18 March 1976

<u>COMMERCIAL-IN-CONFIDENCE</u>

Mrs [illegible] Jones
Chief Geologist
Consolidated Gold Field Ltd
Little Daugh
Cairnie
near Huntly
Aberdeenshire

Dear Mrs Jones

I enclose copies of my logs of your 5 Scourie boreholes, together with two summary tables based on the logs which may be of some interest to Graham Roberts. As you know, my own logs differ only marginally from those of Graham and there will no doubt be further modifications needed after your petrographical studies. Furthermore, estimates of the type contained in my tables are necessarily very subjective, providing only a general guide to the distribution of rock types and visible sulphides.

Mr G S Johnstone, head of the Highlands and Islands Unit, expressed considerable interest in the samples you kindly provided. He has asked Dr D I Smith, who has great experience of the Lewisian, to keep in touch with the results ~~occurring~~ accruing from your Scourie investigation, in so far as it bears on the Institute's maps of the district and further knowledge of the Scourian adjacent to the Laxford 'front'. Additionally he suggests from previous experience of sulphide mineralisation in the Lewisian that your pyrrhotitic rocks could be enriched in cobalt, a point you may wish to follow up. May I suggest that it would be of value to all concerned for Donald Smith to see your slides at some suitably convenient time in the future and subsequently to discuss his observations with you or one of your colleagues.

Finally may I thank you for affording me the full facilities of Little Daugh last week.

Yours sincerely

M J GALLAGHER

AE 3

COMMERCIAL:IN CONFIDENCE

Mr G S Johnstone

MEIGA file ref: 3(iv)

FINANCIAL ASSISTANCE FOR MINERAL EXPLORATION

Ref MRD 84/2/8 - Scotland Copper, Nickel and Molybdenum study - Scourie.
Consolidated Gold Fields Limited.

Introduction

240 m of drilling out four sites some 3 km W of Laxford Bridge (Bore Sheet nos. NC 24 NW/1-4) and at a fifth location 4.8 km WNW of Laxford Bridge (NC 14 NE/1) has intersected disseminated and near-massive sulphide concentrations in a wide range of Scourian rocks, including lithologies not mapped at surface (six-inch geological Sheet 30, Sutherland). The group of four boreholes (SBH 1-4 on the attached location maps) was drilled on EM anomalies detected in the vicinity of galena-sphalerite mineralisation exposed in amphibolite and hornblende gneiss (NGR 2000 4735). Borehole SBH 5 near Foindle and some 2 km NW of the other boreholes was also drilled on our EM anomaly after attention had been drawn to the district by the finding of an exposure of "gossanous gneiss" carrying 0.1% Cu. Although copper, nickel and gold values associated with the pyrrhotite-pyrite mineralisation are not of economic significance, the investigation can be held to have been successful in that substantial sub-surface concentrations of sulphides were detected by geophysical surveys.

Logs of the five inclined boreholes are attached together with tables summarising the abundances of the rock-types present in the cores and of the sulphides contained in the rocks. 39 samples have been placed in the Bore Collection (Rock Specimen lists are attached) and it is intended that slides loaned from CGF will be examined at a future date.

Lithology of the drill cores

The principal Scourian rock types intersected in the boreholes are: i. biotite gneiss grading through lesser biotite-hornblende gneiss to subsidiary hornblende gneiss, together comprising 56% of the cores (see Table 1), and ii. garnet amphibolite with lesser amphibolite and minor altered amphibolite, totalling 33% of the cores. The gneisses are garnetiferous in places and predominate in boreholes SBH 1, 4 and 5, whereas the amphibolites are best developed in boreholes 2 and 3. Of particular interest is the presence of ultrabasic gneisses (locally somewhat altered) which attain a maximum of 25% in borehole 5 core and were not observed in the surface mapping. Minor rock types are garnet gneiss (mainly in boreholes 1 and 2), acid gneiss (mainly borehole 3) and a probable calc-silicate band with relatively abundant pyrite in borehole 1.

The contacts between the rock-types may be sharp or gradational.

Megascopic evidence of structural breaks are lacking although some of the quartz bands and veins may have sealed earlier structures. Alteration is displayed by several rock types, most notably by amphibolite and ultrabasic gneiss but except for one sulphide enrichment in altered biotite gneiss (borehole 3) the mineralisation appears to be unrelated to alteration.

Mineralisation

The principal sulphide is pyrrhotite, occurring as disseminated grains, in stringers parallel to the foliation of the gneisses and amphibolites, in narrow veins and lenses with quartz, and as bands of nearly massive ore up to 10 cm in thickness The best intersections are in pyrrhotite amphibolite or ultrabasic basic gneiss at 4.01-5.04 m inclined depth in borehole 5 and in garnetiferous gneiss, garnet amphibolite and amphibolite at 18.36-21.39 m inclined depth in borehole 2. Sulphide distribution in the garnet amphibolites appears to be at least partly related to that of garnet. Pyrite is present in much smaller amounts, either closely associated with pyrrhotite or in late veins and joint coatings. Only traces of chalcopyrite were observed, occurring as rare scattered grains as well as in pyrrhotite-pyrite assemblages. A narrow quartz-pyrite-molybdenite band is present in biotite gneiss at 27.4 m in borehole 5. Other features of mineralogical interest are the possible presence of olivine in a banded amphibolite in borehole 1 at 41.4 m inclined depth and of scapolite in borehole 2 (17.8 m).

Compared against an overall content of rather less than 1% of visible sulphides (see Table 2) the sulphides are somewhat concentrated in garnet amphibolite of the major rock types and in garnet gneiss, altered biotite gneiss and calc-silicate amongst the minor rock types. Sulphides are equally plentiful in biotite and biotite-hornblende gneiss but slightly depleted in garnetiferous varieties of these rock types. The high average sulphide content of the garnet amphibolites is due to the exceptional sulphide concentration in a unit tentatively assigned to this group from borehole 5. Sulphides are depleted in hornblende gneiss and in the most acid and basic rock types displayed by the cores, namely the acid gneisses and the ultrabasic gneisses.

Discussion

It may be concluded that minor but nevertheless unusually rich sulphide mineralisation is associated with Scourian rocks ranging in composition from leucocratic biotite gneiss to amphibolite and garnet amphibolite. The obviously post-metamorphic mineralisation represented by cross-cutting veins and joint coatings is most probably a remobilisation of the principal pyrrhotite (-pyrite) phase of mineralisation which is tentatively regarded as having formed at a late stage in the metamorphic history of the rocks. Petrographical studies are clearly required on the cores to determine whether the sulphide-bearing assemblages can be compared with those in younger differentiated peridotite-norite-gabbro complexes. Although the mineralisation so far found is not of economic significance, the discovery of nearly massive sulphide bands is of some encouragement towards the further exploration of areas of basic rocks within the Scourian.

