## OPEN FILE

# CYPRUS GOLD AUSTRALIA CORPORATION EXPLORATION LICENCE 6121

#### BOWERBIRD

Pine Creek 1:250,000 sheet SD 52-8

Ranford Hill 1:100,000 sheet 5370

Annual Report for Year Ended 28th August, 1989

CR89/814

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#### INTRODUCTION

Exploration Licence 6121, comprising six graticular blocks totalling approximately 19.4 square kilometres in area, was granted to Cyprus Gold Australia Corporation and Moline Joint Venture partner Greenbushes Limited on 29th August, 1988. This report outlines work carried out on the tenement by Cyprus, as operators during the first year of occupancy.

Expenditure for the year ending August 28, 1989 amounted to \$13,090.34 (see attached Expenditure Statement).

#### Location and Access

The tenement is centred about 8 kilometres east-south-east of Moline, 50 kilometres by road north-east of the town of Pine Creek in the Northern Territory. Access is via the Kakadu Highway from Pine Creek to the New Wandie/Mt Diamond Road turnoff about three kilometres north-east of Moline, thence via bulldozed tracks which turn off to the east from this road about 5 and 10 kilometres respectively south of the highway (see Figure 1).

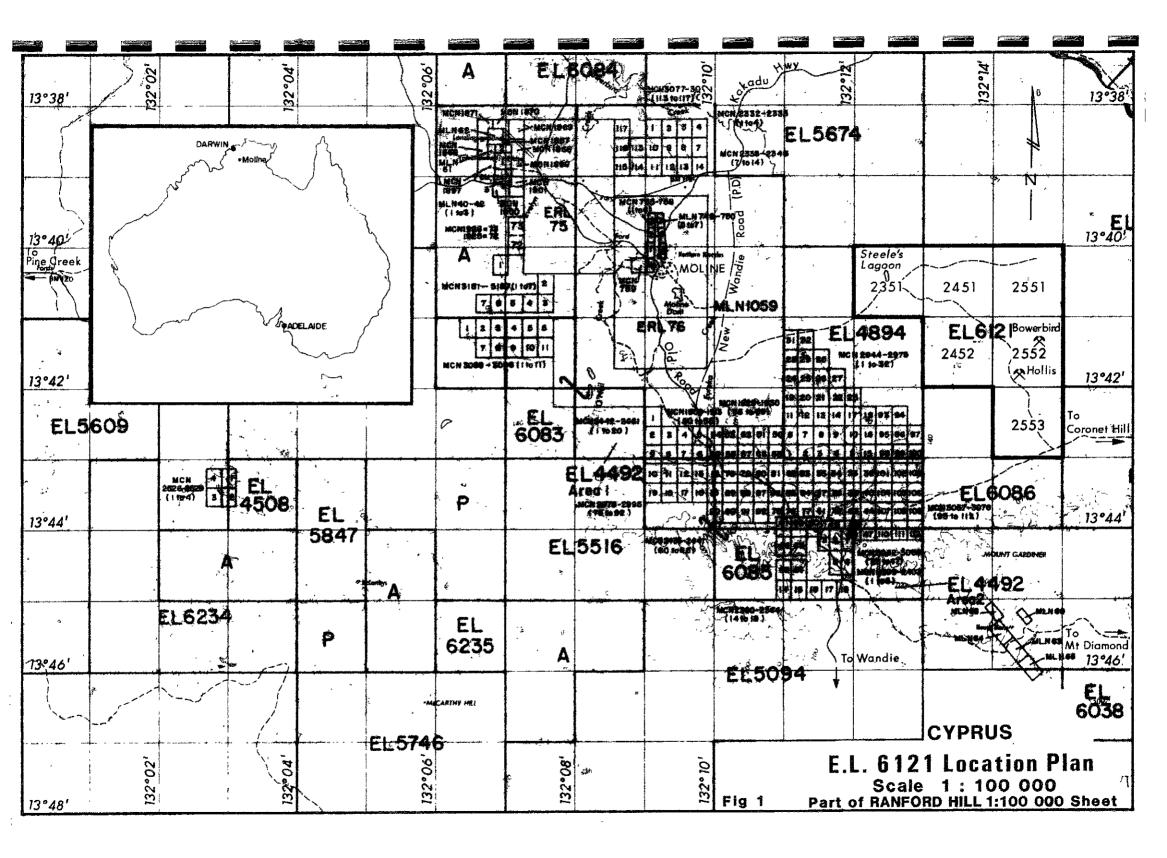
Most of the tenement area can easily be traversed by four-wheel-drive vehicle. Some steep strike-ridges, areas of "tombstone" greywacke outcrop and near-vertical banks on major creeks provide the major obstacles.

#### Geography

Exploration Licence 6121 covers much of the upper portion of the Bowerbird Creek basin, which exhibits a sub-dendritic drainage pattern. This creek flows in a north-westerly direction across the tenement area and is a major tributary of the Mary River, which drains northwards onto the coastal floodplain. During the dry season (May-November) the upper reaches of Bowerbird Creek and its tributaries are virtually dry. The main waterhole is at Steele's Lagoon on block 2351 (see Figure 3a).

Topographic relief is moderate, generally less than 50 metres, with north-east trending strike ridges composed of either medium to coarse grained greywacke or extensively quartz-veined, finer grained sediments (see Figure 3b).

The area is covered by eucalypt-dominated savannah woodland typical of the region. A moderate to thick cover of annual grasses can be a hindrance to outcrop mapping.



#### WORK CARRIED OUT BY CYPRUS

#### Low Level Air-magnetics

Prior to EL 6121 being granted, the area was included in a low level air-magnetic survey of the Moline district carried out for Cyprus. This work has not been included in the expenditure on EL 6121, however. The relevant portion of the air-magnetic contour plan is shown at 1:25,000 scale in Figure 2.

#### Construction of Access Roads

Before 1989, the only access road into the tenement area was the Coronet Hill road which cuts the south-east corner of block 2553 (see Figure 1). This road was in a poor condition. During 1989, the Coronet Hill road was repaired and a new access road bulldozed from the New Wandie road to a crossing on Bowerbird Creek near Steele's Lagoon. From there, access roads were bulldozed to the north-east corner of EL 6121 and south-eastwards via the Hollis workings to link up with the Coronet Hill road in the south-east corner of the tenement (see Figure 4). Approximately 12 kilometres of access roads were established within the tenement area.

#### Reconnaissance Geology and Rock-Chip Geochemistry

A reconnaissance geological and rock-chip geochemical survey was carried out using the Commonwealth 1:25,000 scale colour air-photographs as a base. The object of this survey was to locate zones of potential economic interest for gold and/or base metals. A total of 103 composite (2-3 kg) rock-chip samples (numbers 12886 - 12988) were taken and sent to Australian Assay Laboratories in Pine Creek.

The samples were assayed for gold by fire assay using a 50 gram charge and for Ag, As, Cu, Pb and Zn by AAS. Repeat fire assays for gold were routinely carried out on a percentage of the samples submitted. Sample number, graticular block number, assay results and lithology for each sample are set out in Table 1. The limit of detection and accuracy/precision for each element are also given in Table 1.

Rock-chip sample locations and numbers are plotted on Figure 4 and the assay results for Au-Ag, As, Cu, Pb and Zn are plotted on Figures 5-9 respectively. Figures 4-9 are at 1:25,000 (air-photo) scale. Cumulative frequency graphs for As, Cu, Pb and Zn, plotted on probability x 4 cycle log paper, are presented in Figures 10-13 respectively. This technique was used to determine the natural breaks in the assay results for each element, the assumption being made that individual populations have a log-normal distribution (indicated by a straight line on the graph).

During the rock-chip sampling program, particular attention was paid to cherty (tuffaceous?) horizons, limonitic gossans, zones of metasomatic alteration, quartz stockworking and brecciation and to gossanous and/or chloritic quartz blows and veins. Outcrops devoid of any indications of potential mineralising events were not sampled. Consequently, although outcrop is fairly good throughout the tenement area, the sampling density varied considerably.

