

12th October, 1973.

FINANCIAL ASSISTANCE FOR MINERAL EXPLORATION

Project Title : Loch Fyne & Cumlodden (MME 1/AE 4)

Second Supplementary Application for Assistance

Applicant : Consolidated Gold Fields Limited

Registered Office : 49, Moorgate, EC2R 6BQ

Telephone No. : 01-606-1020

Contact : Mr. R.B. Riley or Mr. L.J. Stubbings
at above address and telephone.

Site : The Loch Fyne & Cumlodden District of
Argyllshire, as shown on the 1 : 250,000
map attached.

Minerals sought : Copper, nickel, zinc, molybdenum and
precious metals.

Mineral rights.

The mineral rights of the project area belong to three
landowners:-

- (a) The Duke of Argyll, the Argyll Estate, 52,000 acres;-
a five-year prospecting licence applies until 31st December,
1974;
- (b) Sir Ilay M. Campbell, Cumlodden Estate, 7,000 acres;-
the prospecting licence has been extended to 12th November,
1973, and it is intended to ask the owner for a further
six months' extension;
- (c) Mr. D.J. McKinlay, North Cralacken Farm, 360 acres;-
prospecting licence current until 29th June, 1974.

Planning Permission.

It is considered that the continued work programme
outlined below is not of a nature that would require planning
permission.

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Work Programme

1. A geological report, with 11 enclosures, to cover the work undertaken in the first period from 2nd August, 1971 to 30th June, 1972, and the claim for the expenditure involved, accompanies this new application.
2. A geological report for the second period, from 1st July, 1972 to 30th June, 1973, is being prepared. In essence, the work during this period has been as follows:-
 - (i) The setting up of a permanent geological office, and the enlargement of the field team to two geologists (with additional specialist personnel intermittently as required), and a minimum of 4 field assistants.
 - (ii) The primary geochemical follow-up by closer-spaced stream sampling, of all the many regional geochemical anomalies indicated in the previous initial reconnaissance; and the secondary follow-up of some of the localities continuing to show promise, in some cases including I.P. traverses. (Some of this secondary follow-up remains to be undertaken).
 - (iii) The analysis and priority rating of the localised geochemical (soil)/geophysical (I.P. and magnetic) anomalies in the area of the two known Cu-Ni workings, Craignure and Coille Bhraghad, and the Intermine area between them, (the localities being marked on the attached map).

The detailed systematic geological examination of these anomalous localities; detailed in-fill soil sampling (where necessary by auger to sample below very thick peat) at 100 ft. spacing on lines 200 ft. apart; further localised magnetic surveys; and petrographic work on selected rock specimens.

- (iv) Intensive work on the Garbh Achadh locality, where the primary geochemical follow-up work had outlined an area of ca. 3,000 ft. by 2,000 ft. of significantly anomalous copper content. This work consisted of plane table surveying, detailed soil sampling on a 100 ft. interval, detailed geological mapping, detailed I.P. traversing on lines 200 ft. apart, 'P.I.F.' analysis and petrographic examination of rock specimens; multi-element and precious metal analysis of selected rocks and soils.

-3-

- (v) For the whole Loch Fyne-Cumloddan area, an initial programme of 15-element spectrographic analysis, and sampling for S : Ni ratios on selected sulphide specimens.

3. Although certain analytical results are awaited, the results of the above work have tended to show that:

- (a) the Intermine area, while having fine-grained disseminated pyrrhotite and pyrite in the phyllitic metasediments, appears now to have little prospect of containing significant low-grade or massive mineralisation;
- (b) most of the 'regional' geochemical anomalies probably have little economic significance, but several remain to be investigated in detail;
- (c) some results of the initial multi-element and precious metal sampling are interesting, and such work needs expanding, with localised follow-up of significant anomalies;
- (d) the Garbh Achadh locality requires more detailed sampling and trenching before any drilling targets can be indicated;
- (e) the anomalous areas around the old workings at Coille Bhraghad require more intensive I.P., magnetometer and soil sampling surveys, power-augering (by Cobra drill) and trenching to bed-rock, and the further examination of the old mine workings (as access permits) to make a further study of possible controls of mineralisation, together with additional rock sampling.

These items of work form the next stage of the exploration programme.

Starting Date.

The work programme outlined in Section 3 above, is scheduled for a period of about one year, beginning 1st July, 1973.

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FINANCIAL ASSISTANCE FOR MINERAL EXPLORATION

26 JUN 1972

Supplementary Application for
Assistance

Applicant : Consolidated Gold Fields Limited

Registered office : 49 Moorgate, London EC2R 6BQ

Telephone No. : 01-606-1020

Contact : Mr. F. Blurton or Mr. R.B. Riley
at above address and telephone

Project title : Loch Fyne and Cumloddan (MME 1/AE4)

Site : The Loch Fyne and Cumloddan district of
Argyllshire. Please see accompanying
1:250000 map of the area

Minerals sought : Copper, nickel and zinc

Geology

Attached is overlay (plan LF1) to 1 inch to 1 mile Geological Survey sheets 37 and 45. This shows the updated position by outlining the areas of geophysical and geochemical anomalies on which further work is intended.

Mineral Rights

The mineral rights of the area are held by three landowners:

- (a) Duke of Argyll (Argyll Estates 81 sq. miles/52000 acres) - a five-year prospecting licence expiring 31st December, 1974, with option to take up a 42-year mining licence.
- (b) Sir Ilay M. Campbell (Cumloddan Estate 11 sq. miles/7000 acres) - agreement expires 12th August, 1972: new prospecting agreement or licence yet to be negotiated.
- (c) D.J. McKinlay (North Crallerton 360 acres) - still under negotiation.

Planning Permission

It is considered that the work programme outlined below is not of a nature to require planning permission, although the planning position will be reviewed if drilling is undertaken.

Work Programme

1. The original application for assistance of 30th July, 1971 was drawn up to cover the following phases of exploration on the Argyll and Cumloddan Estates:-
 - 1.1. Initial follow-up work, comprising soil sampling, magnetometry and ground E.M., in the vicinity of known mineralisation at the disused Craignure and Coille Braghad mines to investigate the possibility of extensions to the sulphide zones and to serve as orientation studies of the various levels of responses that can be expected from mineralisation in this geological environment.

1.2 Initial geochemical and geophysical follow-up work on anomalous zones detected by the reconnaissance stream sediment sampling elsewhere on the estates in order to confirm the anomalies and perhaps locate signs of mineralisation or to disprove them and locate indications of contamination from man-made objects.

2. Work achieved since the application. The initial follow-up work at Craignure, Coille Braghad and the intervening zone has been completed (June 1972) and has involved the taking of 1,382 soil samples, the completion of 53 line miles of reconnaissance magnetometry, 18 line miles of more detailed magnetometry at Craignure, 5 line miles of E.M., 53 line miles of reconnaissance I.P., geological mapping at a scale of 1:2500, tape and compass surveys of the old workings and preliminary investigations of the underground workings from the adit at Coille Braghad.

2.1 At Craignure, grid soil sampling was undertaken and outlined an anomalous area close to the old mine with values up to 159 ppm copper and greater than 120 ppm nickel. Reconnaissance magnetometry was carried out and outlined discontinuous trends with amplitudes of 1000 gamma along a strike length of 4,500 feet, the largest anomaly being associated with the old Craignure mine. Some E.M. work was undertaken, but the equipment proved to be very unreliable when used on long traverses and was not used again. Consequently, I.P. work was carried out on a grid coincident with that used for the magnetometry. Several extensive zones of high chargeability were outlined, one up to 100 milliseconds, with generally low resistivities. There was good coincidence between I.P. and magnetometry over a strike length of about 4,000 feet at the Craignure mine. Some more detailed magnetometry was carried out over 18 line miles revealing an extremely complex pattern of anomalies which will require detailed I.P. work to screen out those anomalies due to mineralisation.

In October 1971, tape and compass surveys of the old surface workings were carried out and geological mapping was completed in March 1972. The data are being plotted at present.

2.2 At Coille Braghad, a similar programme of work was undertaken. Grid soil sampling gave anomalies close to the mine with values up to 120 ppm copper and over 120 ppm nickel and there was good coincidence between these geochemical anomalies and the magnetic anomalies, and between magnetic anomalies and I.P. All geophysics here has, as yet, been reconnaissance only. Tape and compass surveys of the old surface workings were carried out in October 1971 and geological mapping was completed in May 1972. The data are at present being plotted.

2.3 The intervening zone between the Craignure and Coille Braghad mines has been investigated by soil sampling. No large anomalous groupings were revealed by this work but there were several values over 200 ppm nickel and between 100 and 200 ppm copper. The geophysical grids over the mine areas were expanded into this area and further magnetometry and I.P. was carried out N.E. of the Craignure grid during May 1972, the results of which have not yet been assessed.

- 2.4 The initial follow-up on anomalous zones detected by the reconnaissance stream sediment sampling is in its early stages as more emphasis than foreseen at this stage was placed on geological and geophysical work at Craignure and Coille Braghad. To date closely spaced stream sediment sampling has been carried out and 1,000 samples have been taken in the vicinity of Garb Achadh, and this phase of work will continue.
3. Future Work Programme has been drawn up to cover the following phases of exploration:-
- 3.1 Further initial follow-up on anomalous zones detected by the reconnaissance stream sediment sampling will be carried out. Samples will be analysed for zinc in addition to copper and nickel as massive sulphides on the S.E. side of Loch Fyne contain significant quantities of zinc and the association of volcanic rocks, which could occur in the area, may contain zinc.
- 3.2 Detailed geophysical work will be undertaken around the Craignure and Coille Braghad mines and the intervening ground. It is estimated that this may involve carrying out up to 250 line miles of ground magnetometry and 50 line miles of I.P.
- 3.3 It is hoped that work in 3.1 may outline some drilling targets, and at this stage, it is envisaged that there may be up to 2,000 feet of diamond drilling undertaken in this programme.

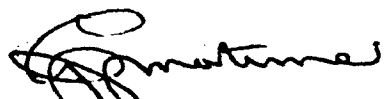
Starting Date

The work programme and attached statement of costs relate to a one-year period beginning 1st July, 1972.

Declaration

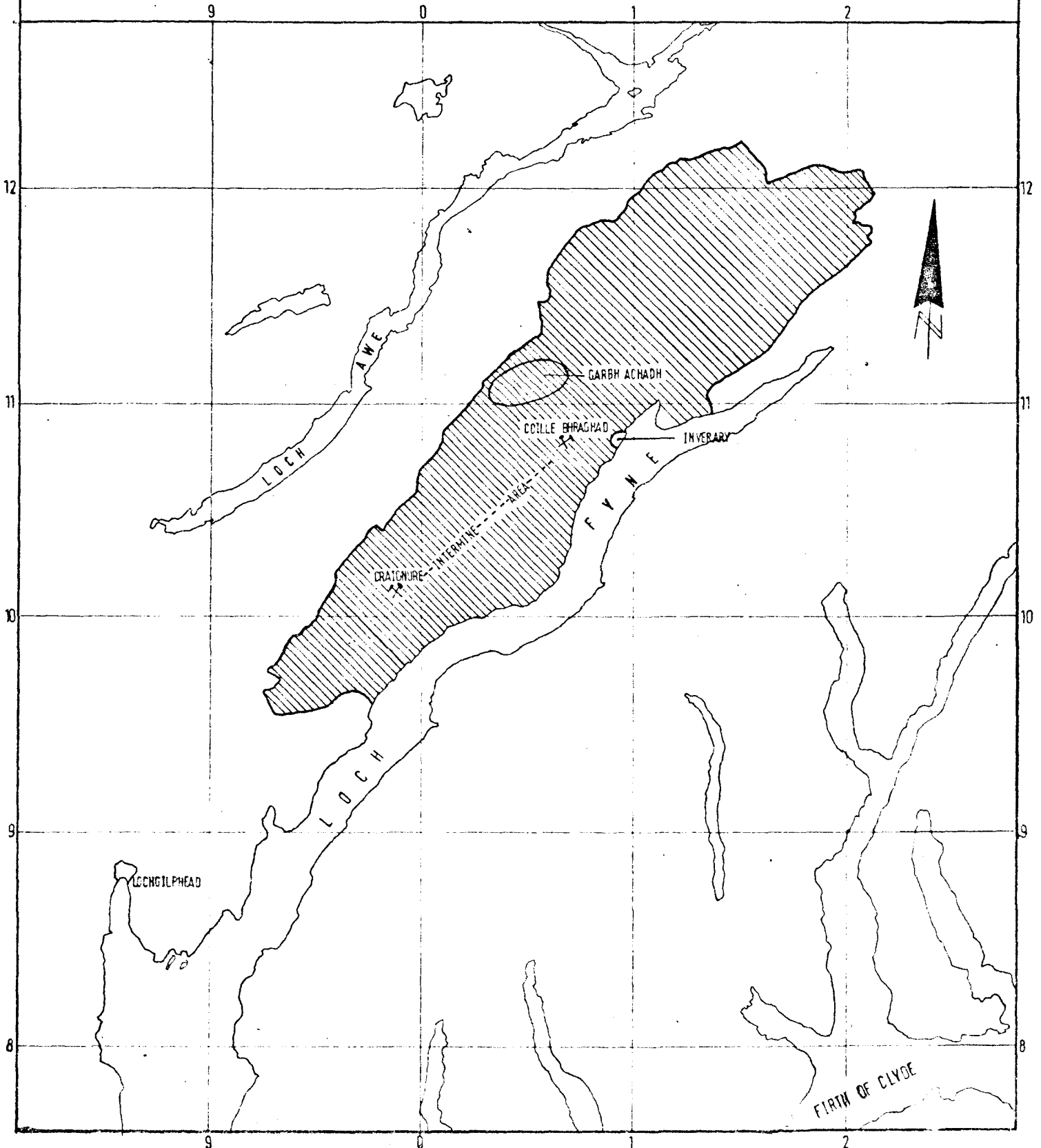
- (i) We wish the proposed exploration programme outlined in this application to be considered for financial assistance under the Mineral Exploration and Investment Grants Act 1972. To the best of our knowledge and belief the information given above is correct.
- (ii) We understand that before any monies are advanced by the Department we will be required to give undertakings in writing regarding the terms and conditions governing the scheme.
- (iii) We agree that the information given in this application may be made available in confidence to the Institute of Geological Sciences.
- (iv) We agree that the information on location, work programme and duration given above may be made available in confidence to the Nature Conservancy.

Yours faithfully,
for and on behalf of Consolidated Gold
Fields Limited.


Deputy Chairman.

LOCH FYNE AND CUMLODDEN
BOUNDARIES OF EXPLORATION AREA

scale 1:250 000



Signed for and on behalf of
Consolidated Gold Fields Limited

J. C. Han
Director.

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LOCH FYNE & CUMLODDEN M.M.E. 1/AE4

Technical Report for the period 1.7.73 - 30.6.74

Introduction

This report and the accompanying maps have been compiled to support Consolidated Gold Fields Ltd. claim for financial assistance for mineral exploration. It covers the work briefly outlined in Section 3 of the Second Supplementary Application for Assistance of 12th October, 1973. The report is laid out in the same style as to its predecessor for the period 1st July 1972 - 30th June 1973, viz :

Summary

1. Regional Reconnaissance Drainage Anomalies
2. Garbh Achadh
3. Mines and the Intermine Area
4. Other Work

Appended list of accompanying plans

Summary

Geological and geochemical follow-up work was continued and completed over the regional reconnaissance drainage anomalies. Other follow-up work of a similar nature was carried out in areas of poor reconnaissance stream sampling coverage. No economic mineralisation was discovered and no further geophysical follow-up work was undertaken.

The results of copper, nickel, zinc, molybdenum, gold and silver analyses on preliminary samples of soils and rocks from Garbh Achadh were encouraging and a programme of overburden and bedrock sampling on a regular grid pattern was carried out using a mechanical digger. Four diamond drill holes were sunk to test the geophysical and geochemical anomalies which had been established. 1,416' were drilled but no economic mineralisation was intersected.

More detailed geophysical and geochemical surveys were carried out at the sites of the two old mines, Coille Bhraghaid and Craignure. Results indicated that no further work was justified at the latter site. Three trenches were dug at Coille Bhraghaid to examine coincident low geochemical and strong geophysical anomalies. No economic mineralisation was exposed.

A few extra soil samples were collected along lines east of Coille Bhraghad and west of Craignure. Reconnaissance E.M. and magnetic traverses were conducted in an area of no exposure east of the Leacann Water where a strong I.P. anomaly had previously been located. No follow up work was merited.

The results achieved to date are such that little further exploration work is contemplated on these estates.

1. Regional Reconnaissance Drainage Anomalies - Fig. 1
 - 1.1 Allt an t-Sithein - No further work was carried out.
 - 1.2 Brannie Burn - Geological investigations were made over the previously located, reconnaissance I.P. anomalies. No economic mineralisation was found. No further work was carried out in the Head of Brannie Burn area.
 - 1.3 Glen Aray - Geological mapping was undertaken in S.W. part of this area (Fig. 2) No economic mineralisation was discovered.

Soil sampling was carried out in the E. and N.E. of the area to try to locate the point of entry of anomalous metal values, particularly zinc, into the drainage (Fig. 3). The level of zinc values was found to be much lower in the soils and secondary enrichment of the stream sediments is suspected.

Preliminary follow-up stream sediment sampling was extended to link Glen Aray with Garbh Achadh and Coille Bhraghad in order to define the area of interest around these last two places. (Fig. 1 and Figs. 4.1 - 4.7)

- 1.4 Single Locality Copper Anomalies (Areas A - H and J)

Further work was limited to areas H and J and consisted of geological examinations and a few reconnaissance soil sampling traverses. (Fig. 5) No significant mineralisation was discovered and the soil trace element values were considered to be uninteresting.
- 1.5 Single Locality Nickel Anomalies (Areas I and II)

Preliminary follow-up stream sediment sampling was carried out in both of these areas. (Fig. 4.5 and Fig. 6) Geological investigations revealed a sheared talcy ultrabasic rock in area II and a lamprophyre

dyke in area I, which units are considered to be the likely source of the anomalous nickel concentrations in the sediments.

2. Garbh Achadh

2.1 Geology - Geological mapping was continued and refined (Fig. 7)

2.2 Geochemistry (Figs. 8, 9 and 10) Following the discovery of anomalous base and precious metals in soils of the area, further sampling was undertaken. This consisted largely of pit profiling and bedrock sampling using a mechanical digger. Samples were collected every 200' along lines 600' apart. Samples were analysed by atomic absorption methods for copper, nickel, zinc, molybdenum, gold and silver. Check assaying for gold was carried out by the Neutron Activation technique. Where no bedrock was encountered, the overburden value is that of material collected from pit bottom (Fig. 8)

The results of this work were considered sufficiently encouraging to warrant a limited test programme by scout diamond drilling.

2.3 Diamond Drilling

Four holes were drilled (Figs. 11.1) to test the anomalies discovered in the pitting programme where they were coincident with established geophysical anomalies. No planning permission was required. (Figs. 11a and b).

Geological sections together with the analytical data on split cores are illustrated (Figs. 12-15) No intersections of economic mineralisation were made and a total of 1,416' of drilling was completed.

3. Mines and the Intermine Area

3.1 Coille Bhraghad

3.1.1 Geology Further geological mapping was carried out and the full data are presented (Fig. 16)

3.1.2 Geochemistry Detailed soil sampling was carried out to the North of the original grid where detailed geophysics had indicated a strong I.P. anomaly (see below) Three lines of samples were collected in Upper Avenue to try to locate the source of an anomalous copper value in a stream sediment sample. No significant pattern of values emerged so the anomaly was discounted. The data appear in Fig. 17.

Duplicate material from the original P.F.U. orientation stream sediment sampling exercise was analysed for arsenic and silver, as it was hoped that these might act as pathfinders for base and precious metals. (Fig. 18) No significant values appeared and the idea was abandoned.

- 3.1.3 Geophysics A detailed gradient array I.P. survey was conducted in the vicinity of the old mine workings. A strong chargeability zone was located to the North of the mine workings - Fig. 19 and Fig. 20.

A new detailed magnetometer survey was carried out over this zone of interest - Fig. 21.

- 3.1.4 Trenching - Fig. 21 shows the location of three trenches dug on coincident magnetic and I.P. anomalies. Weak geochemical anomalies are present in close proximity.

Superficially interesting concentrations of sulphides were found in two of the trenches but analytical values were too low to justify any further work. - Fig. 22.

3.2 Craignure

- 3.2.1 Geophysics A detailed gradient array I.P. survey was completed (Figs. 23 and 24) No good conductors, coincident with magnetic or geochemical anomalies, were located and no further work was carried out.

3.3 Intermine Area and Extensions to East and West

- 3.3.1 Leacann Water A strong I.P. anomaly in this area was further investigated by magnetometer and E.M. gun traverses, along three adjacent lines (Graphs 2, 3 and 1). The results are inconclusive and no further work was considered.
- 3.3.2 Extensions Some further soil sampling for copper, nickel and zinc was carried out to the west of Craignure and to the east of Coille Bhraghad. (Fig. 25) but no significant results were obtained.

4. Other Work

Preliminary follow-up stream sediment sampling was carried out to the north of Loch Leacann (Fig. 26) in an area where the original reconnaissance sampling cover was considered inadequate. Geological examinations of moderate nickel stream sediment sample

anomalies were undertaken, but no economic mineralisation was found.

A similar exercise with similar results was carried out in the Furnace/Craleckan area and the results appear in Fig. 27.

List of maps accompanying Geological Report for Loch Fyne Project.

| <u>No.</u> | <u>Title</u> |
|--------------|---|
| Fig. 1 / | Argyll and Cumlodden Estates Preliminary follow-up (P F U) drainage sampling. |
| Fig. 2 / | Glen Aray - geology |
| Fig. 3 | Glen Aray - edge of stream soil samples |
| Fig. 4.1-7 / | Argyll and Cumlodden Estates - P F U stream sediment samples (Cu, Ni, Au values in p.p.m) |
| Fig. 5 / | Areas H and J soil samples (Cu, Ni values in p.p.m) |
| Fig. 6 / | Area I (Glen Shira) P F U stream sediment samples (Cu, Ni, Au values in p.p.m) |
| Fig. 7 / | Garbh Achadh - geology |
| Fig. 8 / | Garbh Achadh - base of overburden samples (Cu, Ni, Zn, Mo, Au and Ag values in p.p.m) |
| Fig. 9 - | Garbh Achadh - soil samples (Cu, Ni, Mo, Au, Ag values in p.p.m) |
| Fig. 10 / | Garbh Achadh - bedrock samples (Cu, Ni, Zn, Mo, Au and Ag values in p.p.m) |
| ✓ Fig. 11 / | Garbh Achadh - diamond drill hole locations and I.P. contours |
| Fig. 12 - | Garbh Achadh - diamond drill hole G.A. 1 |
| ✓ Fig. 13 / | Garbh Achadh - diamond drill hole G.A. 2 |
| Fig. 14 - | Garbh Achadh - diamond drill hole G.A. 3 |
| Fig. 15 / | Garbh Achadh - diamond drill hole G.A. 4 |
| Fig. 16 / | Coille Bhraghad - geology |

| <u>No.</u> | <u>Title</u> |
|-------------|---|
| Fig. 17 / | Coille Bhraghad - soil samples (Cu, Ni, values in p.p.m) |
| Fig. 18 / | Coille Bhraghad - stream sediment samples (As, Ag values in p.p.m) |
| Fig. 19 / | Coille Bhraghad - I.P. (gradient array) chargeability values in milleseconds |
| Fig. 20 / | Coille Bhraghad - I.P. (gradient array) resistivity values in ohm metres |
| Fig. 21 - | Coille Bhraghad - detailed magnetometry survey and trench locations |
| Fig. 22 / | Coille Bhraghad - trench geological logs and bedrock samples (Cu, Ni, Au values in p.p.m) |
| ✓ Fig. 23 - | Craignure - I.P. (gradient array) charge- ability values in milliseconds |
| ✓ Fig. 24 / | Craignure - I.P. (gradient array) resistivity values in ohm metres |
| Fig. 25 / | Craignure to Coille Bhraghad - soil samples (Cu, Ni, Zn values in p.p.m) |
| Fig. 26 / | Loch Leacann - P F U stream sediment samples (Cu Ni Au in p.p.m) |
| Fig. 27 / | Furnace/Craleckan - P F U stream sediment samples (Cu, Ni Au values in p.p.m) |
| Graph 1 | Leacann Water Line 800 EM and Magnetometer Traverses |
| Graph 2 | Leacann Water Line 805 EM and Magnetometer Traverses |
| Graph 3 | Leacann Water Line 810 EM and Magnetometer Traverses |

G.F. Wilks

G.F. Wilks
for Alan Wright

HUNTING TECHNICAL SERVICES LIMITED

12th 15th 6th

Geochemical Analysis

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Client: CONSOLIDATED GOLD FIELDS

Checked by:

