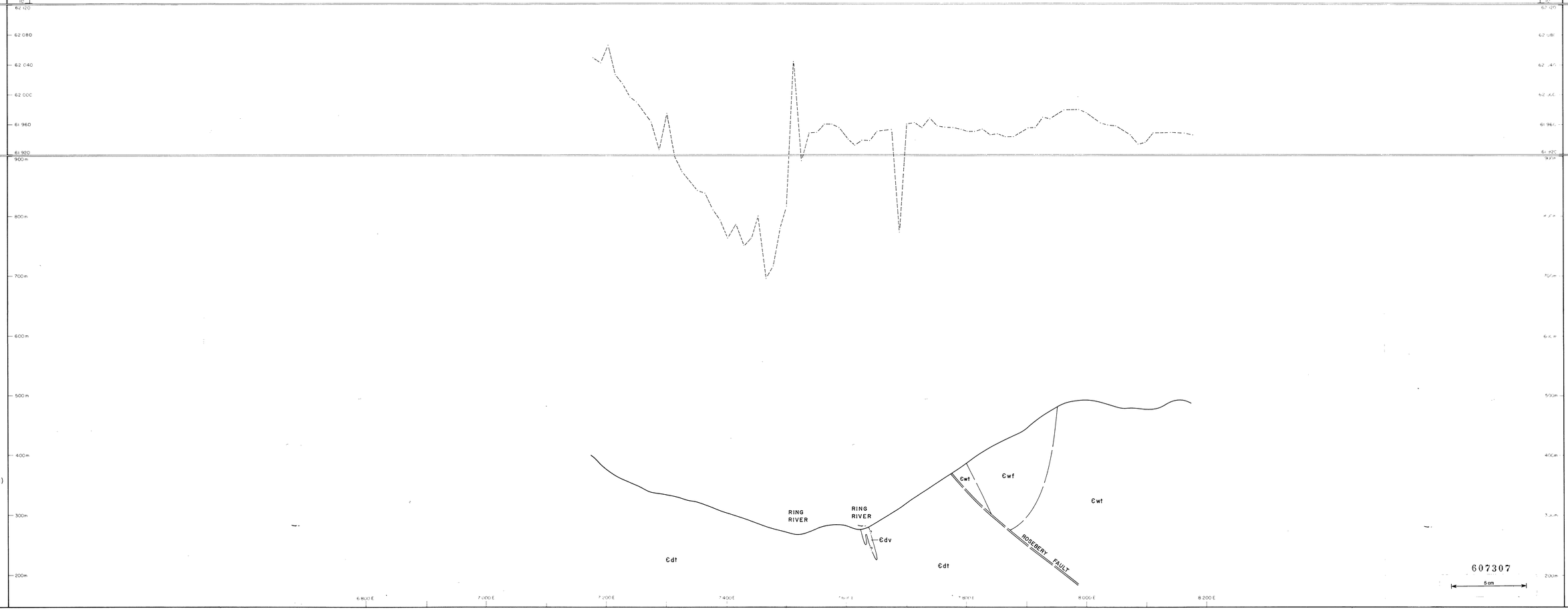






GRADIENT ARRAY
I.P.

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s)



MAGNETICS
(gammas)

APHY

GY
sea level)

TOPOGRAPHY
&
GEOLOGY
(height above sea level)