M J Gallagher
23 March 1976

INSTIT[illegible] GEOLOGICAL SCIENCES

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HE 3

Your ref

Our ref

Dr D Slater
Institute of Geological Sciences
Exhibition Road
London SW7

18 August 1972

Dear Dr Slater

Dr Bowie has requested that the whole of our comments on the enclosed applications be sent to DTI. We have found the geochemical approach of the company is not soundly based and rather than turn down the application with[illegible] comment, we have gone into the matter quite fully, giving reasons why we consider this to be the case. Reference should also be made to Geophysics Division regarding the interference of power lines with the geophysical part of the survey in the Loch Fyne area.

Basically we feel that although the Company may find relatively large mineral occurrences by the methods they use (and they are quite rightly not interested in small ones) they will also by using these methods waste a lot of money following up spurious metal values, which could be eliminated [illegible] better controlled sampling.

Yours sincerely

L Haynes

L Haynes

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COMMERCIAL IN CONFIDENCE

Dr D Slater

MRD

Exhibition Road Office

FINANCIAL ASSISTANCE FOR MINERAL EXPLORATION

MRD/84/2/4 Consolidated Gold Fields Ltd - Scotland and N England Molybdenite etc.

(i) The applicants are a well known mining company with a trained staff capable of carrying out geological work. However, a meeting in February 1972 with the company geologist responsible for South West Scotland suggested that he was not familiar with all the problems involved in the successful application of geochemical survey techniques.

(ii) and (iii) Planning permission is unlikely to be required but there are strong reasons why only qualified support should be given to the application. It is generally accepted that the most satisfactory method of prospecting for molybdenum is by stream sediment and soil surveys because the high solubility of the element inhibits its occurrence as residual heavy metal sulphide, but for other elements the best results are obtained by collecting heavy mineral concentrates followed by soil sampling in anomalous areas. This was pointed out to the company in a meeting on their work in South West Scotland (report enclosed) and it is clear that the company have been having little success with their prospecting methods in South West Scotland, the reason being pointed out to them at the time. They were also given details of several promising Pb-Zn-Ba anomalies in the area where they had prospecting rights. Clearly nothing has been done about these even though several of them are in the Bengairn - Airieland Moor area, Dalbeattie, where they have obtained high Cu and Mo values in soils. It is questionable that a company spending government money should ignore high metal values simply because the metal is not one of the "valuable four" - namely, Cu, Ni, Sn and Mo.

It is difficult to accept the companies reasons for dismissing Cu anomalies in two areas, because their methods of sampling are not the best for this metal, and their conclusions appear to have little scientific basis.

The large grouping of moderate Cu values on the western flank of the Doon granite (page 6) may be due to high background values in black shales, but proof should be provided. In other areas, black shales of the same age are pyritiferous but seldom contain more than 100 ppm Cu, although Zn values may reach 400 ppm. The western margin of the Doon granite is, in our opinion, an area in which vein type Cu deposits could be found.

In the Barcloy-White Hills area near Dalbeattie (page 5 of application) copper anomalies of up to 840 ppm (background 20 ppm) were dismissed as due to chemical concentration of copper in peaty soils with a high organic content. The absorption of Cu and Mo on peat is an extremely complex problem but our own researches have indicated the following.

1. In normal peat low concentration of Cu is expected ~~unless~~ when there is co-precipitation with ferric-iron. Thus at the heads of limonitic seepage values of 100 ppm Cu may be obtained.

2. Copper will concentrate in peat under alkaline conditions i.e. if there is a plentiful supply of bicarbonate from mineral veins or suboutcropping limestones. At Coniston however where there is both limestone and carbonate rich mineral veins mined for Cu, the maximum concentration in peat sampled over the vein was only 380 ppm Cu.

3. Under mildly acid conditions (pH 4.0-7.0) Copper will complex with organic fatty acids in the peat and concentrations greater than 1000 ppm Cu may result from background values. These complexes are however extremely stable and will only break down if all organic material is burned off and the peat sample is subjected to a 24 hour attack by nitric/perchloric acid mixture. Any organic material left will reduce the copper and cause interference with the A.A.S. determination.

Enquiries to Consolidated Gold fields have revealed that they are largely ignorant of this information. They do not even measure the pH of their peaty soils, and use normal methods of analysis involving rapid nitric/perchloric acid attack. They leave all problems associated with the interpretation of metal absorption on peaty soils to their consultant Professor Webb, who we believe has little experience in this complex subject. It is quite possible that if the right analytical procedure is not being used, Cu values at Barcloy may be much higher than 840 ppm. Alternatively if the Cu value is regarded as correct, and normal analytical procedures do not break down Cu-fatty acid complexes, it seems unlikely that the copper is in these complexes. This enhances the chance of finding vein mineralisation, as only fatty acid complexes can account for such high concentrations from background values. The Barcloy-White Hills area contains intermediate and basic igneous rocks, which usually contain higher than normal amounts of copper, and therefore to dismiss these anomalies without even an I.P. survey is totally unreasonable.

With regard to the Molybdenum prospects the reverse is the case. Molybdenum is easily absorbed onto acid peaty soils and high concentrations can result from only background levels of Molybdenum in rocks. Soils of this type prevail on most of the high granitic moors of Scotland. At Grudie in Sutherland molybdenite is disseminated throughout the Grudie granite but samples of granite contain only a few ppm Mo. The metal is however so easily leached from the granite, that in the acid peat bog below the granite contact, concentrations of Mo in peat frequently exceed 200 ppm (max 520 ppm Mo). The follow-up of values not in excess of 60 ppm in the Mullach area, or 30 ppm in the Fearn and Fleet areas, does seem to have little justification unless the nature of the peat concentration is determined beforehand. It is recommended that a soil sampling program, followed by possible geophysical work, is only approved for the Cleirich area where values of up to 389 ppm Mo have been obtained. If this does not lead to Mo mineralisation the rest of the Mo program should be abandoned.