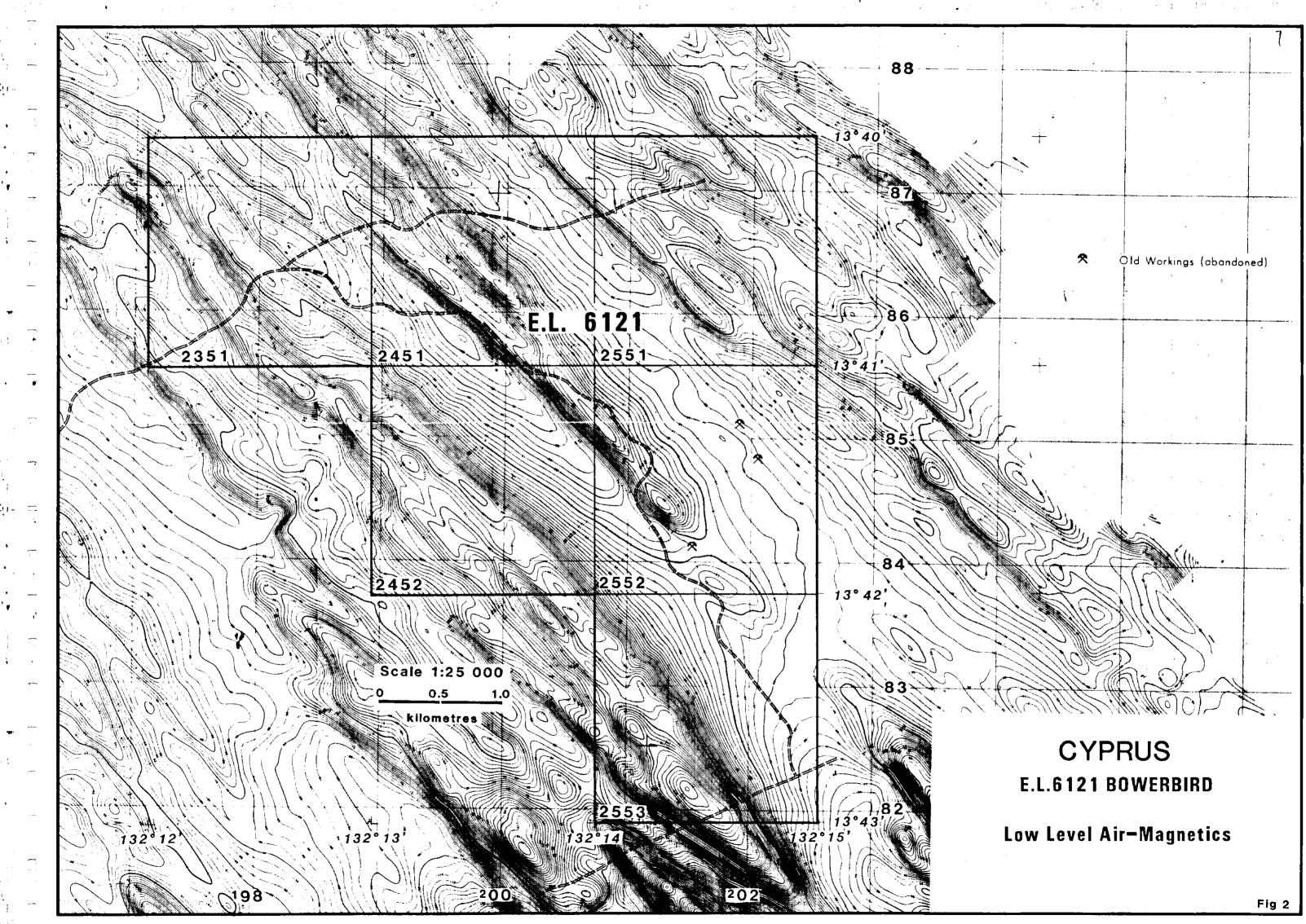




Figure 3a. Steele's Lagoon, looking south.



Figure 3b. Strike ridge of quartz-veined shale/siltstone, north-east quadrant of block 2351, looking west. Bull buffalo in foreground.



Figure 3c Bowerbird workings, looking south.



Figure 3d. Main outcrop, Bowerbird workings, looking north.



Figure 3e. Bowerbird workings. Quartz veining in altered greywacke, looking north-west.

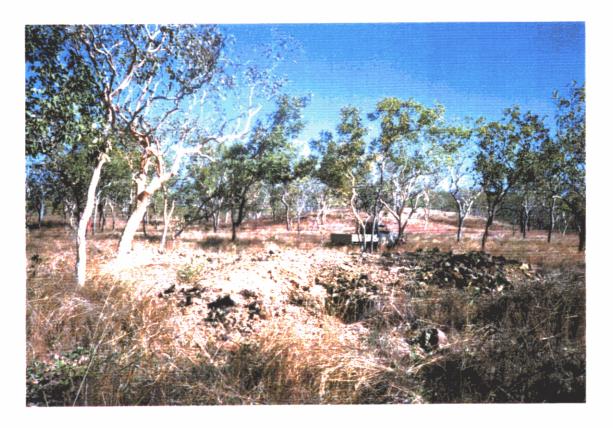


Figure 3f. Southern extension of Bowerbird workings (sample no. 12918), looking south.



Figure 3g. Hollis workings, looking north.



Figure 3h. Hollis workings, looking south.

#### GEOLOGY

#### Stratigraphy

The tenement area appears to be underlain by a fairly monotonous sequence of alternating shales, siltstones and greywackes, thought to belong to the Burrel Creek Formation of Lower Proterozoic age. The shales are commonly moderately ferruginous and are laminated to massive. They include some more resistant cherty (tuffaceous?) bands varying in thickness from 2 to 30 centimetres. The siltstones generally show flaggy bedding and are gradational to fine to medium grained greywackes. There are some units of coarse grained lithic greywackes, but the majority are relatively fine grained.

No igneous rocks, other than the thin, possibly tuffaceous units referred to above, were observed within the tenement area. However, quartz veining, probably largely of metamorphic origin, is abundant. Much of the quartz appears to be barren or to have only chloritised inclusions of country rock within it.

The rocks underlying the zones of relative magnetic highs, which traverse the area parallel to the regional strike (see Figure 2), do not appear to be appreciably different from those in zones of lower magnetic intensity. There is little evidence of significant stratabound pyrite/pyrrhotite mineralisation in the sequence and it seems most likely that the relative magnetic highs are due to slightly increased magnetite content in some of the siltstone and greywacke units.

#### Structure

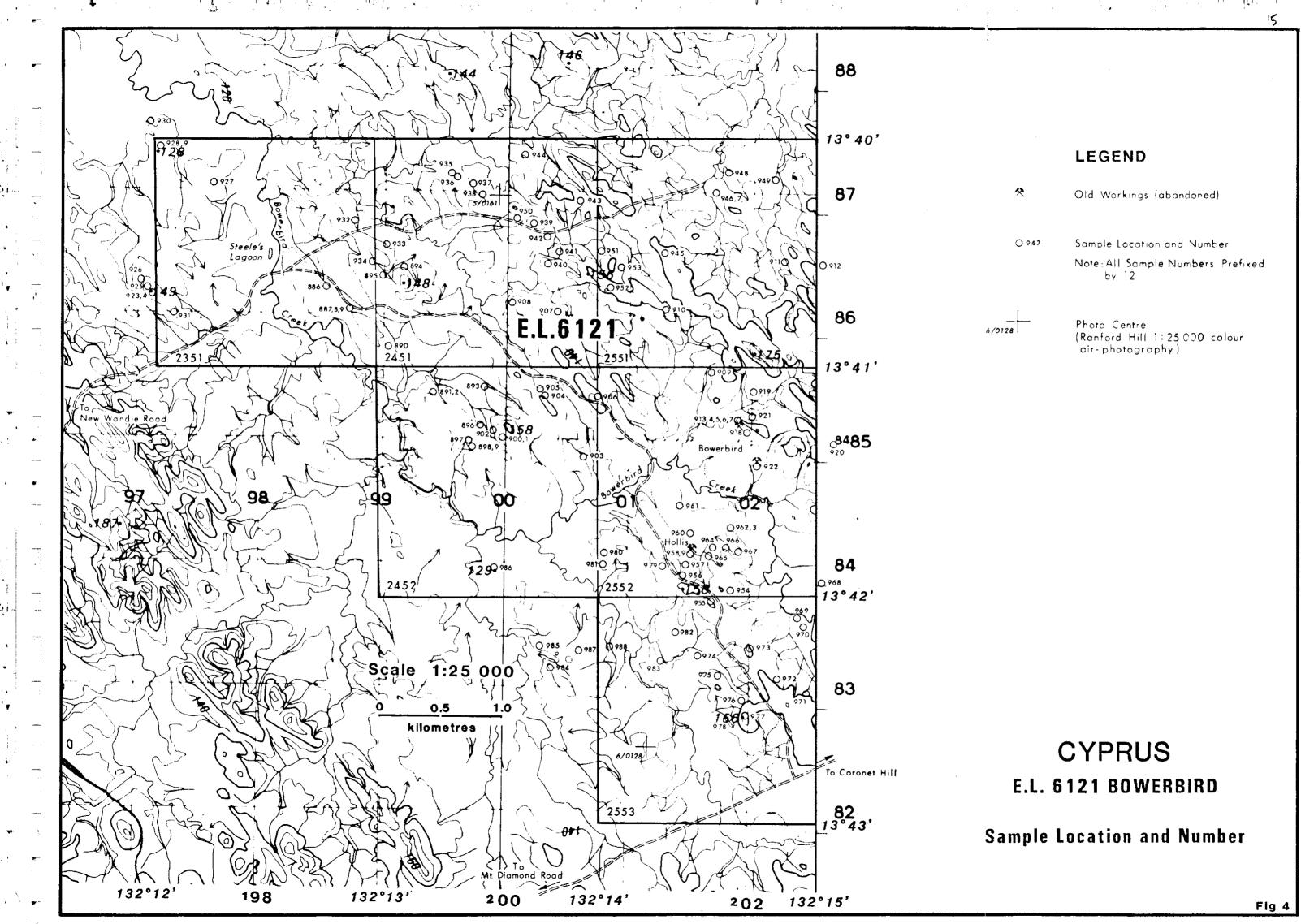
The sedimentary succession is isoclinally folded about NW-SE trending axes. The dip of the strata is predominantly to the south-west at 60-80 degrees, indicating that the folds are overturned. A slaty cleavage is developed in the finer grained units and some of the siltstones and greywackes show strong brecciation and metasomatic alteration.