89-2994

GEOLOGY

DUNDAS GROUP
WATERSPUR FORMATION

- Cdv — FELSIC VITRIC TUFF AND CRYSTAL TUFF
- Cdt — INTERBEDDED QUARTZWACKE AND MUDSTONE
- Cdq — QUARTZWACKE AND CONGLOMERATIC SANDSTONE
- Cdc — POLYMICTIC CONGLOMERATE
- Cwf — MEDIUM TO COARSE GRAINED FELSIC VOLCANIC LITHICWACKE AND FELSIC PUMICEOUS MASS FLOW TUFF
- Cwt — INTERBEDDED / TURBIDITIC FINE GRAINED FELSIC LITHICWACKE AND GREY MICACEOUS SILTSTONE
- Cfp — RHYOLITIC QUARTZ PORPHYRY, PROBABLY INTRUSIVE
- Cs — PERVASIVELY SILICIFIED ROCKS
- Cus — SILICIFIED/CHERTY MAFIC VOLCANICLASTIC
- Cub — BASALT, COMMONLY AMYGDALOIDAL, PILLOWED, INTENSE PERVASIVE QUARTZ + CARBONATE ± FUCHSITE ALTERATION
- Cug — GABBRO, VARIABLY ALTERED TO QUARTZ + CARBONATE ± FUCHSITE ASSEMBLAGE

GEOLOGICAL BOUNDARY, ASSUMED OR INFERRED

FAULT

FOLD AXIS, INFERRED

MAGNETICS

GRADIENT ARRAY I.P.

- Chargeability
- Resistivity

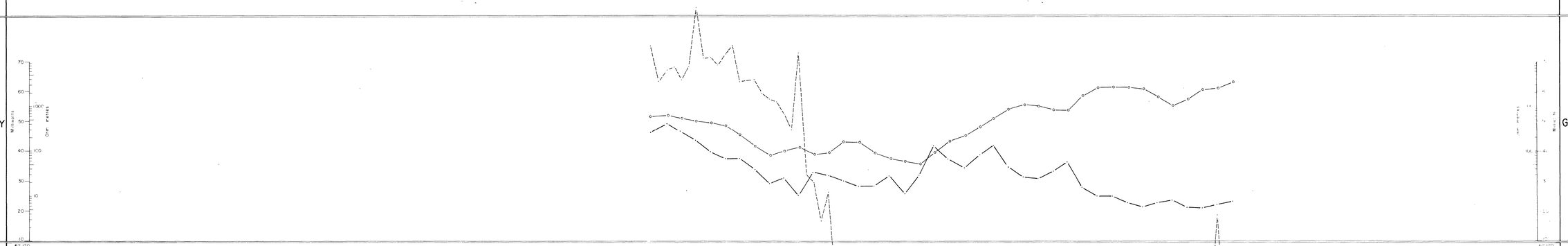
RGC EXPLORATION PTY. LIMITED
(INC. IN N.S.W.)

COMPILED	A. J. C.	RING RIVER GRID
DRAWN	J. M. S.	LINE PROFILE
DATE	MAY 1989	L 6800N
CHECKED		
1:25,000 REFERENCE	DUNDAS	

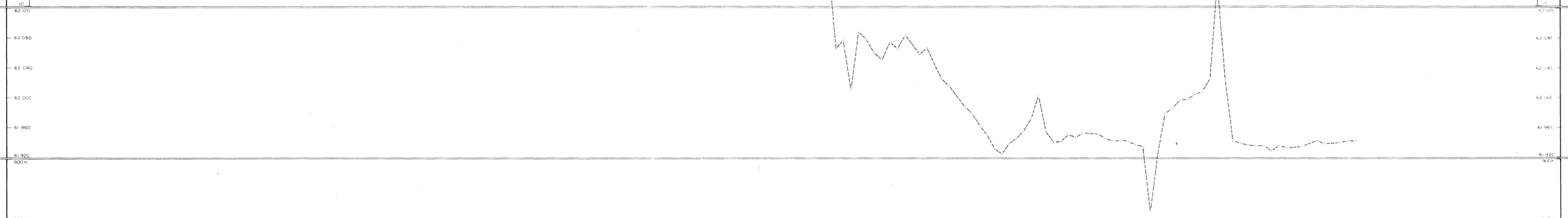
BASE PLAN No.
OVERLAY PLAN No.
SCALE 1:2500 (0 50 100 metres)
FIG. 54