There are no inadequacies about the work in the Cockermouth area which seems a good prospect but surprise must be expressed that the Craven area has proved barren. The following work program is proposed.

a) Survey as planned in the Cockermouth area.

b) Detailed soil and rock sampling in <u>both</u> areas of the Dalbeattie project where high Cu values have been obtained. Soils should be collected under careful control conditions and pH determined on site. An I.P. survey can follow. Anomalous values for other metals should also be investigated.

c) Re-investigation of the Loch Doon area for Cu mineralisation.

d) Investigation of the Cleirich area for Mo by detailed controlled soil sampling with determination of pH on site. Geophysical work could follow if warranted.

e) All Cu analyses on peaty soils should be performed under the optimum metal extraction conditions as described above.

f) The company should re-submit an application giving expenditure for these projects only. Under no circumstances should the present application be accepted.

(iii) The program is not sensible in the light of supplied information (see above).

(iv) The prospecting licence for the Cleirich area should be obtained before any work on Molybdenum is considered. We have reason to believe this may not be easy to negotiate.

L Haynes

L Haynes

18 July 1972

COMMERCIAL IN CONFIDENCE

REPORT ON MEETING WITH CONSOLIDATED GOLD FIELDS ON 2 FEBRUARY 1972

Present:

Mr Eric Peters - Gold Fields
Dr L Haynes) - RMMU
Mr B C Tandy)
Dr M.J. Gallagher)

Gold Fields originally approached Mr Ostle to request information obtained during geochemical sampling in parts of SW Scotland over which they had prospecting rights. A meeting was arranged for 2 February and before this meeting geochemical maps for the Fleet and Dalbeattie regions were processed to include information only for areas where prospecting rights had been obtained. This information, together with all analysed metal values for sites anomalous in at least one metal, was given to Mr Peters. Data included anomalous values in stream sediments, rocks and panned concentrates.

Mr Peters said that Gold Fields were looking principally for Cu and Ni but were interested in "anything else going". He did not seem to know much about the area and was very secretive about company information. In fact he even went so far as to express the view that many companies were not applying for DTI grants because government scientists were not capable of keeping commercial information confidential! Although much of the discussion was centred around controls of Cu, Pb, Zn mineralization, the Ni occurrence at Talnotry was mentioned, and there was a rather one-sided exchange of information about Mo and U in the Fleet granite.

Mr Peters expressed the view that the method of grab sediment sampling employed by the company was proving of little use and that the company was thinking of abandoning sediment sampling altogether. I emphasised that this was because the wrong types of samples were being taken and showed how collecting panned concentrates was of much more value. Mr Tandy indicated that spurious high metal anomalies in stream sediments were common in the Fleet area, particularly for Pb and Zn, and I indicated that in most Forestry Commission areas where recent ploughing had taken place, Zn values in sediments were extremely high. Mr Peters seemed to accept the view that even soil sampling in such areas would be of little use. It was also pointed out that Sn contamination was high, particularly in Forestry areas and at roadside sites where beer cans and other metallic rubbish was deposited.

It was only after lengthy discussion in which the cost of sampling was weighed against information obtained, and the reliability of results, that Mr Peters began to see the light. He appeared to go away at least partly converted to our viewpoint, but protesting strongly that even though he would communicate our views, they would likely fall on deaf ears.

Although the exchange of information was one-sided, the meeting was useful in that it provided insight into the methods employed by a major company in the type of prospecting operation for which many DTI grants have been allotted. Such methods may be valid in areas where mineralization is widespread and only one metal is sought (e.g. Cu in North Wales) but it clearly does not work in areas where little previous mining activity has taken place, or where mineralization is varied. In such areas a change in approach at little extra cost might save much government money from being wasted.

L Haynes

L Haynes
10 February 1972

Reference..

Dr Bowie

Message from Dr Haynes

re: Gold Fields application for DTI grant

Dr Haynes has contacted Gold Fields on this question and they say that they rely for information on peat problems on the consultancy services of Professor Webb at Imperial College.

They have suggested that if we feel strongly on this matter a meeting could be arranged between their representative and Dr Haynes. Could you let Dr Haynes know whether he should arrange a meeting?

We don't feel strongly that we should educate Goldfields if they use IC as their consultants. We just report our views to DTI on the independent [?] of the approach

Pam

Lawrence: please note

Pam

CODE 18-78

SOUTH HARRIS - D.T.I.

Introduction

As the geological setting of an igneous complex intruded into metasediments was favourable for copper/nickel mineralisation, a preliminary soil sampling programme was carried out in 1972. An anomalous area from Rodel to Leverburgh was outlined and some single point high values were noted near Borve. The follow-up soil sampling and some rock sampling was carried out in June, 1974 under the D.T.I. grant application for Scotland and North of England CuNiMo Stage II Follow Up. All the results have been presented for the sake of completeness, but those subject to this grant period are outlined in green.

Follow-up Geochemistry

The follow-up soil sampling programme consisted of lines 1000' apart with samples taken at 200' intervals. The whole grid was laid out such that it provided an infill of the original pattern.

Two kilogramme rock samples were taken along the soil lines where mineralized material was observed.

Results

Soils

The soil sample results are plotted on Fig. 1. The original nickel anomaly near Rodel was basically substantiated. The copper results for the same area produced five small anomalies composed of consistently grouped moderate values. The zinc values gave a more fragmented picture than had initially been seen. In the Borve area, the zinc results merely confirm the contrast between the underlying rock types of amphibolite and the Sta Bay Series. The single point copper anomalies were confirmed and extended in a north-north-east direction. This strike and the low order of the values suggest minor faulting. The nickel results for Borve were of no significance.

Rocks

The sample sites and values are given in Fig.2. The petrological names and results are listed in Table 1. No zinc values of any significance were reported. Only one result (550 ppm) for nickel is slightly above the Clarke value for the particular rock type and in that case, it is still probably within the normal range for an ultrabasic rock. Copper values worthy of note, ranged from 110 to 1200 ppm. The latter, in a foliated amphibolite with an associated small soil anomaly is still below an economic level.

Conclusions

Although the large nickel anomaly around Rodel was confirmed, the low values in rocks taken from that area do not encourage further work. It seems likely that the naturally high nickel content of the basic and ultrabasic rocks there is providing a relatively nickel rich soil by its concentration in the topographic

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low of Glens Rodel and Strondeval.

List of Enclosures

Fig. 1. Soil sample results, copper, nickel, zinc
Fig. 2. Rock sample Results, copper, nickel, zinc
Table 1. Rock samples: Petrology and results.