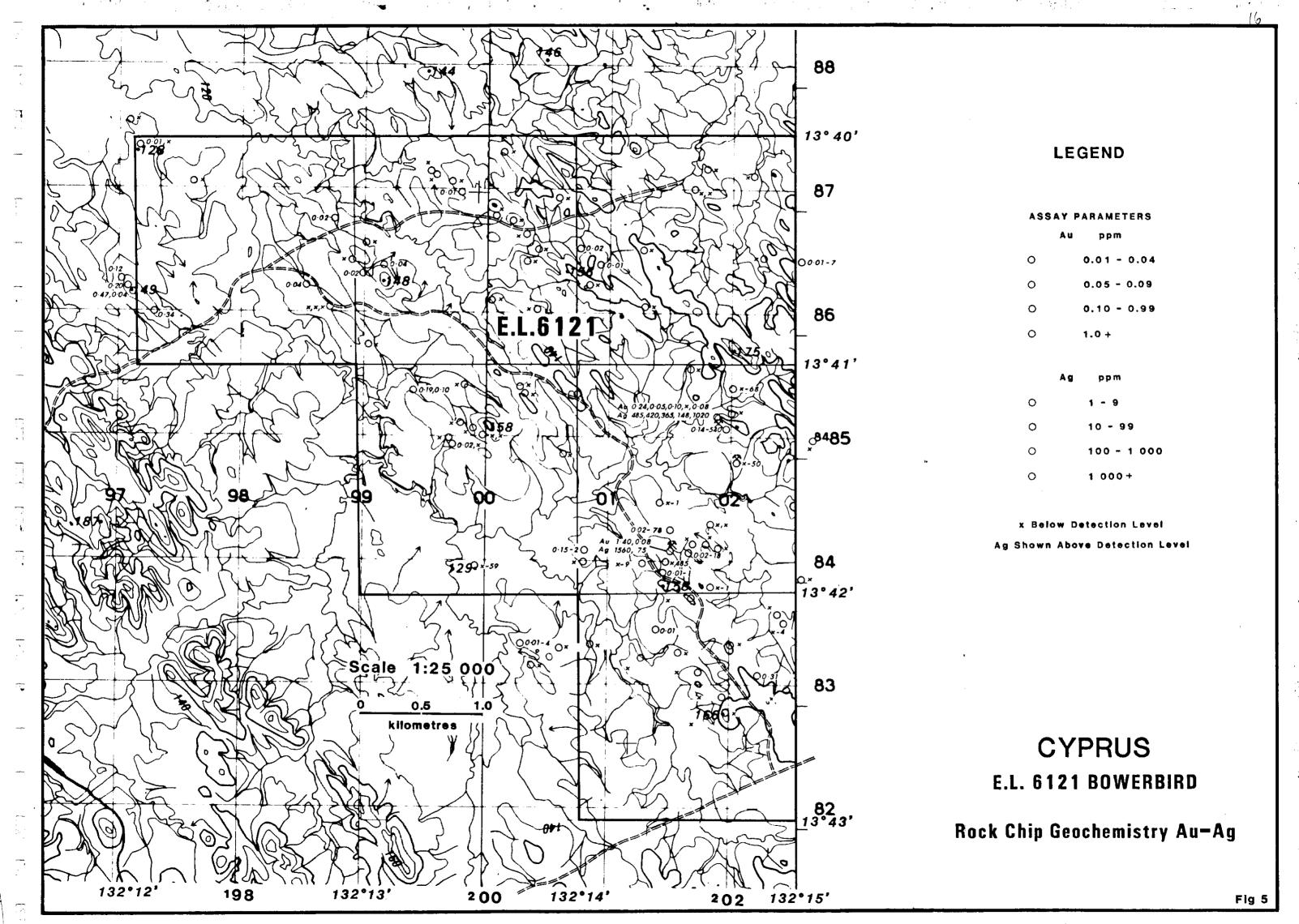
As mentioned above, quartz blows and veins are common, especially on the ridge tops. The larger quartz veins tend to be oriented sub-parallel to bedding. In some cases the quartz veins themselves are contorted and brecciated.