Date: 25th JULY 1972

ROCK GEOCHEM L. F. PYNE

| Sample No. | Lab. No. | Element (ppm) | | | | | |
|------------|----------|---------------|-------|------|---------------------------|-------------|--------|
| | | Cu | Ni | Zn | | | |
| LF 2570 | 36743 | 111 | 68 | 81 | calc. pyrite in matrix | + pyrite | LFAV |
| 2571 | 36744 | 84 | 51 | 57 | pyrite matrix | with pyrite | " |
| 2572 | 36745 | 260 | 87 | 125 | pyrite sch. matrix | in pyrite | " |
| 2573 | 36746 | 330 | 44 | 49 | calc. pyrite | | " |
| 2574 | 36747 | 33 | 70 | 49 | pyrite matrix | + pyrite | " |
| 2575 | 36748 | 111 | 65 | 51 | pyrite matrix | | " |
| 2576 | 36749 | 72 | 82 | 90 | pyrite matrix | + pyrite | " |
| 2577 | 36750 | 93 | 46 | 1440 | pyrite matrix | + pyrite | " |
| 2578 | 36751 | 142 | 106 | 144 | pyrite matrix | + pyrite | " |
| 2579 | 36752 | 107 | 139 | 96 | | | " |
| 2580 | 36753 | 73 | 84 | 47 | pyrite matrix | | " |
| 2581 | 36754 | 75 | 65 | 100 | pyrite matrix | | " |
| 2582 | 36755 | 280 | 60 | 87 | pyrite matrix | | " |
| 2583 | 36756 | 93 | 95 | 220 | pyrite matrix | | " |
| 2584 | 36757 | 195 | 112 | 125 | pyrite matrix | | " |
| 2585 | 36758 | 310 | 126 | 75 | pyrite matrix | | " |
| 2586 | 36759 | 151 | 163 | 78 | | | " |
| 2587 | 36760 | 80 | 82 | 240 | pyrite matrix | | " |
| 2588 | 36761 | 104 | 290 | 73 | pyrite matrix | | " |
| 2589 | 36762 | 430 | 65 | 84 | pyrite matrix | | " |
| 2590 | 36763 | 142 | 29 | 1890 | pyrite matrix | | LFEP? |
| 2591 | 36764 | 1800 | 11500 | 75 | | | LFAV 4 |
| 2592 | 36765 | 1910 | 55000 | 87 | | | LFAV 4 |
| 2593 | 36766 | 133 | 1930 | 250 | pyrite matrix | | " |

| Sample No | (Hunings) Lab No. | Cu | Ni | Zn | LFAWN | |
|-----------------------|----------------------|-------|-------|-----|-----------|-----|
| LF 2594 | 36767 | 100 | 139 | 37 | 52 | |
| 2595 | | 169 | 124 | 63 | 57 | |
| 2596 | | 97 | 92 | 250 | 58 | |
| 2597 | | 6900 | 42000 | 73 | 59 | |
| 2598 | | 280 | 1540 | 107 | 60 | |
| 2599 | | 120 | 129 | 37 | <u>62</u> | |
| 2600 | | 1510 | 530 | 44 | 102 | |
| 2601 | | 104 | 178 | 230 | 103 | |
| 2602 | | 147 | 77 | 55 | 104 | |
| 2603 | | 90 | 65 | 70 | 105 | |
| 2604 | | 400 | 400 | 73 | 106 | |
| 2605 | | 36708 | 122 | 77 | 170 | 107 |
| | | | | | | |

Repeat Analyses

| Sample No | Lab No. | Cu | Ni | Zn | New Nos |
|-----------|---------|-----|----|------|----------------------------------|
| LF 2577 | 41981 | 46 | 14 | | LF 2612 |
| 2590 | 41984 | 100 | — | 3200 | 2613 |
| 2593 | 41980 | 95 | 48 | | 2610 |
| 2598 | 41982 | 145 | 92 | | 2614 |
| 2600 | 41983 | 170 | 65 | | 2611 |

| REF. NO. | ppm Bi | ppm Co | ppm Cu | ppm Cr | ppm Pb | ppm Mo | ppm Ni | ppm Ag | ppm Sn | ppm V | ppm W | ppm Zn | % Zr | % Ti | % | |
|----------|--------|--------|--------|--------|--------|--------|--------|--------|--------|-------|-------|--------|------|------|-------|-----|
| LY 3400 | <5 | <5 | 17 | 15 | 300 | 20 | <2 | 100 | 50 | <0.5 | <2 | 100 | <50 | 50 | 0.05 | 0.5 |
| 3401 | <5 | <5 | 30 | 25 | 100 | 30 | <2 | 32 | 10 | <0.5 | <2 | 50 | <50 | 30 | 0.03 | 0.3 |
| 3402 | <5 | 10 | 28 | 30 | 150 | 30 | <2 | 19 | 40 | <0.5 | 5 | 100 | <50 | 50 | 0.1 | 0.5 |
| 3403 | <5 | <5 | 8 | 10 | 70 | 50 | <2 | 54 | <5 | 0.5 | <2 | 40 | <50 | 30 | 0.03 | 0.4 |
| 3404 | <5 | 5 | 45 | 80 | 200 | 30 | <2 | 76 | 40 | <0.5 | <2 | 80 | <50 | 45 | 0.2 | 0.5 |
| 3405 | <5 | <5 | 10 | 5 | 40 | 40 | <2 | 42 | 5 | <0.5 | <2 | 40 | <50 | 20 | 0.02 | 0.3 |
| 3406 | <5 | <5 | 52 | 40 | 150 | 20 | <2 | 40 | 20 | 0.5 | <2 | 40 | <50 | 30 | 0.01 | 0.3 |
| 3407 | <5 | <5 | 240 | 230 | 150 | 30 | <2 | 24 | <5 | <0.5 | <2 | 30 | <50 | 20 | 0.01 | 0.2 |
| 3408 | <5 | 10 | 650 | 700 | 300 | <5 | 10 | 81 | 50 | 1 | <2 | 60 | <50 | 30 | 0.03 | 0.5 |
| 3409 | <5 | 15 | 380 | 900 | 300 | 10 | 10 | 97 | 70 | 1 | <2 | 60 | <50 | 40 | 0.05 | 0.5 |
| 3410 | <5 | <5 | 71 | 80 | 200 | 30 | <2 | 31 | <5 | <0.5 | <2 | 30 | <50 | 20 | 0.01 | 0.3 |
| 3411 | <5 | 5 | 200 | 190 | 300 | 40 | 15 | 74 | 60 | <0.5 | <2 | 60 | <50 | 40 | 0.05 | 0.5 |
| 3412 | <5 | 10 | 200 | 180 | 200 | 20 | 3 | 66 | 70 | 1 | <2 | 60 | <50 | 50 | 0.1 | 0.5 |
| 3413 | <5 | <5 | 61 | 80 | 200 | 30 | 3 | 60 | 40 | <0.5 | <2 | 50 | <50 | 40 | 0.03 | 0.4 |
| 3414 | <5 | <5 | 44 | 50 | 300 | 10 | <2 | 71 | 70 | <0.5 | <2 | 50 | <50 | 30 | 0.02 | 0.3 |
| 3415 | <5 | 15 | 210 | 220 | 250 | 20 | 4 | 91 | 70 | <0.5 | <2 | 80 | <50 | 50 | 0.1 | 0.5 |
| 3459 | <5 | <5 | 4 | 10 | 70 | 40 | <2 | 21 | 5 | <0.5 | <2 | 60 | <50 | 30 | 0.1 | 0.5 |
| 3460 | <5 | 5 | 55 | 60 | 100 | 50 | <2 | 47 | 30 | <0.5 | <2 | 70 | <50 | 80 | 0.2 | m |
| 3461 | <5 | <5 | 10 | 10 | 40 | 30 | <2 | 13 | <5 | 0.5 | <2 | 30 | <50 | 30 | 0.03 | 0.2 |
| 3462 | <5 | <5 | 5 | 5 | 70 | 10 | <2 | 17 | 5 | 0.5 | <2 | 60 | <50 | 20 | 0.1 | 0.3 |
| 3463 | <5 | <5 | 30 | 30 | 100 | 30 | <2 | 52 | 20 | <0.5 | <2 | 70 | <50 | 80 | 0.1 | 0.4 |
| 3464 | <5 | 5 | 15 | 20 | 150 | 60 | <2 | 37 | 20 | <0.5 | <2 | 70 | <50 | 250 | 0.1 | 0.5 |
| 3465 | <5 | <5 | 12 | 20 | 50 | 40 | <2 | 17 | <5 | 1 | <2 | 40 | <50 | 40 | 0.03 | 0.2 |
| 3466 | <5 | <5 | 23 | 30 | 70 | 20 | <2 | 22 | 5 | 0.5 | <2 | 50 | <50 | 30 | 0.1 | 0.3 |
| 3467 | <5 | <5 | 8 | 10 | 30 | 50 | <2 | 10 | <5 | <0.5 | 5 | 30 | <50 | 30 | 0.1 | 0.2 |
| 3468 | <5 | <5 | 19 | 20 | 30 | 50 | <2 | 15 | <5 | <0.5 | <2 | 40 | <50 | 50 | 0.03 | 0.3 |
| 3469 | <5 | 10 | 55 | 50 | 150 | 10 | 3 | 49 | 30 | <0.5 | <2 | 60 | <50 | 30 | 0.1 | 0.4 |
| 3470 | <5 | 20 | 300 | 340 | 250 | 10 | 10 | 97 | 70 | 1 | <2 | 70 | <50 | 60 | 0.05 | 0.5 |
| 3471 | <5 | 5 | 30 | 300 | 50 | 80 | 2 | 32 | <5 | 1 | <2 | 40 | <50 | 70 | 0.01 | 0.3 |
| 3472 | <5 | <5 | 51 | 50 | 100 | 40 | <2 | 37 | 30 | 0.5 | 5 | 50 | <50 | 10 | 0.05 | 0.5 |
| 3473 | <5 | 5 | 100 | 140 | 150 | 30 | <2 | 60 | 50 | 0.5 | <2 | 60 | <50 | 40 | 0.1 | m |
| 3474 | <5 | <5 | 92 | 80 | 70 | 30 | <2 | 49 | 30 | 1 | <2 | 40 | <50 | 60 | 0.03 | 0.5 |
| 3475 | <5 | 5 | 85 | 80 | 70 | 50 | <2 | 52 | 30 | 1 | <2 | 60 | <50 | 60 | 0.05 | 0.5 |
| 3476 | <5 | 5 | 131 | 130 | 150 | 20 | <2 | 54 | 30 | 2 | <2 | 70 | <50 | 40 | 0.1 | 0.5 |
| 3477 | <5 | <5 | 111 | 120 | 70 | 70 | <2 | 52 | 10 | 0.5 | <2 | 50 | <50 | 30 | 0.01 | 0.3 |
| 3478 | <5 | <5 | 130 | 150 | 20 | <2 | 130 | 1 | <2 | 70 | <50 | 70 | 0.05 | 0.5 | | |
| 3479 | <5 | 20 | 183 | 180 | 150 | 10 | <2 | 95 | 70 | <0.5 | <2 | 80 | <50 | 50 | 0.02 | 0.5 |
| 3480 | <5 | 20 | 189 | 180 | 200 | 10 | 5 | 71 | 70 | 0.5 | <2 | 100 | <50 | 50 | 0.1 | m |
| 3481 | <5 | 20 | 1200 | 200 | 10 | 10 | 169 | 70 | 2 | 5 | 80 | <50 | 50 | 0.03 | 0.5 | |
| 3482 | <5 | <5 | 650 | 600 | 30 | 30 | 10 | 24 | 10 | 1 | <2 | 40 | <50 | 20 | 0.02 | 0.3 |
| 3483 | <5 | <5 | 320 | 350 | 70 | 10 | 10 | 34 | 10 | 0.5 | <2 | 80 | <50 | 50 | 0.1 | 0.5 |
| 3484 | <5 | <5 | 600 | 600 | 30 | 20 | 2 | 24 | 10 | 1 | <2 | 40 | <50 | 30 | 0.03 | 0.4 |
| 3485 | <5 | <5 | 600 | 480 | 40 | 20 | 10 | 26 | 10 | 2 | <2 | 70 | <50 | 40 | 0.05 | 0.5 |
| 3486 | <5 | <5 | 360 | 300 | 50 | 50 | 7 | 30 | 30 | 1 | <2 | 70 | <50 | 30 | 0.02 | 0.3 |
| 3487 | <5 | 10 | 155 | 150 | 70 | 30 | 30 | 32 | 30 | 1 | <2 | 80 | <50 | 30 | 0.1 | 0.5 |
| 3488 | <5 | <5 | 48 | 40 | 70 | 10 | 3 | 34 | 20 | 0.5 | <2 | 60 | <50 | 40 | 0.1 | 0.5 |
| 3489 | <5 | <5 | 610 | 600 | 40 | 10 | 5 | 37 | <5 | 1 | <2 | 40 | <50 | 50 | 0.02 | 0.3 |
| 3530 | <5 | 15 | 20 | 280 | 40 | 60 | 10 | 42 | 40 | 1 | <2 | 50 | <50 | 40 | 0.02 | 0.3 |
| 3531 | <5 | <5 | 95 | 90 | 30 | 20 | 3 | 11 | <5 | 1 | <2 | 30 | <50 | 10 | <0.01 | 0.2 |
| 3532 | <5 | <5 | 119 | 100 | 30 | 20 | <2 | 24 | <5 | <0.5 | <2 | 30 | <50 | 40 | 0.02 | 0.2 |
| 3533 | <5 | <5 | 78 | 75 | 5 | 20 | <2 | 19 | 100 | <0.5 | 30 | 100 | <50 | 20 | 0.1 | 0.5 |
| 3534 | <5 | <5 | 81 | 80 | 50 | 20 | 3 | 28 | 10 | <0.5 | <2 | 70 | <50 | 20 | 0.05 | 0.4 |
| 3535 | <5 | 10 | 49 | 90 | 100 | 30 | 5 | 49 | 20 | <0.5 | <2 | 100 | <50 | 30 | 0.1 | 0.5 |
| 3536 | <5 | 10 | 19 | 25 | 100 | 10 | 3 | 45 | 20 | <0.5 | <2 | 100 | <50 | 40 | 0.1 | 0.5 |

↑
AA
Cu

↑
AA
Ni

| REF. NO. | ppm Bi | ppm Co | ppm Cu | ppm Cr | ppm Pb | ppm Mo | ppm Ni | ppm Ag | ppm Sn | ppm V | ppm W | ppm Zn | % Zr | % Ti | % Mn | |
|----------|--------|--------|--------|--------|--------|--------|--------|---------|--------|-------|-------|--------|------|------|------|------|
| LF 3537 | <5 | <5 | 5 | 10 | 100 | 10 | <2 | 19 5 | <0.5 | <2 | 100 | <50 | 10 | 0.05 | 0.5 | 0.05 |
| 3538 | <5 | <5 | 12 | 30 | 100 | 10 | <2 | 34 30 | <0.5 | <2 | 70 | <50 | 20 | 0.1 | 0.4 | 0.05 |
| 3539 | <5 | 15 | 12 | 20 | 100 | 10 | <2 | 108 50 | <0.5 | <2 | 100 | <50 | 80 | 0.05 | 0.5 | 0.1 |
| 3540 | <5 | <5 | 19 | 20 | 100 | 10 | <2 | 45 20 | <0.5 | <2 | 100 | <50 | 70 | 0.1 | 0.5 | 0.05 |
| 3640 | <5 | 10 | 17 | 20 | 150 | 20 | <2 | 51 50 | <0.5 | <2 | 100 | <50 | 60 | 0.1 | 0.5 | 0.05 |
| 3641 | <5 | 5 | 15 | 20 | 150 | 20 | <2 | 44 30 | <0.5 | <2 | 70 | <50 | 60 | 0.05 | 0.4 | 0.05 |
| 3642 | <5 | <5 | 17 | 20 | 100 | 10 | <2 | 37 5 | <0.5 | <2 | 70 | <50 | 15 | 0.05 | 0.4 | 0.05 |
| 3643 | <5 | 20 | 135 | 120 | 200 | 20 | <2 | 210 100 | <0.5 | <2 | 100 | <50 | 65 | 0.03 | 0.4 | 0.1 |
| 3644 | <5 | 10 | 52 | 50 | 150 | 20 | <2 | 71 60 | <0.5 | <2 | 100 | <50 | 80 | 0.1 | 0.5 | 0.05 |
| 3645 | <5 | <5 | 111 | 90 | 100 | 20 | <2 | 42 30 | <0.5 | <2 | 50 | <50 | 70 | 0.03 | 0.2 | 0.05 |
| 3646 | <5 | <5 | 43 | 40 | 100 | 20 | 2 | 63 30 | <0.5 | <2 | 70 | <50 | 40 | 0.05 | 0.4 | 0.1 |
| 3647 | <5 | 5 | 92 | 80 | 100 | 20 | 2 | 46 30 | <0.5 | <2 | 70 | <50 | 20 | 0.05 | 0.4 | 0.05 |
| 3648 | <5 | <5 | 75 | 60 | 100 | 10 | 2 | 42 10 | <0.5 | <2 | 60 | <50 | 30 | 0.03 | 0.3 | 0.05 |
| 3649 | <5 | 5 | 45 | 80 | 100 | 40 | 1 | 49 40 | <0.5 | <2 | 70 | <50 | 40 | 0.05 | 0.4 | 0.05 |
| 3650 | <5 | 10 | 40 | 400 | 200 | 10 | 5 | 118 50 | <0.5 | <2 | 70 | <50 | 60 | 0.03 | 0.4 | 0.1 |
| 3651 | <5 | 10 | 49 | 400 | 200 | 10 | 5 | 130 50 | <0.5 | <2 | 70 | <50 | 65 | 0.03 | 0.3 | 0.2 |
| 3652 | <5 | <5 | 103 | 90 | 100 | 20 | 7 | 46 5 | <0.5 | <2 | 70 | <50 | 30 | 0.05 | 0.3 | 0.05 |
| 3653 | <5 | 5 | 63 | 60 | 100 | 20 | 3 | 60 30 | <0.5 | <2 | 100 | <50 | 40 | 0.05 | 0.5 | 0.1 |
| 3654 | <5 | <5 | 33 | 80 | 70 | 30 | <2 | 8 <5 | <0.5 | <2 | 50 | <50 | 20 | 0.02 | 0.2 | 0.03 |
| 3655 | <5 | <5 | 65 | 60 | 100 | 30 | 4 | 49 30 | <0.5 | <2 | 70 | <50 | 20 | 0.05 | 0.4 | 0.05 |
| 3700 | <5 | <5 | 28 | 30 | 100 | 10 | 2 | 49 20 | <0.5 | <2 | 70 | <50 | 30 | 0.05 | 0.5 | 0.1 |
| 3701 | <5 | 10 | 52 | 40 | 100 | 10 | <2 | 63 30 | <0.5 | <2 | 100 | <50 | 50 | 0.1 | 0.5 | 0.1 |
| 3703 | <5 | 15 | 50 | 140 | 200 | 10 | <2 | 169 70 | <0.5 | <2 | 70 | <50 | 50 | 0.05 | 0.5 | 0.05 |
| 3704 | <5 | 15 | 20 | 290 | 200 | 10 | <2 | 183 100 | <0.5 | <2 | 100 | <50 | 70 | 0.05 | 0.5 | 0.1 |
| 3705 | <5 | 5 | 59 | 140 | 100 | 10 | 3 | 49 30 | <0.5 | <2 | 70 | <50 | 30 | 0.1 | 0.5 | 0.1 |
| 3706 | <5 | 10 | 155 | 140 | 150 | 10 | 7 | 78 30 | <0.5 | <2 | 70 | <50 | 40 | 0.05 | 0.5 | 0.1 |
| 3707 | <5 | <5 | 81 | 70 | 100 | 50 | 7 | 63 20 | <0.5 | <2 | 60 | <50 | 40 | 0.05 | 0.4 | 0.03 |
| 3708 | <5 | <5 | 38 | 40 | 70 | 20 | 7 | 42 10 | <0.5 | <2 | 50 | <50 | 20 | 0.05 | 0.3 | 0.03 |
| 3709 | <5 | <5 | 65 | 50 | 70 | 10 | 7 | 42 10 | <0.5 | <2 | 70 | <50 | 20 | 0.05 | 0.3 | 0.03 |
| 3710 | <5 | <5 | 79 | 120 | 50 | 10 | 2 | 78 10 | <0.5 | <2 | 70 | <50 | 60 | 0.05 | 0.3 | 0.1 |
| 3711 | <5 | <5 | 21 | 30 | 100 | 10 | <2 | 46 20 | <0.5 | <2 | 70 | <50 | 40 | 0.1 | 0.5 | 0.03 |
| 3714 | <5 | 15 | 12 | 20 | 100 | 10 | <2 | 76 30 | <0.5 | <2 | 100 | <50 | 160 | 0.1 | m | 0.2 |
| 3715 | <5 | 15 | 12 | 25 | 70 | 10 | <2 | 86 10 | <0.5 | <2 | 70 | <50 | 170 | 0.05 | 0.4 | 0.2 |
| 4453 | <5 | 10 | 15 | 150 | 20 | 3 | 70 | <0.5 | <2 | 70 | <50 | 40 | 0.03 | 0.3 | 0.1 | |
| 4454 | <5 | 10 | 20 | 70 | 40 | <2 | 20 | <0.5 | <2 | 70 | <50 | 65 | 0.05 | 0.4 | 0.1 | |
| 4455 | <5 | 5 | 25 | 70 | 30 | <2 | 20 | <0.5 | <2 | 70 | <50 | 65 | 0.05 | 0.4 | 0.05 | |
| 4457 | <5 | 5 | 25 | 70 | 40 | <2 | 30 | <0.5 | <2 | 70 | <50 | 70 | 0.05 | 0.4 | 0.05 | |
| 4458 | <5 | 10 | 40 | 70 | 30 | <2 | 40 | <0.5 | <2 | 70 | <50 | 80 | 0.05 | 0.4 | 0.05 | |
| 4459 | <5 | 15 | 50 | 70 | 10 | <2 | 30 | <0.5 | <2 | 100 | <50 | 80 | 0.05 | 0.5 | 0.1 | |
| 4460 | <5 | 20 | 170 | 260 | 10 | <2 | 130 | <0.5 | <2 | 70 | <50 | 110 | 0.03 | 0.4 | 0.2 | |
| 4461 | <5 | 20 | 110 | 150 | 10 | <2 | 100 | <0.5 | <2 | 70 | <50 | 80 | 0.05 | 0.4 | 0.2 | |
| 4521 | <5 | 5 | 40 | 70 | 20 | 10 | 10 | <0.5 | <2 | 70 | <50 | 200 | 0.05 | 0.3 | 0.1 | |
| 4522 | <5 | 10 | 35 | 100 | 20 | 2 | 50 | <0.5 | <2 | 100 | <50 | 90 | 0.05 | 0.5 | 0.1 | |
| 4523 | <5 | <5 | 10 | 70 | 20 | <2 | 10 | <0.5 | <2 | 70 | <50 | 50 | 0.05 | 0.4 | 0.05 | |
| 4524 | <5 | 30 | 250 | 100 | 30 | <2 | 1000 | <0.5 | <2 | 70 | <50 | 100 | 0.05 | 0.4 | 0.1 | |
| 4525 | <5 | 25 | 50 | 70 | 20 | <2 | 20 | <0.5 | <2 | 70 | <50 | 50 | 0.05 | 0.5 | 0.3 | |
| 4526 | <5 | 20 | 420 | 250 | 20 | <2 | 700 | <0.5 | <2 | 100 | <50 | 60 | 0.05 | 0.3 | 0.1 | |
| 4527 | <5 | <5 | 50 | 200 | 20 | <2 | 30 | <0.5 | <2 | 150 | <50 | 30 | 0.1 | 0.5 | 0.03 | |
| 4528 | <5 | <5 | 30 | 70 | 20 | <2 | 20 | <0.5 | <2 | 60 | <50 | 55 | 0.1 | 0.3 | 0.2 | |
| 4529 | <5 | 5 | 35 | 100 | 20 | <2 | 60 | <0.5 | <2 | 100 | <50 | 80 | 0.1 | 0.5 | 0.1 | |
| 4530 | <5 | 10 | 20 | 150 | 20 | <2 | 70 | <0.5 | <2 | 100 | <50 | 60 | 0.1 | 0.5 | 0.1 | |
| 4531 | <5 | <5 | 25 | 100 | 20 | 2 | 40 | <0.5 | <2 | 100 | <50 | 55 | 0.1 | 0.5 | 0.1 | |
| 4532 | <5 | 20 | 30 | 200 | 20 | <2 | 100 | <0.5 | <2 | 100 | <50 | 80 | 0.1 | 0.5 | 0.2 | |
| 4533 | <5 | 20 | 140 | 100 | 20 | <2 | 100 | <0.5 | <2 | 100 | <50 | 60 | 0.1 | 0.5 | 0.3 | |
| 4534 | <5 | 5 | 60 | 100 | 20 | <2 | 100 | <0.5 | <2 | 70 | <50 | 35 | 0.1 | 0.5 | 0.05 | |