8515

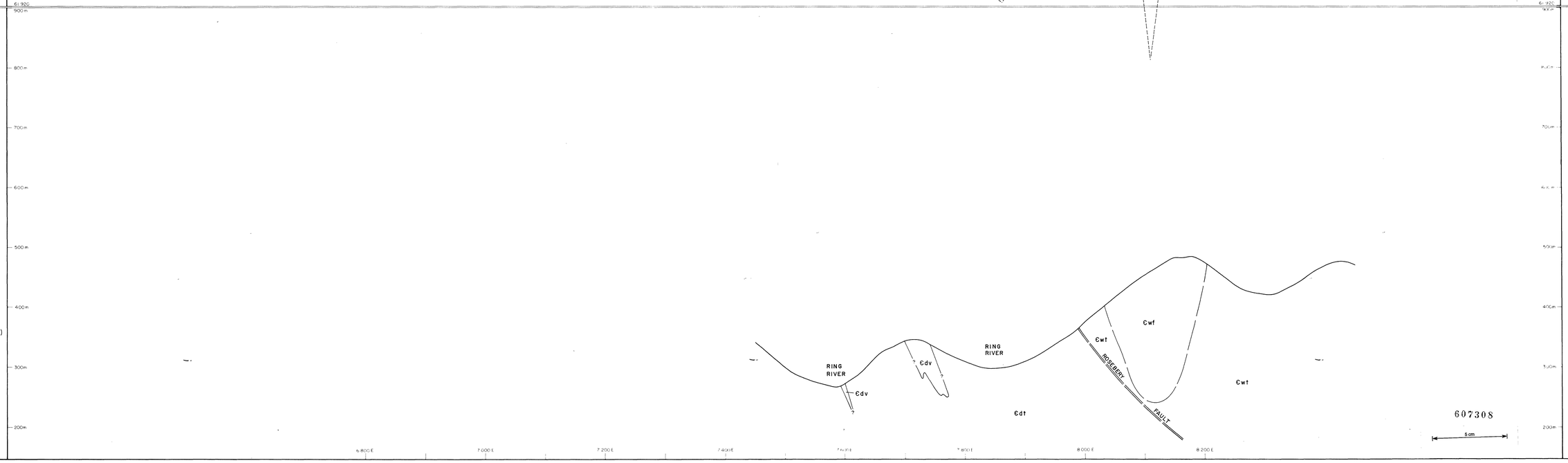
GRADIENT ARRAY I.P.



MAGNETICS (gammas)



TOPOGRAPHY & GEOLOGY (height above sea level)



GRADIENT ARRAY I.P.

MAGNETICS (gammas)

TOPOGRAPHY & GEOLOGY (height above sea level)

89-2994

GEOLOGY

DUNDAS GROUP

ANITA PEAK FORMATION

- Cdv — FELSIC VITRIC TUFF AND CRYSTAL TUFF
- Cdt — INTERBEDDED QUARTZWACKE AND MUDSTONE
- Cds — QUARTZWACKE AND CONGLOMERATIC SANDSTONE
- Cdc — POLYMICTIC CONGLOMERATE
- Cwf — MEDIUM TO COARSE GRAINED FELSIC VOLCANIC LITHICWACKE AND FELSIC PUMICEOUS MASS FLOW TUFF
- Cwt — INTERBEDDED/TURBIDITIC FINE GRAINED FELSIC LITHICWACKE AND GREY MICACEOUS SILTSTONE
- Cqp — RHYOLITIC QUARTZ PORPHYRY, PRIMARILY INTRUSIVE
- Cs — PERVASIVELY SILICIFIED ROCKS
- Cus — SILICIFIED/CHERTY MAFIC VOLCANICLASTIC
- Cub — BASALT, COMMONLY AMYGDALOIDAL, PILLOWED, INTENSE PERVASIVE QUARTZ + CARBONATE ± FUCHSITE ALTERATION
- Cug — GABBRO, VARIABLY ALTERED TO QUARTZ + CARBONATE ± FUCHSITE ASSEMBLAGE

GEOLOGICAL BOUNDARY, APPROXIMATE / INFERRED

FAULT

FOLD AXIS, INFERRED

MAGNETICS

GRADIENT ARRAY I.P.