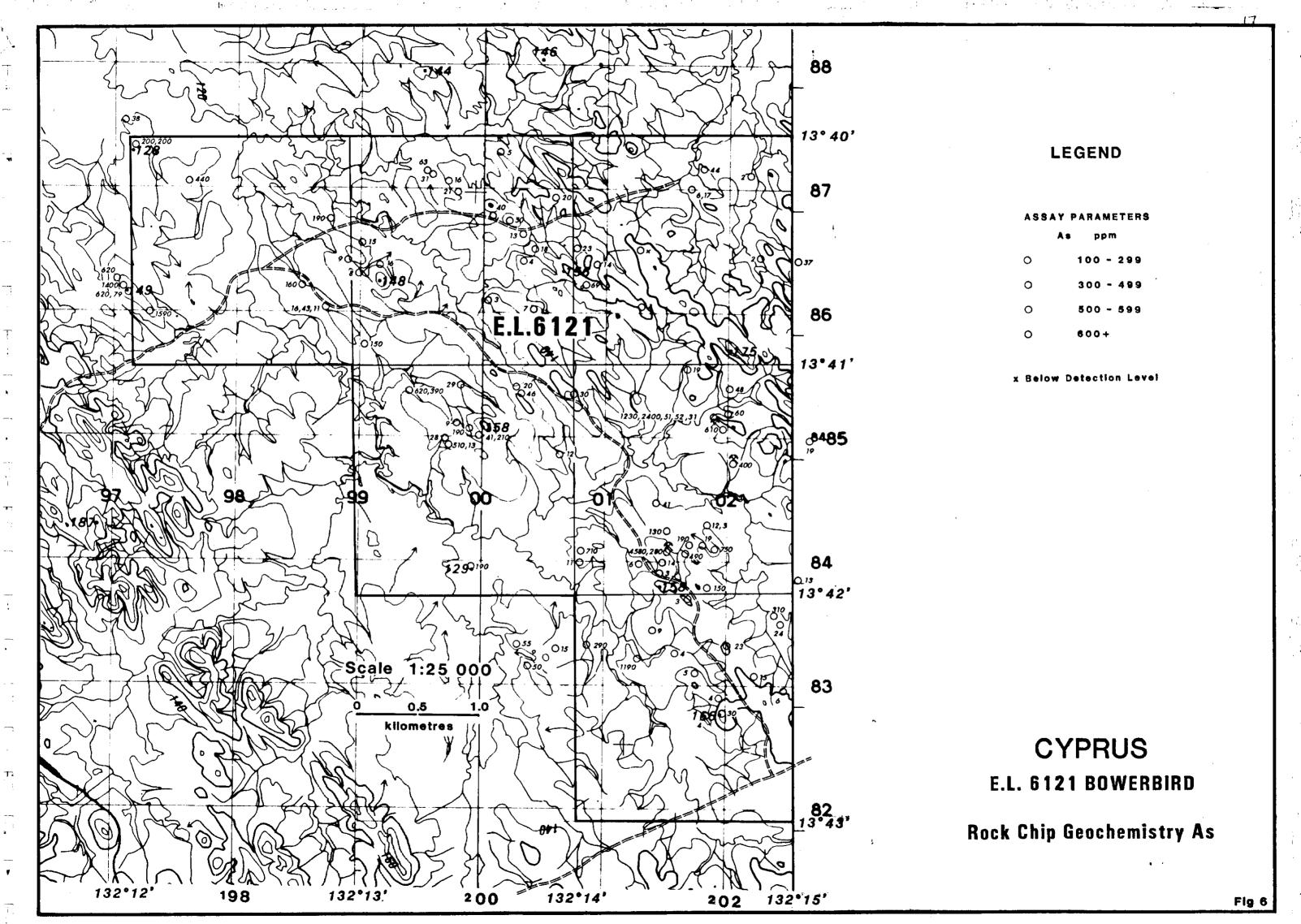
#### Metamorphism

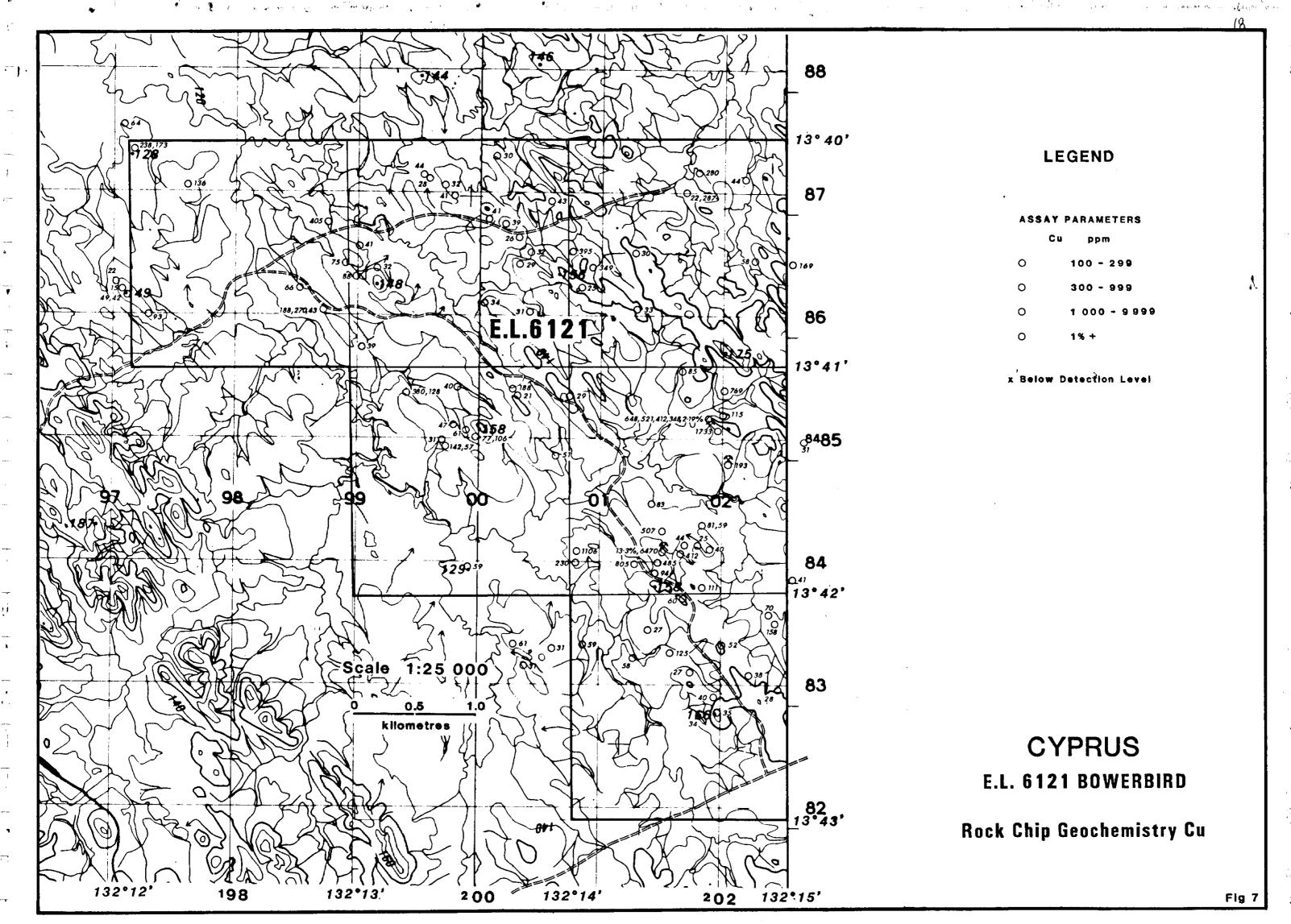
Within El 6121, the sedimentary succession has been regionally metamorphised to the lower greenschist facies, with the development of fine grained chlorite, sericite and epidote and secondary quartz. The widespread quartz veining is thought to be largely due to this regional metamorphism.

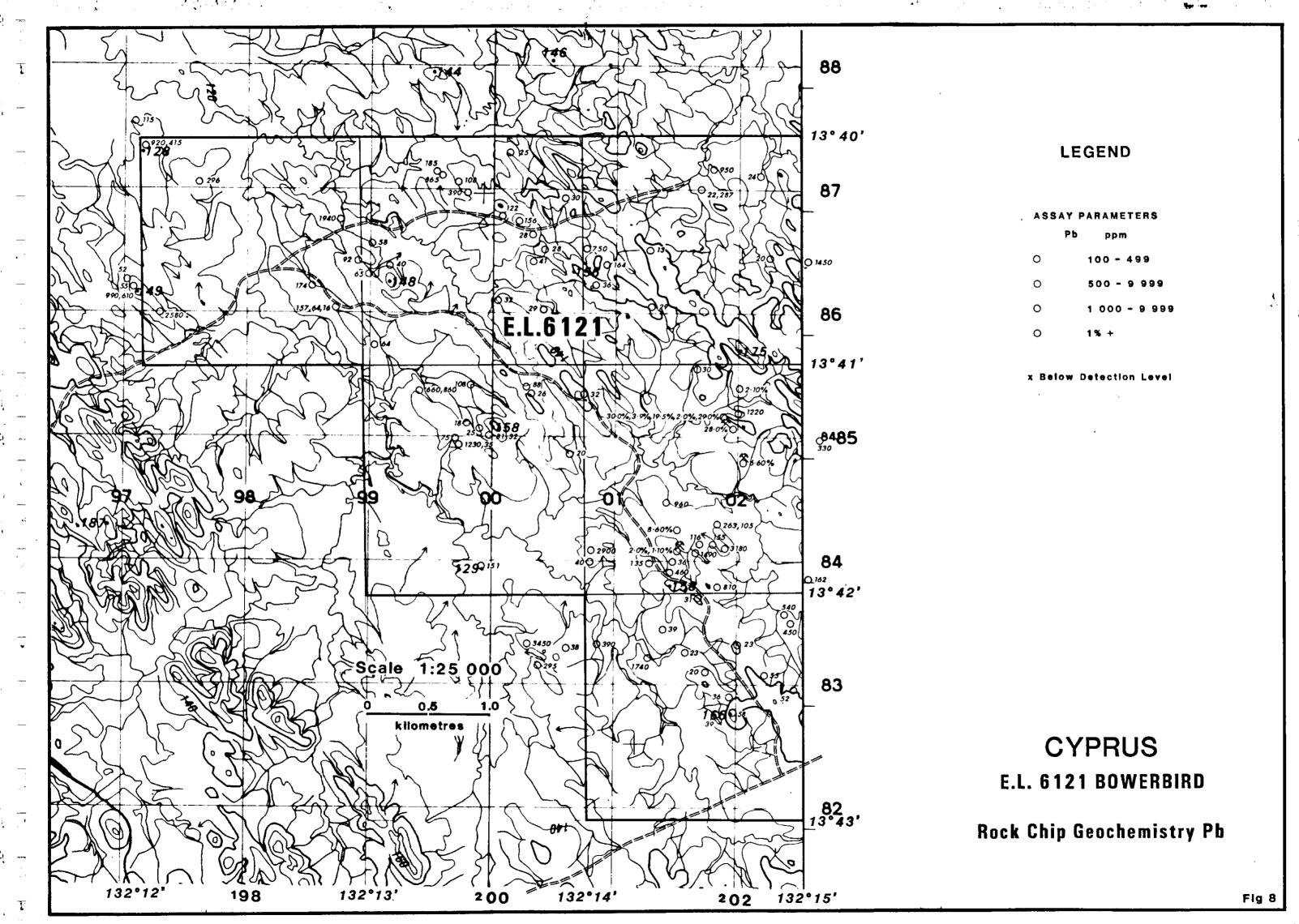
The nearest outcropping granitoid intrusive is the Mount Davis Granite, the northern contact of which is about two kilometres to the south of the southern boundary of block 2553. This granite is surrounded by a half kilometre-wide contact hornfels which forms prominent steep-sided ridges. There is no evidence of hornfelsing within EL 6121.