| REF. NO. | ppm Bi | ppm Co | ppm Cu | ppm Cr | ppm Pb | ppm Mo | ppm Ni | ppm Ag | ppm Sn | ppm V | ppm W | ppm Zn | % Zr | % Ti | % Mn |
|-----------------|------------------|---------------|---------------|----------------|---------------|------------------|---------------|--------------------|------------------|----------------|-------------------|----------------|-----------------|----------------|----------------|
| LF 4535 | <5 | 30 | 320 | 200 | 30 | 20 | 1000 | <0.5 | <2 | 70 | <50 | 30 | 0.05 | 0.5 | 0.1 |
| 4536 | <5 | 20 | 100 | 100 | 20 | <2 | 100 | <0.5 | 30 | 70 | <50 | 80 | 0.05 | 0.5 | 0.1 |
| 4537 | <5 | 20 | 80 | 150 | 30 | <2 | 100 | <0.5 | <2 | 150 | <50 | 90 | 0.05 | 0.5 | 0.1 |
| 4538 | <5 | 30 | 60 | 150 | 30 | <2 | 150 | <0.5 | <2 | 150 | <50 | 80 | 0.05 | 0.5 | 0.1 |
| 4539 | <5 | <5 | 30 | 100 | 20 | <2 | 200 | <0.5 | <2 | 150 | <50 | 40 | 0.1 | 0.5 | 0.1 |
| 4540 | <5 | <5 | 30 | 50 | 20 | <2 | 10 | <0.5 | <2 | 70 | <50 | 50 | 0.02 | 0.3 | 0.0 |
| 4541 | <5 | 5 | 30 | 70 | 20 | <2 | 70 | <0.5 | <2 | 70 | <50 | 50 | 0.05 | 0.4 | 0.0 |
| 4542 | <5 | 5 | 10 | 70 | 20 | <2 | 30 | <0.5 | <2 | 100 | <50 | 80 | 0.2 | 0.5 | 0.3 |
| 4562 | <5 | 5 | 25 | 100 | 20 | <2 | 30 | <0.5 | <2 | 70 | <50 | 50 | 0.05 | 0.5 | 0.1 |
| 4563 | <5 | 10 | 30 | 70 | 40 | <2 | 30 | <0.5 | <2 | 70 | <50 | 60 | 0.05 | 0.4 | 0.2 |
| 4564 | <5 | 5 | 30 | 70 | 30 | <2 | 60 | <0.5 | <2 | 100 | <50 | 50 | 0.05 | 0.5 | 0.1 |
| 4565 | <5 | 5 | 60 | 50 | 20 | <2 | 30 | <0.5 | <2 | 70 | <50 | 80 | 0.05 | 0.3 | 0.0 |
| 4566 | <5 | 20 | 190 | 50 | 10 | <2 | 60 | <0.5 | <2 | 150 | <50 | 130 | 0.05 | 0.5 | 0.2 |
| 4567 | <5 | <5 | 40 | 50 | 10 | <2 | 20 | <0.5 | <2 | 70 | <50 | 50 | 0.05 | 0.3 | 0.0 |
| 4662 | <5 | 5 | 45 | 70 | 40 | <2 | 60 | <0.5 | <2 | 100 | <50 | 90 | 0.1 | 0.5 | 0.1 |
| 4663 | <5 | 5 | 10 | 70 | 20 | <2 | 40 | <0.5 | <2 | 100 | <50 | 100 | 0.1 | 0.5 | 0.2 |
| 4664 | <5 | 20 | 200 | 100 | 40 | <2 | 100 | <0.5 | <2 | 70 | <50 | 100 | 0.1 | 0.4 | 0.2 |
| 4665 | <5 | 10 | 40 | 100 | 40 | <2 | 70 | <0.5 | <2 | 70 | <50 | 90 | 0.05 | 0.5 | 0.1 |
| 4689 | <5 | 5 | 25 | 70 | 40 | <2 | 70 | <0.5 | <2 | 70 | <50 | 60 | 0.05 | 0.3 | 0.0 |
| 4690 | <5 | 15 | 320 | 150 | 50 | <2 | 1000 | <0.5 | <2 | 100 | <50 | 85 | 0.05 | 0.5 | 0.1 |
| 4691 | <5 | <5 | 30 | 70 | 80 | <2 | 20 | <0.5 | <2 | 100 | <50 | 85 | 0.05 | 0.5 | 0.2 |
| 4716 | <5 | <5 | 20 | 100 | 20 | <2 | 20 | <0.5 | <2 | 70 | <50 | 50 | 0.05 | 0.4 | 0.1 |
| 4717 | <5 | <5 | 10 | 70 | 20 | <2 | 20 | <0.5 | <2 | 70 | <50 | 60 | 0.05 | 0.4 | 0.0 |
| 4718 | <5 | <5 | 20 | 50 | 30 | <2 | <5 | <0.5 | <2 | 70 | <50 | 20 | 0.05 | 0.4 | 0.2 |
| 4719 | <5 | <5 | 10 | 50 | 30 | <2 | 20 | <0.5 | <2 | 70 | <50 | 60 | 0.05 | 0.4 | 0.0 |
| 4720 | <5 | <5 | 10 | 60 | 20 | <2 | 10 | <0.5 | <2 | 60 | <50 | 40 | 0.05 | 0.4 | 0.0 |
| 4721 | <5 | <5 | 20 | 60 | 50 | <2 | 10 | <0.5 | <2 | 70 | <50 | 60 | 0.05 | 0.3 | 0.0 |
| 4722 | <5 | 10 | 10 | 60 | 40 | 20 | 20 | <0.5 | 5 | 100 | <50 | 100 | 0.05 | 0.5 | 0.1 |
| 4723 | <5 | 40 | 2000 | 250 | 80 | <2 | 2000 | 2 | 5 | 100 | <50 | 180 | 0.03 | 0.3 | 0.3 |
| 4724 | <5 | <5 | 10 | 50 | 120 | <2 | 50 | <0.5 | 5 | 100 | <50 | 70 | 0.05 | 0.4 | 0.1 |
| 4734 | <5 | 15 | 15 | 70 | 70 | <2 | 60 | <0.5 | <2 | 100 | <50 | 60 | 0.05 | 0.4 | 0.1 |
| 4736 | <5 | <5 | 10 | 50 | 20 | <2 | 10 | <0.5 | <2 | 70 | <50 | 50 | 0.03 | 0.3 | 0.0 |
| 4737 | <5 | <5 | <10 | 70 | 30 | <2 | 10 | <0.5 | <2 | 70 | <50 | 45 | 0.05 | 0.4 | 0.1 |
| 4738 | <5 | <5 | <10 | 70 | 20 | <2 | 10 | <0.5 | <2 | 100 | <50 | 30 | 0.05 | 0.5 | 0.5 |
| 4756 | <5 | <5 | <10 | 50 | 50 | <2 | 20 | <0.5 | <2 | 100 | <50 | 60 | 0.05 | 0.5 | 0.1 |
| 4757 | <5 | <5 | 10 | 50 | 40 | <2 | 10 | <0.5 | 5 | 100 | <50 | 35 | 0.05 | 0.5 | 0.0 |
| 4758 | <5 | <5 | 20 | 50 | 40 | <2 | 10 | <0.5 | <2 | 70 | <50 | 65 | 0.05 | 0.3 | 0.1 |
| 4759 | <5 | <5 | 20 | 50 | 30 | 20 | 10 | <0.5 | 5 | 100 | <50 | 70 | 0.05 | 0.3 | 0.1 |
| 4796 | <5 | 30 | 10 | 50 | 50 | <2 | 10 | <0.5 | <2 | 70 | <50 | 200 | 0.05 | 0.2 | m |
| 4797 | <5 | 10 | 20 | 40 | 30 | <2 | 10 | <0.5 | <2 | 50 | <50 | 80 | 0.05 | 0.4 | 0.0 |
| 4798 | <5 | 5 | 10 | 50 | 30 | <2 | <5 | <0.5 | <2 | 30 | <50 | 160 | <0.01 | 0.2 | 0.3 |
| 4799 | <5 | 5 | 5 | 40 | 20 | <2 | <5 | <0.5 | <2 | <10 | <50 | 370 | 0.02 | 0.1 | 0.3 |
| 4800 | <5 | 10 | 10 | 40 | 40 | <2 | <5 | <0.5 | <2 | <10 | <50 | 200 | 0.02 | 0.1 | 0.3 |
| 4801 | <5 | 20 | 15 | 60 | 20 | <2 | 5 | <0.5 | <2 | <10 | <50 | 430 | 0.02 | 0.1 | m |
| 4843 | <5 | <5 | 15 | 100 | 20 | <2 | 50 | <0.5 | <2 | 30 | <50 | 160 | 0.05 | 0.4 | 0.2 |
| 4844 | <5 | 20 | 30 | 200 | 20 | <2 | 70 | 2 | <2 | 60 | <50 | 70 | 0.05 | 0.5 | 0.3 |
| 4845 | <5 | 20 | 20 | 100 | 20 | <2 | 70 | <0.5 | <2 | 50 | <50 | 110 | 0.05 | 0.4 | 0.2 |
| 4846 | <5 | 25 | 15 | 150 | 20 | <2 | 100 | <0.5 | <2 | 60 | <50 | 110 | 0.05 | 0.5 | 0.3 |
| 4847 | <5 | 25 | 15 | 150 | 20 | <2 | 70 | <0.5 | <2 | 70 | <50 | 140 | 0.05 | 0.5 | 0.3 |
| 4849 | <5 | 20 | 15 | 70 | 10 | <2 | 60 | <0.5 | <2 | 70 | <50 | 110 | 0.05 | 0.5 | 0.2 |
| 4850 | <5 | 20 | 15 | 50 | 10 | <2 | 20 | <0.5 | <2 | 60 | <50 | 110 | 0.05 | 0.5 | 0.3 |
| 4855 | <5 | <5 | 10 | 50 | 30 | <2 | 10 | <0.5 | <2 | 50 | <50 | 110 | 0.05 | 0.4 | 0.4 |
| 4856 | <5 | <5 | 15 | 50 | 40 | <2 | 10 | <0.5 | <2 | 50 | <50 | 150 | 0.05 | 0.4 | 0.1 |
| 4857 | <5 | <5 | 35 | 70 | 40 | <2 | 10 | <0.5 | <2 | 30 | <50 | 120 | 0.05 | 0.4 | 0.1 |

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| REF. NO. | ppm Bi | ppm Co | ppm Cu | ppm Cr | ppm Pb | ppm Mo | ppm Ni | ppm Ag | ppm Sn | ppm V | ppm W | ppm Zn | % Zr | % Ti | % Mn |
|-----------------|------------------|------------------|---------------|---------------|---------------|------------------|---------------|--------------------|------------------|----------------|-------------------|----------------|-----------------|----------------|----------------|
| LF 4858 | <5 | 20 | 15 | 50 | 40 | <2 | 40 | <0.5 | <2 | 40 | <50 | 120 | 0.03 | 0.3 | 0.3 |
| 4860 | <5 | 10 | 45 | 70 | 20 | <2 | 40 | <0.5 | <2 | 40 | <50 | 110 | 0.03 | 0.3 | 0.7 |
| 4872 | <5 | 10 | 40 | 50 | 20 | <2 | 40 | <0.5 | <2 | 50 | <50 | 100 | 0.1 | 0.4 | 0.0 |
| 4873 | <5 | 10 | 10 | 70 | 30 | <2 | 40 | <0.5 | <2 | 50 | <50 | 120 | 0.1 | 0.2 | 0.2 |
| 4874 | <5 | 20 | 20 | 50 | 30 | <2 | 30 | <0.5 | <2 | 40 | <50 | 160 | 0.02 | 0.2 | 0.4 |
| 4875 | <5 | 20 | 15 | 50 | 50 | <2 | 20 | <0.5 | <2 | 30 | <50 | 320 | 0.02 | 0.2 | 0.4 |
| 4876 | <5 | 5 | 25 | 70 | 30 | <2 | 20 | <0.5 | <2 | 60 | <50 | 100 | 0.1 | 0.5 | 0.1 |
| 4877 | <5 | 5 | 40 | 70 | 20 | <2 | 20 | <0.5 | <2 | 50 | <50 | 100 | 0.1 | 0.4 | 0.1 |
| 4878 | <5 | 5 | 40 | 70 | 20 | <2 | 20 | <0.5 | <2 | 70 | <50 | 120 | 0.1 | 0.5 | 0.1 |
| 4886 | <5 | 15 | 20 | 50 | 40 | <2 | 20 | <0.5 | <2 | 30 | <50 | 280 | 0.05 | 0.3 | m |
| 4887 | <5 | 20 | 40 | 70 | 20 | <2 | 30 | <0.5 | <2 | 70 | <50 | 130 | 0.1 | 0.5 | 0.5 |
| 4888 | <5 | 25 | 20 | 50 | 20 | <2 | 40 | <0.5 | <2 | 50 | <50 | 350 | 0.05 | 0.3 | m |
| 4889 | <5 | 25 | 35 | 70 | 20 | <2 | 50 | <0.5 | <2 | 70 | <50 | 240 | 0.05 | 0.5 | m |
| 4890 | <5 | 30 | 35 | 100 | 30 | <2 | 70 | <0.5 | <2 | 100 | <50 | 140 | 0.1 | m | m |
| 4891 | <5 | 20 | 15 | 50 | 20 | <2 | 10 | <0.5 | <2 | 20 | <50 | 160 | 0.02 | 0.2 | m |
| 4892 | <5 | 20 | 10 | 70 | 30 | <2 | 10 | <0.5 | <2 | 20 | <50 | 180 | 0.05 | 0.3 | m |
| 4893 | <5 | 25 | 10 | 70 | 20 | <2 | 20 | <0.5 | <2 | 50 | <50 | 120 | 0.05 | 0.5 | m |
| 4894 | <5 | <5 | 15 | 70 | 50 | <2 | 10 | <0.5 | <2 | 40 | <50 | 500 | 0.03 | 0.3 | 0.1 |
| 4895 | <5 | 25 | 15 | 50 | 20 | <2 | 20 | <0.5 | <2 | <10 | <50 | 600 | 0.03 | 0.1 | m |
| 4896 | <5 | 20 | 10 | 50 | 30 | <2 | 10 | <0.5 | <2 | 20 | <50 | 230 | 0.03 | 0.2 | 0.4 |
| 4897 | <5 | 40 | 10 | 50 | 40 | <2 | 10 | <0.5 | <2 | <10 | <50 | 1000 | 0.03 | 0.1 | m |
| 4898 | <5 | 15 | 10 | 50 | 30 | <2 | 10 | <0.5 | <2 | <10 | <50 | 500 | 0.02 | 0.1 | 0.4 |
| 4899 | <5 | 30 | 10 | 50 | 40 | <2 | 10 | <0.5 | <2 | <10 | <50 | 200 | 0.02 | 0.1 | 0.3 |
| 4900 | <5 | 10 | 15 | 70 | 30 | <2 | 10 | <0.5 | <2 | 30 | <50 | 140 | 0.05 | 0.4 | 0.2 |
| 4901 | <5 | 20 | 10 | 50 | 30 | <2 | 10 | <0.5 | <2 | 30 | <50 | 310 | 0.03 | 0.4 | m |
| 4902 | <5 | 25 | 10 | 50 | 20 | <2 | 10 | <0.5 | <2 | 40 | <50 | 280 | 0.05 | 0.3 | 0.5 |
| 5007 | <5 | 20 | 10 | 50 | 30 | <2 | 20 | <0.5 | <2 | 50 | <50 | 230 | 0.05 | 0.3 | 0.3 |
| 5008 | <5 | 20 | 20 | 50 | 20 | <2 | 20 | <0.5 | <2 | 50 | <50 | 180 | 0.05 | 0.3 | 0.2 |
| 5010 | <5 | 25 | 80 | 70 | 20 | <2 | 70 | <0.5 | <2 | 80 | <50 | 150 | 0.05 | 0.4 | 0.2 |
| 5011 | <5 | 10 | 50 | 70 | 50 | <2 | 50 | <0.5 | <2 | 40 | <50 | 160 | 0.05 | 0.4 | 0.3 |
| 5012 | <5 | 10 | 60 | 50 | 60 | <2 | 30 | <0.5 | <2 | 30 | <50 | 180 | 0.05 | 0.3 | 0.3 |
| 5013 | <5 | 30 | 55 | 70 | 60 | 5 | 50 | <0.5 | <2 | 70 | <50 | 160 | 0.05 | 0.3 | 0.4 |
| 5014 | <5 | 30 | 35 | 70 | 60 | 5 | 50 | <0.5 | <2 | 70 | <50 | 170 | 0.05 | 0.4 | 0.4 |
| 5017 | <5 | <5 | 10 | 50 | 20 | <2 | 10 | <0.5 | <2 | 30 | <50 | 60 | 0.05 | 0.3 | 0.1 |
| 5035 | <5 | 20 | 30 | 50 | 20 | <2 | 30 | <0.5 | <2 | 50 | <50 | 110 | 0.05 | 0.3 | 0.1 |
| 5106 | <5 | 15 | 20 | 50 | 10 | <2 | 20 | <0.5 | <2 | 70 | <50 | 120 | 0.1 | 0.3 | 0.1 |
| 5107 | <5 | 5 | 30 | 70 | 5 | 2 | 15 | <0.5 | <2 | 70 | <50 | 90 | 0.05 | 0.5 | 0.1 |
| 5108 | <5 | 10 | 40 | 70 | 30 | <2 | 70 | <0.5 | <2 | 70 | <50 | 80 | 0.05 | 0.4 | 0.05 |
| 5109 | <5 | <5 | 10 | 50 | 30 | <2 | 15 | <0.5 | <2 | 100 | <50 | 50 | 0.05 | 0.5 | 0.05 |
| 5131 | <5 | <5 | 10 | 70 | 60 | <2 | 10 | <0.5 | <2 | 50 | <50 | 30 | 0.05 | 0.3 | 0.05 |
| 5132 | <5 | 20 | 10 | 70 | 20 | 2 | 50 | <0.5 | 5 | 100 | <50 | 90 | 0.2 | 0.5 | 0.3 |
| 5133 | <5 | 30 | 550 | 100 | 60 | <2 | 700 | <0.5 | <2 | 60 | <50 | 90 | 0.05 | 0.4 | 0.2 |
| 5134 | <5 | 15 | 20 | 50 | 10 | <2 | 10 | <0.5 | <2 | 70 | <50 | 130 | 0.05 | 0.5 | 0.2 |
| 5156 | <5 | <5 | <10 | 70 | 10 | <2 | 10 | <0.5 | <2 | 50 | <50 | 40 | 0.05 | 0.3 | 0.05 |
| 5157 | <5 | <5 | 10 | 60 | 10 | <2 | <5 | <0.5 | <2 | 50 | <50 | 40 | 0.02 | 0.3 | 0.05 |
| 5158 | <5 | <5 | 5 | 50 | 20 | <2 | 5 | <0.5 | <2 | 50 | <50 | 30 | 0.05 | 0.3 | 0.05 |
| 5159 | <5 | 5 | 35 | 70 | 20 | <2 | 20 | <0.5 | <2 | 60 | <50 | 90 | 0.05 | 0.3 | 0.05 |
| 5160 | <5 | <5 | 15 | 60 | 40 | <2 | 10 | <0.5 | <2 | 50 | <50 | 80 | 0.05 | 0.5 | 0.1 |
| 5161 | <5 | 20 | 15 | 60 | 120 | <2 | 15 | <0.5 | <2 | 60 | <50 | 100 | 0.05 | 0.4 | 0.4 |
| 5162 | <5 | <5 | 15 | 70 | 30 | <2 | 15 | <0.5 | <2 | 60 | <50 | 40 | 0.05 | 0.5 | 0.05 |
| 5180 | <5 | <5 | 30 | 50 | 30 | <2 | 10 | <0.5 | <2 | 60 | <50 | 80 | 0.05 | 0.3 | 0.05 |
| 5181 | <5 | <5 | 20 | 60 | 20 | <2 | 10 | <0.5 | <2 | 60 | <50 | 80 | 0.05 | 0.4 | 0.05 |
| 5182 | <5 | <5 | 10 | 60 | 20 | <2 | 20 | <0.5 | <2 | 60 | <50 | 60 | 0.05 | 0.5 | 0.1 |
| 5187 | <5 | <5 | 10 | 50 | 20 | <2 | 10 | <0.5 | <2 | 50 | <50 | 40 | 0.05 | 0.3 | 0.05 |
| 5188 | <5 | <5 | 10 | 60 | 30 | <2 | <5 | <0.5 | <2 | 50 | <50 | 30 | 0.03 | 0.3 | 0.05 |
| 5189 | <5 | <5 | 20 | 60 | 20 | <2 | 5 | <0.5 | <2 | 60 | <50 | 60 | 0.05 | 0.3 | 0.05 |
| 5190 | <5 | <5 | 15 | 60 | 40 | <2 | <5 | <0.5 | <2 | 50 | <50 | 50 | 0.1 | 0.3 | 0.05 |

GREEN AREA

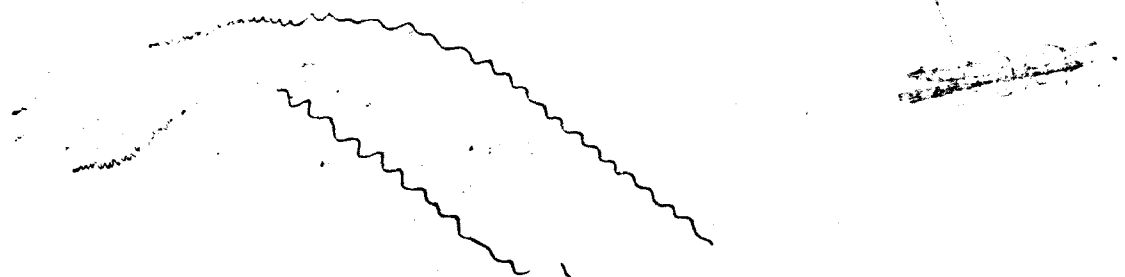
ISKANE BURN

SIP TAIL COLLECTOR

| | | | | | | | | | | | | | | | | |
|------|----|------|------|-----|-----|----|--------|----|----|-----|-----|-----|-------|-------|------|----|
| AU 1 | <5 | 5 | 350 | 30 | <10 | <2 | 10 | <1 | <5 | 10 | <50 | 25 | <0.01 | 0.1 | 0.2 | |
| AU 2 | <5 | 500 | 3000 | 80 | 220 | 2 | 4000 | 3 | <5 | <10 | <50 | 130 | <0.01 | 0.01 | 0.05 | |
| AU 3 | <5 | 1000 | 2.5% | 70 | 20 | 10 | 3000 | 8 | <5 | 50 | <50 | 220 | 0.01 | 0.15 | 0.05 | |
| AU 4 | <5 | 700 | 2500 | 100 | 10 | <2 | 5000 * | 2 | 5 | <10 | <50 | 50 | <0.01 | <0.01 | 0.05 | |
| AU 5 | <5 | 200 | 6.0% | 50 | 10 | 5 | 3000 * | 10 | 5 | <10 | <50 | 900 | <0.01 | 0.15 | 0.02 | |
| AU 6 | <5 | 400 | 4.0% | 80 | 10 | 5 | 5000 * | 8 | 5 | <10 | <50 | 290 | <0.01 | 0.01 | 0.02 | |
| | Si | Co | Cu | Cr | Pb | Mb | Ni | Ag | Au | Sn | V | W | Zn | Zr | Ti | Nb |

= approx

Multielement scan



Consolidated Gold Fields Limited
DIAMOND DRILL CORE RECORD

Project: LOCH FINE

Sheet No. 2

| METRES | | GEOLOGICAL LOG | | | | ASSAY RECORD | | | |
|---------|------------|----------------|-------------|----------------|---|--------------|------|--------|-----|
| From | Represents | Rock Type | Graphic Log | Intersec Angle | Description | Sample No. | From | Length | Rec |
| 102' 0" | 1' 2" | Qtzite | | | Qtzite. Appears to be some thin quartz bands at base of cumulate sequence also - probably xenoliths | | | | |
| 103' 2" | 26' 3" | Breccia | | | Heterogeneous aggregate of breccia blocks with porphyry matrix. Blocks of quartz common. Blobs pyrite common & assoc'd with the breccia blocks. Becomes felsic towards base than grades into: - | | | | |
| 129' 5" | 25' 0" | Breccia | | | More mafic brecciated section with mostly epidiorite of variable composition & in places epidioritic "granitic" segregations present usually with blobby assoc'd pyrite. Iron pyrite common & some calcite veining with assoc'd pyrite. Contact with porph at ~ 25' | | | | |
| 154' 5" | 61' 4" | Porphyry | | | Grey pink qtz. feldsp. biotite porphyry xenoliths common throughout. Ubiquitous disseminated pyrite (prob. < 1%). Occasional qtz porphyry xenoliths of coarser grain. Qtz veining common & some calcite veins particularly at base. | | | | |
| 215' 9" | 96' 6" | Epidiorite | | | Mafic epidiorite with superposed penetrative foliation. Blobby chalcopyrite localised at 220' 6". Occasional iron pyrite & more rarely chalcopyrite. Pyrite veinlets common. | | | | |
| | | | | | 257' 2" - 258' 0" - Qtz veining "granitic" appearance. | | | | |
| | | | | | 268' 8" - 269' 4" - Local brecciation, qtz veining & feldspar | | | | |

| | | | |
|----------------|---------------|----------------------------|-------------|
| Drilled By | D. P. I. | Collar Co-ordinates (grid) | 650A / 367 |
| Date Started | 27th April 74 | Collar Elevation | |
| Date Completed | 9th May 74 | Orientation | Grid N. |
| | from | m. | Recovery |
| | from | m. | Inclination |
| | from | m. | Corrected |
| | | | 45° |