Chargeability

Resistivity

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

COMPILED	A.J.C.	RING RIVER GRID
DRAWN	J.M.S.	LINE PROFILE
DATE	MAY 1989	L 7000N
CHECKED		
1:25,000 REFERENCE	DUNDAS	

BASE PLAN No.

OVERLAY PLAN No.

SCALE 1 : 2 500 (0, 50, 100 metres)

FIG. 55

8516

KARLSEN - RILEY WORKINGS
Baseline 5000 E
9600 N
9400 N
9200 N
9000 N
8800 N
8600 N
8400 N
8200 N
8000 N
7800 N
7600 N
7400 N
7200 N
7000 N
6800 N
6600 N
6400 N
6300 N
6100 N
5900 N
5600 N
5400 N
5200 N
4900 N
4700 N
4500 N
4400 N
4200 N
5500E
RING RIVER
Gormanston Creek
Penzance Creek
Pine Hill
Carbine Hill
Confidence Saddle
ARGENT RIVER
RINGVILLE
BONNIE DUNDEE
055
BONNIE POINT
516
FRAZER MINE
080
GREEN'S PROSPECT
CURTIN DAVIS MINE
CROWN CURTIN MINE
SOUTH WEST CURTIN DAVIS
056
Frazer Falls
Montezuma Falls
BLOCK 291
HECLA 061
Rawlinson Falls
No1 CURTIN DAVIS
034
SOUTH CURTIN DAVIS MINE
CURTIN DAVIS CONSOLS
023
EVENDEN PROSPECT
GREAT NORTHERN CREEK MINE
LOWER RAMSDALE ADIT
T 7471
T 7974
WALLACE'S TRAMWAY
CARBINE JUNCTION
VICINITY OF RAMSDALE WORKINGS (NOT LOCATED)
FRAZER CREEK HUT
WESTERN WORKINGS
WALLACE'S PROSPECTS
054
EASTERN WORKINGS
053
TO CONFIDENCE SADDLE
TO MOORES PIMPLE
TRAMWAY
NORTH EAST DUNDAS
CARBINE HILL TRACK
Gibbon
Nutwell
Fraser
Gibson
Montezuma
69000mN.
68500mN.
68000mN.
67500mN.
67000mN.
66500mN.
66000mN.
65500mN.
65000mN.
64500mN.
64000mN.
70000mE.
71000mE.
71500mE.
72000mE.
72500mE.
73000mE.
73500mE.
74000mE.

LODE ASSEMBLAGES

- TYPE a : QUARTZ + PYRITE + ARSENOPYRITE INFILLING BRECCIATED / SHEARED COUNTRY ROCKS
- TYPE b : MASSIVE SIDERITE VEINS USUALLY WITH GALENA ± SPHALERITE ± CHALCOPYRITE ± TETRAHEDRITE
- TYPE c : HIGH GRADE JAMESONITE VEINS AND SHOOTS SUPERIMPOSED ON TYPES a AND / OR b.
- TYPE d : VUGHY, MILKY QUARTZ ± ARSENOPYRITE ± CASSITERITE ± PYRRHOTITE ± PYRITE
- TYPE a+b: SUPERIMPOSED TYPE b ON TYPE a.
- STRINGER TYPE : QUARTZ + PYRITE ± GALENA ± SPHALERITE VEINING.