Elizabeth Jones

(Elizabeth Jones)
Geologist

<u>TABLE 1</u>

Sample No.	Rock Type	Cu	Ni	Zn
LR 214	Pyritic psammite	270	80	30
215	Altered pyritic quartz hornblende rock	250	240	40
216	Graphitic, pyritic gneiss	290	100	60
217	Sulphide-bearing calc silicate	220	100	40
218	Breccia	130	130	45
219	pyritiferous calc silicate gneiss	120	40	70
220	Altered garnetiferous amphibolite with pyrite.	140	40	80
221	Pyritiferous quartzite	300	100	15
223	Quartzite	50	30	20
224	Graphitic gneiss	100	100	25
225	Metagabbro	80	100	30
226	Amphibolite	80	550	55
227	Amphibolite	340	160	50
228	Quartzite	130	30	20
229	Metagabbro	270	120	60
230	Quartzite	40	30	55
231	Quartzite	40	10	10
232	Quartzite	140	70	35
233	Metabreccia in garnet quartzite	250	140	40
234	Mixed gneiss	110	100	40
235	Anorthosite	30	40	25
236	Quartzite and calc silicates	85	60	30
237	Garnet gneiss	40	70	60
238	Impure quartzite	45	100	30
239	Pegmatite	10	20	10
240	Amphibolite & gneiss	60	60	70
241	psammitic gneiss	35	10	75
242	Amphibolite	80	130	30
243	Quartzite	40	20	60
244	Psammitic gneiss	270	120	60
245	Amphibolite	10	40	25
246	Finely banded gneiss	10	20	35
247	Foliated amphibolite	80	40	40
248	Quartz gneiss	150	10	55
249	Amphibolite	60	20	30
250	Amphibolite	50	20	35
251	Amphibolite	60	30	45
252	Amphibolite	60	40	40
253	Amphibolite	110	60	50
254	Gossanous material	550	280	65
255	Weathered amphibolite	110	150	50
256	Kaolinized rock	70	20	35
257	Biotite gneiss	70	80	75
258	Amphibolite	100	80	40
259	Garnetiferous amphibolite	60	20	25
260	Foliated amphibolite	1200	100	25
261	Biotite gneiss	80	80	20
262	Weathered pyritiferous amphibolite	120	40	30
263	Foliated feldspathic rock	50	30	30
264	? Anorthosite	25	20	20
265	Foliated biotite/hornblende schist	150	100	35
266	Foliated amphibolite	60	210	45
267	Garnetiferous amphibolite	10	20	15
268	Garnetiferous feldspathic schist	75	70	20
269	Amphibolite	190	20	35
270	Pyroxene granulite	25	50	50

SCOTLAND AND N. ENGLAND COPPER-NICKEL-MOLYBDENITE

STAGE IV

Technical Report for period 24th November 1975 to 1st June 1976

Introduction

Geophysical work undertaken in the Scourie area of North West Scotland defined two Induced Polarisation (I.P.) and Electro-magnetic (E.M.) anomalies. As outcrop in the vicinity is poor and it did not explain the anomalies a scout drilling programme was devised. Encouragement for the belief in a metalliferous deposit had been drawn from rock samples bearing up to 0.9% lead, 0.5% zinc and 0.08% copper. The geophysical data that is the basis of the drilling exercise does not constitute part of the claim for assistance but for completeness appropriate maps and profiles were supplied with the initial application forms.

Diamond Drilling

The drilling was eventually scheduled to take place in January, but due to access and weather delays the work was not completed until the end of February. Messrs. Encore Ltd. were contracted to do approximately 250m of diamond drilling using their Diamec 250 machine. Core size was 35mm and average recovery was 98%.

The five holes were all inclined at 50^{o} to the horizontal along the geophysical grid lines. At Scourie the azimuth of the grid was 021^{o}, at Foindle 045^{o}. The locations of these holes are shown on figures 1 and 2.

Geological, sulphide and graphic logs for each hole are attached to this report. The dominant sulphide is strongly magnetic pyrrhotite, with some pyrite, minor chalcopyrite and molybdenite. The following descriptions summarise the geology encountered in the cores.

SBH 1 0 - 60.42m

The hole was directed into the peak of the largest E.M. anomaly. The first 10m are composed mainly of garnetiferous amphibolite. With the exception of a similar zone around 35m, the core is predominantly gneissic with varying amounts of garnet and biotite. Very little sulphide mineralization is present.

SBH 2 0 - 62.15m

A smaller E.M. anomaly, both in size and intensity, lying about 200m west of SBH 1, was of interest because of an associated I.P. anomaly adjacent to it. The drilling encountered much amphibolite with approximately 4m of ultra-basic rock at 15m. Hornblende gneiss, common in SBH 1, is very much subordinate in this hole. The richest sulphide zone occurs immediately below the ultrabasic horizon in garnet biotite and hornblende gneisses.

SBH 3 0 - 36.01m

This hole was located approximately 35m north of SBH 2 and was intended to check the offset I.P. anomaly. The sequence intersected seems to correlate in part with SBH 2 with the amphibolite entering below the overburden probably corresponding to that seen at the bottom of the second hole. The greatest quantity of sulphides is in biotite and hornblende gneisses below the amphibolite, but the percentage of mineralization falls off rapidly despite a second ultrabasic and basic sequence around 30m.

SBH 4 0 - 46.27m

The large E.M. anomaly unsuccessfully tested by SBH 1 was penetrated again by this hole. As before few sulphides were recorded and the core geology is again dominated by gneiss with only intermittent basic rocks between 18m and 30m.

SBH 5 0 - 35.34m

This borehole was the only one on the Foindle anomaly which, although smaller in size than that at Scourie, is of greater intensity. Further encouragement was drawn from a gossanous sample collected immediately above the drill site which had yielded 980 ppm copper. The first 23 metres are mainly basic and ultrabasic rocks with related hornblende gneiss. The sulphides, which reach 20% by volume locally, are generally found in the amphibolite close to, or below ultrabasic layers. At 27m, the drilling entered fresh biotite gneiss with minor disseminated sulphides which, from my experience elsewhere in the area, usually represents the end of the igneous complex. The hole was therefore terminated at 35m.

Analyses and Results

After appropriate logging the core was split. As the sulphides in the original rock had been scarcely visible in hand specimen, the full depth of each hole was divided into 1 metre sample lengths. These samples were crushed to 100 mesh and analysed for copper, nickel, lead and zinc in the Consolidated Gold Fields Laboratory. A selection of the sulphide rich samples were also tested for gold and silver. 20g splits of all samples from SBH 1 and 2 were despatched to Robertson Research for multi-element spectrographic scan as a check on our own analyses and for a range of other elements.

The base metal results are listed on the sulphide logs and those for copper and nickel are also depicted on the graphic logs. No values of significance were recorded. All the nickel figures of any size were confined to the ultrabasic sections where they were obviously related to metal in the silicates.