Consolidated Gold Fields Limited

DIAMOND DRILL CORE RECORD

Project: LOCH FINE

| | |
|------------|-------------------------|
| D.D.H. No. | DDH A 1 |
| Area | E. B.H. ACHADI-I |
| Length | 413' |
| Purpose | TEST AU / I.P. ANALYSIS |
| Logged By | AIN & SJK |
| Date | 10th May 74 |

| FT METRES | | GEOLOGICAL LOG | | | | ASSAY RECORD | | | | | |
|-----------|------------|----------------|-------------|-----------------|--|--------------|------|--------|------|--|--|
| From | Represents | Rock Type | Graphic Log | Intersec. Angle | Description | Sample No. | From | Length | Rec. | | |
| 0 | 1' | Peat | | | Peat. | | | | | | |
| 1' | 12' 6" | Boulder clay | | | Boulder clay last 2' 8" is brown clay matrix | | | | | | |
| 13' 6" | 1' 6" | Epidiorite | | | Fragmented epidiorite with some creamy clay | | | | | | |
| 15' 0" | 5' 6" | Epidiorite | | | Fragmented ferruginous epidiorite. Rusty partings probably equivalent to weathered pyrite veinlets. | | | | | | |
| | | | | | < 1% disseminated pyrite and occasional magnetite grains | | | | | | |
| 20' 6" | 10' 6" | Epidiorite | | | fresh massive epidiorite with calcite veinlets commonly with assoc'd pyrite. Minor disseminated pyrite. | | | | | | |
| 31' 0" | 21' 5" | Epidiorite | | | Ditto - but NQ core size. | | | | | | |
| 52' 5" | 29' 1" | Qtzite | | | Variable qtzite with some gritty areas. Banded horizons with "talc" partings from 72' 3" - 73' 11" | | | | | | |
| | | | | | Disseminated pyrite & some chalcopyrite. Some joint surface coatings of pyrite/chalcopyrite. | | | | | | |
| 81' 6" | 20' 6" | Cumulates? | | | 80-85 finely banded sequence of mainly felsic cumulates. narrow bands of troctolite common. Superposed foliation at 60-65°. Sulpurites rare ex along some fractures and assoc'd with the narrow mafic layers. Some graphite noted on a joint surface at top of sequence. Grading in the mafic layers suggests flow sequence in over-turned. Minor folding from 90' 10" | | | | | | |

Consolidated Gold Fields Limited

DIAMOND DRILL CORE RECORD

Project: LUCH FYNE

Sheet No. 3

D.D.H. No. LGA 1

| METRES | | GEOLOGICAL LOG | | | | ASSAY RECORD | | | |
|---------|------------|---|-------------|------------------|--|--------------|------|--------|-----|
| From | Represents | Rock Type | Graphic Log | Intersec. Angle | Description | Sample No. | From | Length | Rec |
| | | | | | 291' 5" - 291' 11" Qtz vein followed downhole by narrow breccia with qtz fragments. | | | | |
| | | | | | 297' 6" - 298' 10" Qz veining and blebby pyrite followed downhole by 2 narrow "compositional" bands of more felsic nature. Some dissonance in these bands. | | | | |
| | | | | | 311' 0" - 311' 6" Qtz vein. | | | | |
| 312' 3" | 25' 2" | Epidiorite (Mottled streaked appearance) | | 30° | Mottled streaked epidiorite. | | | | |
| | | | | 74° (317' 4") | 315' 4" Narrow felsic band with blebby pyrite. | | | | |
| | | | | | 317' 3" - 318' 11" lighter zone with qtz/calcite banding. | | | | |
| | | | | | 333' 6" - 333' 10" Narrow "aplitic" vein, diffuse contacts | | | | |
| 337' 7" | 22' 5" | Epidiorite | | | Mafic Epidiorite. | | | | |
| | | | | | 343' 10" - 344' 2" Granitic vein. | | | | |
| | | | | 75° | 348' Narrow 1/2" fine grained lighter band (compositional?) | | | | |
| | | | | | 352' 3" - 352' 6" felsic horizons with assoc'd blebby pyrite. | | | | |
| | | | | | 354' 11" - 357' 2" Lighter fine grained band. Movement apparent at top - truncated narrow qtz vein | | | | |
| | | | | | 357' 6" 1/2" narrow band of felsic material with basin chalcopyrite and? pliny benedite " envelope. | | | | |

Consolidated Gold Fields Limited

DIAMOND DRILL CORE RECORD

Project: LOCH FINE

Sheet No. 4

D.D.H. No. LGA 1.

| METRES | | GEOLOGICAL LOG | | | | ASSAY RECORD | | | |
|-------------|------------|--|-------------|-----------------|--|--------------|------|--------|------|
| From | Represents | Rock Type | Graphic Log | Intersec. Angle | Description | Sample No. | From | Length | Rec. |
| 360' 0" | 8' 8 1/2" | Epidiorite (Mottled, streaked appearance) | | | Mottled streaked epidiorite. | | | | |
| 365' 5 1/2" | 16' 3 1/2" | Contaminated Epidiorite | | | Contaminated epidiorite. Blocks of breccia in epidiorite. The blocks of breccia contain quartz, quartz schist, porphyry and basic fragments and much associated blebby pyrite is present within them. Up to 1% of blebby & disseminated chalcopyrite is present also within the breccia blocks. Matrix epidiorite is virtually barren. | | | | |
| 355' 0" | 25' 0" | Epidiorite | | | Epidiorite with disseminated pyrite & pyrite veinlets | | | | |
| | | | | | 403' 9" - 403' 10" } lighter areas of quartz/calcite veins | | | | |
| | | | | | 404' 2" - 404' 4" } | | | | |
| | | | | | 404' 7" - 405' 0" Banded quartz veined zone. | | | | |
| | | | | | 405' 0" - 405' 8 1/2" Zone of rich disseminated pyrite & narrow veinlets. | | | | |
| | | | | | 406' 11" 1/2" quartz vein. | | | | |
| | | | | | 407' 4" - 407' 6" 2" quartz vein. | | | | |
| | | | | | 408' 3" 1/4" quartz vein. | | | | |
| 413' 0" | | | | | 413' 0" END OF HOLE. | | | | |

COMMERCIAL
IN CONFIDENCE

| | | | | | | |
|----------------|---------------------------|--------------------|-----------------|---|------------|-------------------------|
| Drilled By | D.P.1 | Collar Co-ordinate | (6702) 660A/346 | Consolidated Gold Fields Limited DIAMOND DRILL CORE RECORD Project: <u>LOCH FYNE</u> | D.D.H. No. | D DGA 2 |
| Date Started | 12 th MAY 1974 | Collar Elevation | | | Area | CARSH ACHADH |
| Date Completed | 29 th MAY 1974 | Orientation | Grid N. | | Length | 402' 9" |
| | from | m. | Recovery | | Purpose | TEST RUN & IP. ANALYSIS |
| | from | m. | Inclination | | Logged By | S J. K. |
| | from | m. | Corrected | | Date | 5th JUNE 74. |

| METRES | | GEOLOGICAL LOG | | | | ASSAY RECORD | | | |
|--------|------------|--------------------|-------------|----------------|---|--------------|------|--------|------|
| From | Represents | Rock Type | Graphic Lon | Intersec Angle | Description | Sample No. | From | Length | Rec. |
| 7' | 60' 10" | GRITS + QUARTZITES | | | <p>7'-10': fine to medium grained tough grey gritty quartzite; some dissemin pyrite but not widely distributed.</p> <p>[7'-9 1/2' = H Core, remainder = NQ Core]</p> <p>10'-13': medium grained ^{grey} grit + small kaolinitised feldspars. Fine dissemin pyrite + thin pyrite cementing on fracture surfaces, some of which are also covered by olive-green etched material (???)</p> <p>Imposed regional foliation visible at approx 55°</p> <p>13'-23 7' grit becoming coarser towards with depth. Some dissemin pyrite but limited.</p> <p>Contact with underlying quartzite at approx 55°</p> <p>23 7'-29': fine grained impure quartzite with some mafic material present giving grey speckled appearance. Some dissemin pyrite + some short pyrite stringers. Contaminated:-</p> <p>23.10'-25' foliated siltstone "black" within the quartzite. No evident sulphides.</p> <p>Many tiny kaolinitised feldspars</p> <p>25' 6 1/2" - 25' 5" - peculiar circular area</p> | | | | |

Consolidated Gold Fields Limited
DIAMOND DRILL CORE RECORD

Project: LOCH FYNE, CARBH ACHTASH

Sheet No. 2

D.D.H. No. LGA 2

| METRES | | GEOLOGICAL LOG | | | | ASSAY RECORD | | | | | |
|--------|----|-----------------------------------|----------------|-----------------|--|--------------|------|--------|------|--|--|
| From | To | Rock Type | Grain Size Log | Intersect Angle | Description | Sample No. | From | Length | Rec. | | |
| | | GRITS + QUARTZITES (continued) | | | composed of granitic-looking material about 1 1/2" diameter with "walls" approx 1/4" thick with quartzite in centre to give corona-type appearance. Consists of quartz, feldspar, mafic material + dissemin. pyrite. Felspathisation effect? | | | | | | |
| | | | | | 24' - 35'3" Gritty quartzite grading into medium-grained grit. Some dissemin pyrite + unmineralised quartz + calcite stringers. | | | | | | |
| | | | | | 34'1" - 34'7" coarse epidotised grit cut by many calcite veinlets (small fault) | | | | | | |
| | | | | | 35'3" - 60'10" various quartzites, gritty quartzites + grits difficult to delineate boundaries. Within these are many several felspathised + epidotised areas. Fine dissemin pyrite scattered through. | | | | | | |
| | | | | | 36'2" - 36'6" area of segregation of quartz, black mafic minerals, pink feldspar + some ^{green} epidote + calcite. Fair amount of dissemin pyrite. | | | | | | |
| | | | | | 39'10 1/2" - 39'11 1/2" : 2" x 1" oval area of epidote, quartz, calcite + altered pink feldspar within quartzite. No mineralisation. | | | | | | |
| | | | | | 42'7" - 43' Area of quartz, calcite + mafic material associated with epidote + feldspar. Speckled appearance, medium-grained, strong reaction to acid. Very fine dissemin pyrite + scarlet material which reacts to acid (limonite from alteration of pyrite? or cummingtonite?) | | | | | | |

Consolidated Gold Fields Limited
DIAMOND DRILL CORE RECORD

Project: LOCH FYNE, GARISH ACADH

Sheet No. 3

D.D.H. No. LGA 2

| METRES | | GEOLOGICAL LOG | | | | ASSAY RECORD | | | |
|--------|------------|---|-------------|----------------|--|--------------|------|--------|-----|
| From | Represents | Rock Type | Graphic Log | Intersec Angle | Description | Sample No. | From | Length | Rec |
| | | GAITS + QUARTZITES (Cont) | | | 44'5 1/2" - 45'0 1/2" - as above. | | | | |
| | | | | | 45'7 1/2" - 47' Dark speckled coarse-grained gritty band with calcite, epidote, chisim pyrite + limonite? | | | | |
| | | | | | 48'8" - 49'7" ^{fine} felspathized horizon within a quartzite band with epidote, calcite + chisim pyrite. Thin calcite veinlets. | | | | |
| | | | | | 52' - 52'7" Within quartzite is coarser area with dark-grey speckled appearance. ^{Contains} epidote, some calcite, chisim pyrite a blood-red mineral with basal cleavage (hematite?) | | | | |
| | | | | | 56'7" - 60'10" felspathized gritty quartzite, medium grained with numerous pink feldspars. Scattered epidote + ^{fine} chisim pyrite + unmineralized calcite to stringers. 57'1" = limonite(?) on fracture surface. | | | | |
| 60'10" | 111'4" | METAMORPHISED SILTSTONE/ASH(?) SEQUENCE | | | Contact with quartzite runs at approx 60° to core & length & is marked by 3/4" wide calcite vein containing chalcopirite pyrite, 2 small patches of galena & some graphite. Rock is dark-grey in colour, very fine-grained & is highly phyllitized causing young thin laminae approx parallel to the ^{unmarked} visible ^{unmarked} foliation at about 70°. V. soft, scratched easily by knife. Much calcite involved both as veinlets parallel to laminae & as stringers & | | | | |

Consolidated Gold Fields Limited

DIAMOND DRILL CORE RECORD

Project: LOCH FINE, GARRH ACADH

Sheet No. 4

D.D.H. No. LCA 2

| METRES | | GEOLOGICAL LOG | | | | ASSAY RECORD | | | |
|--------|------------|----------------|-------------|----------------|---|--------------|------|--------|------|
| m | Represents | Rock Type | Graphic Log | Intersec Angle | Description | Sample No. | From | Length | Rec. |
| | | | | | veinlets crosscutting them. Some massive calcite often associated with pyrite cubes. Thin lenses of calcareous material within sequence give rock a streaky appearance. | | | | |
| | | | | | Dissem. pyrite scattered through + also fine stringers + veinlets. Massive quartz here + there + associated bubbly pyrite. Pyrite on fracture planes. Some dissem. chalcopyrite in assoc. with pyrite visible. | | | | |
| | | | | | Small-scale shear planes at 45° to length at 61'5" + 62'8". | | | | |
| | | | | | 65'5 1/2" - 65'7" Augen structure involving 3" x 1 1/2" quartz 'blob' with silty material in centre. Some 'blebby' pyrite present. | | | | |
| | | | | | 67'9" - 68'2" massive quartz + silty material. Pyrite + associated 'blebby' chalcopyrite. | | | | |
| | | | | | 68'4" 1/2" wide quartz veinlet + chalcopyrite + pyrite. | | | | |
| | | | | | 68'9" - 70'6" Highly foliated, fine-grained, cherty-looking section. Overall pinkish colour with darker, less fine-grained bands (gneissic looking) + epidote parallel to banding. Many thin calcite stringers usually with associated pyrite. Dissem. pyrite also. | | | | |
| | | | | | Top 5" has large calcite veinlet associated with minor fault. Much 'blebby' chalcopyrite. | | | | |
| | | | | | 69'2 1/2" 1 1/2" of soft grey-green siltstone with pyritiferous calcite veinlets. | | | | |

Consolidated Gold Fields Limited

DIAMOND DRILL CORE RECORD

Project: LOCH FYNE, GARZA ACHHAB

Sheet No. 5

D.D.H. No. LGA 2

| METRES | | GEOLOGICAL LOG | | | | ASSAY RECORD | | | |
|--------|------------|----------------|-------------|----------------|--|--------------|------|--------|-----|
| From | Represents | Rock Type | Graphic Log | Intersec Angle | Description | Sample No. | From | Length | Rec |
| | | | | | 73'4" - 2" wide quartz vein + some dissem pyrite. | | | | |
| | | | | | 75'9" - 76'6" section with abundant thin pyrite stringers, parallel crosscutting foliation. Patches of "blebby" pyrite present. | | | | |
| | | | | | 80'6" - 87'10" Heterogeneous section with many pinkish quartz bands + dark spotted areas. A little dissem pyrite + thin stringers on some fracture surfaces | | | | |
| | | | | | 84'4" - 84'5 1/2" } greenish spotted areas, ashy looking | | | | |
| | | | | | 85'4" - 85'6 1/2" } + much ^{very} fine dissem pyrite | | | | |
| | | | | | 86'8" signs of secondary, superimposed foliation at 45-50° to core direction. Intersects primary regional foliation at 40 to 45°. | | | | |
| | | | | | 87'8 1/2" 1 1/2" wide feldspathised band rich in epidote + fine ^{dissem} pyrite + stringers. | | | | |
| | | | | | 89'5" 1 1/2" wide layer of light grey speckled, fine grained ashy material + dissem pyrite. | | | | |
| | | | | | 90'2" - for 4" same as above but pyrite veinlets | | | | |
| | | | | | 90'9" - 2" of ashy material + dissem pyrite | | | | |
| | | | | | 91'6" 3" " " " " | | | | |
| | | | | | From 92' rock becomes very heterogeneous - difficult to delineate specific units + rock much more "spotted" now (hornfelsing?) Much green epidote present + assoc dissem pyrite. Thin pyrite stringers throughout + calcite veinlets usually with associated pyrite "blebby" pyrite on fracture surfaces. Some patches are | | | | |

Consolidated Gold Fields Limited

AMOND DRILL CORE RECORD

Project: LOCH FYNE, GARDH ACHADH

Sheet No. 6

D.D.H. No. LCA 2

| METRES | | GEOLOGICAL LOG | | | | ASSAY RECORD | | | |
|--------|------------|----------------|-------------|-----------------|---|--------------|------|--------|------|
| From | Represents | Rock Type | Graphic Log | Intersec. Angle | Description | Sample No. | From | Length | Rec. |
| | | | | | appear highly foliated (though fine-grained pinkish areas). | | | | |
| | | | | | 96'7"-96'10" small fine-grained lens-shaped areas with this section. Zoned with pinkish material on margin, light-grey towards centre, dark-grey & speckled in centre. Associated dissemin pyrite. | | | | |
| | | | | | 100' - 2" thick calcite vein + "blebby" pyrite. | | | | |
| | | | | | 115" - 3" wide highly epidotised with much dissemin pyrite + thin stringers. | | | | |
| | | | | | From 110'10" "spitting" increases in intensity & size giving an overall darker speckled appearance. (N.B. - spots not visible in split sections) | | | | |
| | | | | | 114'9"-115'8" minor folding involving a 'spotted' unit Axial-plane direction 80° i.e. parallels regional foliation. Dissemin pyrite + folded pyrite stringers + concentrations of pyrite in fold cores. | | | | |
| | | | | | 115'8"-117' pinkish foliated rock. Extensive calcite veins + associated pyrites. | | | | |
| | | | | | 121' axial plane of minor fold paralleling regional foliation. | | | | |
| | | | | | 123' 2" section highly foliated + "blebby" pyrite. | | | | |
| | | | | | 128'7"-129' oval segregations of pink foliated material with dissemin pyrite. | | | | |
| | | | | | 133'10"-134'7" minor flexures within "hornblende" material Also at 134'11"-135'2" | | | | |
| | | | | | 135'9" 1/2" wide band of light-grey fine-grained speckled rock + dissemin pyrite. | | | | |
| | | | | | 138'5"-141'7" fine-grained unspotted | | | | |

Consolidated Gold Fields Limited
DIAMOND DRILL CORE RECORD

Project: LOCH FINE CARBONATH

Sheet No. 7

D.D.H. No. LGA 2

| METRES | | GEOLOGICAL LOG | | | | ASSAY RECORD | | | |
|--------|------------|----------------|-------------|----------------|---|--------------|------|--------|-----|
| From | Represents | Rock Type | Graphic Log | Intersec Angle | Description | Sample No. | From | Length | Rec |
| | | | | | grey-green highly phyllicized & epidotized unit with small fine grained pyrite especially in association with epidote. Extensive thin pyrite stringers & calcite last 8" v. rich in pyrite | | | | |
| | | | | | 142' 7 1/2" - 142' 11" block of quartzitic material with more silty horizon. Some disseminated pyrite & stringers | | | | |
| | | | | | 143' 4" 1/2" wide grey silty band separating dark mottled material from unaltered substone/ ash (?). Disseminated chalcopyrite & pyrite and also stringers of them. | | | | |
| | | | | | 143' 11" - as above. | | | | |
| | | | | | 147' 2" - 3" x 2" oval area of zoned material (sulfidic?) Disseminated chalcopyrite around this area - fine pyrite within it | | | | |
| | | | | | 147' 4" - 148' 10" Band of fine grained pinkish grey quartz & disseminated pyrite & pyrite stringers | | | | |
| | | | | | 152' - 152' 4" thin coating of a soft white material along fracture plane. Unreactive to dilute acid (quartz?) | | | | |
| | | | | | 154' 7" - 155' 9" pinkish grey fine grained quartzitic section. Disseminated pyrite & areas of concentration of pyrite. Also on fracture surfaces. | | | | |
| | | | | | 156' 5" - 157' thin brecciated area with silty phyllicized chert & grey brecciated substone ash (?) Disseminated pyrite & calcite veinlets with pyrite. | | | | |

Consolidated Gold Fields Limited
DIAMOND DRILL CORE RECORD

Project: LOCH FYNE, GARDH ACHADH

Sheet No. 8

D.D.H. No. LG72

| METRES | | GEOLOGICAL LOG | | | | ASSAY RECORD | | | |
|--------|------------|----------------|-------------|----------------|--|--------------|------|--------|-----|
| From | Represents | Rock Type | Graphic Log | Intersec Angle | Description | Sample No. | From | Length | Rec |
| | | | | | 157'7"-158'4" - fine crystalline, fractured, foliated silstone/lush (?) cut by many thin pinkish veins containing felsic material, qtz + calcite + "blebb" pyrite. | | | | |
| | | | | | 158'10"-160'5" - pinkish-grey silicified zone cut by many calcite stringers (chalcopyrite in stringer at 159'5" (about 1" long), also associated with pyrite on fracture surfaces. | | | | |
| | | | | | 160'5 1/2"-160'8" - foliated band + disseminated pyrite | | | | |
| | | | | | 162'4 1/2"-162'11" - grey qtzite, pyrite stringers | | | | |
| | | | | | 163'4"-163'7" - zone of disturbance with fragments of silstone/lush + calcite veins. | | | | |
| | | | | | 164'4"-165'18" - grey fine-grained quartzite. Abundant pyrite clusters in stringers + on fracture surfaces. Associated chalcopyrite at 165'5". | | | | |
| | | | | | 167'7"-168'6" - brecciated + silicified zone with massive qtz. Disseminated pyrite + associated chalcopyrite. | | | | |
| | | | | | 168'6"-170'7" ? silstone/lush - many pink qtz veins with stibby pyrite. At 170'1" is all white material (gypsum?) + decomposed calcite. Many calcite veins + associated pyrite. | | | | |
| 172'2" | 2310' | QUARTZITE | | | 172'2"-173'2" transition zone of pinkish-grey silicified quartzite with darker grey zone of silicified buff/lush (?) block quartz on fracture surfaces parallel to zone. Much disseminated pyrite + stringers of some associated chalcopyrite. | | | | |

Consolidated Gold Fields Limited
DIAMOND DRILL CORE RECORD

Project: LOCH FYNE GARBHACHADH

Sheet No. 9

D.D.H. No. LGA 2

| METRES | | GEOLOGICAL LOG | | | | ASSAY RECORD | | | |
|--------|------------|---------------------------------|-------------|----------------|---|--------------|------|--------|------|
| From | Represents | Rock Type | Graphic Log | Instruc. Angle | Description | Sample No. | From | Length | Rec. |
| | | | | | 173'2"-179'6" Homogeneous fine-grained grey quartzite with much disseminated pyrite + blebby pyrite on fracture surfaces (Chalcopyrite stringers at 176'2"). Short pyrite stringers + small veinlets. | | | | |
| | | | | | 179'6"-186'2" Crilly quartzite with small yellowish-brown areas (< 1mm - feldspars??). Abundant disseminated pyrite + stringers. | | | | |
| | | | | | 186'2"-192'10" - coarse crilly quartzite + disseminated pyrite + stringers + on fracture surfaces. | | | | |
| | | | | | 192'10"-196'0" very fine-grained quartzite. | | | | |
| 95' | 9' | DISCONTINUED TRANSITION ZONE | | | 196'-197'4" silicified + leached buff/ash/siltstone(?). Much fine disseminated pyrite + quartz stringers (Chalcopyrite in situ at 196'2" on fracture surfaces). | | | | |
| | | | | | 197'4"-198'11" mixture of coarse grit + small "granitic" fragments + licheniferous massive pyrite in veinlets around fragments. | | | | |
| | | | | | 198'11"-199'8" highly silicified zone + section + pyrite stringers. | | | | |
| | | | | | 199'8"-200'4" highly silicified zone + mainly calcite veinlets + pyrite stringers. Inclusions are small "granitic-looking" fragments. | | | | |
| | | | | | 200'4"-201'8" coarse medium-grained black | | | | |

Consolidated Gold Fields Limited
DIAMOND DRILL CORE RECORD

Project: LOCH FYNE, GARBH ACHADH

Sheet No. 11

D.D.H. No. LGA 2

| METRES | | GEOLOGICAL LOG | | | | ASSAY RECORD | | | | | |
|--------|------------|----------------|-------------|----------------|---|--------------|------|--------|------|--|--|
| From | Represents | Rock Type | Graphic Log | Intersec Angle | Description | Sample No. | From | Length | Rec. | | |
| | | | | | 230'8" - 5mm wide pyrite veinlet at 45° | | | | | | |
| | | | | | 251' - pyrite veinlet 1cm wide at widest point tapering to about 1mm. Runs at 45°. | | | | | | |
| | | | | | 252'7" - 2mm wide chalcopyrite stringer with associated pyrite. | | | | | | |
| | | | | | 253'4" - 289'9" light colored pinkish porphyry scarce ^{white} plagioclase crystals. Much disseminated pyrite & associated chalcopyrite, also stringers in association often with coarse veinlets. | | | | | | |
| | | | | | 266'5" fracture surface with 4mm wide chalcopyrite veinlet at 45° to core. | | | | | | |
| | | | | | 264'7" - 265'9" - purplish porphyry | | | | | | |
| | | | | | 264'11" - thin chalcopyrite stringer | | | | | | |
| | | | | | 265'9" - 266'3" - abundant disseminated chalcopyrite | | | | | | |
| | | | | | 267'10" 2mm wide pyrite veinlet associated with | | | | | | |
| | | | | | 273'7" - 2cm x 1cm fragment of dark grey buff ash? | | | | | | |
| | | | | | 276'8" - 285'6" - numerous thin quartz veinlets (< 5mm wide) at 45° to core & usually pyritiferous, some associated ch. | | | | | | |
| | | | | | 286'4" - fracture surface coated with bluish pyrite & associated chalcopyrite. | | | | | | |
| | | | | | 289'9" - 298'4 1/2" - light purple porphyry with high percentage white plagioclase phenocrysts up to 5mm wide. Disseminated pyrite & stringers - pyrite on fracture surfaces with associated disseminated chalcopyrite. | | | | | | |