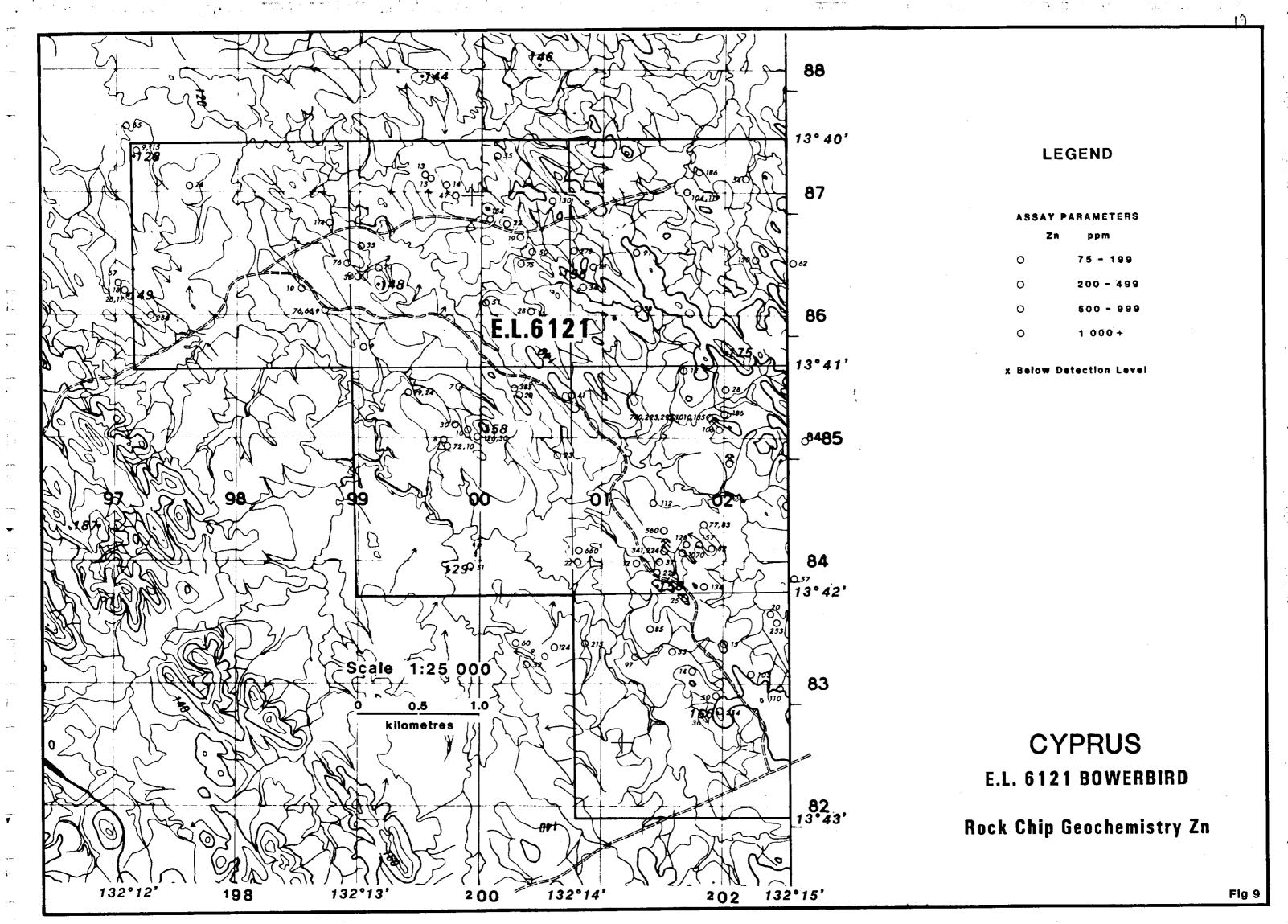












#### ECONOMIC GEOLOGY AND GEOCHEMISTRY

Tin, copper, bismuth arsenic and gold mineralisation is associated with the Mount Davis granite to the south and copper and tin with the Coronet Fault to the east. However, only two sets of old workings were encountered within EL 6121 during the reconnaissance survey. These are referred to in the report as the "Bowerbird" and "Hollis" workings (see Figure 4). The Ranford Hill 1:100,000 scale geological map shows a Pb:Ag prospect about one kilometre north of Steele's Lagoon. A search failed to find any sign of old workings in this area and it is assumed that this mapped location is a misplot of either the "Bowerbird" or "Hollis" workings.

The "Bowerbird" workings comprise a number of shafts (to eight metres deep), pits and costeans in a steeply dipping south-south-east trending shear zone in variably altered and brecciated greywacke over a strike length of about 200 metres (see Figures 3c-f). The mineralisation occurs as limonitic boxwork gossan veins, with partly oxidised galena and some malachite-azurite in altered greywacke (sample numbers 12913-5, 12918). There is also some associated gossanous quartz veining with disseminated, partly oxidised galena, pyrite and chalcopyrite (sample numbers 12916-7). An isolated shallow pit with limonitic boxwork gossan and gossanous quartz veins in altered greywacke, is located about 300 metres south-south-east of the main workings (sample number 12922).

The "Hollis" workings comprise a number of pits and shafts (to about 5 metres depth) in altered siltstone/greywacke over a strike length of about 50 metres in a north-south direction (see Figures 3g-h). The mineralisation occurs as limonitic, malachite-azurite bearing gossan veins (sample numbers 12958-9) in a narrow (less than one metre wide) steeply dipping shear zone, with some associated gossanous quartz veining. An isolated, one metre deep pit, with some gossanous material in brecciated greywacke, occurs about 150 metres to the north of the main "Hollis" workings (sample number 12960).

Probable threshold values for As, Cu, Pb and Zn for the rock-chip samples taken during the survey of EL 6121 can be inferred from the breaks in the cumulative frequency graphs (see Figure 10-13). For As, Cu and Pb the probable threshold value is 100ppm and for Zn 75 ppm. Although these values represent up to 40% (in the case of Pb) of the population of 103 samples, this reflects the strong sampling bias towards possibly mineralised rock. The definite anomalous thresholds are 600 ppm As, 1000 ppm Cu, 1000 ppm Pb and 200 ppm Zn, which, to some extent, reflects the differing mobility of these elements in the weathering zone. All gold and silver values above the limit of detection, 0.01 ppm and 1.0 ppm respectively, are regarded as possibly anomalous, although readings below 0.05 ppm Au and 2.0 ppm Ag may not be readily reproducible.

## BOWERBIRD EL 6121

Table 1. Rock Chip Geochemistry

| SAMPLE     |               | 1              | *     | ASSAY            | S (ppm       | 1)              |           |            | }<br>!                             |
|------------|---------------|----------------|-------|------------------|--------------|-----------------|-----------|------------|------------------------------------|
| NO 12-     | BLOCK         | Au             | Au(R) | As               |              | Cu              | Pb        | Zn         | ** LITHOLOGY                       |
|            | 1<br>I        | _              |       | .t               | ! <u></u>    | .ŧ              | 1         | !<br>!     | 1<br>1                             |
| 886        | 2351          | 0.04           |       | 160              | x            | 66              | 174       | 19         | ot mo ou                           |
| 887        | 2351          | X              |       | 16               |              | 188             | 157       |            | ct ms, qv                          |
| 888        | 2351          | Z.             |       | 43               | X            |                 |           | 76         | g ct (in fe ms)                    |
| 889        | 2351          |                |       |                  | x            | 270             | 64        | 66         | g ct (in fe ms)                    |
| 890        | 2451          | X              |       | 11               | Z            | 43              | 16        | 9          | g vy qv                            |
| 891        |               | X              |       | 150              | X            | 39              | 64        | 9          | br g al gw, qv                     |
|            | 2452          | 0.19           |       | 620              | X            | 380             | 660       | 99         | br g al gw, gqv                    |
| 892        | 2452          | 0.10           |       | 390              | X            | 128             | 860       | 24         | br g al gw, gqv, ga                |
| 893        | 2452          | X              |       | 29               | х            | 40              | 108       | 7          | g al gw, qv                        |
| 894        | 2451          | X              |       | 16               | X            | 32              | 40        | 20         | g al gw, gqv                       |
| 895        | 2451          | 0.02           |       | 8                | X            | 88              | 65        | 38         | lm gqv (in fe ms)                  |
| 896        | 2452          | X              |       | 9                | $\mathbf{x}$ | 47              | 18        | 30         | lm qv (in fe ms)                   |
| 897        | 2452          | X              |       | 28               | X            | 31              | 75        | 8          | g al gw, qv                        |
| 898        | 2452          | 0.02           |       | 510              | X            | 142             | 1230      | 72         | g al gw, qv                        |
| 899        | 2452          | X              |       | 13               | $\mathbf{x}$ | 57              | 35        | 10         | ctt (in fe ms)                     |
| 900        | 2452          | X              |       | 41               | x            | 77              | 31        | 126        | lm gqv                             |
| 901        | 2452          | X              |       | 210              | x            | 106             | 32        | 30         | g al st, br gqv                    |
| 902        | <b>2</b> 452  | x              |       | 190              | х            | 61              | 25        | 10         | g al gw, br gqv                    |
| 903        | 2452          | X.             |       | 12               | X            | <b>5</b> 1      | 20        | 23         | gw, qv                             |
| 904        | 2452          | $\mathbf{x}$   |       | 46               | x            | $\overline{21}$ | 26        | 20         | g al gw, gqv                       |
| 905        | 2452          | x              |       | 20               | x            | 188             | 88        | 385        | ctt (in fe ms)                     |
| 906        | 2552          | x              |       | 30               | x            | 29              | 32        | 41         | ms/gw, gqv                         |
| 907        | 2451          | x              |       | 7                | x            | 31              | 29        | 28         | fe ms, br gqv                      |
| 908        | 2451          | x              |       | 3                | X            | 34              | 32        | 51         | <del>-</del>                       |
| 909        | 2552          | x              |       | 19               |              | 85              | 30        | 12         | gqv                                |
| 910        | 2551          | X              |       | 4                | X            | 33              | 30<br>29  |            | al gw, qv                          |
| 911        | 2551          | X              |       | $\overset{4}{2}$ |              |                 |           | 38         | lm fe ch qv                        |
| 912        | 2651          | 0.01           |       | 37               | x<br>7       | 58              | 20        | 130        | fe ms, lm qv                       |
| 215        | 2001          | 0.01           |       | 31               | 1            | 169             | 1450      | 62         | g al gw, br qv                     |
| Bowerbir   | rd Workir     | igs            |       |                  |              |                 |           |            |                                    |
| 913        | 2552          | 0.24           |       | 1230             | 485          | 648             | 30.0%     | 740        | al gw, li bx gv, ga                |
| 914        | 2552          | 0.05           |       | 2400             | 420          | 521             | 3.9%      | 223        |                                    |
| 915        | 2552          | 0.10           |       | 51               | 365          | 412             | 19.5%     | 223<br>292 | al gw, li bx g/qv,                 |
| 916        | 2552          | X              |       | 51<br>52         | 148          | 348             | 2.0%      |            | al gw, li bx g/qv,                 |
| 917        | 2552          | 0.08           |       | 31               | 1020         |                 |           |            | bx gqv, ga                         |
| 918        | 2552<br>2552  |                | 0.11  | 610              | 540          |                 | 29.0%     | 135        | bx gqv, ga ml                      |
| 510        | 2002          | 0.10           | 0.11  | 010              | 540          | 1733            | 28.0%     | 106        | li bx g al gw, ga m                |
| 919        | 2552          | X              |       | 48               | 68           | 769             | 2.1%      | 28         | br al gw, gqv                      |
| 920        | 2652          | X              |       | 19               | x            | 51              | 330       | 33         | g ch qv                            |
| 921        | 25 <b>5</b> 2 | X              |       | 60               | x            | 115             | 1220      | 186        | ctt, lm qv (in fe m                |
| 922        | 2552          | X              |       | 400              | 50           | 193             | 6.6%      | 570        | li bx g al gw,qv (p.               |
| 923        | 2251          | 0.47           |       | 620              | х            | 49              | 990       | 26         | gqv                                |
|            | ~~~           | 0.01           | 0.04  |                  |              |                 |           |            |                                    |
| 923<br>924 | 2251          | 0.04           | 0.04  | 79               | X            | 42              | $O_{11}$  | ] (        | braigw, gov                        |
|            | 2251<br>2251  | $0.04 \\ 0.20$ | 0.04  | 1400             | x<br>x       | 42<br>15        | 610<br>55 | 17<br>18   | br al gw, gqv<br>bx g al gw,li gqv |