The sulphide zones are, by comparison, deficient in nickel. The pyrrhotite clearly does not carry pentlandite. A copper value of 1360 ppm was recorded from SBH 5 but this can be related to one small vein of chalcopyrite. Lead and zinc values are uniformly low and do not merit a graphical display. The gold and silver results are either at, or below, detection limit and likewise have not been plotted. The multi-element scan data is not of interest except to note the expected close correlation between the ultrabasic layers and the high chromium values. These results are listed in tables 1 and 2.

Samples for thin and polished sections were taken at horizons of particular interest. A full petrographic report is attached.

Interpretation

The drilling revealed more sulphide mineralization than had previously been recorded in the area. As the predominant mineral is quite strongly magnetic pyrrhotite, a re-interpretation of the magnetic anomalies detected in the original survey was required. Previously, the anomalies had been attributed to magnetite-bearing Scourian dykes, but it now seems likely that some at least represent pyrrhotite-rich bands in the older igneous rocks. As the pyrrhotite appears to be sygenetic, this might be further evidence in favour of the layered igneous complex hypothesis. Composite diagrams relating the geophysical profiles, the borehole geology and the sulphide content of the core are included as figures 3-6.

The lack of sulphides in SBH 1 and 4 leaves the geophysical anomaly in that area unexplained. It might be that the mineralization is in a zone very near the surface unrelated to the underlying geology because of the low angle fault. Such thrusts, though rare, are to be seen elsewhere in the Scourie district.

Conclusions

The drilling programme was a technical success as it discovered more mineralization than had previously been recorded. This accounts for the geophysical anomalies, but the most abundant sulphide was pyrrhotite which unfortunately did not carry nickel. The low base metal contents and the narrow widths of sub-massive mineralization have no economic potential.

Recommendations

I recommend that no further work be carried out in the Scourie area.

E. Jones
Geologist in Charge
Scottish Office

LIST OF ENCLOSURES

TABLE 1.

SCOURIE DRILLING PRECIOUS METAL ANALYSES

Borehole	Sample No.	ppm Silver	ppm Gold
BH 1	GS 1298	1	0.01
"	1300	1	0.01
"	1706	1	0.01
"	1711	1	0.01
"	1728	1	0.01
BH 2	1732	1	0.01
"	1734	1	0.01
"	1736	1	0.01
"	1738	1	0.01
"	1747	1	0.01
"	1749	1	0.01
"	1752	1	0.01
"	1766	1	0.01
"	1777	1	0.01
"	1778		0.01
BH 3	1791		0.01
"	1803		0.01
"	1821		0.01
BH 4	1843		0.01

SCOURIE: TABLE 2

MULTI-ELEMENT SPECTROGRAPHIC SCAN RESULTS

(Total pages: 6)

ample No.	Bi ppm	Co ppm	Cu ppm	Cr ppm	Pb ppm	Mo ppm	Ni ppm	Ag ppm	Sn ppm	V ppm	W ppm	Zn ppm	Zr %	Ti %	Mn %
S 1297	<10	30	95	300	<10	2	100	<1	<5	100	<50	45	0.02	0.3	0.2
1297	<10	40	160	300	<10	4	100	<1	<5	150	<50	100	0.04	m	0.2
1299	<10	50	80	150	<10	3	70	<1	<5	200	<50	80	0.03	m	0.3
1300	<10	40	60	250	<10	2	100	<1	<5	130	<50	75	0.03	0.3	0.2
1701	<10	25	60	60	<10	2	40	<1	<5	80	<50	100	0.03	0.4	0.15
1802	<10	20	75	40	<10	7	30	<1	<5	80	<50	120	0.05	0.3	0.1
1703	<10	40	60	120	<10	3	50	<1	<5	180	<50	85	0.04	m	0.2
1704	<10	60	120	120	<10	5	70	<1	<5	200	<50	50	0.03	m	0.25
1705	<10	50	100	150	<10	2	60	<1	<5	200	<50	50	0.02	m	0.3
1706	<10	40	100	300	<10	<2	100	<1	<5	200	<50	100	0.02	0.4	0.2
1707	<10	15	25	60	<10	<2	20	<1	7	60	<50	75	0.03	0.3	0.1
1708	<10	15	35	50	<10	<2	20	<1	<5	40	<50	80	0.02	0.4	0.1
1709	<10	25	20	70	<10	<2	30	<1	5	100	<50	80	0.03	0.3	0.08
1710	<10	20	25	70	<10	<2	40	<1	<5	80	<50	80	0.03	0.4	0.08
1711	<10	50	80	600	<10	2	130	<1	<5	160	<50	90	0.02	0.4	0.25
1712	<10	5	20	20	<10	3	20	<1	5	15	<50	30	<0.01	0.02	0.1
1713	<10	<5	15	20	<10	<2	10	<1	5	15	<50	25	<0.01	0.05	0.1