Consolidated Gold Fields Limited
DIAMOND DRILL CORE RECORD

Project: LOCH FYNE, GARBH ACHADIT

Sheet No. 13

D.D.H. No. L.F. 2

| METRES | | GEOLOGICAL LOG | | | ASSAY RECORD | | | | | | |
|--------|------------|--------------------------------|-------------|----------------|--|------------|------|--------|-----|--|--|
| From | Represents | Rock Type | Graphic Log | Intersec Angle | Description | Sample No. | From | Length | Rec | | |
| | | | | | epidiorite (?) ; banded pink + dark grey metasediment / half ? Dissemi. pyrite + qtz veins with pyrite | | | | | | |
| | | SILICIFIED BANDED METASEDIMENT | | | Top 2'6" is highly brecciated with interstices filled with massive pyrite. Down to 370'8" the rock is banded 'dark grey & pink very fine-grained & tough. Dark bands wider than rest up to 2-3" wide pinkish bands no greater than 1/2". Contains very fine disseminated pyrite - much pyrite on fracture surfaces. Appears highly silicified in parts & often epidote is found both in interstices & veins. Both staurolite present, thin quartz & calcite veins with associated pyrite. Some associated chloropyrite | | | | | | |
| 414'2" | 58'2" | | | | 344'8" - chloropyrite associated with pyrite on fracture surface. | | | | | | |
| | | | | | 355'1" - 357'7" highly silicified grey zone | | | | | | |
| | | | | | 358'6" - 359'4" with minor thin qtz fragments often with pyrite. Much dissem pyrite | | | | | | |
| | | | | | 367'7" - massive pyrite in area 1' x 1" | | | | | | |
| | | | | | 369' - 369'5" - "blobby" pyrite along fracture planes - associated chloropyrite | | | | | | |
| | | | | | 370'8" - 399'7" Highly silicified section showing a change from grey to greenish to pink | | | | | | |

Consolidated Gold Fields Limited
DIAMOND DRILL CORE RECORD

Project: LOCH FINE, GARDIA ACHDAN

Sheet No. 12

D.D.H. No. LGA 2

| METRES | | GEOLOGICAL LOG | | | | ASSAY RECORD | | | |
|--------|------------|--|-------------|----------------|--|--------------|------|--------|-----|
| From | Represents | Rock Type | Graphic Log | Intersec Angle | Description | Sample No. | From | Length | Rec |
| | | | | | 292'-294'1" - small thin qtz veinlets + some dissem. pyrite + chalcopyrite. | | | | |
| | | | | | 295'4 1/2" - 307' orange-brown porphyry rich in plaq crystals but barren of incls. Much pyrite, dissem + stringers, associated chalcopyrite. | | | | |
| | | | | | 302'6" - brecciated fragmental porphyry + calcite + pyrite. | | | | |
| | | | | | 304'8" - 305' - as above. | | | | |
| | | | | | 307' - 3mm wide pyrite veinlet + chalcopyrite | | | | |
| | | | | | 307' - 317'1" orange porphyry cut by thin qtz + calcite veinlets low incls content | | | | |
| | | | | | 309'9" - 310'7" - main pyrite veinlets + dissem pyrite + associated chalcopyrite. Fractured surfaces coated with pyrite. | | | | |
| | | | | | 313'6" - 314' 3/4" - pyrite veinlet + pyrite on fracture surfaces. Both have associated incls. | | | | |
| | | | | | 317'1" - 327'6" purplish coarse-grained with clasts included fragments cut by main thin quartz veinlets down to 327'6". Pyrite dissem + stringers + associated chalcopyrite. | | | | |
| | | | | | 320'4" - 322' - much chalcopyrite. Some minor stringers - disseminated silver (?) | | | | |
| | | | | | 327'6" - 329' brecciated with "granitic" fragments + dark "epidote" fragments. Chalcopyrite associated with pyrite. | | | | |
| 333' | 310' | 310' - 311'6" - brecciated with fragments of porphyry, dark quartz | | | | | | | |

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IN CONFIDENCE

| | | | | | | |
|----------------|---------|---------------------|-------------------|---|------------|------------------------|
| Date Started | 18.6.74 | Collar Co-ordinates | Grid REF. 67D/367 | Consolidated Gold Fields Limited DIAMOND-DRILL CORE RECORD Project: <u>LOCH FYNE</u> | D.D.H. No. | DDGA 3 |
| Date Completed | 25.6.74 | Collar Elevation | Grid N. | | Area | GARBN ACHAD |
| from | m. | Recovery | | | Length | 200 feet |
| from | m. | Inclination | 45° | | Purpose | TESTING ANOMALY + WELL |
| from | m. | Corrected | | | Logged By | SJK + BK |
| | | | | Date | 5.7.74 | |

| METRES | | GEOLOGICAL LOG | | | | ASSAY RECORD | | | |
|--------|------------|--|-------------|-------------------|--|--------------|------|--------|------|
| From | Represents | Rock Type | Graphic Log | Inclination Angle | Description | Sample No. | From | Length | Rec. |
| 0 | 11" | PEAT | | | | | | | |
| 11" | 6'4" | BOULDER CLAY | | | Top 1' is rust-brown boulder-clay, few small fragments remains comprises pebbles + boulders of grit, epidiorite + porphyry | | | | |
| 7'3" | 1337" | HETEROGENEOUS METASEDIMENTARY SEQUENCE | | | (N.B. HQ core down to 9'9", then NO) 7'3"-13'4" banded ^{schistose} zone comprising intercalated soft, grey, highly schistose, very fine-grained mudstone ^{with some pits} and fine-grained, grey/white speckled, in parts calcareous, metasediment. Zone shows folds + exhumations + margins of speckled metasediment are brown, pink & highly silicified. Very weathered with abundant iron-staining. Strain-slip cleavage visible as at right-angles to bands along contacts. Mineralisation restricted to mainly blabby pyrite, a little disseminated in the speckled metasediment. 13'4"-20'4" even more quartzite contaminated with occasional bands of dark greenish, fine-grained metasediment. At 19'4" is 2" fragment of black, fine-grained material | | | | |

Consolidated Gold Fields Limited

DIAMOND DRILL CORE RECORD

Project: LOCH FYNE, GARSH ACHADH

Sheet No. 2

D.D.H. No. DDG 3

| METRES | | GEOLOGICAL LOG | | | | ASSAY RECORD | | | |
|--------|------------|-----------------|-------------|-----------------|---|--------------|------|--------|------|
| From | Represents | Rock Type | Graphic Log | Intersec. Angle | Description | Sample No. | From | Length | Rec. |
| | | METASED (Cont.) | | | <p>20'4" - 25'5" dark green-black, fine-grained, chloritic, partly calcareous, metasediment; calcite on joints + few flattened pyrite "blebs". From 21'7" - 24'3" meshwork of quartzitic veins (no greater than 1/2" wide) with some associated green epidote. Abundant "blobby" pyrite + a reddish-brown, resinous, hard mineral with a creamy-white streak (garnet (spessartine) or sphene??)</p> <p>25'5" - 32' highly folded + contorted section similar to 7'3" - 18'4" consisting of bands (not greater than 1/2" wide) of dark greenish chloritic ^{schistose} metased in parts calcareous + having pink, siliceous margins interbedded with soft, grey, highly laminated ^{phyllitic} mudstone/shale. Strain-slip cleavage on siliceous margins. Folds vary from symmetric to asymmetric to inclined + axial plane direction approximately 75°-85° with some local variations. Joints/fractures parallel this direction. A little fine dissemin. pyrite + "blobby" pyrite. "blobby" pyrite on joints.</p> <p>32' - 34'2" unfolded, very calcareous, soft grey/white "spotted" metased much iron-staining especially on joints. A little "blobby" pyrite present.</p> <p>34'2" - 40'1" (N.B. much coarse-look than</p> | | | | |

Consolidated Gold Fields Limited

DIAMOND DRILL CORE RECORD

Project: LOCH FYNE, GARRH ACHADH

Sheet No. 3

D.D.H. No. DICA 3

| METRES | | GEOLOGICAL LOG | | | | ASSAY RECORD | | | |
|--------|------------|----------------|-------------|-----------------|---|--------------|------|--------|------|
| From | Represents | Rock Type | Graphic Log | Intersec. Angle | Description | Sample No. | From | Length | Rec. |
| | | METRES (Cont) | | | approx. 36'8" to 38'6" & due to softness of certain horizon) Mixture of light-grey quartzites with some intercalated muddy horizons and soft, light-green material with small (up to 2mm diam.) "globules" of quartzitic material (some form of grit?) Almost barren of sulphides except for a little "blebby" pyrite in top 2'. | | | | |
| | | | | | 40'1"-102' Rocks similar to above but vertical changes in lithologies very frequent. Consists of light-grey impure quartzites & gritty quartzites (only top part present); soft grey/white speckled, often calcareous schistose material; soft, light-green metasediment; grey, highly laminated & schistose phyllitic mudstone (lamination at 60°-65°). Intercalations of all these lithologies occur, sometimes with minor folding & faulting, & siliceous margins developed on some horizons. Occasional talc partings, some associated epidote & whole sequence highly fragmented due to numerous fractures & imposed schistosity. Limited sulphides, some zones having more "blebby" pyrite than others with the quartzites & the light-green material. Some arsenic-bearing pyrite seen in inter- | | | | |

Adated Gold Fields Limited

MOND DRILL CORE RECORD

Project: BARBH ACHADH

Sheet No. 4

D.D.H. No. DXA 3

| METRES | | GEOLOGICAL LOG | | | | ASSAY RECORD | | | |
|--------|------------|-----------------|-------------|-----------------|--|--------------|------|--------|------|
| From | Represents | Rock Type | Graphic Log | Intersec. Angle | Description | Sample No. | From | Length | Rec. |
| | | Metased (cont.) | | | occasionally abundant. | | | | |
| | | | | | 53'6" - $\frac{1}{4}$ " wide veinlet of "blobby" pyrite | | | | |
| | | | | | 55'9" - quite massive pyrite veinlet + epidote + qtz | | | | |
| | | | | | 56'7" - $\frac{1}{8}$ " wide calcite veinlet + "blobby" pyrite | | | | |
| | | | | | 62'2" - 62'8" - zone of staurolite phyllite with much "blobby" pyrite in veinlets | | | | |
| | | | | | 87'3" - blobby pyrite + hematite staining? | | | | |
| | | | | | 91'6" - $\frac{1}{2}$ " wide massive pyrite veinlet | | | | |
| | | | | | 91'1" - 93" - highly silicified zone, much pink qtzite, within metased | | | | |
| | | | | | 96' - 100' - 4' of core missing. | | | | |
| | | | | | 101'7" - 101'10" - zone with abundant "blobby" pyrite & thin veinlets within soft mudstone / phyllite. | | | | |
| | | | | | 102' - 136'4" soft, grey, fine-grained, "spotted" graded? phyllitised siltstone / ash? On split surface spots not visible. Lamination at 75° to core direction & unpaired schistosity at approx 30°-35° to core direction. Laminae show crenulations due to unpaired schistosity. Some zones are tougher, more silicified & grey-green in colour. Crashing Cradled-bedding indicates right-way up but difficult to delineate. At 116'10" - 9 1/2" long block of dark, basic material with many ovoids. | | | | |

Consolidated Gold Fields Limited

DIAMOND DRILL CORE RECORD

Project: LILLY FINE GARDH ACHADH

Sheet No. 35

D.D.H. No. JDCA 3

| METRES | | GEOLOGICAL LOG | | | | ASSAY RECORD | | | |
|-------------|------------|--------------------|-------------|-----------------|---|--------------|------|--------|------|
| From | Represents | Rock Type | Graphic Log | Intersec. Angle | Description | Sample No. | From | Length | Rec. |
| | | METASO (cont.) | | | filled with calcite + olivine. Margins highly chilled + ^{running} running at approx. 60° to core direction. | | | | |
| | | | | | Thin pyrite veinlets often associated with qtz, plus at 103'4" is associated "blebby" chalcopyrite. Occasional unmineralised calcite veinlets. Joints have ore pyrite usually. | | | | |
| | | | | | 127'8" 1/2" wide qtz veinlet + "blebby" pyrite | | | | |
| | | | | | 130'6 1/2" - 3 1/2" zone of massive quartz + "blebby" pyrite. | | | | |
| | | | | | 136'4" - 139' grey-pink quartzite much "blebby" pyrite on joints with ^{associated} massive chalcopyrite at 137'. Several thin pyrite veinlets. | | | | |
| | | | | | 139' - 140'10" banded zone of intercalated qtzite (pinkish) + grey/white "speckled" metasediment. Bands run at approx 70°. "Blebby" pyrite associated with thin qtz veinlets with scattered epidote. | | | | |
| 140'59 1/2" | | FOLIATED EPIDORITE | | | Dark green/black fine to medium grained, foliated epidorite with abundant tiny feld ragged, feldspar crystals which become more "stretched-out" in lower part of sequence. Foliation direction is approx 80°. Chalcopyrite on joint surfaces. | | | | |

| METRES | | GEOLOGICAL LOG | | | | ASSAY RECORD | | | | | |
|--------|------------|-------------------|-------------|-----------------|---|--------------|------|--------|------|--|--|
| From | Represents | Rock Type | Graphic Log | Intersec. Angle | Description | Sample No. | From | Length | Rec. | | |
| | | EPIDIRITE (Cont.) | | | Pyrite disseminated throughout, often "blebby". "Blebby" pyrite on joints & associated with quartz & calcite veinlets plus much massive magnetite. | | | | | | |
| | | | | | 141'2" - 2" calcite veinlets about 1/2" wide with blebby pyrite. | | | | | | |
| | | | | | 141'7" - joint with much "blebby" & crystalline pyrite. | | | | | | |
| | | | | | 142'7" - several veinlets of calcite with blebby pyrite & massive magnetite. | | | | | | |
| | | | | | 145'6" - 3/4" wide calcite veinlet + "blebby" pyrite & magnetite. | | | | | | |
| | | | | | 146'7" - as above plus many thin (1mm or less) pyrite veinlets running parallel to each other at 45° Massive pyrite on joint + magnetite. | | | | | | |
| | | | | | 149'10" - 2" wide zone with massive & "blebby" pyrite, massive magnetite, + reddish-brown hematite? | | | | | | |
| | | | | | 153' - 1/8" wide qtz veinlet + blebby pyrite, massive magnetite & epidote. | | | | | | |
| | | | | | 153'8" - 154' Three 1/8" wide veinlets running at 90° to core with qtz, pyrite & massive magnetite. | | | | | | |
| | | | | | 155' - 10" long section with many calcite thin veinlets with assoc. massive & blebby pyrite + massive magnetite. | | | | | | |

Consolidated Gold Fields Limited

DIAMOND DRILL CORE RECORD

Project: LOCH Fyne, GARBH ACHADH

Sheet No. 7

D.D.H. No. 356A-3

| METRES | | GEOLOGICAL LOG | | | | ASSAY RECORD | | | |
|--------|------------|-------------------|-------------|-----------------|--|--------------|------|--------|-----|
| From | Represents | Rock Type | Graphic Log | Intersec. Angle | Description | Sample No. | From | Length | Rec |
| | | EPIDICRITE (Cont) | | | 156'10" - 1/4" wide qtz vein + pyrite + magnetite | | | | |
| | | | | | 158'10" - 1/4" wide qtz vein is 8" long running at 45° to core, with "blebby" pyrite + associated magnetite | | | | |
| | | | | | 160'8" - 6" long section with much massive pyrite + magnetite associated with ^{massive} quartz + a little epidote | | | | |
| | | | | | 164'8" - 7" long calcite veinlet, 1/4" - 1/2" long at 45° | | | | |
| | | | | | 165'9" - 1/2" wide calcite veinlet with blebby pyrite + a little massive magnetite. | | | | |
| | | | | | 166'3" - 167'7" - zone with many pyrite veinlets, often associated with qtz + calcite. At 167'5" is 1" wide veinlet with qtz, massive magnetite + "blebby" pyrite. | | | | |
| | | | | | 169'4" 3/4" wide qtz veinlet + "blebby" pyrite + massive magnetite | | | | |
| | | | | | 169'9" - calcite veinlet + pyrite + magn. | | | | |
| | | | | | 170'7" - qtz | | | | |
| | | | | | 171'3" - massive pyrite in ragged veinlets on joints. Associated qtz + magnetite | | | | |
| | | | | | 172'-172'6" - section with abundant thin qtz veinlets with pyrite + magnetite; also thin ^{massive} pyrite veinlet. At 172'6" is 1/4" wide veinlet at 90° | | | | |

Associated Gold Fields Limited
DIAMOND DRILL CORE RECORD

Project: LOCH FYNE, GARDH ACHADH

Sheet No. 2

D.D.H. No. DDCA 4

| METRES | | GEOLOGICAL LOG | | | | ASSAY RECORD | | | |
|--------|------------|----------------|-------------|----------------|---|--------------|------|--------|-----|
| From | Represents | Rock Type | Graphic Len | Inclined Angle | Description | Sample No. | From | Length | Rec |
| | | DEEPART (CONT) | | | felspars. Mainly very fine pyrite some associated chalcopyrite. | | | | |
| | | | | | 13'4" - 14'6" - qtz-nica-felipar porphyry medium grained with fine, dense pyrite & some unassociated chalcopyrite; occasional thin stringers of pyrite. | | | | |
| | | | | | 14'6" - 16' - purplish qtz-nica-porphyry with some felipar. At 15' is small veinlet of epidiorite (1" square) | | | | |
| | | | | | 16' - 21' ^{orange} pink-purple mica-felipar-porphyry with subsidiary quartz | | | | |
| | | | | | 21' - 27'5" - pinkish qtz-nica-porphyry very rich in qtz, with a little felipar. | | | | |
| | | | | | 27'5" - 33'4" - mainly a mica-felipar-porphyry with not subsidiary qtz in parts; some areas finer grained than others. | | | | |
| | | | | | 33'4" - 36'6" qtz-felipar-nica porphyry, patches rich in qtz. | | | | |
| | | | | | 36'6" - 48'10" - at 36'6" is a contact running at approx 10° between the above porphyry & a qtz-nica porphyry lacking felipar (mixing of 2 magmas?). Orange purple in colour with last 2' containing some felipar phenocrysts. Mineralisation - dense pyrite & some blebby pyrite; thin stringers of pyrite - pyrite on joints. Occasional dense chalcopyrite. Thin qtz veinlets radiating through. | | | | |
| | | | | | 48'10" - 50'7" block of holocrystalline orange quartz material (veinlet?) Much quartz | | | | |

D P 1

670/373

Consolidated Gold Fields Limited

DIAMOND DRILL CORE RECORD

DDGA 4

Project: LOCH FYNE

| | |
|-----------|-------------------------|
| Area | GLAISH ALHADDH |
| Length | 400' |
| Purpose | TEST 17 - GULLHEM ANCPA |
| Logged By | S.J.K. |
| Date | 24 6 74 |

| | | | |
|----------------|---------|------------------|--------|
| Date Started | 6 74 | Collar Elevation | |
| Date Completed | 17 6 74 | Orientation | Grid N |
| from | m. | Recovery | |
| from | m. | Inclination | 45° |
| from | m. | Corrected | |

| METRES | | GEOLOGICAL LOG | | | | ASSAY RECORD | | | |
|--------|---------|---------------------------------|------------|----------------|---|--------------|------|--------|------|
| From | Repeats | Rock Type | Grains Len | Intersec Angle | Description | Sample No. | From | Length | Rec. |
| 0 | 1'2" | PEAT | | | | | | | |
| 1'2" | 1'2" | PEAT / BEDROCK | | | Mixture of rotten, fragmented porphyry & peat. | | | | |
| 2'6" | 67 L | PORPHYRY | | | Heterogeneous mixture ranging from very coarse grained mica-felapat porphyry with felapat phenocrysts up to 1/2" diameters & often highly kaolinitised, to purplish porphyry sometimes almost completely barren of felapat but with abundant quartz phenocrysts up to 1/4" diameters - a Qtz-mica-porphyry. Very fine disseminated pyrite throughout often with associated chalcopyrite small streaks of pyrite & chalcopyrite & occasionally veinlets of pyrite with associated chalcoc; coatings of pyrite on joint/fracture surfaces often with a little disseminated chalcoc. | | | | |
| | | [HC core down to 10'5" then NP] | | | 2'6"-12'8" coarse-grained mica-felapat porphyry with holocrystalline purplish groundmass thick kaolinitised felapat some Qtz blebs here & there & cut by thin Qtz veinlets. Pyrite on joints disseminated & in thin stringers; chalcoc chalcopyrite at 9'6" & also scattered through this section. At 11' = disseminated (?) | | | | |
| | | | | | 12'8"-13'4" - Qtz-mica-porphyry, tabling | | | | |

D P 1

670/373

| | | | |
|----------------|---------|------------------|---------|
| Date Started | ← 6.74 | Collar Elevation | |
| Date Completed | 17 6.74 | Orientation | Grid N. |
| from | m. | Recovery | |
| from | m. | Inclination | 45° |
| from | m. | Corrected | |

Consolidated Gold Fields Limited.

DIAMOND DRILL CORE RECORD

Project: LOCH FINE

DDGA 4

| | |
|-----------|------------------------|
| Area | GLAISH ALMADH |
| Length | 400' |
| Purpose | TEST 17 + GELHEM ANOVA |
| Logged By | S. J. K. |
| Date | 24 6.74 |

| METRES | | GEOLOGICAL LOG | | | | ASSAY RECORD | | | |
|--------|------------|---------------------------------|------------|---------------|--|--------------|------|--------|------|
| From | Represents | Rock Type | Grain Size | Miner. Asses. | Description | Sample No. | From | Length | Rec. |
| 0 | 1.2" | PEAT | | | | | | | |
| 1.2" | 1.2" | PEAT / BEDROCK | | | Mixture of rotten fragmental porphyry & peat. | | | | |
| 2.6" | 67.6" | PORPHYRY | | | Heterogeneous mixture ranging from very coarse grained mica-felicitous porphyry with fibrous phenocrysts up to 1/2" diameters & often highly inclined, to purplish porphyry sometimes almost completely barren of felicitous but with abundant quartz phenocrysts up to 1/4" diameters - a Qtz-mica-porphyry. Very fine disseminated pyrite throughout often with associated chalcopyrite. Small streaks of pyrite & chalcopyrite & occasionally veins of pyrite with associated chalcocite coatings of pyrite on joint/fracture surfaces often with a little disseminated chalcopyrite. | | | | |
| | | [NO core down to 10.5" then NO] | | | 2.6"-12.8" coarse-grained mica-felicitous porphyry with holocrystalline purplish surroundings which inclined felicitous some Qtz blebs here & there & cut by thin Qtz veins. Pyrite on joints disseminated & in thin streaks; disseminated chalcopyrite at 9.6" & also scattered through this section. At 11" = disseminated (?) | | | | |
| | | | | | 12.8"-13.4" - Qtz-mica-porphyry, containing | | | | |

| METRES | | GEOLOGICAL LOG | | | | | ASSAY RECORD | | | | | | |
|--------|------------|---------------------------|--------------------|--------------------|---|------------|--------------|--------|-----|--|--|--|--|
| From | Represents | Rock Type | Interval - L to | Interval - A to | Description | Sample No. | From | Length | Rec | | | | |
| | | PORPHYRY (cont.) | | | <p>measured on joint planes. Imposed foliation at 25-30°</p> <p>Last 4" highly brecciated, many qtz veinlets + $\frac{3}{4}$" calcite veinlet at 80'.</p> <p>50'7"-55'7" coarse-grained mica-felicitous porphyry with kaolinitised felicitous which are often zoned + have a greenish hue in centre.</p> <p>55'7"-60'7" orange-purple coloured medium-grained porphyry which is felicitous-rich at top + base + qtz-rich in central area. Much ^{pink} felicitous along joint surface at 55'7"-56'5" (potash micatization)</p> <p>60'7"-70' heterogeneous section in parts contained, some zones rich in large white felicitous, others very holocrystalline with a little mica, others more grey granitic-looking. Numerous calcite stringers + qtz veinlets up to $\frac{1}{2}$" wide; some qtz fragments up to $\frac{3}{4}$" diameter at 69'10". Thin ^{pink} felicitous veinlets with pyrite.</p> | | | | | | | | |
| 70' | 231" | "GRANITE" (?) PORPHYRY | | | <p>Generally medium-grained, grey in colour with abundant mica (at 72'5" mica shows vague preferred orientation at 60°-70°). Contains numerous thin qtz, calcite + potash felicitous veinlets often with associated pyrite; druse pyrite with occasional chalcopyrite + also thin stringers. Some pyrite on joints/fractures with occasional associated chalcopyrite. The white</p> | | | | | | | | |