| SAMPLE     |              | 1            | *     | ASSAYS          | mqq) 8       | )         |            |             |                             |
|------------|--------------|--------------|-------|-----------------|--------------|-----------|------------|-------------|-----------------------------|
| NO 12-     | BLOCK        | ¦ Au ¦       | Au(R) | : As            | Ag           | ¦ Cu      | ¦ Pb¦      | Zn          | ** LITHOLOGY                |
|            | l<br>        | .!;          |       | i               |              | i<br>I    | <br>       |             |                             |
|            |              |              |       |                 |              |           |            |             |                             |
| 927        | 2351         | X            |       | 710             | X            | 136       | 296        | 24          | br g ms, gqv                |
| 928        | 2351         | 0.01         |       | 200             | X            | 238       | 920        | 9           | br ms, gqv                  |
| 929        | 2351         | X            |       | 200             | X            | 173       | 415        | 115         | lm gqv (in fe ms)           |
| 930        | 2250         | X            |       | 38              | X            | 64        | 115        | 65          | lm gqv (in fe ms)           |
| 931        | 2351         | 0.31         | 0.38  | 1590            | X            | 93        | 2580       | 284         | g al gw, qv                 |
| 932        | 2351         | 0.02         |       | 190             | X            | 405       | 1940       | 114         | <pre>lm ct (in fe ms)</pre> |
| 933        | 2451         | X            |       | 15              | x            | 41        | 58         | 35          | fe ms gqv                   |
| 934        | 2351         | X            |       | 9               | X            | 75        | 92         | 76          | ct, fe ms, gqv              |
| 935        | 2451         | X            |       | 63              | X            | 44        | 185        | 13          | br g al gw, gqv             |
| 936        | 2451         | $\mathbf{x}$ |       | 31              | x            | 28        | 865        | 13          | br g al gw, gqv             |
| 937        | 2451         | $\mathbf{x}$ |       | 16              | X            | 32        | 108        | 14          | br g al gw, gqv             |
| 938        | 2451         | 0.01         | 0.02  | 21              | x            | 41        | 390        | 47          | br g al gw, gqv             |
| 939        | 2451         | X            |       | 50              | X            | 39        | 156        | 22          | br g al gw, gqv             |
| 940        | 2451         | X            |       | 1               | x            | 29        | 41         | 75          | ct fe ms, g Im qv           |
| 941        | 2451         | x            |       | 18              | x            | 32        | 28         | 50          | gw/ms, g lm qv/ct           |
| 942        | 2451         | X            |       | 13              | X            | 26        | 28         | 19          | g al gw, qv                 |
| 943        | 2451         | X            |       | 20              | Z ×          | 43        | 30         | 130         | fe gw, gqv                  |
| 944        | 2451         | x            |       | 5               |              | 30        | 25         | 35          |                             |
| 945        | 2551         |              |       |                 | X            |           |            |             | g al gw, ms, gqv            |
|            |              | X            | X     | X               | X            | 30        | 13         | 91          | ch qv                       |
| 946        | 2551         | X            |       | 6               | X            | 75        | 22         | 104         | lm qv (in fe ms)            |
| 947        | 2551         | x            |       | 17              | X            | 175       | 287        | 119         | lm qv (in fe ms)            |
| 948        | 2551         | X            |       | 41              | X            | 280       | 950        | 186         | lm gqv (in fe ms)           |
| 949        | 2551         | X            |       | 2               |              | 44        | 24         | 54          | lm gqv (in fe ms)           |
| 950        | 2451         | X            |       | 40              | X            | 41        | 122        | 154         | al gw, gqv                  |
| 951        | 2551         | 0.02         |       | 23              | $\mathbf{x}$ | 395       | 750        | <b>27</b> 8 | lm qv (in fe ms)            |
| 952        | 2551         | X            |       | 69              | X            | 25        | 36         | 34          | al st, gqv                  |
| 953        | 2551         | 0.01         |       | 14              | X            | 349       | 164        | 61          | g lm qv (in fe ms)          |
| 954        | 2552         | X            |       | 150             | 1            | 111       | 810        | 134         | g lm qv (in fe ms)          |
| 955        | 2553         | X            |       | 3               | X            | 60        | 31         | 25          | g ch qv (in ms)             |
| 956        | 2552         | 0.01         |       | 3               | 1            | 94        | 460        | 226         | al gw, br gqv               |
| 957        | 2552         | x            |       | 14              | x            | 485       | 36         | 37          | fe al gw, qv                |
| Hollis     | Workings     |              |       |                 |              |           |            |             |                             |
| 0.70       | 0550         |              |       |                 | . =          | 40 0-4    | A A        |             |                             |
| 958        | 2552         | 1.40         |       | 4580            | 1560         | 13.3%     |            |             | al gw, bx li gv, ml         |
| 959        | 2552         | 0.08         | 0.08  | 280             | 75           | 6470      | 1.1%       | 224         | al gw, bx li g/qv           |
| 960        | 2552         | 0.02         |       | 130             | 78           | 507       | 8.6%       | 560         | br gw, bx li gv             |
| 961        | 2552         | x            |       | 41              | 1            | 83        | 960        | 112         | br bx li g ms               |
| 962        | 2552         | x            |       | 12              | x            | 81        | 263        | 77          | gw, gqv                     |
| 963        | 2552         | x            |       | 3               | X            | 59        | 105        | 83          | fe ms, gqv                  |
| 964        | 2552         | x            |       | 190             | X            | 44        | 116        | 128         | gw, br gqv                  |
| 965        | 2552         | 0.02         |       | 490             | 18           | 412       | 1490       | 1070        | br al gw, bx li gqv         |
| 966        | 2552<br>2552 | X            |       | 19              |              | 25        | 155        | 157         |                             |
| 967        | 2552<br>2552 | X            |       | 750             | x<br>x       | 40        | 3180       | 82          | ms, gqv                     |
| 968        | 2652         | X            |       | 13              |              | 41        | 162        | 57          | g al gw, qv                 |
| 969        | 2553         |              |       | 310             | X            |           |            |             | g al gw, qv                 |
| 969<br>970 | 2553<br>2553 | X            |       |                 | X            | 70<br>150 | 540<br>450 | 20          | al st, gqv                  |
| 970<br>971 | 2553         | X            |       | 2 <u>4</u><br>6 | 4            | 158       | 450<br>52  | 253         | br al gw, qv                |
| 211        | 2000         | Х            |       | O               | x            | 28        | 52         | 110         | ms, ch qv                   |