Sample No.	Bi ppm	Co ppm	Cu ppm	Cr ppm	Pb ppm	Mo ppm	Ni ppm	Ag ppm	Sn ppm	V ppm	W ppm	Zn ppm	Zr %	Ti %	Mn %
GS 1714	<10	25	90	100	<10	7	80	<1	<5	80	<50	60	0.03	0.3	0.1
1715	<10	30	110	200	<10	3	100	<1	<5	100	<50	160	0.04	0.5	0.1
1716	<10	60	65	1000	<10	4	120	<1	<5	150	<50	70	0.03	0.4	0.2
1717	<10	60	35	150	<10	3	50	<1	<5	180	<50	45	0.03	m	0.3
1718	<10	40	75	150	<10	2	50	<1	<5	120	<50	35	0.03	0.4	0.25
1719	<10	20	50	100	<10	3	40	<1	<5	120	<50	55	0.06	0.5	0.15
1720	<10	10	20	70	<10	<2	15	<1	<5	80	<50	80	0.03	0.4	0.1
1721	<10	25	35	150	<10	2	40	<1	<5	100	<50	80	0.04	0.5	0.1
1722	<10	25	45	100	<10	3	30	<1	<5	100	<50	80	0.04	0.4	0.1
1723	<10	15	30	130	<10	<2	30	<1	<5	100	<50	80	0.03	0.3	0.1
1724	<10	25	60	150	<10	2	50	<1	<5	90	<50	100	0.04	0.3	0.1
1725	<10	25	45	100	<10	<2	40	<1	<5	120	<50	45	0.04	0.4	0.2
1726	<10	40	90	200	<10	2	50	<1	<5	100	<50	80	0.04	0.4	0.2
1727	<10	50	40	400	<10	3	60	<1	<5	100	<50	50	0.03	0.2	0.2
1728	<10	50	30	300	<10	15	60	<1	<5	130	<50	35	0.02	0.4	0.25
1729	<10	60	65	1000	<10	2	400	<1	<5	120	<50	35	0.02	0.4	0.15
1730	<10	60	80	1500	<10	2	400	<1	<5	90	<50	40	0.02	0.3	0.1
1731	<10	30	90	100	<10	3	60	<1	<5	100	<50	40	0.06	0.3	0.15
1732	<10	40	150	250	<10	6	80	<1	<5	150	<50	70	0.02	0.5	0.2
1733	<10	40	120	180	<10	4	70	<1	<5	120	<50	80	0.03	0.4	0.2
1734	<10	50	160	200	<10	2	120	<1	<5	130	<50	90	0.02	0.4	0.15
1735	<10	30	80	150	<10	2	50	<1	<5	100	<50	95	0.04	0.4	0.15
1736	<10	15	90	130	<10	<2	30	<1	<5	40	<50	80	0.02	0.2	0.15
1737	<10	50	95	300	<10	3	100	<1	<5	170	<50	55	0.03	m	0.2
1738	<10	50	130	800	<10	2	150	<1	<5	150	<50	35	0.02	0.4	0.25
1739	<10	60	30	1000	<10	2	150	<1	<5	150	<50	15	0.02	0.3	0.3
1740	<10	50	25	1000	<10	2	150	<1	<5	100	<50	10	0.02	0.2	0.2

Sample No.	Bi ppm	Co ppm	Cu ppm	Cr ppm	Pb ppm	Mo ppm	Ni ppm	Ag ppm	Sn ppm	V ppm	W ppm	Zn ppm	Zr %	Ti %	Mn %
CS 1741	<10	60	25	1000	<10	3	100	<1	<5	100	<50	15	0.02	0.2	0.3
1742	<10	60	70	1500	<10	2	300	<1	<5	90	<50	15	0.02	0.1	0.2
1743	<10	80	55	2000	<10	2	700	<1	5	100	<50	40	0.03	0.1	0.15
1744	<10	60	50	2000	<10	2	300	<1	<5	100	<50	40	0.02	0.15	0.2
1745	<10	70	40	2000	<10	<2	200	<1	<5	70	<50	35	0.03	0.1	0.2
1746	<10	50	75	1500	<10	3	150	<1	<5	90	<50	50	0.02	0.2	0.25
1747	<10	50	530	500	<10	5	130	<1	<5	100	<50	70	0.04	0.3	0.3
1748	<10	50	260	250	<10	5	100	<1	<5	130	<50	60	0.05	m	0.2
1749	<10	50	420	200	<10	5	130	<1	<5	100	<50	130	0.03	0.3	0.2
1750	<10	40.	65	180	<10	4	70	<1	5	130	<50	85	0.03	0.3	0.2
1751	<10	30	55	200	<10	2	60	<1	5	100	<50	50	0.03	0.3	0.2
1752	<10	30	180	120	<10	4	80	<1	<5	100	<50	100	0.03	0.3	0.15
1753	<10	40	50	130	<10	2	50	<1	<5	120	<50	40	0.06	0.4	0.2
1754	<10	30	50	120	<10	2	60	<1	5	120	<50	30	0.04	0.3	0.2
1755	<10	50	40	130	<10	4	80	<1	5	120	<50	140	0.03	0.4	0.2
1756	<10	40	50	120	<10	3	60	<1	<5	150	<50	80	0.03	m	0.3
1757	10	50	55	100	<10	4	50	<1	<5	120	<50	40	0.06	0.5	0.2
1758	<10	20	25	80	<10	2	15	<1	<5	80	<50	20	0.03	0.2	0.1
1959	<10	20	40	80	<10	2	20	<1	5	100	<50	15	0.02	0.3	0.2
1760	<10	30	50	100	<10	3	60	<1	<5	130	<50	25	0.02	0.5	0.2
1761	<10	30	100	100	<10	2	50	<1	<5	150	<50	35	0.03	m	0.3
1762	<10	40	70	120	<10	3	60	<1	<5	150	<50	50	0.03	0.4	0.3
1763	<10	30	60	100	<10	2	50	<1	<5	130	<50	25	0.03	0.4	0.25
1764	<10	50	110	100	<10	2	100	<1	<5	200	<50	35	0.04	0.4	0.3
1765	<10	50	120	100	<10	3	70	<1	<5	150	<50	40	0.03	0.4	0.3
1766	<10	40	130	100	<10	2	80	<1	<5	180	<50	60	0.02	0.4	0.3