| METRES | | GEOLOGICAL LOG | | | | ASSAY RECORD | | | |
|--------|------------|--|-------------|----------------|---|--------------|------|--------|-----|
| From | Represents | Rock Type | Graphic Log | Intersec Angle | Description | Sample No. | From | Length | Rec |
| | | Quartzite? (cont) Porphyry | | | ashy grey felsars are generally highly kaolinized - weathered out (especially between 35'9" + 37'10") At 81' is 4" section very potash-felspar-rich with pink feldspar veinlets. Much pyrite here in stringers & veinlets. 37'11" - 43'1" contamination with fragments of white & quartzose material. Lower 10" cut by many qtz calcite veinlets with pyrite. | | | | |
| 31' | 39' | CONTAMINATED MICA-FELSPAR PORPHYRY | | | Color varies from grey to grey-pink to grey-purple depending on amount and distribution of felspar & qtz phenocrysts. Very heterogeneous collection with thin porphyry occurrences in which are embedded distinct fragments from $\frac{1}{2}$" diameter up to 6-8" long of dark fine grained epidiorite quartzose material and granitic looking material. Many qtz veinlets up to $\frac{1}{2}$ " wide occur together with thinner ones of calcite & qtz both with fine disseminated pyrite & occasionally chloropyrite often epidote associated. Joint surfaces having coating of sometimes highly pyrite - occasional inlets of chloromylonite associated. Fine brown pyrite throughout & some chalc. 43' - qtz vein 1" wide at maximum rather with highly contorted margins, dissemin. chalc. with thin, short pyrite stringers. | | | | |

| METRES | | GEOLOGICAL LOG | | | | ASSAY RECORD | | | |
|--------|------------|---|-------------|-----------------|---|--------------|------|--------|------|
| From | Represents | Rock Type | Graphic Log | Intersec. Angle | Description | Sample No. | From | Length | Rec. |
| | | CONTAMINATED TERTIARY (cont.) | | | 88'0" - 93'6" bar | | | | |
| | | | | | 105'2" : 7" long joint coated with pink felpar. | | | | |
| | | | | | 108'11" - 110'10" dense meshwork of thin qtz veinlets with associated pyrite. | | | | |
| | | | | | 113'7" joint surface with "blobby" pyrite + chalcopyrite | | | | |
| | | | | | 127'1" - 132'1" grey granitic-looking less contaminated material with many thin quartz felpar veinlets with associated pyrite. Abundant qtz. | | | | |
| 132'1" | 112'9" | LAVA/PILLOW LAVA/ METASEDIMENT SEQUENCE (?) | | | 132'1" - 135'7" highly contaminated zone with fragments of epidiorite/lava(?), porphyry, green metasediment in a light grey-green fine-grained groundmass. Size of fragments - up to several inches across. Almost barren of mineralisation except for a little disseminated pyrite. | | | | |
| | | | | | 136'1" - 136'10" - brecciated zone, interstices filled with calcite - hydrothermal brecciation? | | | | |
| | | | | | From 135'7" onwards is a mixture of dark-grey very fine-grained amygdaloidal lava/pillow lava(?) with light-grey-green fine-grained chloritic metasediment (?) occurring throughout the sequence. However no definite zones can be delineated. Throughout the sequence are rounded amygdaloids which up to 176' are small (<< 1mm) but then tend to increase in size reaching 5mm diameter in parts. Colours generally grey-green greenish & probably | | | | |

| METRES | | GEOLOGICAL LOG | | | | ASSAY RECORD | | | |
|--------|---------|---------------------------|------------|--------------|--|--------------|------|--------|------|
| From | Repeats | Rock Type | Grain Size | Fract. Angle | Description | Sample No. | From | Length | Rec. |
| | | LAVA / METASED (cont.) | | | 172' 1" "blabby" pyrite | | | | |
| | | | | | 175' 6" coating of cuprite? on joint/fracture surface + "blabby" pyrite. | | | | |
| | | | | | 177' smear of cuprite? on joint + in a quartz veinlet. | | | | |
| | | | | | 178' 1" wide qtz vein at 45° to core with "blabby" pyrite, rock fragments, little cuprite? + calcite. | | | | |
| | | | | | 184' 6" 1 1/2" wide qtz vein with dissemin. pyrite + a coating of cuprite? + pyrite on adjacent joint | | | | |
| | | | | | 186' 6" 1/4" wide qtz vein with "blabby" pyrite. | | | | |
| | | | | | 192' 9" varied width, up to 1 1/2" of qtz with pyrite stringers + associated chalcopyrite. A little cuprite in cross-cutting calcite stringer. | | | | |
| | | | | | 193' - 2" wide qtz veinlet with a little dissemin. pyrite. Adjacent areas have many thin calcite veinlets | | | | |
| | | | | | 195' 6" 1/4" pyrite veinlet with associated chalc. | | | | |
| | | | | | 200' - 3" wide zone with talc partings | | | | |
| | | | | | 200' 6" 1 1/2" wide qtz vein + rock fragments with a little dissemin. pyrite. | | | | |
| | | | | | 201' 8" - as above | | | | |
| | | | | | 204' - 205' 9" light green very fine-grained zone rich in amygdales + many fine black acicular mineral in groundmass (amphibole?). Thin pyrite stringers + veinlets present. | | | | |
| | | | | | 216' - 217' fragmented zone with dissemin. pyrite in interstices between (hydrothermal breccia?) | | | | |

| METRES | | GEOLOGICAL LOG | | | | ASSAY RECORD | | | |
|---------|------------|--|-------------|----------------|---|--------------|------|--------|------|
| From | Represents | Rock Type | Graphic Log | Intersec Angle | Description | Sample No. | From | Length | Rec. |
| | | LAVA/METASES (cont.) | | | 229'10" 3" width of quartzite + many thin qtz veinlets; a little dissemin. pyrite + chalcocopyrite. | | | | |
| | | | | | 234'5"-235'3" zone with large sub-rounded amygdaloids up to 1/4" diameter. | | | | |
| | | | | | 236'8" 8" long section, buff-coloured, no sharp contact with many small amygdaloids. | | | | |
| | | | | | 237'10"-238'2" light-green block with amygdaloids + acicular crystals (as before). | | | | |
| | | | | | 238'3"-238'7" - zone of many calcite veinlets | | | | |
| | | | | | 239'2"-244'10" - basaltic looking rock, grey- black in colour, fine-grained, with small, white plag crystals + small amygdaloids + some chlorine? Cut by many, thin calcite veinlets. Sparse disseminated pyrite. | | | | |
| 244'10" | 155'2" | CONTAMINATED MICA-PORPHYRY PERIPHERY | | | Varies from medium to coarse-grained grey to purple porphyry with white plag feldspar, phenocrysts often highly kaolinised, with platy mica + occasional quartz. Contaminated throughout the sequence with coarse pink porphyry fragments (i.e. 2 ages of porphyry), quartzose material, dark epidiorite + in parts green/black serpentinite. In parts certain zones look like broken in mica with a greenish-grey felspat. Other zones are more grey, granitic- looking with a more equigranular groundmass. Abundant qtz veinlets, usually mineralised + | | | | |

| METRES | | GEOLOGICAL LOG | | | | ASSAY RECORD | | | |
|--------|------------|-------------------|-------------|-------------|--|--------------|------|--------|-----|
| From | Represents | Rock Type | Graphic Log | Incl. Angle | Description | Sample No | From | Length | Rec |
| | | CONTAMINATED | | | Often have thin calcite veinlet running through their centre (2 ages of veinlets?). Very finely disseminated pyrite throughout, occasionally "blebby", sometimes associated chalcopyrite. Thin stringers of pyrite + occasional veinlets present. Pyrite on joint surfaces with occasional chalcopyrite. Thin pink felpas veinlets here & there. | | | | |
| | | P. 271727 (cont.) | | | 247'10" brecciated zone (hydrothermal?) interstices filled with quartz, some calcite. | | | | |
| | | | | | 257' - 1/2" wide quartz vein + blebby pyrite. | | | | |
| | | | | | 268'6" 1" wide qtz veinlet + thin calcite veinlet within. | | | | |
| | | | | | 275'8" 7" long fragment of quartzitic material mixed with porphyry - dissemin. pyrite + chalcopyrite. | | | | |
| | | | | | 281'11" - 1/4" wide qtz vein + chalc. stringer with pyrite. | | | | |
| | | | | | 283'9" 1" wide qtz vein adjacent is serpentinite fragment. | | | | |
| | | | | | 284'6"-285' highly silicified zone with pinkish porphyry; associated dissemin. pyrite + chalco. | | | | |
| | | | | | 286'7" 2" wide zone at 90° to core with dissemin. pyrite, veinlets of a reddish-brown soft mineral (cuprite/hematite?) + fragments of serpentinite + porphyry. | | | | |
| | | | | | 290'2" thin chalcopyrite stringer + associated qtz. | | | | |
| | | | | | 293'-297'7" - buff-colored contaminated porphyry with microfracturing of thin qtz veinlets in part 18'. Dissemin. chalcopyrite at 293'3". | | | | |
| | | | | | 295'3" Barren of mica, much dissemin. pyrite. | | | | |

Diamond Gold Fields Limited
DIAMOND DRILL CORE RECORD

Project: LOCH Fyne, GARBH ACHADH

Sheet No. 10

D.D.H. No. DDGA 4

| METRES | | GEOLOGICAL LOG | | | | ASSAY RECORD | | | |
|--------|------------|------------------|-------------|-------------|--|--------------|------|--------|-----|
| From | Represents | Rock Type | Graphic Log | Incl. Angle | Description | Sample No. | From | Length | Rec |
| | | CONTAMINATED | | | 299'10" $\frac{3}{4}$ " wide brecciated zone + dissemin. pyrite. | | | | |
| | | PERIMYRZ (cont.) | | | 300' $\frac{3}{4}$ " wide qtz vein + dissemin. pyrite. | | | | |
| | | | | | 305'306'5" - zone barren of mica. | | | | |
| | | | | | 305'7" thin chalcopyrite stringer | | | | |
| | | | | | 310'9" $\frac{1}{4}$ " wide qtz veinlet + blebby pyrite + chalc. | | | | |
| | | | | | 312'8" 1" square green/black impure wood fragment. | | | | |
| | | | | | 315'7" 2" wide zone of highly silicified porphyry with dissemin. pyrite + some chalcopyrite. | | | | |
| | | | | | 317'3" $\frac{1}{2}$ " wide qtz vein at 75° to core with dissemin. pyrite + associated chalcopyrite. | | | | |
| | | | | | 317'8"-317'11" - pink feldspar-rich zone cut by calcite + qtz veinlets; some dissemin. chalc. | | | | |
| | | | | | 318'6" $\frac{3}{4}$ " wide vein consisting of grey qtzitic material on margins with massive qtz in centre + fine brecciated material (hydrothermal channel?). Dissemin. pyrite + chalc. | | | | |
| | | | | | 321'4" - $\frac{1}{2}$ " wide qtz vein at 85° to core. | | | | |
| | | | | | 321'9" $\frac{1}{2}$ " wide qtz vein at 70° with thin calcite veinlet in centre. | | | | |
| | | | | | 324'2 $\frac{1}{2}$ " - thin qtz veinlet + abundant chalcopyrite. | | | | |
| | | | | | 327'5" 327'7" $\frac{1}{2}$ " wide qtz veinlet + dissemin. pyrite. | | | | |
| | | | | | 329' blebby pyrite + chalc. on joint surface. | | | | |
| | | | | | 329'7"-330'5" highly feldspathoid pink zone. | | | | |
| | | | | | 334'7" $\frac{1}{2}$ " wide qtz vein at 55-60° with thin pyrite stringers + dissemin. pyrite. 333'9"-335'6" = zone with abundant thin qtz veinlet parallel to above vein. | | | | |

DIAMOND DRILL CORE RECORD

Project: LOCH FYNE, GARBH ACHADH

Sheet No. 11

D.D.H. No. DDCA 4

| METRES | | GEOLOGICAL LOG | | | | ASSAY RECORD | | | |
|--------|------------|----------------------------------|------------|--------------|---|--------------|------|--------|------|
| From | Represents | Rock Type | Grain Size | Change Angle | Description | Sample No. | From | Length | Rec. |
| | | CONTAMINATED PORPHYRY (cont.) | | | 349'9"-354'5" buff-coloured porphyry depleted in mafics with soft creamy-white feldspar phenocrysts. Fine chrom pyrite with dense zone of qtz veinlets from 352'6"-353'6" up to 4" wide. 355'6" 3/4" wide qtz vein + perfect qtz crystals + several tiny (<1mm) pyrite cubes. | | | | |
| | | | | | 354'3"-354'11" - buff-coloured, mafic-basalt porphyry, highly silicified in lower 6" | | | | |
| | | | | | 360'10"-364' contaminated grey porphyry, lacking mica, with fragments of coarse orange-brown feldspar porphyry. Abundant quartz + calcite veinlets with dense pyrite, some stringers, + occasional chalcopyrite. | | | | |
| | | | | | 367'10" 1/2" wide qtz/calcite veinlet + "blebby" pyrite + chalcopyrite. | | | | |
| | | | | | 370'5" 1/2" wide qtz vein + abundant blebby pyrite. | | | | |
| | | | | | 370'7"-371'1" - large fragment of white-grey streaked calcareous grit with much dense pyrite + some thin stringers. | | | | |
| | | | | | 372'4" cuprite? with fragment of quartzite. | | | | |
| | | | | | 372'6" thin qtz vein with "blebby" pyrite + a little "blebby" chalcopyrite. | | | | |
| | | | | | 375'2" 1/2" wide qtz vein + calcite. | | | | |
| | | | | | 377-400' highly fragmented + kachinised contaminated mica-feldspar porphyry with some coarse secondary. At 388' is 4" qtz veinlet + thin pyrite stringer. Occasional chalc "speck". | | | | |

List of maps accompanying Geological Report for Loch Fyne
Project A E 4

| <u>No.</u> | <u>Title</u> | | |
|------------|---|---|---|
| Fig. F1. ✓ | Furnace - N. Cralechan farm, P.F.U. Stream sediment sampling. | ✓ | ✓ |
| F2. ✓ | Mines and Intermine area. Soil sampling results - copper, nickel (zinc) | | ✓ |
| F3. ✓ | Craigmure - Soil sampling - copper, nickel values. | | ✓ |
| F4. ✓ | Coille Bhraghaid - Soil sampling - copper, nickel values. | | ✓ |
| - F5. ✓ | Mines and Intermine area. Locations of priority A, B+ and B anomalies. | | ✓ |
| 6. ✓ | " " " Chargeability values. | | |
| 7. ✓ | " " " Resistivity values. | | |
| 8. ✓ | Coille Bhraghaid I.P. Pseudo Section. | | |
| 9. ✓ | " " Detailed magnetometry survey. | | |
| F 10. ✓ | Garbh Achadh. Geological sketch map. | | ✓ |
| F 11. ✓ | " Soil sampling values. | | ✓ |
| F 12. ✓ | " Detailed grid soil analysis. | | ✓ |
| 13. ✓ | " Chargeability values. | | |
| 14. ✓ | " Resistivity values. | | |
| 15. ✓ | " I.P. pseudosection. | | |
| 16. ✓ | " Detailed grid. Chargeability results. | | |
| 17. ✓ | " Detailed grid. Resistivity results. | | |
| 18. ✓ | " " " Metal Factor results. | | |
| - F19. ✓ | Argyll and Cumlochy Estates. Location of Garbh Achadh, Glen Aray, Allt-an-t'Sithein and Branie Burn anomalous areas and anomalies A - H. | | ✓ |
| ✓ F20. ✓ | Glen Aray and adjoining Forestry Comm. Grounds P.F.U. Stream sediment sampling. | | |

MINERAL EXPLORATION INCENTIVE SCHEME

APPLICATION

for assistance

1. Applicant Consolidated Gold Fields Limited
Address 49 Moorgate, London EC2R 6BQ
Telephone No. 01-606-1020
Contact Mr. R.B. Riley or Mr. M.J. Lynch

2. Project title Loch Fyne & Cumlodden

3. Applicant's organisation
& financial structure

Please see this Company's letter dated 30th July, 1971.

4. Outline of proposed project,
including geological considerations

To investigate the possible existence of economic base metal mineralisation on the Argyll and Cumlodden estates. Geological, geochemical and geophysical techniques are already in use.

See overlay no. 5 to 1 inch to 1 mile Geological Survey sheets 37 and 45 (portion), accompanying this application.

The area covered comprises Dalradian metasediments with bands of feldspar and epidiorite. Two known and formerly worked minor deposits of Cu-Ni-Fe sulphides occur in the metasediments, their locations being marked on the overlay.

Whether or not any significant extensions of these sulphide zones or any new sulphide deposits can be expected may emerge from the results of the preliminary reconnaissance sampling and the current more detailed work.

5. Work programme and costs of project

Following a comprehensive geochemical stream sediment reconnaissance programme of sampling for Cu and Ni over the whole area of 90 square miles, surveys comprising soil sampling, magnetometry and ground e.m. are being undertaken in the vicinities of the known Cu-Ni occurrences. Depending upon the results of this work, geochemical and geophysical follow-up may be undertaken on low anomalous zones detected by the reconnaissance stream sediment sampling at substantial distances from the known mineral occurrences.

for assistance for 9 months during which

ATOMIC WEAPONS RESEARCH ESTABLISHMENT

Bldg. R61.1
Aldermaston, Reading, RG7 4PR
Telephone Tadley 4111 (STD 073 56 4111)
Telex 848104/5

C. E. LPT.,
- 6 AUG 1973

Enc 32.

Ext: 5924
Our Ref:
Your Ref:
Date: 3 August 1973

Mr R G Burn
Consulting Engineers Dept.,
Consolidated Goldfields Ltd.,
49 Mooregate
LONDON E C 2

Dear Mr Burn

Further to our telephone conversation I now enclose the results of our gold analysis for the 41 samples submitted by Robertson Research Ltd. They are:-

| | | | |
|---------|----------|-------------------|--------------------------------|
| LEAU5 | 13.3 ppm | <i>C. O'neill</i> | <i>Massive pyrochlore ore.</i> |
| OESL/1 | 0.24 " | | |
| OCS/1/3 | 0.19 " | | |
| OCS 2/3 | 0.14 " | | |
| OES 9/3 | 0.26 " | | |

100 ppb - !!

The following samples contained < 0.1 ppm of gold, this high limit of detection being due to the extremely high background activity level.

| | | | |
|------|---|------------|------------|
| IAG | 1 - 5 | <i>1.2</i> | <i>3.4</i> |
| LEAU | 1, 2, 3, 4, 6 | | |
| IR | 200, 201, 202, 203, 205, 207, 208, 209, 210, 211. | | |
| OCS | 1/1, 2/1, 3/1, 6/1, 1/4, 1/5, 2/4, 2/5, 3/3, 6/3 | | |
| OES | 9/1, 9/4, 4/3, 4/4, 5/1, 5/3 | | |

Yours sincerely

G. C. Goode
G C Goode

Alan
Lock Ryno.

LEAU 1-6

AU/NAA ICI
SNI
ME Rob.

A) B

| | | | | | | | | |
|----|-----|-----|-------|--------|-------|--------|-------|------|
| 15 | .01 | .00 | .33 | .40 | 39.07 | 1.14 | 1.14 | 3.01 |
| 16 | .02 | .04 | .22 | .13 | 23.23 | 88.28 | .46 | 3.00 |
| 17 | .03 | .06 | .16 | .90 | 38.60 | 3.13 | 2.18 | 3.01 |
| 18 | .04 | .15 | .45 | .66 | 37.56 | 7.91 | 3.55 | 3.01 |
| 19 | .05 | .60 | .46 | .47 | 39.16 | .84 | .70 | 3.01 |
| 20 | .06 | .36 | .27 | .09 | 17.74 | 118.29 | .59 | 3.00 |
| 21 | .07 | .01 | .53 | .55 | 39.05 | 1.18 | 1.18 | 3.01 |
| 22 | .08 | .01 | .86 | .97 | 39.26 | .34 | .68 | 3.02 |
| 23 | .09 | .02 | .03 | .11 | 30.64 | 31.27 | 20.42 | 3.00 |
| 24 | .10 | .03 | .02 | .12 | 18.75 | 112.41 | 1.41 | 3.00 |
| 25 | .11 | .04 | .02 | .69 | 39.19 | .96 | .38 | 3.01 |
| 26 | .12 | .05 | 1.45 | 1.50 | 39.11 | 1.05 | .83 | 3.02 |
| 27 | .13 | .06 | .24 | .17 | 24.99 | 78.53 | .71 | 3.00 |
| 28 | .14 | .07 | 3.50 | 3.45 | 39.36 | .10 | .10 | 3.05 |
| 29 | .15 | .08 | .01 | .06 | 36.31 | 3.63 | 24.21 | 3.00 |
| 30 | .16 | .09 | .07 | .26 | 31.42 | 43.51 | .24 | 3.00 |
| 31 | .17 | .10 | .09 | .52 | 39.14 | .95 | .74 | 3.01 |
| 32 | .18 | .11 | .17 | .77 | 39.31 | .26 | .26 | 3.01 |
| 33 | .19 | .12 | .10 | 2.15 | 39.31 | .25 | .25 | 3.03 |
| 34 | .20 | .13 | .13 | 2.36 | 39.22 | .70 | .67 | 3.00 |
| 35 | .21 | .14 | .14 | 1.36 | 39.25 | .48 | .48 | 3.02 |
| 36 | .22 | .15 | .15 | .24 | 39.23 | .71 | .71 | 3.01 |
| 37 | .23 | .16 | 1.31 | 1.38 | 39.01 | 1.57 | .90 | 3.02 |
| 38 | .24 | .17 | .16 | .30 | 31.49 | 13.20 | .31 | 3.01 |
| 39 | .25 | .18 | .17 | 1.15 | 38.89 | 2.56 | .51 | 3.02 |
| 40 | .26 | .19 | 1.30 | 1.46 | 38.86 | 2.48 | .80 | 3.02 |
| 41 | .27 | .20 | 17.94 | 15.63 | 38.41 | 5.16 | .42 | 3.90 |
| 42 | .28 | .21 | 2.31 | 3.97 | 38.06 | 6.22 | 3.58 | 3.09 |
| 43 | .29 | .22 | 2.88 | 2.83 | 37.75 | 7.22 | 1.01 | 3.05 |
| 44 | .30 | .23 | .29 | .47 | 37.01 | 11.32 | 3.02 | 3.01 |
| 45 | .31 | .24 | 1.21 | 1.50 | 38.22 | 5.27 | 3.05 | 3.02 |
| 46 | .32 | .25 | 2.14 | 3.27 | 38.20 | 5.80 | 1.15 | 3.05 |
| 47 | .33 | .26 | 2.17 | 9.67 | 38.16 | 5.46 | 3.27 | 3.15 |
| 48 | .34 | .27 | 2.17 | 17.64 | 38.30 | 5.57 | 1.05 | 3.27 |
| 49 | .35 | .28 | 2.17 | 32.32 | 38.31 | 4.99 | 1.53 | 3.52 |
| 50 | .36 | .29 | 2.17 | 3.88 | 38.25 | 5.52 | 1.20 | 3.06 |
| 51 | .37 | .30 | 2.17 | 3.80 | 37.88 | 3.71 | 1.36 | 3.13 |
| 52 | .38 | .31 | 2.17 | .77 | 38.05 | 6.17 | 2.11 | 3.01 |
| 53 | .39 | .32 | 2.17 | 20.90 | 38.27 | 5.23 | .36 | 3.40 |
| 54 | .40 | .33 | 2.17 | 35.27 | 37.22 | 3.70 | 3.52 | 3.52 |
| 55 | .41 | .34 | 2.17 | 2.60 | 39.26 | 2.18 | .77 | 3.00 |
| 56 | .42 | .35 | 2.17 | 37.06 | 38.13 | 4.57 | .76 | 3.30 |
| 57 | .43 | .36 | 2.17 | 69.29 | 38.64 | 1.77 | 3.90 | 3.09 |
| 58 | .44 | .37 | 2.17 | 107.66 | 38.14 | 5.76 | 2.70 | 4.71 |
| 59 | .45 | .38 | 2.17 | 38.52 | 37.39 | 10.23 | .26 | 4.66 |
| 60 | .46 | .39 | 2.17 | 72.28 | 38.10 | 6.33 | 1.29 | 4.17 |

FINANCIAL ASSISTANCE FOR MINERAL EXPLORATION (M.E.I.G.A.)

COMPANY: CONSOLIDATED GOLDFIELDS LTD

REF: AE 4

PROJECT: LOCH FYNE AND CUMLODDEN

MRD 84/2/2

MRD 144/2/2

The following Open File material is held by B.G.S. in London, Keyworth and Edinburgh. Available for public inspection from 26.3.87.