LEGEND

- INFERRED FAULT
- LODE
- VERTICAL LODE
- FOLIATION
- BEDDING
- PITS
- SHAFT
- ADIT
- OLD MINE WORKINGS
- SAMPLE LOCATION
- BUILDING
- HELICOPTER LANDING PAD

607309

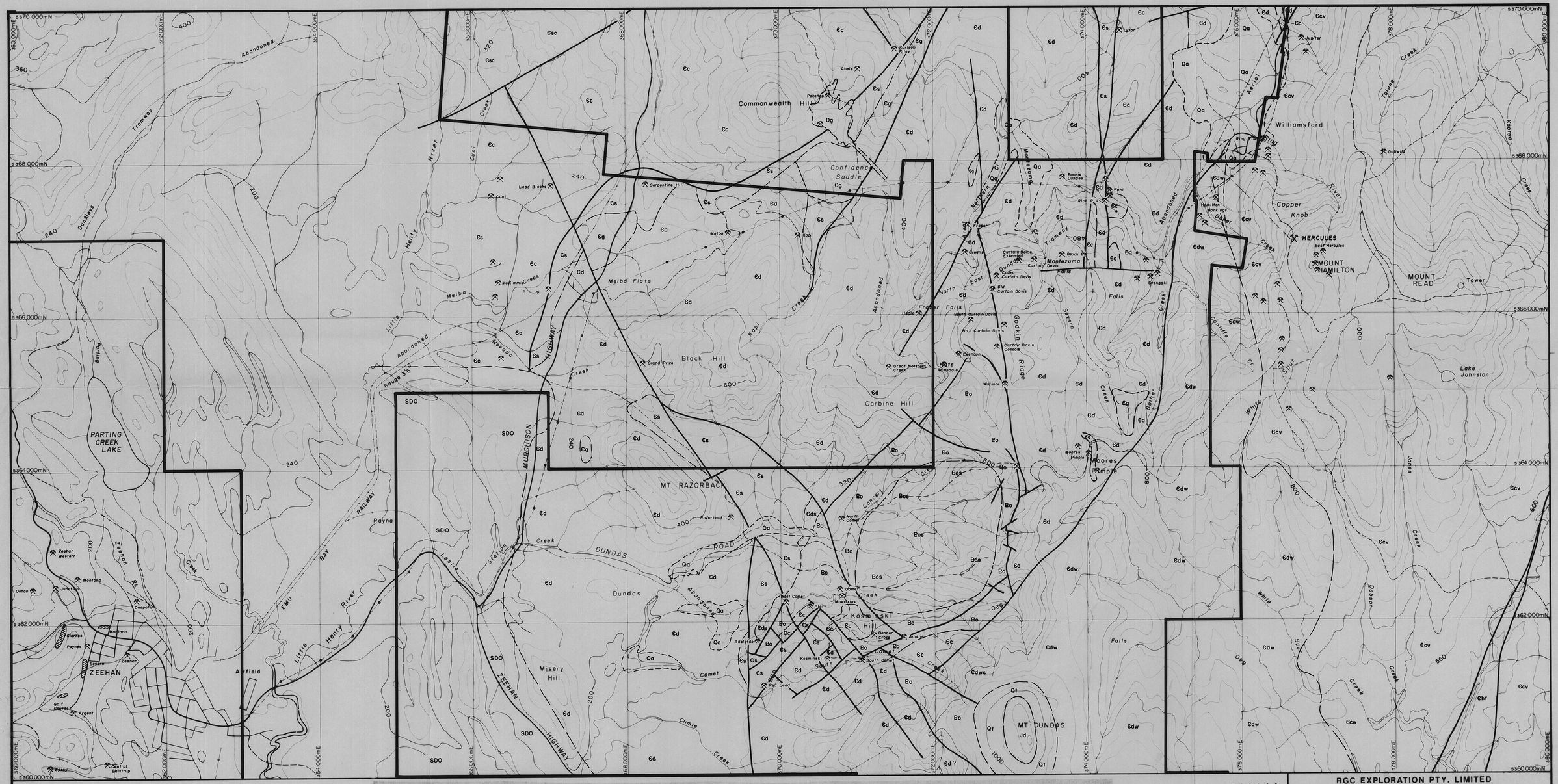
5 cm

89-2994

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

COMPILED	W. H.	NORTH DUNDAS MINERAL FIELD
DRAWN	J.M.S.	MONTEZUMA GRID
DATE	5/89	LOCATION OF OLD WORKINGS
CHECKED		
1:25,000 Reference	DUNDAS	