Reference	Bi ppm	Co ppm	Cu ppm	Cr ppm	Pb ppm	Mo ppm	Ni ppm	Ag ppm	Sn ppm	V ppm	W ppm	Zn ppm	% Zr	% Ti	% Mn
1767	<10	50	100	100	<10	4	130	<1	<5	300	<50	45	0.02	m	0.4
1768	<10	50	130	100	<10	5	130	<1	<5	300	<50	50	0.02	m	0.3
1769	<10	60	100	100	<10	2	130	<1	<5	400	<50	50	0.04	m	0.3
1770	<10	30	30	100	15	2	80	<1	<4	150	<50	60	0.04	0.4	0.1
1771	<10	20	25	70	<10	<2	40	<1	<5	100	<50	80	0.02	0.4	0.1
1772	<10	30	25	100	10	2	90	<1	<5	200	<50	95	0.02	0.4	0.1
1773	<10	30	25	100	15	3	50	<1	<5	120	<50	70	0.01	0.4	0.08
1774	<10	30	75	100	15	4	60	<1	<5	200	<50	120	0.04	0.4	0.08
1775	<10	40	40	120	10	<2	70	<1	<5	300	<50	65	0.04	0.5	0.15
1776	<10	25	20	70	<10	3	30	<1	<5	200	<50	40	0.02	0.4	0.1
1777	<10	25	30	40	10	4	40	<1	<5	90	<50	35	0.02	0.3	0.1
1778	<10	40	140	120	<10	6	100	<1	<5	250	<50	130	0.04	m	0.2
1779	<10	5	20	30	15	<2	10	<1	<5	20	<50	20	0.02	0.03	0.06
1780	<10	40	20	100	10	2	60	<1	<5	200	<50	50	0.01	0.3	0.1
1781	<10	60	30	150	<10	<2	130	<1	<5	400	<50	35	0.01	0.5	0.2
1782	<10	60	140	100	<10	5	130	<1	<5	300	150	85	0.03	m	0.2
1783	<10	30	70	150	<10	4	120	<1	<5	120	<50	110	0.03	0.4	0.15
1784	<10	30	60	120	<10	4	60	<1	<5	120	<50	110	0.03	0.4	0.1
1785	<10	30	140	100	10	2	60	<1	<5	120	<50	100	0.02	0.3	0.08
1786	<10	60	90	120	<10	2	100	<1	<5	300	<50	40	0.02	m	0.2
1787	<10	60	150	150	<10	3	130	<1	<5	400	<50	35	0.02	m	0.2
1788	<10	50	40	800	<10	2	500	<1	<5	250	<50	30	0.01	0.3	0.2
1789	<10	50	80	600	<10	2	300	<1	<5	250	<50	30	0.02	0.3	0.2
1790	<10	60	80	700	<10	3	400	<1	<5	300	<50	30	0.02	0.3	0.2
1791	<10	50	85	130	<10	3	80	<1	<5	200	<50	60	0.02	m	0.2
1796	<10	50	90	100	<10	3	100	<1	<5	400	<50	40	0.03	m	0.25
1801	<10	70	15	800	<10	3	400	<1	<5	300	<50	50	0.02	0.5	0.2
1803	<10	25	210	120	<10	4	70	<1	<5	150	<50	90	0.02	0.4	0.1
1811	<10	30	140	120	10	7	90	<1	<5	100	<50	45	0.03	0.3	0.1
1814	<10	20	30	90	15	6	30	<1	<5	100	<50	80	0.02	0.3	0.1
1821	<10	50	100	1500	<10	<2	1000	<1	<5	120	<50	50	0.02	0.2	0.15
1826	<10	25	70	120	10	2	150	<1	<5	120	<50	110	0.03	0.5	0.1
1832	<10	80	170	500	10	<2	400	<1	<5	250	<50	110	0.03	m	0.3

eference	Bi ppm	Co ppm	Cu ppm	Cr ppm	Pb ppm	Mo ppm	Ni ppm	Ag ppm	Sn ppm	V ppm	W ppm	Zn ppm	% Zr	% Ti	% Mn
S 1833	<10	30	70	130	<10	3	130	<1	<5	150	< 50	100	0.03	m	0.2
1838	<10	25	100	100	<10	2	60	<1	<5	150	< 50	100	0.03	0.5	0.1
1843	<10	50	75	1200	<10	4	1500	<1	<5	120	< 50	60	0.02	0.4	0.15
1848	<10	60	45	2000	<10	<2	1000	<1	<5	100	<50	60	0.02	0.3	0.1
1853	<10	25	55	100	10	2	90	<1	<5	70	<50	75	0.03	0.4	0.1
1857	<10	25	100	90	<10	3	70	<1	<5	100	<50	100	0.05	0.4	0.1
1858	<10	25	70	100	10	4	100	<1	<5	100	<50	110	0.03	0.5	0.1
1863	<10	20	35	100	10	4	100	<1	<5	150	<50	120	0.04	m	0.1
1868	<10	30	40	120	10	10	100	<1	5	200	< 50	140	0.04	m	0.1
1873	<10	120	1150	250	<10	10	600	<1	5	100	< 50	70	0.03	0.3	0.2
1876	<10	90	290	3000	<10	7	1000	<1	5	150	< 50	50	0.03	0.4	0.2
1881	<10	35	95	500	<10	12	200	<1	<5	150	< 50	60	0.02	0.4	0.3
1886	<10	40	110	200	10	2	120	<1	<5	200	< 50	80	0.02	m	0.2
1891	<10	40	100	400	<10	3	200	<1	<5	250	< 50	70	0.03	0.5	0.2
1894	<10	25	90	120	10	4	60	<1	5	100	< 50	130	0.04	m	0.2
1899	<10	15	30	100	15	4	40	<1	5	80	< 50	65	0.03	0.4	0.1
1904	<10	50	70	200	10	10	150	<1	<5	150	< 50	80	0.04	0.5	0.2
1905	<10	60	45	900	<10	2	500	<1	<5	150	< 50	65	0.02	0.4	0.2
1906	<10	25	85	150	15	3	80	<1	<5	100	< 50	65	0.03	0.4	0.07
1907	<10	50	70	600	15	2	200	<1	<5	120	< 50	60	0.02	0.4	0.1
1908	<10	60	65	800	<10	4	400	<1	<5	150	< 50	70	0.02	0.4	0.1
1909	<10	70	40	1000	<10	2	700	<1	<5	100	< 50	55	0.01	0.3	0.2
1910	<10	40	100	400	10	2	130	<1	<5	180	< 50	85	0.03	0.5	0.2
1911	<10	40	130	200	10	4	120	<1	5	200	< 50	120	0.04	0.5	0.15
1912	<10	30	80	120	15	4	100	<1	5	130	< 50	75	0.05	0.5	0.1
1913	<10	25	50	100	15	4	90	<1	<5	100	< 50	75	0.04	0.5	0.1
1914	<10	30	120	100	15	5	100	<1	<5	100	< 50	70	0.04	0.5	0.08
1915	<10	25	40	100	15	2	80	<1	<5	130	< 50	70	0.04	0.4	0.08
1916	<10	30	45	120	<10	2	100	<1	<5	100	< 50	70	0.03	0.5	0.1
1917	<10	25	50	100	15	3	70	<1	<5	100	< 50	75	0.03	0.5	0.1
1918	<10	30	70	120	20	4	90	<1	<5	150	< 50	90	0.03	0.5	0.1

Reference	Bi ppm	Co ppm	Cu ppm	Cr ppm	Pb ppm	Mo ppm	Ni ppm	Ag ppm	Sn ppm	V ppm	W ppm	Zn ppm	Zr Zr	Ti Ti	Mn Mn
S 1919	<10	30	50	100	15	4	90	<1	<5	100	<50	80	0.02	0.4	0.1
1920	<10	25	60	100	15	3	100	<1	<5	100	<50	100	0.02	m	0.1
1921	<10	20	40	120	15	<2	70	<1	5	90	<50	120	0.04	0.4	0.1
1922	<10	20	45	100	15	2	60	<1	<5	80	<50	95	0.04	0.5	0.08
1923	<10	30	50	120	20	8	80	<1	<5	120	<50	100	0.04	0.5	0.1
1924	<10	30	50	100	20	25	70	<1	<5	130	<50	110	0.03	0.5	0.08
1925	<10	30	45	100	15	5	70	<1	5	150	<50	95	0.03	m	0.08
1926	<10	30	60	100	15	5	90	<1	<5	130	<50	90	0.04	0.5	0.08
1927	<10	30	65	100	20	7	90	<1	<5	100	<50	95	0.03	m	0.1
1928	<10	30	100	500	20	15	150	<1	<5	130	<50	110	0.05	m	0.2