- Extract from application for assistance 30.7.71 with Fig 5. Prospect No. 2. 1" : 1 mile. 28.7.71
- Extract from supplementary application 26.6.72 with plan 1" : 1 mile. 26.6.72
- Geological report 2.8.71 to 30.6.72 with the following enclosures:
 1. Plan of surface workings at Craignure, 1 : 250 scale
 2. Plan of surface workings at Coille Bhraghad, 1 : 250 scale
 3. Geological mapping in Craignure area, 1 : 2,500 scale
 4. Geological mapping in Coille Bhraghad area, 1 : 250 scale
 5. Copper/nickel soil sampling results, Collie Bhraghad to Craignure, 6" : 1 mile
 6. Copper/nickel/zinc stream sediment sampling results, Garbh Achadh, 6" : 1 mile
 7. Eight E.M. profiles in the Craignure area, P. 1 to 8
 8. Chargeability values, Coille Bhraghad to Craignure, 6" : 1 mile
 9. Resistivity values, Coille Bhraghad to Craignure, 6" : 1 mile
 10. Vertical magnetic intensity values, Coille Bhraghad to Craignure, 6" : 1 mile
 11. Vertical magnetic intensity values, detailed magnetic survey at Craignure, 1 : 2,500 scale
- Extract from second supplementary application 15.10.73
- Technical report for 1.7.72 to 30.6.73 (submitted with application on 20.2.74) with the following enclosures:
 - Fig 1. Furnace - N. Craleckan Farm, P.F.U. stream sediment sampling. 6" : 1 mile
 - Fig 2. Mines and intermine area. Soil sampling results - Copper, nickel, (zinc)
 - Fig 3. Craignure - Soil sampling - Copper, nickel values. 1 : 2500

. . . . (continued)

- Fig 4. Collie Bhraghad - Soil sampling - copper, nickel values O.S. Map No. CXX1119
- Fig 5. Mines and Intermine area. Locations of priority A, B+ and B anomalies. 1 : 10,560
- Fig 6. " " " " " Chargeability values
- Fig 7. " " " " " Resistivity values
- Fig 8. Coille Bhraghad I.P. Pseudo Section
- Fig 9. " " Detailed magnetometry survey. 1 : 2,500
- Fig 10. Garbh Achad. Geological sketch map. 1 : 2,500
- Fig 11. " " Soil sampling values. O.S. map no. CXX11NE
- Fig 12. " " Detailed grid soil analysis
- Fig 13. " " Chargeability values. CXXX11NE, 1 : 10,560
- Fig 14. " " Resistivity values. " " "
- Fig 15. " " I.P. Pseudosection
- Fig 16. " " Detailed grid. Chargeability results
- Fig 17. " " Detailed grid. Resistivity results
- Fig 18. " " " " Metal Factor results
- Fig 19. Argyll and Cumlodden Estates. Location of Garbh Achadh, Glen Aray, Allt-an-t'Sithein and Brannie Burn anomalous areas and anomalies A-H 1" : 1 mile. O.S. map nos. 52 & 53
- Fig 20. Glen Aray and adjoining Forestry Comm. Grounds P.F.U. stream sediment sampling. 1 : 10,560, O.S. map no. 53
- Fig 21. Glen Shira. Allt-an-t'Sithein, Head of Brannie Burn and anomaly A., P.F.U. stream sediment sampling. 1 : 10,560
- Fig 22. Glen Shira. Anomalies B, C and D. 1 : 10,560. P.F.U. stream sediment sampling
- * Fig 23. Glen Aray. Anomaly E. P.F.U. stream sediment sampling pre June '73. 1 : 10,560
- * Fig 24. Douglas Wate. Anomaly G. " " " "
- Fig 25. Feolin. Anomaly H. P.F.U. stream sediment sampling. 1 : 10,560
- Fig 26. Glen Shira. Brannie Burn. Chargeability values. 1 : 10,560
- Fig 27. " " " " Resistivity values. "

. . . . (continued)

- * Letter from E. Jones 27.9.74 with the following enclosures:
 - * Fig 10. Garbh Achad, Geology, 1 : 2,500' 23.9.74
 - * Fig 28. Garbh Achad, Location of Survey grid, 1 : 5,000 + negative
- Extract from second supplementary application 15.10.73
- * Fig 19. Argyll & Cumlodden estates, location of Garbh Achadh etc anomalies A to H, O.S. map nos. 52 & 53, 1" : 1 mile (submitted with application on 20.2.74)
- Technical report for 1.7.73 to 30.6.74 with the following enclosures:
 - Fig 1. Argyll and Cumlodden Estates. Preliminary follow-up (P.F.U.) drainage sampling. 1" : 1 mile
 - Fig 2. Glen Aray - geology 6" : 1 mile
 - Fig 3. Glen Aray - edge of stream soil samples
 - Fig 4.1-7. Argyll and Cumlodden Estates - P.F.U. stream sediment samples (Cu, Ni, Au values in ppm). 6" : 1 mile
 - Fig 5. Areas H and J soil samples (Cu, Ni values in ppm)
 - Fig 6. Area I (Glen Shira) P.F.U. stream sediment samples (Cu, Ni, Au values in ppm)
 - * Fig 7. Garbh Achadh - geology 1 : 2,500
 - Fig 8. Garbh Achadh - base of overburden samples (Cu, Ni, Zn, Mo, Au and Ag values in ppm). 25" : 1 mile
 - Fig 9. Garbh Achadh - soil samples (Cu, Ni, Mo, Au and Ag values in ppm) 25" : 1 mile
 - Fig 10. Garbh Achadh - bedrock samples (Cu, Ni Zn, Mo, Au and Ag values in ppm)
 - Fig 11. Garbh Achadh - diamond drill hole locations and I.P. contours. 1 : 5,000
 - Fig 12. Garbh Achadh - diamond drill hole GA1
 - Fig 13. " " " " " GA2
 - Fig 14. " " " " " GA3
 - Fig 15. Garbh Achadh - diamond drill hole GA4
 - Fig 16. Coille Bhraghad - geology. 1 : 2,500 (x 3 copies)
 - * Fig 17. Coille Bhraghad - soil samples (Cu, Ni, values in ppm) 1 : 2,500

. . . . (continued)

- Fig 18. Coille Bhraghad - stream sediment samples (As, Ag values in ppm). 1 : 10,560
 - Fig 19. Coille Bhraghad - I.P. (gradient array) chargeability values in milliseconds
 - Fig 20. Coille Bhraghad - I.P. (gradient array) resistivity values in ohm metres
 - Fig 21. Coille Bhraghad - detailed magnetometry survey and trench locations
 - Fig 22. Coille Bhraghad - trench geological logs and bedrock samples (Cu, Ni, Au values in ppm)
 - Fig 23. Craignure - I.P. (gradient array) chargeability values in milliseconds
 - Fig 24. Craignure - I.P. (gradient array) resistivity values in ohm metres
 - * Fig 25. Craignure to Coille Bhraghd - soil samples (Cu, Ni, Zn values in ppm)
 - Fig 26. Loch Lecann - P.F.U. stream sediment samples (Cu, Ni, Au in ppm)
 - Fig 27. Furnace/Craleckan - P.F.U. stream sediment samples (Cu, Ni, Au values in ppm)
 - Fig 28. Gargh Achadh - Location of survey grid
- | | | | | | | | | |
|---------|--------------------|-----|---------------------|-----------|-----|---|---|---|
| Graph 1 | Leacann Water Line | 800 | EM and Magnetometer | Traverses | | | | |
| " | 2 | " | " | " | 805 | " | " | " |
| " | 3 | " | " | " | 810 | " | " | " |
- * Letter from G.F. Wilks 5.6.75
 - Diamond Drill Core Record GA 1-4
 - *‡ Enclosures - re Loch Awe Forests
- | | | | | |
|----|--------|----------------------|-----------------------|------------------------------------|
| 1. | Area 5 | Kirkmichael Section, | Preliminary Follow-up | Geochemistry |
| 2. | " 5 | " " " | Soil Sampling | Geochemistry |
| 3. | " 13 | " " " | Stream Geochemistry, | Preliminary follow-up |
| 4. | " 13 | " " " | Soil sampling | Geochemistry |
| 5. | " 14 | " " " | Kirkmichael Section, | Preliminary follow-up Geochemistry |
- ‡ Enc. 28. Robertson Research, Analytical Results, Loch Fyne Soils LF 3400 - 5190. 6 sheets

- ‡ Enc. 29.)
-) Loch Fyne - Glen Aray., stream sample locations
- ‡ Enc. 30.)

- ‡ Enc. 31. Loch Fyne - Brannie Burn., stream sample locations

- ‡ Enc. 32. Letter 3.8.1973. Au analyses of 41 samples. 3 sheets

- ‡ Enc. 33. Loch Fyne - Rock Geochemistry sample locations. LF 2570 - 2592
- ‡ Enc. 34. " " " " " " " LF 2599 - 2605
- ‡ Enc. 35. " " " " " " " LF 2593 - 2598

- ‡ Enc. 36. Hunting Technical Services, Analytical Results.
Loch Fyne Rocks. LF 2570 - 2605. 2 sheets

- ‡ Enc. 37. Loch Fyne - Craignure, soil sample locations

- ‡ Enc. 38. Loch Fyne - Coille Bhraghad., soil sample locations

- ‡ Enc. 39. Map, Argyllshire Sheet 82 NE. 6" : 1 mile. Inaccurate
plan of ? soil grid

- *‡ Enc. 40. As above, transparent dyeline, clean copy

- *‡ Enc. 41. Missing, but believed to be similar

- *‡ Enc. 42. As above, grid co-ordinates only

- *‡ Enc. 43. As above, clean copy

‡ Not in London * Not in Keyworth

LOCH FYNE PROJECT AE4

Geological Report: 2 August 1971-30 June 1972

During the period, geological mapping and geophysical surveys were carried out in the vicinity of the disused mines at Coille Bhraghad and Craignure, and systematic reconnaissance geochemical and geophysical surveys were completed over the intervening ground. Follow-up stream sediment sampling was initiated over the Garbh Achadh anomaly which had been located by reconnaissance stream sediment sampling.

1. Geological mapping: Tape and compass surveys were undertaken at the disused Coille Bhraghad and Craignure Mines, and plans of the surface workings at 1 : 250 scale were prepared. Geological mapping at a scale of 1 : 2500 was carried out in the vicinity of both the disused mines.

2. Geochemistry: Reconnaissance soil sampling at 200 ft. intervals on lines 1000 ft. apart was carried out over the area between the two old mines. The samples were collected from the 'B' soil horizon and the -80 mesh fraction was determined for copper and nickel by atomic absorption spectrophotometry.

Follow-up stream sediment sampling (500 ft. intervals) was undertaken in the Garbh Achadh area and these samples were analysed for copper, nickel and zinc.

3. Geophysics:

3.1. Electromagnetic surveys (E.M.): 5 line miles of E.M. surveys using Scintrex SE600 equipment was completed in the vicinity of the disused Craignure Mine. The survey was abandoned because of breakdowns and interference from National Grid powerlines in the area.

3.2. Induced Polarisation surveys (I.P.): A total of 53 line miles of reconnaissance (1000 ft. line spacing) I.P. surveys were completed at Coille Bhraghad, Craignure and the intervening zone. A Scintrex 25 watt time domain unit with a dipole-dipole array was used throughout the survey.

3.3. Magnetic surveys: The vertical magnetic intensity was read on stations 100 feet apart along all reconnaissance I.P. lines (53 line miles). Also 18 line miles of detailed magnetometry was undertaken at Craignure; here grid lines were 200 ft. apart with a 50 ft. station spacing. A Scintrex vertical component fluxgate magnetometer was used in both instances.

Enclosures.

Certain items of detailed information (pointed out lightly in pencil) on Plans 5, 8 and 9 relate to results of work undertaken subsequent to June 1972, but which it was impractical to erase. A report for the subsequent period will follow in due course.

- F 1. ✓ Plan of surface workings at Craignure, 1 : 250 scale. ✓
- F 2. ✓ Plan of surface workings at Coille Bhraghad, 1 : 250 scale. ✓
- F 3. ✓ Geological mapping in Craignure area, 1 : 2500 scale. ✓
- F 4. ✓ Geological mapping in Coille Bhraghad area, 1 : 2500 scale. ✓
- F 5. ✓ Copper/nickel soil sampling results, Coille Bhraghad to Craignure, 6 inches to 1 mile. ✓
- F 6. ✓ Copper/nickel/zinc stream sediment sampling results, Garbh Achadh, 6 inches to 1 mile. ✓
- 7. Eight E.M. profiles in the Craignure Area, P.1 to 8.
- F 8. Chargeability values, Coille Bhraghad to Craignure, 6 inches to 1 mile. ✓
- F 9. Resistivity values, Coille Bhraghad to Craignure, 6 inches to 1 mile. ✓
- F 10. Vertical magnetic intensity values, Coille Bhraghad to Craignure, 6 inches to 1 mile. ✓
- F 11. ✓ Vertical magnetic intensity values, detailed magnetic survey at Craignure, 1 : 2500 scale.

The 6 inch to 1 mile county series maps were used as base maps.

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K.B.

Technical Report for period 1st July 1972 - 30th June 1973

During the period, a field office with a project geologist and adequate staff was established in Argyllshire. The full programme of geochemistry, geophysics and geology could then be carried out as indicated in the information accompanying our Second Supplementary Application (12th October, 1973). This involved:-

a) Follow-up stream sediment sampling at 500' intervals over the remaining regional reconnaissance drainage sample anomalies (Fig. 19). Geological examinations were carried out at the same time. Secondary follow-up work will depend upon the results and other commitments. Some progress on one of these anomalies, at Garbh Achadh, had already been made and the results indicated that intensive exploration was justified.

b) Systematic geological, geochemical and geophysical follow-up of the geochemical and geophysical anomalies discovered in the reconnaissance work previously carried out at Coille Bhraighed, Craigmure and in the intervening zone. Some further reconnaissance work was indicated to close geophysical and geochemical anomalies. In order to carry out this work detailed analysis of the magnetic and geochemical anomalies was made and priority ratings established (Fig. 5) according to their intensity and degree of coincidence with the anomalous I.P. responses.

For the purpose of this report, the work is sub-divided under four headings:

1. Regional Reconnaissance Drainage Anomalies
2. Garbh Achadh
3. Mines and the Intermine Area
4. Other work

1. Reconnaissance Anomalies

1.1 Geology (Fig. 19)

Geological examinations of the Glen Aray and Allt-an-t'Sithien anomalous areas together with the single point copper anomalies A - H were carried out. No economic mineralisation was discovered.

1.2 Geochemistry (Figs. 20-25)

Preliminary follow-up stream sediment sampling at 500' intervals was carried out over all the anomalies. 459 samples were collected, 209 being analysed for copper and nickel and 250 for copper, nickel and zinc.

Multielement analysis was carried out on each of 50 selected samples from the Glen Aray and Brannie Burn areas but showed no significant associations of other elements with copper and nickel.

1.3. Geophysics (Fig. 26-27)

A reconnaissance I.P. survey was carried out at Brannie Burn. 9 line miles were read. Geological examination of the anomalies is required.

Further work on the reconnaissance anomalies will be required in the form of geochemical sampling, geological field checks on occasional stream sediment nickel anomalies together with more preliminary follow-up drainage sampling.

2. Garbh Achadh

2.1 Geology (Fig.10)

Following encouragement from the preliminary follow-up stream sampling, geological examinations of the area were made. Disseminated mineralisation was observed over much of the area consisting mainly of pyrite with associated chalcopyrite. Only in isolated cases was massive mineralisation found. One old trial discovered, consisted of a shallow down-dip excavation exhibiting minor copper staining. An old dressing-floor was found outside the main sampling grid midway between High Balantyre farm and Garbh Achadh. The origin of the pieces of ore however, has not been satisfactorily established.

The cursory examination was expanded into detailed mapping as interest in the area strengthened. Mapping is to continue. Fig. 10 includes mapping which was carried out after June 1975, but which is impracticable to erase.

Routine thin and polished section work confirmed the presence of disseminated pyrite and associated chalcopyrite in many of the rock types of the area. Argentiferous gold was seen in one specimen. Gold analysis on some early rock samples failed to give any encouragement. Copper, sulphur and nickel analyses were carried out on two rock specimens.

2.2 Geochemistry (Fig.11-12)

87 molybdenum analyses were carried out on duplicate material from the original reconnaissance grid sampling exercise in which 786 samples were collected. Maximum values of 25 p.p.m. were reported. Multi-element analyses were carried out on portions of the same material and the presence of silver established in amounts up to 2 p.p.m. 30 of the highest values were checked by Atomic Absorption analyses and confirmed silver values up to 2.5 p.p.m.

Detailed soil sampling to give a ground sample-site density of approximately 200' x 100' was then undertaken. 885 samples were collected; 864 being analysed for copper and nickel and 21 for copper, nickel and zinc. The reconnaissance copper anomaly was confirmed and better defined.

20 soil samples were collected from sites having the highest soil silver content and these were analysed for gold by Neutron Activation Analysis. A maximum of .310 p.p.m. gold with encouraging supporting values, was reported over a theoretical background of 0.02 - 0.03 p.p.m. Further work to test the precious metal potential of area, particularly in view of the results of the microscope work, is envisaged. Rock analyses for gold are too few to be meaningful at this stage.

2.3 Geophysics (I.P.) (Fig.13-18)

A reconnaissance survey on lines approximately 1,000' apart (18.5 line miles), using an 800' dipole - array was carried out and suitable encouragement obtained to go ahead with a detailed survey on lines approximately 200' apart with readings taken every 100'. A pseudo section was constructed to select the best electrode array for the detailed survey. This survey was limited to the extent of the copper geochemical anomaly and the results are presented in Figs. 16-18. 12.2 line miles of survey were involved.

2.4 Surveying

The pegged and numbered grid used for the detailed work was surveyed using a plane table and alidade technique. The resultant grid was used to plot all the detailed data.

Mines and the Intermine Area

3.1 Geology

Geological examinations were made of all the sites assigned A, B+ and B ratings after analysis of the

anomalous responses. B, C and D rated anomalies were disregarded. No economic mineralisation was discovered outside the two old mine areas. The observed variation in magnetite, trace-element and disseminated sulphide content of the under-lying rock types provides a satisfactory explanation of the anomalies.

Analyses of rock specimens from the two old mine areas indicated the presence of gold in a sample of massive ore at Coille Bhraghad. The occurrence is to be further investigated. Replicate specimens were analysed for copper, nickel and sulphur primarily to determine the sulphur-nickel ratios.

3.2 Geochemistry

3.2.1 Stream Sediment sampling (Fig.1)

58 stream sediment samples were collected in the Furnace - N. Craleckan Farm area which adjoins the inter-mine area and which was not adequately covered in the reconnaissance sampling programme.

3.2.2 Soil Sampling (Figs. 2-4)

Some of the reconnaissance soil sampling lines were extended and more adjacent lines sampled to give the same ground cover as that obtained by the I.P. survey. 274 samples were collected. In the proximity of A, B+ and B rated anomalies, intermediate lines were sampled at 100' intervals and 841 samples were collected. Closer spaced sampling was considered unwarranted in the light of geological investigations.

Detailed soil sampling using a 200' x 100' grid spacing was carried out at Craignure and Coille Bhraghad (Figs. 3 and 4) If anomalies due to contamination by the old workings are discounted the remaining copper and nickel values are discouraging. In this programme a total of 543 samples were collected.

Geochemical re-analysis of rock specimens containing disseminated sulphides was disappointing, confirming the suspected laboratory contamination.

Multi-element analyses were carried out on 82 soil samples from the two old mine areas.

3.3 Geophysics

3.3.1 Induced Polarisation (I.P) (Fig.6-8)

Some of the original reconnaissance survey lines were extended in an attempt to close off the existing anomalies and, in the proximity of A, B+ and B rated anomalies, intermediate survey lines were read. A total

of 26.5 line miles of I.P. survey was involved. The reconnaissance geophysics has not successfully distinguished massive mineralisation from rocks containing uneconomic disseminated mineralisation. For this reason more detailed work, especially I.P. is considered necessary around the known mineralised occurrences which have been mined. A pseudo section was constructed for one line across the Coille Bhraghaid occurrence to select the best electrode configuration which might be used in a future detailed survey.

3.3.2 Magnetometry (Fig.9)

A detailed magnetic survey was carried out in the Coille Bhraghaid area involving 6.2 lines of survey. To the north of the mine an area of strong magnetic activity was found and more work, carrying the survey further north and better defining the anomalies in the active zone, will be necessary.

More detailed magnetic work over the reconnaissance A, B+ and B rated anomalies was not carried out as planned because of the overwhelming effect of magnetic activity caused by dolerite dyke and sill intrusions.

4. Other Work (Fig. 19-20)

Preliminary follow-up work was carried out over small blocks of Forestry Commission ground adjoining Argyll and Cumloiden in the Glen Aray region. The results are presented in Fig.20.

Approximately fifty samples are involved and these were necessary to complete the cover of the particular area. As the land covered lies outside the area designated in our application, the cost of this work has been deducted from our submission accordingly, but the information is included for completeness.

No.

Fig. 21. ~~X~~ F Glen Shira. Allt-an-t'Sithein, Head of
Brannie Burn and anomaly A.
P.F.U. stream sediment sampling.

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F 22. ~~X~~ F Glen Shira. Anomalies B, C and D.
P.F.U. stream sediment sampling.

F 23. ~~X~~ F Glen Aray. Anomaly E. P.F.U. stream
sediment sampling.

F 24. ~~X~~ F Douglas Water. Anomaly G. " " .

F 25. ~~X~~ Feolin. Anomaly H. " " .

26. ~~X~~ Glen Shira. Brannie Burn. Chargeability values.

27. ~~X~~ " " Resistivity values.

2nd copy illegible too!

29th January, 1974

E.M. Jones

12/10/73

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-2-

Work Programme

1. A geological report, with 11 enclosures, to cover the work undertaken in the first period from 2nd August, 1971 to 30th June, 1972, and the claim for the expenditure involved, accompanies this new application.
2. A geological report for the second period, from 1st July, 1972 to 30th June, 1973, is being prepared. In essence, the work during this period has been as follows:-
 - (i) The setting up of a permanent geological office, and the enlargement of the field team to two geologists (with additional specialist personnel intermittently as required), and a minimum of 4 field assistants.
 - (ii) The primary geochemical follow-up by closer-spaced stream sampling, of all the many regional geochemical anomalies indicated in the previous initial reconnaissance; and the secondary follow-up of some of the localities continuing to show promise, in some cases including I.P. traverses. (Some of this secondary follow-up remains to be undertaken).
 - (iii) The analysis and priority rating of the localised geochemical (soil)/geophysical (I.P. and magnetic) anomalies in the area of the two known Cu-Ni workings, Craignure and Coille Bhraghad, and the Intermine area between them, (the localities being marked on the attached map).

The detailed systematic geological examination of these anomalous localities; detailed in-fill soil sampling (where necessary by auger to sample below very thick peat) at 100 ft. spacing on lines 200 ft. apart; further localised magnetic surveys; and petrographic work on selected rock specimens.

- (iv) Intensive work on the Garbh Achadh locality, where the primary geochemical follow-up work had outlined an area of ca. 3,000 ft. by 2,000 ft. of significantly anomalous copper content. This work consisted of plane table surveying, detailed soil sampling on a 100 ft. interval, detailed geological mapping, detailed I.P. traversing on lines 200 ft. apart, 'P.I.F.' analysis and petrographic examination of rock specimens; multi-element and precious metal analysis of selected rocks and soils.

3/....

- (v) For the whole Loch Fyne-Cumlodden area, an initial programme of 15-element spectrographic analysis, and sampling for S : Ni ratios on selected sulphide specimens.

3. Although certain analytical results are awaited, the results of the above work have tended to show that:

- (a) the Intermine area, while having fine-grained disseminated pyrrhotite and pyrite in the phyllitic metasediments, appears now to have little prospect of containing significant low-grade or massive mineralisation;
- (b) most of the 'regional' geochemical anomalies probably have little economic significance, but several remain to be investigated in detail;
- (c) some results of the initial multi-element and precious metal sampling are interesting, and such work needs expanding, with localised follow-up of significant anomalies;
- (d) the Garbh Achadh locality requires more detailed sampling and trenching before any drilling targets can be indicated;
- (e) the anomalous areas around the old workings at Coille Bhraghaid require more intensive I.P., magnetometer and soil sampling surveys, power-augering (by Cobra drill) and trenching to bed-rock, and the further examination of the old mine workings (as access permits) to make a further study of possible controls of mineralisation, together with additional rock sampling.

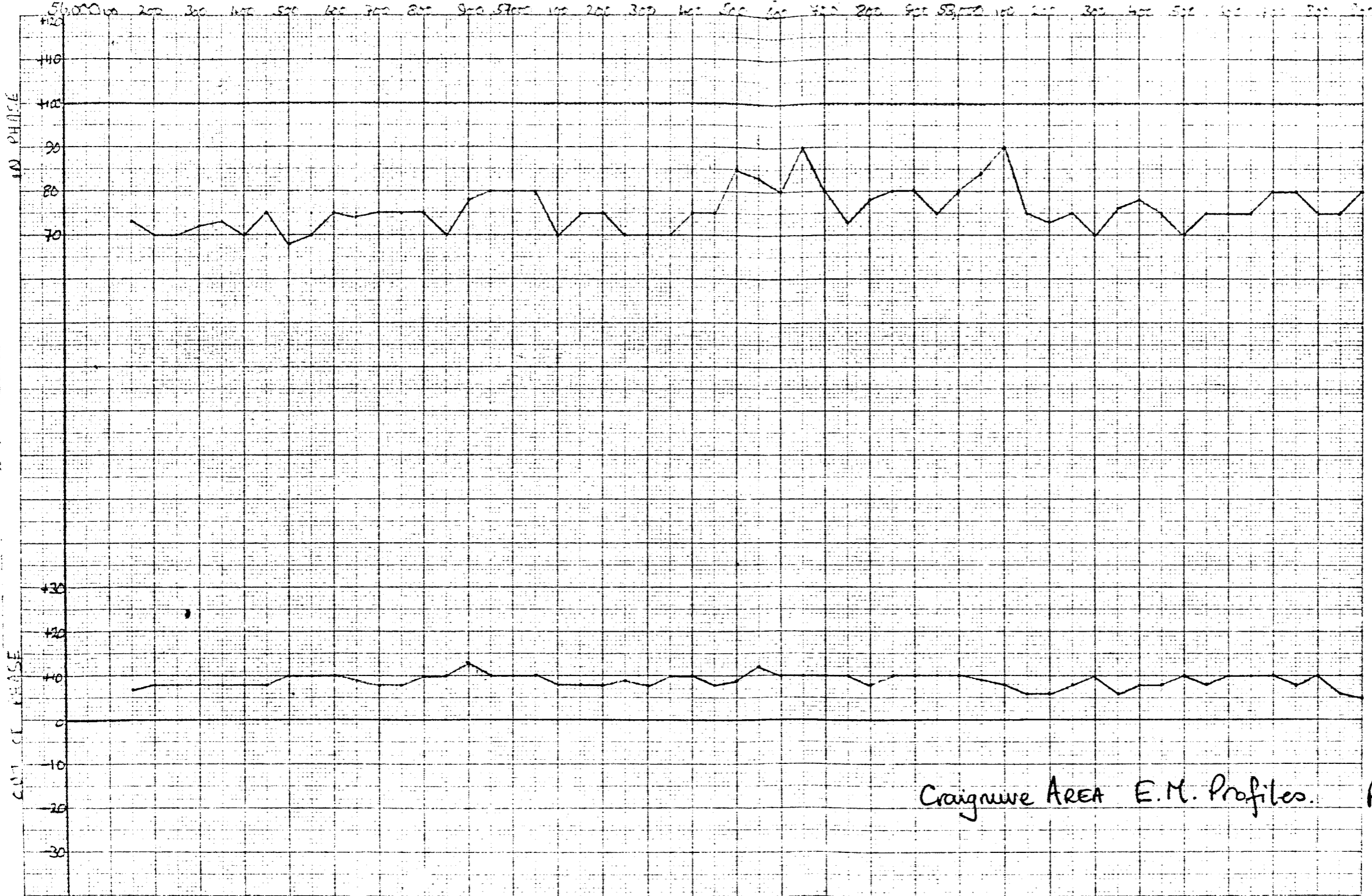
These items of work form the next stage of the exploration programme.