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| SAMPLE | GRATIC       | i<br>I       | >     | k ASSAYS | mqq) E       | )      |      |     |                |
|--------|--------------|--------------|-------|----------|--------------|--------|------|-----|----------------|
| NO 12- | BLOCK        | ¦ Au         | Au(R) | As       | Ag           | Cu     | ! Pb | Zn  | ** LITHOLOGY   |
|        | !<br>        | _!           | }     |          | ţ            | i<br>+ |      | !   | l<br>          |
|        |              |              |       |          |              |        |      |     |                |
| 972    | 2553         | 0.30         | 0.32  | 15       | X            | 38     | 55   | 103 | br fe gw, qv   |
| 973    | 2553         | X            |       | 23       | X            | 52     | 23   | 15  | br al gw, qv   |
| 974    | <b>2</b> 553 | $\mathbf{x}$ |       | 4        | $\mathbf{x}$ | 125    | 23   | 35  | brgalgw, qv    |
| 975    | 2553         | X            | X     | 9        | X            | 27     | 20   | 14  | ctt, gqv       |
| 976    | 2553         | x            |       | 4        | x            | 40     | 36   | 50  | al gw, gqv     |
| 977    | 2553         | x            |       | 30       | x            | 35     | 58   | 254 | al gw, gqv     |
| 978    | 2553         | x            |       | 4        | X            | 34     | 39   | 36  | g ch qv        |
| 979    | 2552         | $\mathbf{x}$ |       | 6        | 9            | 805    | 135  | 12  | br al gw, qv   |
| 980    | 2552         | 0.15         | 0.13  | 710      | 2            | 1106   | 2900 | 660 | bx g al gw, qv |
| 981    | 2552         | X            |       | 11       | X            | 230    | 40   | 22  | al gw, fe qv   |
| 982    | 2553         | 0.01         |       | 9        | X            | 27     | 39   | 85  | al gw, qv      |
| 983    | 2553         | x            |       | 1190     | X            | 58     | 1740 | 97  | gqv            |
| 984    | 2453         | x            |       | 50       | x            | 31     | 295  | 52  | g al gw, qv    |
| 985    | 2453         | 0.01         |       | 55       | 4            | 61     | 3450 | 60  | bx g al gw, qv |
| 986    | 2452         | x            |       | 190      | x            | 59     | 151  | 51  | g al gw qv     |
| 987    | 2453         | X            |       | 15       | X            | 31     | 38   | 124 | fe gw, qv      |
| 988    | 2553         | x            |       | 290      | x            | 59     | 390  | 215 | fe ch qv       |

| * ANALYSIS | CODE    | QUALITY PARAMETER  | DETECTION<br>LIMIT | UNITS |
|------------|---------|--------------------|--------------------|-------|
| Au         | FA50    | Acc.+15%           | 0.01               | ppm   |
| Au(R)      | FA50    | Acc. +15%          | 0.01               | ppm   |
| Ag         | D100    | Prec. <u>+</u> 10% | 1                  | ppm   |
| Cu         | D100    | Prec. +10%         | 2                  | ppm   |
| Pb         | D100    | Prec. +10%         | 5                  | ppm   |
| Zn         | D100    | Prec. +10%         | 2                  | ppm   |
| As         | D100    | Prec. +10%         | 2                  | ppm   |
| Y          | Below 1 | imit of detection  |                    |       |

## \* \* Key to Lithological Abbreviations, Table 1.

| Sw                     | greywacke               |
|------------------------|-------------------------|
| st                     | siltstone               |
| ms                     | mudstone, shale         |
| ct                     | chert, cherty           |
| ett                    | cherty tuff (?)         |
| q                      | quartz                  |
| ga                     | galena                  |
| ml                     | malachite               |
| g                      | gossan                  |
| li                     | limonite, limonitic     |
| fe                     | ferruginous             |
| ch                     | chloritic               |
| al                     | altered (metasomatised) |
| bx                     | boxwork                 |
| $\mathbf{v}\mathbf{y}$ | vuggy                   |
| br                     | brecciated              |
| lm                     | laminated               |

vein

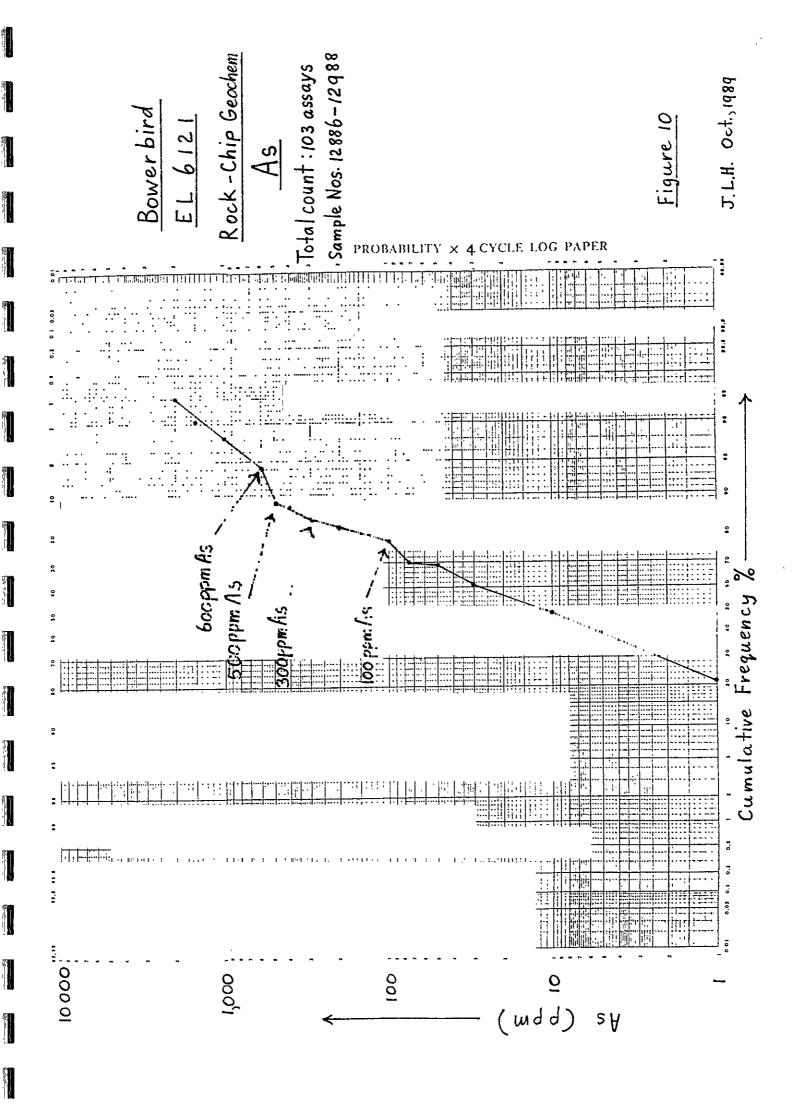
The geochemical parameters given in Figures 6-9 are also based on the cumulative frequency graphs and are intended as a guide to colour coding.

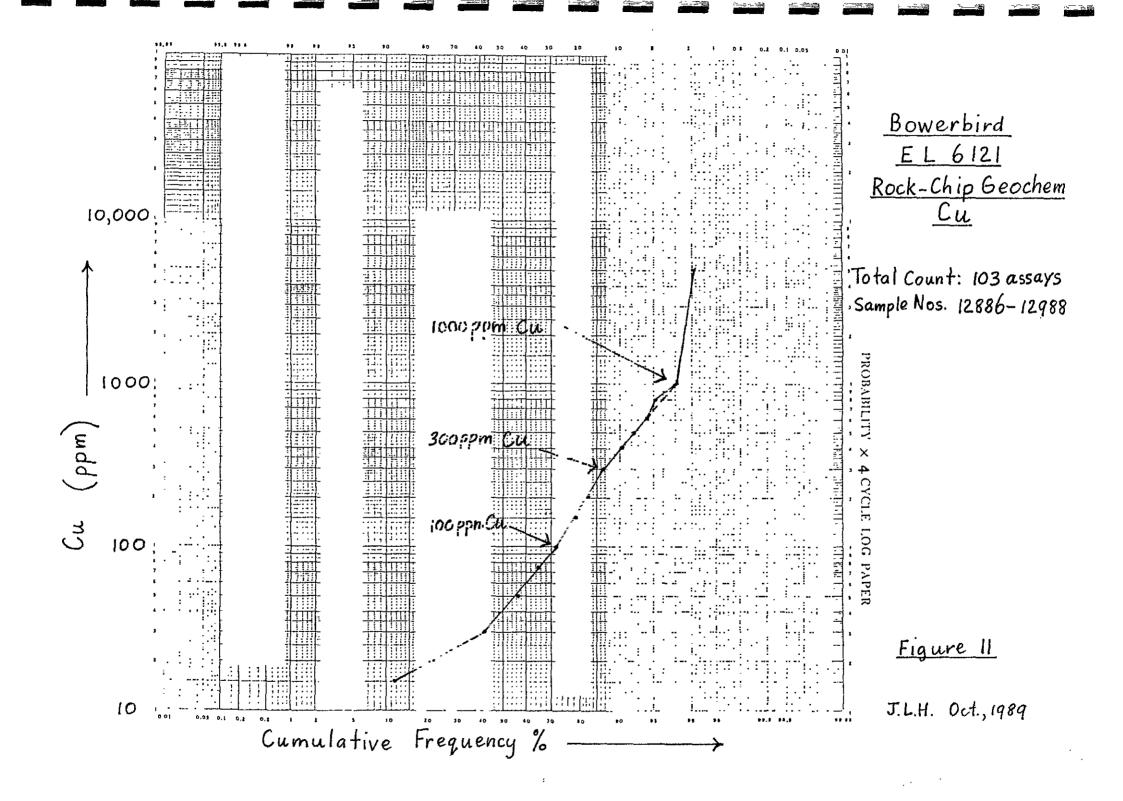
In addition to the +1% values for lead and copper, samples from both the "Bowerbird" and "Hollis" workings gave very high silver and anomalous gold values (1560 ppm Ag and 1.40 ppm Au for sample numbers 12958). Arsenic and zinc values were also anomalous, up to 4580 ppm As and 1010 ppm Zn.