BASE PLAN No.
OVERLAY PLAN No.
SCALE: 1:5,000 (200 50 0 100 200 METRES)
FIG. 5



LEGEND

QUATERNARY TERTIARY — Qa — Alluvium

PERMIAN - CARBONIFEROUS — Pu — Conglomerate, sandstone, mudstone, pebbly mudstone

DEVONIAN - SILURIAN — SD — Elliott Group : sandstone, siltstone, mudstone, minor calcareous siltstone and conglomerate

ORDOVICIAN — O — Quartz sandstone, minor siltstone, Gordon Limestone

CAMBRIAN

DUNDAS GROUP
- Ed — Undifferentiated greywacke sandstone, siltstone, shale, minor felsic tuffs and lavas
- Edc — Polymict conglomerate, with fuchsite clasts in some units
- Edd — Dolomitic siltstone and sandstone with minor conglomerate
- Edb — Basaltic - andesitic volcanics (lavas, breccias and tuffs)
- Edw — White Spur Formation : lithicwacke, siltstone, mudstone, tuff

INTER HENTY FAULT SEQUENCE
- Ehf — Lithicwacke, mudstone, siltstone, minor conglomerate and tuff

MEREAD VOLCANICS
- TYNDALL GROUP
  - Et — Quartz - feldspar - phyric tuffs, lavas and epiclastics
- CENTRAL VOLCANIC SEQUENCE
  - Ecv — Undifferentiated felsic volcanics : tuffs, ignimbrites, breccias, epiclastics and feldspar - phyric lavas
  - Ecvs — Shale, siltstone, sandstone, minor tuff units

ORMSON CREEK FORMATION
- Ec — Undifferentiated basaltic lithicwacke, siltstone, red to green mudstone, minor basalt and mafic - ultra mafic intrusives

SUCCESS CREEK GROUP
- Esc — Undifferentiated sandstone, siltstone, black mudstone, polymict conglomerate, minor red chert, mudstone and carbonate

OONAH FORMATION
- PRECAMBRIAN — Eos — Concert Schist
- Bo — Undifferentiated quartz sandstone, siltstone, mudstone, dolomite conglomerate including metamorphic equivalents (Concert Schist)

INTRUSIVE ROCKS
- JURASSIC — Jd — Dolerite
- DEVONIAN — Dg — Granitic rocks (Pine Hill Granite)
- CAMBRIAN
  - Ep — Quartz - feldspar porphyry
  - Eps — Felsic intrusive, commonly spherulitic feldspar - quartz - phyric
  - Eg — Gabbro, dolerite
  - Es — Ultramafic rocks, serpentinite

Known mineralisation
Geological boundary approximate, inferred
Unconformity approximate, inferred
Fault approximate, inferred
Operating mine, Prospect or abandoned mine (if >1" scale, 2 units)
Diamond drill hole

GRID/MAGNETIC ANGLE 11° E (1986)
M.G. decays Easterly at approximately 10'-11' every 2 years

Geology after K.D.Corbett (1986), A.V.Brown (1983) and RGC mapping

607310

SHEET LAYOUT

STRINGER	ROSEBERY	TULLAH
HEEMSKIRK	DUNDAS	SELINA
TRIAL	OCEANA	TYNDALL

RGC EXPLORATION PTY. LIMITED

89-2994

DUNDAS

GEOLOGICAL INTERPRETATION

DRAWN BY	A.J.C.
DRAFTSMAN	G.B.
DATE	Oct. 1988
REVISIONS	
FILE NO.	

SCALE 1:25 000

5 cm

500 0 500 1000 METRES

FIG. 57