Starting Date.

The work programme outlined in Section 3 above, is scheduled for a period of about one year, beginning 1st July, 1973.

No 7

STATION NUMBER



Craigmore AREA E.M. Profiles. P.1

LINE 91000

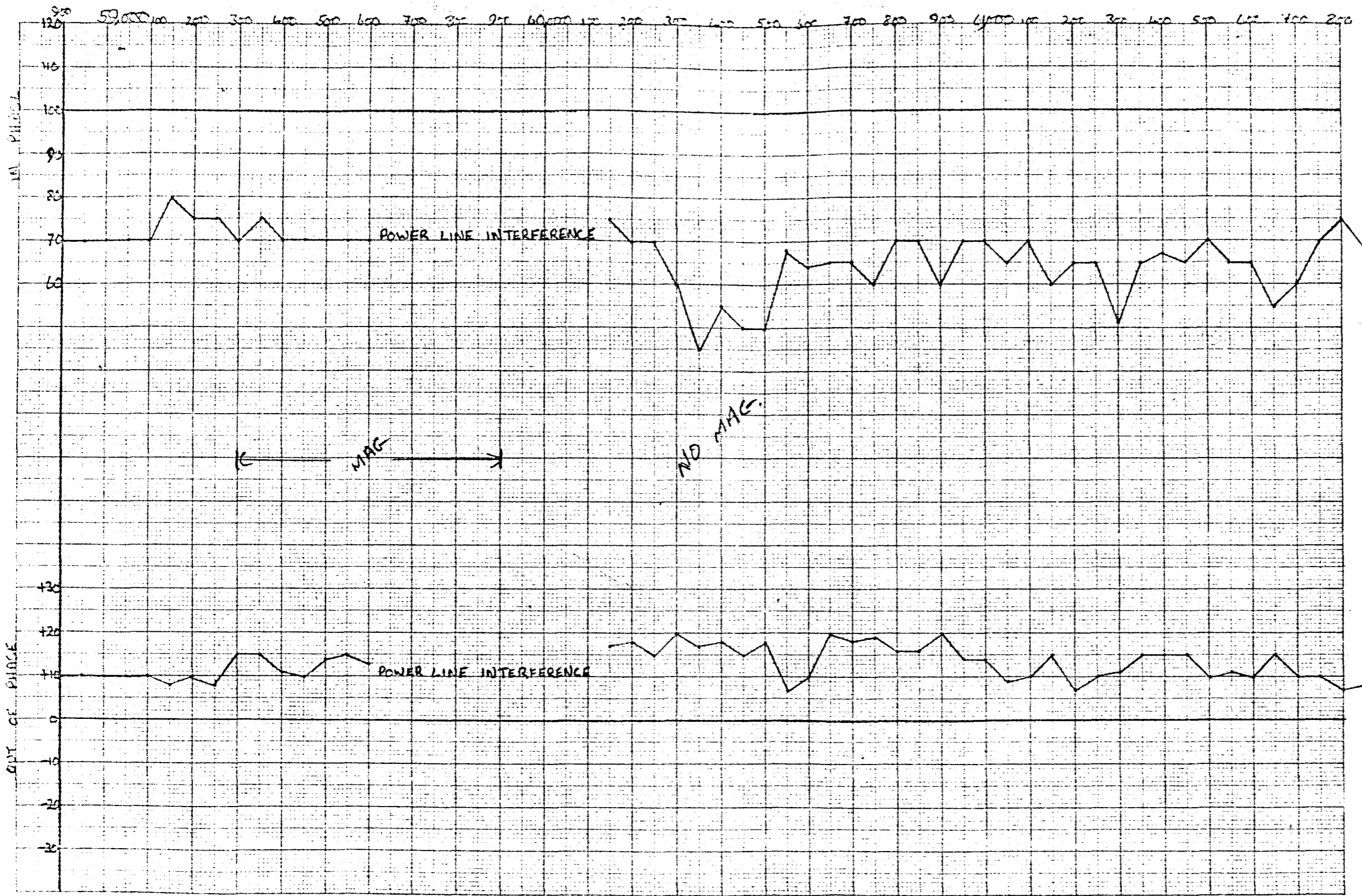
STATION NUMBER

LINE 97,000



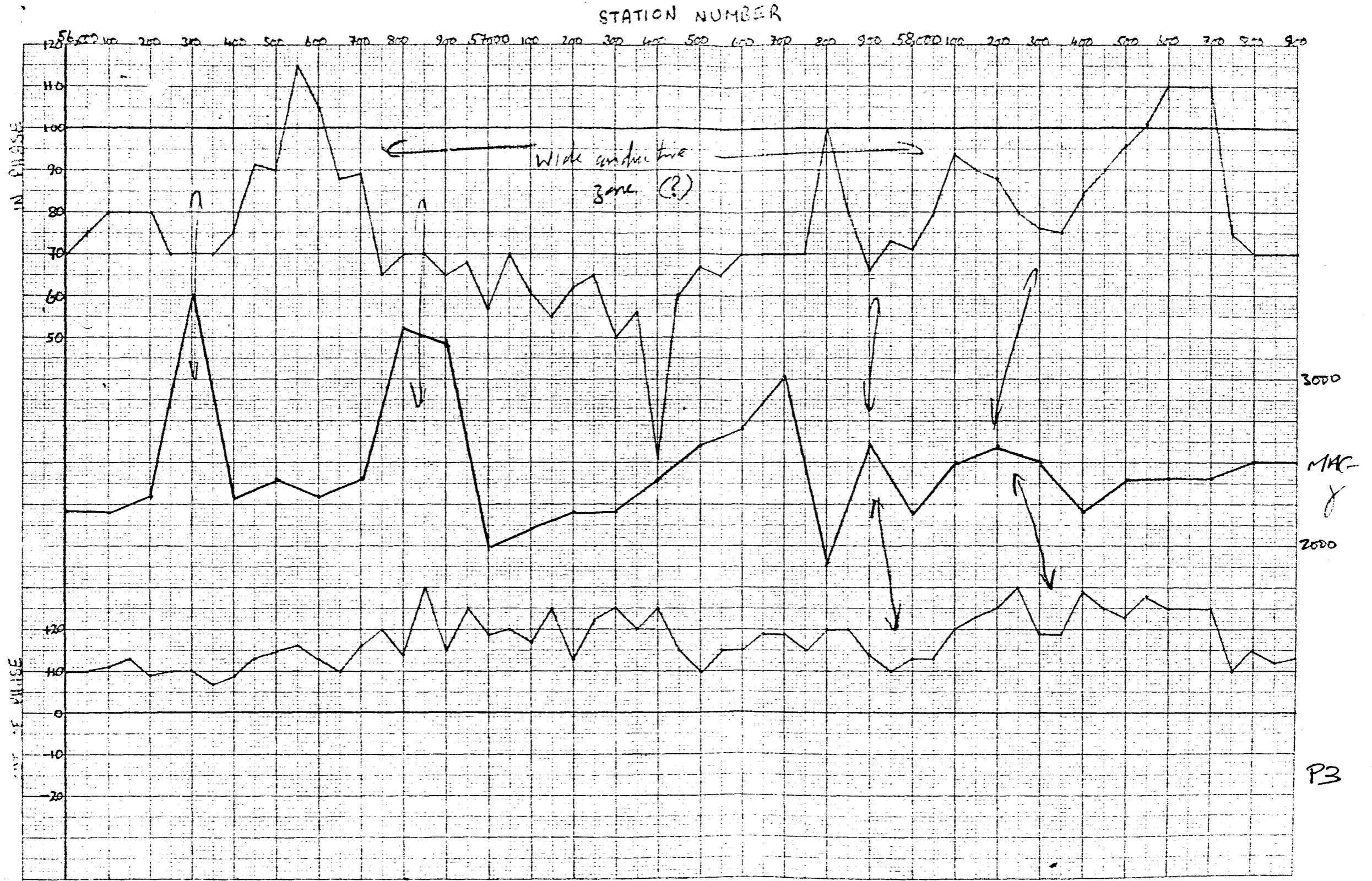
P2

STATION NO. 101021

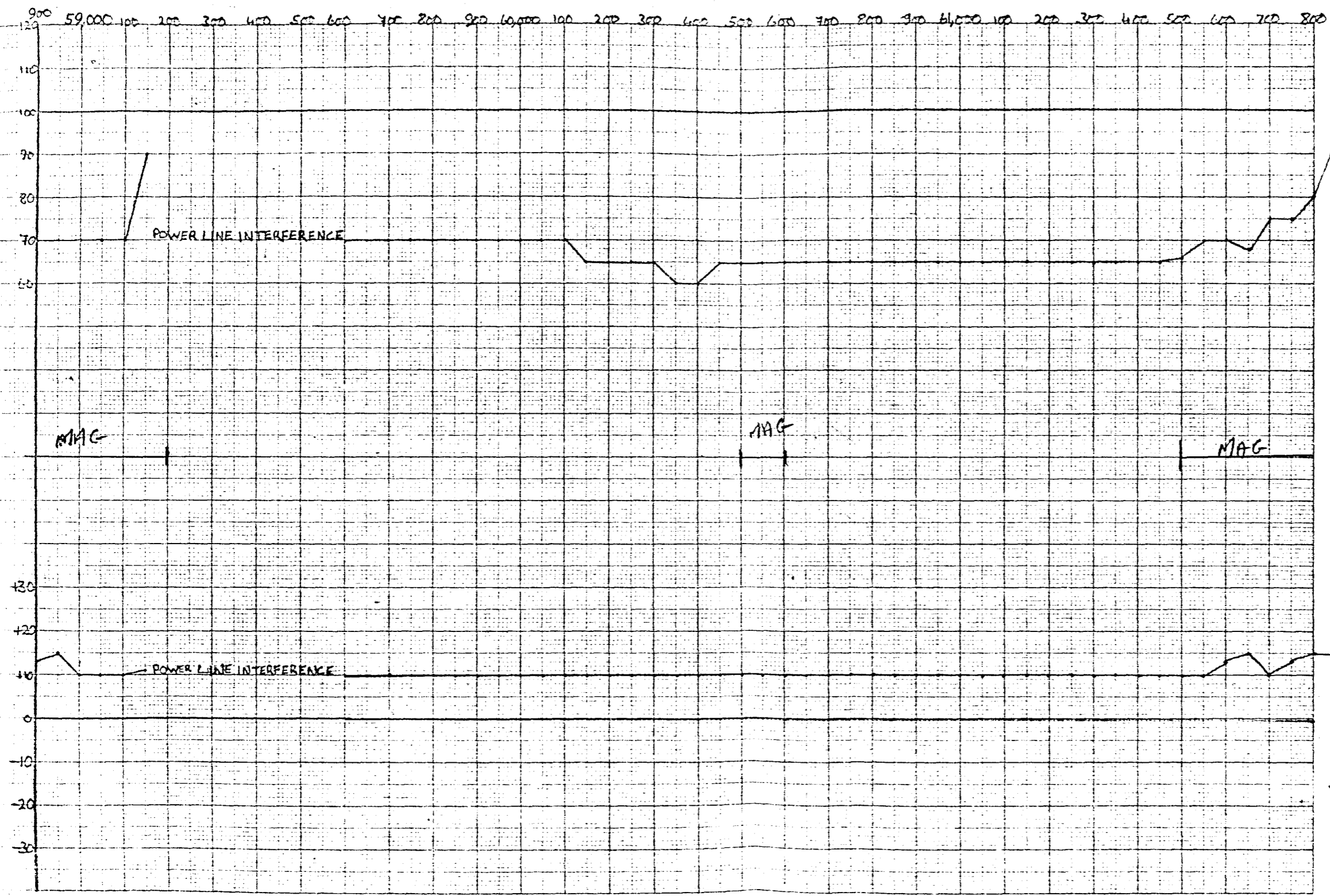


P8

LINE 93,000

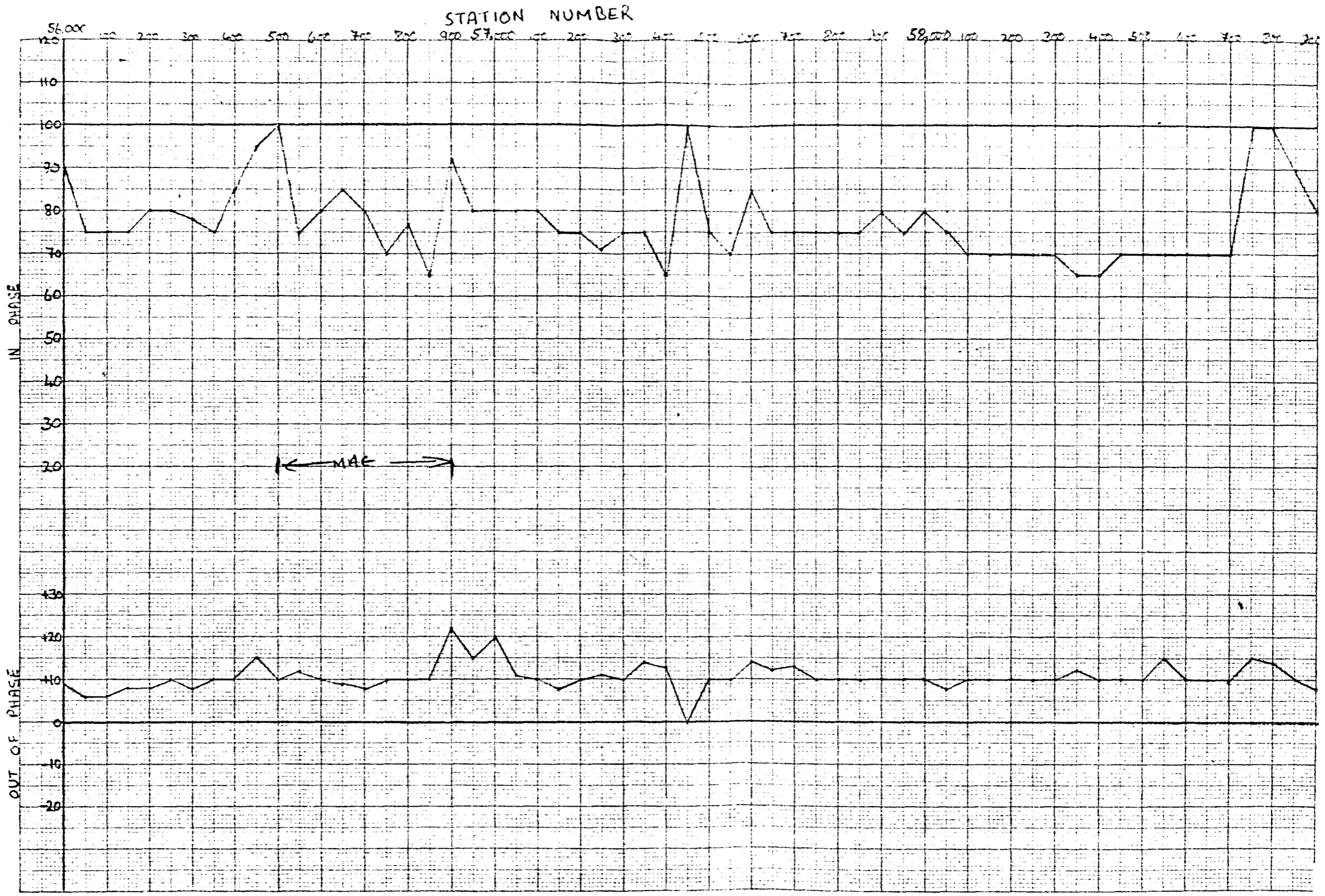


STATION NUMBER



P4

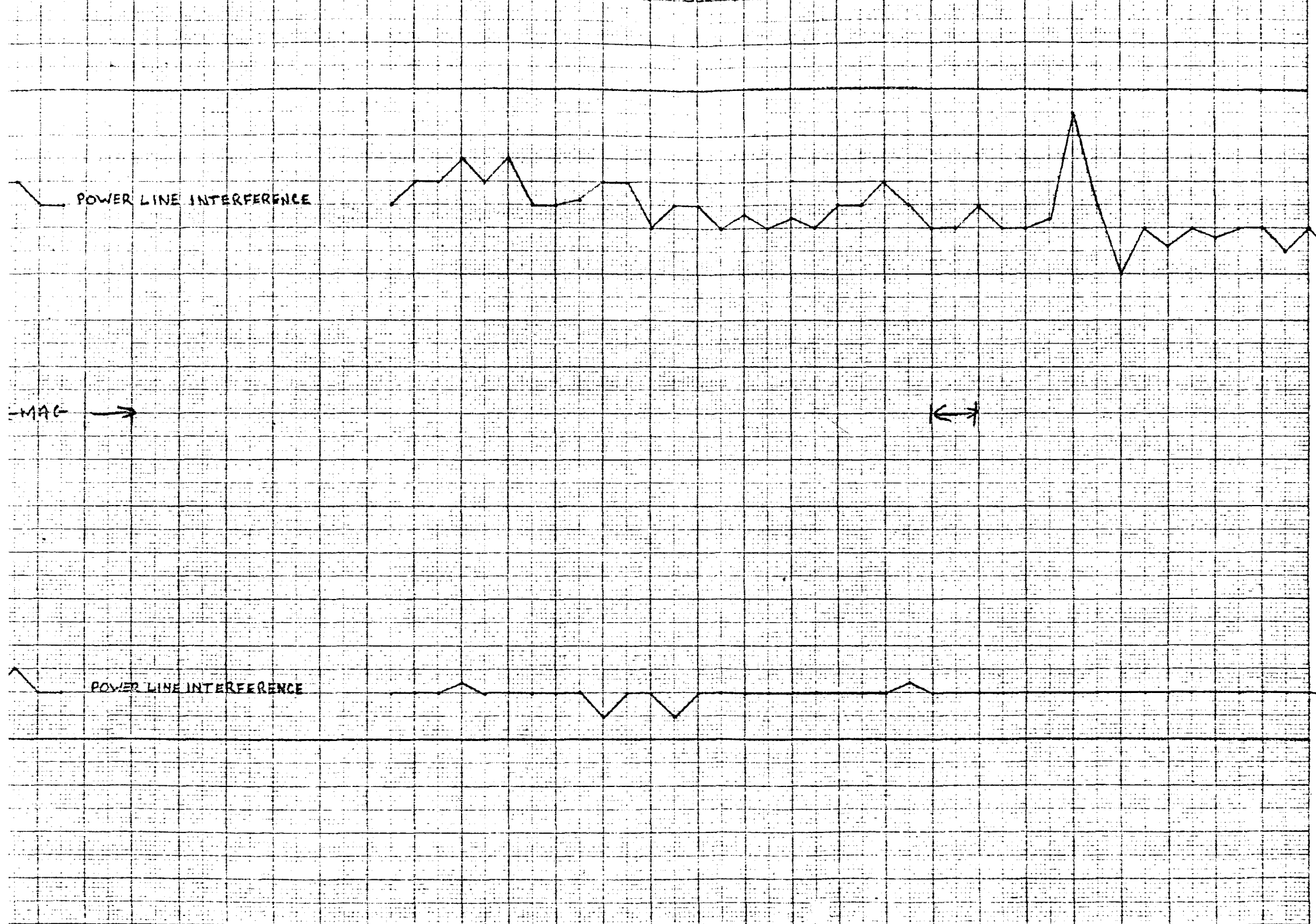
LINE 94,000



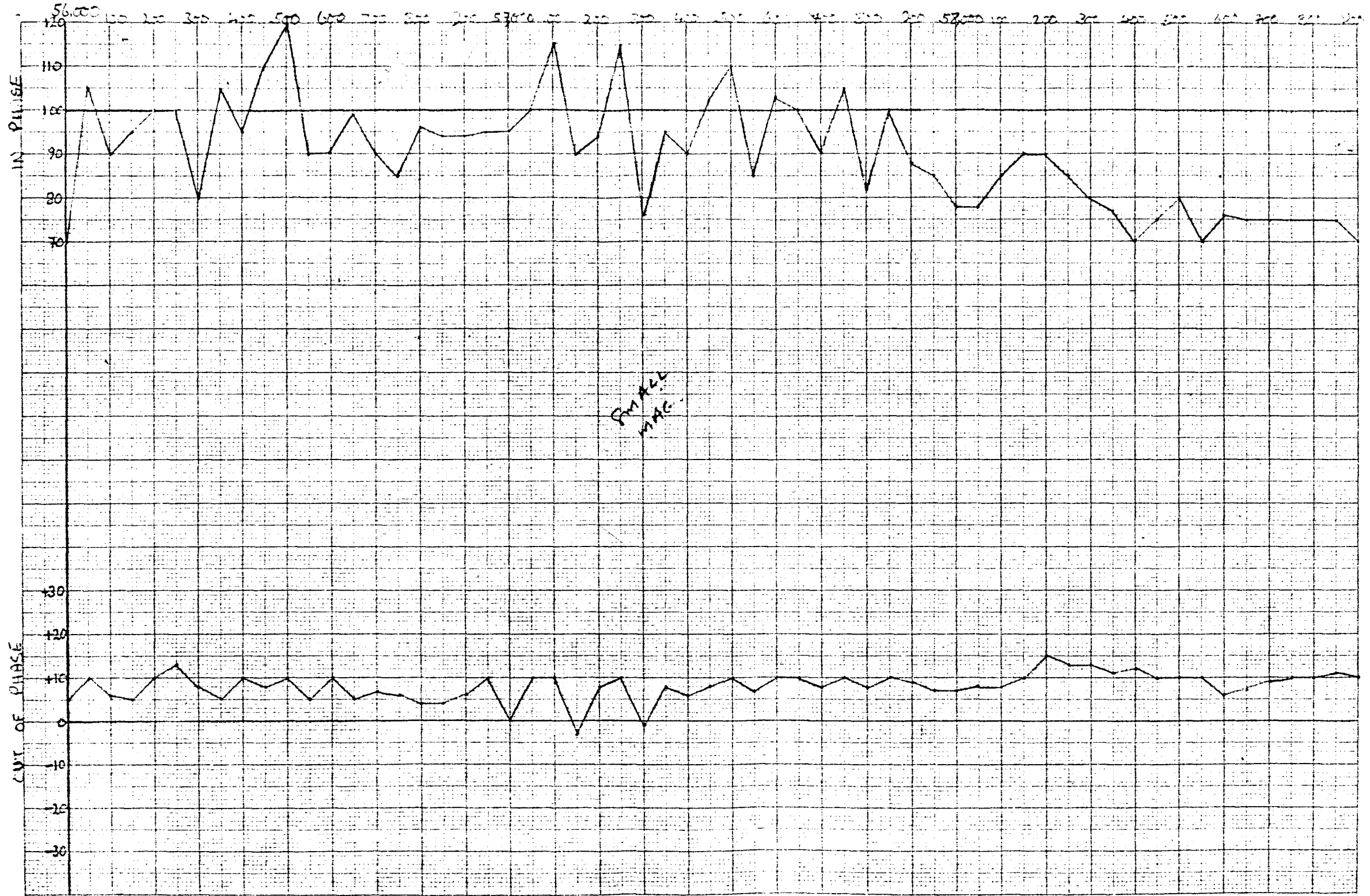
P.5

STATION NUMBER

100 200 300 400 500 600 700 800 900 1000 1100 1200 1300 1400 1500 1600 1700 1800 1900 2000 2100 2200 2300 2400 2500 2600 2700 2800 2900 3000 3100 3200 3300 3400 3500 3600 3700 3800 3900 4000 4100 4200 4300 4400 4500 4600 4700 4800 4900 5000



STATION NUMBER



LINE 95,000