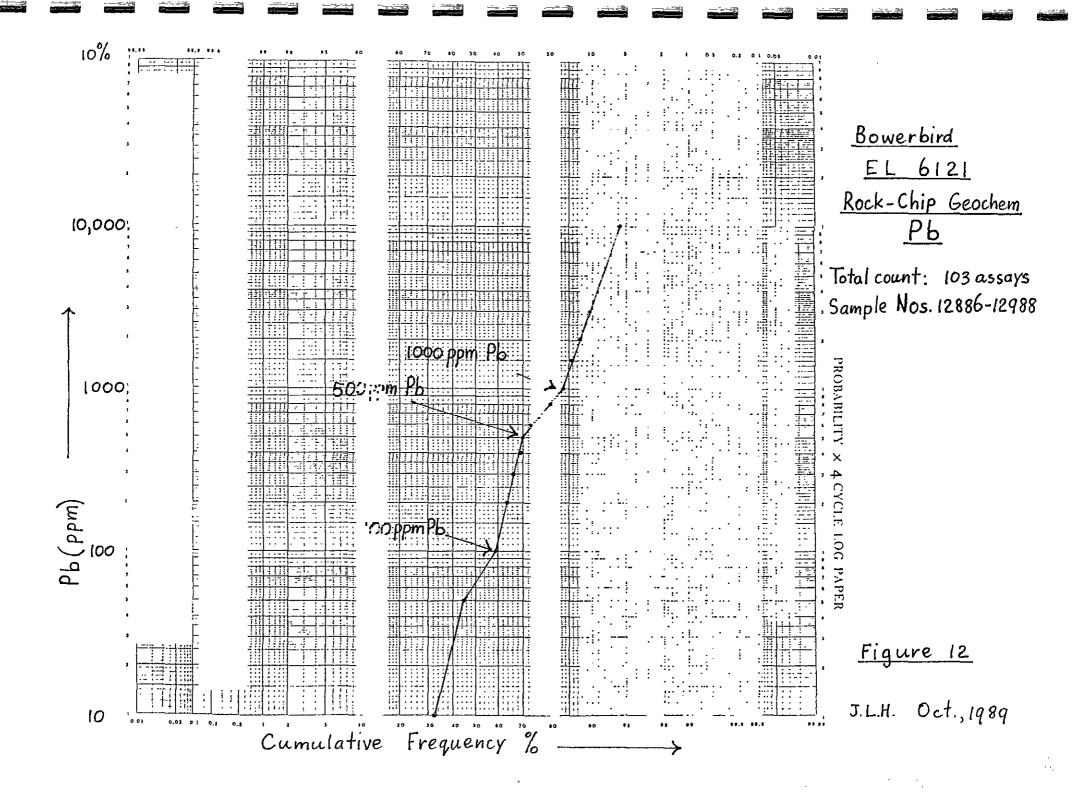
Lithologically similar, although less strongly mineralised, zones were noted elsewhere within the tenement area. These zones unlike the "Bowerbird" and "Hollis" workings were generally stratabound and in some cases had a considerable strike length. One zone of brecciated gossanous altered quartz-veined greywacke (sample numbers 12890-2, 12896-8, 12900-1) gave assay values up to 0.19 ppm Au, 620 ppm As, 380 ppm Cu and 860 ppm Pb. Sample numbers 12980-1 may be part of this zone. Another zone of mineralised altered greywacke is represented by sample numbers 12984-6 and a third by sample numbers 12935-39, 12941-2, 12950. This group generally gave anomalous lead values (up to 865 ppm Pb) although the other metal values were generally not anomalous.

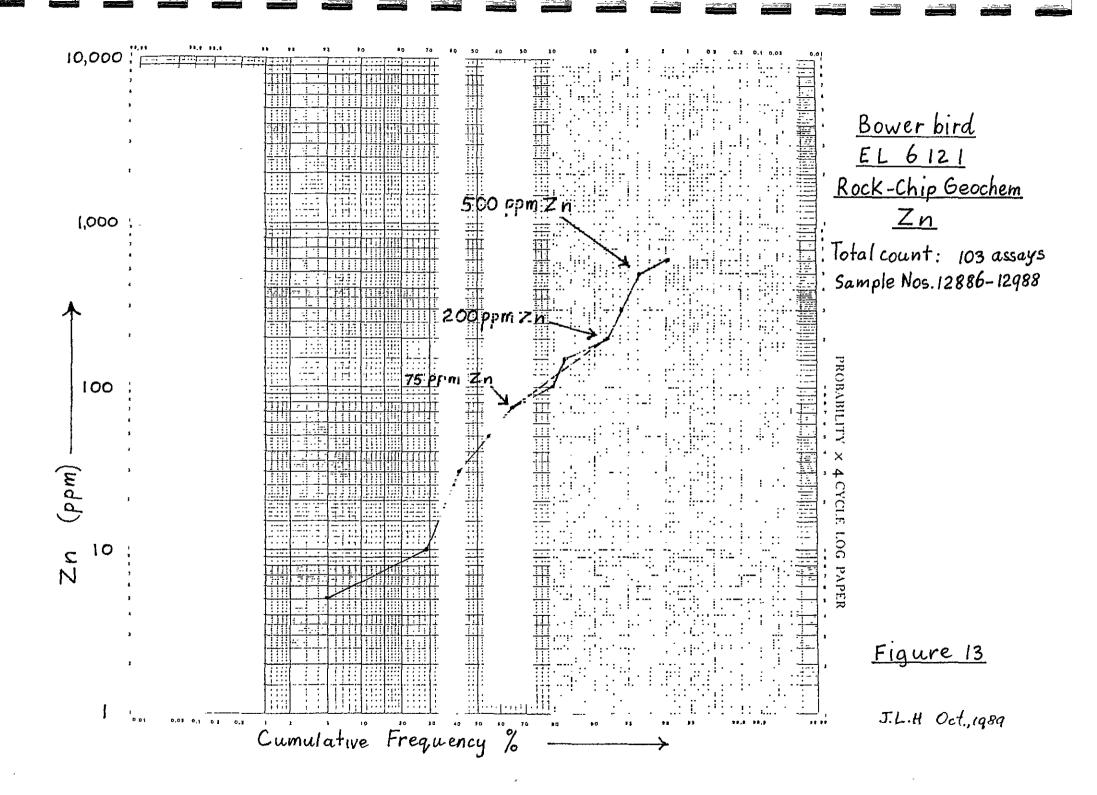
Other samples in the vicinity of the "Hollis" workings gave anomalous values, especially for Pb and Cu. Notable examples, generally of altered quartz-veined greywacke, are sample numbers 12956-7, 12965, 12967, 12969-70. The anomalous result given by sample number 12919 may be due to contamination, during sample preparation, from the previous sample (12918) from the "Bowerbird" workings.

The most consistent zone of anomalous gold values (sample numbers 12923-6, 12931) is from a weakly mineralised quartz-veined ridge of altered greywacke/siltstone which crosses the western boundary of block 2351. Assays up to 0.47 ppm Au, 1590 ppm As, 2580 ppm Pb and 284 ppm Zn were obtained from this zone, over a strike length of 400 metres.









#### CONCLUSIONS AND RECOMMENDATIONS

Mineralisation within EL 6121 appears to be entirely epigenetic, although probably mainly derived from the enclosing sedimentary strata by hydrothermal means during metamorphism.

The presence of extensive zones of brecciated altered greywacke with weakly to strongly anomalous base metal, silver and gold values has been demonstrated.

The two strongest rock-chip geochemical anomalies are those associated with the abandoned "Bowerbird and "Hollis" workings, where narrow mineralised shears cut obliquely across the stratigraphy. Neither of these prospects appears to be of economic significance, although an EM survey with limited follow-up RC drilling may be warranted, especially at "Bowerbird".

The most encouraging target for follow-up exploration work is the zone of anomalous gold (and Pb-As) values in the western part of block 2351. This zone has potential for the discovery of a medium sized gold deposit.

To further test other zones of potential gold/base metal mineralisation within EL 6121, a limited number of widely spaced soil sample traverses, with samples at 50 metre intervals, is recommended.

JEFFERSON L. HARRIS B.Sc., M.Aus. I.M.M.

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### EXPENDITURE STATEMENT

EXPENDITURE FOR THE YEAR ENDING AUGUST 28 1989

EXPLORATION LICENCE MOLINE EL 6121

| SALARIES & WAGES            | 585.07  |
|-----------------------------|---|
| BENEFITS                    | 211.42  |
| DRAFTING                    | <del></del>                                     |
| COOKERY                     | 516.00  |
| FIELD SUPPLIES - GENERAL    | 150.00  |
| TRAVEL                      | 734.32  |
| FREIGHT                     | 328.30  |
| OTHER CONTRACTORS           | 7,230.60  |
| CONTRACT GEOLOGICAL         | -   |
| ASSAYS                      | 2,023.60  |
| EQUIPMENT OPERATION & MAINT | 121.00  |
|                             | Diggs Spring Spring spring along should be been |
|                             | 11,900.31                                       |
| OVERHEAD @ 10%              | 1,190.03  |
|                             |   |
|                             | 13,090.34                                       |
| ,                           | =======   |

## C. WILLIAMS

MANAGER - ACCOUNTING