Consolidated Gold Fields Limited

DIAMOND DRILL CORE RECORD

Drilled By	Encore Ltd;	Collar Co-ordinates	20834663	
Date Started	24-1-76	Collar Elevation		
Date Completed	30-1-76	Orientation	020° Grid N.	
from	m.	Recovery	99%	
from	m.	Inclination	50° N	
from	m.	Corrected		

Project: Cu Ni Mo

D.D.H. No.	SBH1
Area	SCOURIE
Length	60.42 m
Purpose	Scout drilling E.M. Anomaly
Logged By	G.S.Roberts
Date	3-2-76

METRES		GEOLOGICAL LOG				ASSAY RECORD						
From	Represents	Rock Type	Graphic Log	Intersec. Angle	Description	Sample No.	From	Length	Rec.			
0	1.47	Overburden			Peat with pink,medium grained,foliated granitic boulder at base 1.12-1.47m							
1.47	2.71	Amphibolite			Dark grey,fine grained amphibolite becoming garnetiferous at 2m with white quartzo feldspathic bands at 1.50,2.20 & 2.30m.1% disseminated pyrite & pyrrhotite specks. (Recovery: 98%)							
2.71	3.42	Garnet Gneiss			Pink,strongly foliated and coarsely banded gneiss Fresh and competent but containing numerous white specks of probable primary origin. Patchy dissemination of pyrite specks and threads. (Recovery:100%)							
3.42	3.58	Garnet Amphibolite			Dark green,medium grained amphibolite with pink, porphyroblastic garnet inclusions. Fresh but contains high percentage of white mineral specks. Weakly foliated, with only a few weakly chloritised fractures.							
3.58	5.10	Amphibolite			Fresh,dark green,medium grained amphibolite with occasional narrow quartzo feldspathic bands and pink garnet inclusions. Becoming finer grained from 4.37m with further numerous white mineral specks. Dissemination of pyrite and							

METRES		GEOLOGICAL LOG				ASSAY RECORD						
From	Represents	Rock Type	Graphic Log	Intersec Angle	Description	Sample No.	From	Length	Rec.			
3.58	5.10	Amphibolite			pyrrhotite specks increases from 0.5% initially							
		(contd.)			to 1% from 4.09-4.37m and from 1-3% at 4.37-5.10m.							
					(Recovery:98%)							
5.10	7.79	Biotite Gneiss			Fine-medium grained,grey,strongly foliated gneiss							
					Generally fresh with dark brown biotite mica							
					giving way to bronze coloured micas at 6.72m.							
					Irregular,narrow,quartzo feldspathic bands and							
					lenses throughout with fracture fillings at 6.92m							
					and 7.70-7.79m.							
					Random fractures parallel to main foliation							
					frequent with a narrow zone of fracturing at [illegible]							
					5.10-5.20m.							
					(Recovery:100%)							
7.79	9.65	Garnet			Dark green,weakly foliated coarse amphibolite							
		Amphibolite			with pink porphyroblastic garnets up to 0.75cm							
					in size often associated with minor pyrites							
					specks and infrequent white quartzo feldspathic							
					bands. Marked decrease in garnet content from							
					8.75m associated with an increase of pyrites							
					from 0.5% to 1% and the appearance of pyrrhotite,							
					seen as a narrow fracture filling at 8.90m.							
					Band of fresh,grey biotite gneiss from 9.29-9.65m							
9.65	10.60	Altered			Light green,fine grained,strongly foliated							
		Amphibolite			altered amphibolite, with chlorite and pale green							
					amphiboles. Increasing garnet content from 9.85m							
					together with frequent quartzo feldspathic							

DIAMOND DRILL CORE RECORD Project: Sheet No. D.D.H. No.

METRES		GEOLOGICAL LOG				ASSAY RECORD					
From	Represents	Rock Type	Graphic Log	Intersec Angle	Description	Sample No.	From	Length	Rec	TS	PS
9.65	10.60	Altered			segregation bands and a stronger foliation.						
		Amphibolite			Patchy pyrite dissemination varies from 1-3% and						
		(contd)			may include minor quantities of pyrrhotite with						
					a thin 5% band at 10.55m.						
					(Recovery : 100%)						
10.60	10.98	Hornblende			Altered amphibolite grades sharply to a medium						
		Gneiss			grained hornblende gneiss. Strongly foliated						
					with a conspicuous crosscutting regular light						
					and dark green mineral banding. Thin quartzo						
					feldspathic banding and the garnet content						
					increase lower down with a low sulphides of						
					0.5% throughout. Generally fresh except for a						
					few chlorite patches after biotite.						
					(Recovery:100%)						
10.98	16.00	Biotite Gneiss			Initially a fresh, competent, brown biotite	GS1706	11.03m	11.0[illegible]m			✓
					gneiss containing a light bronze biotite mica						
					with quartz and feldspar. Some very minor						
					chlorite and sulphides 0.1%.						
					This grades sharply to a dark grey, medium grained						
					biotite gneiss with uneven quartzo feldspathic						
					banding at first but becoming more regular from						
					12.02m, also noticeably finer grained and lighter						
					in colour with a negligable dissemination of						
					sulphides 0.1%.						
					The section is fresh and generally competent except						
					for occasional fracturing through mica rich bands.						
					(Recovery:92%)						

DIAMOND DRILL CORE RECORD — Project: [illegible] — Sheet No. [illegible] — D.D.H. No. [illegible]

METRES		GEOLOGICAL LOG				ASSAY RECORD						
From	Represents	Rock Type	Graphic Log	Intersec Angle	Description	Sample No.	From	Length	Rec.			
16.00	16.35	Hornblende			Medium grained, green hornblende gneiss with a							
		Gneiss			few irregular white quartz bands and rare small							
					pink garnet inclusions.							
					Variable pyrite and pyrrhotite content of 1-3%							
					with a small, 1cm, brecciated pyrrhotite/							
					amphibolite wedge at 16.25m.							
					(Recovery: 100%)							
16.35	18.85	Quartzo			Major quartzo feldspathic band with minor							
		Feldspathic			inclusions and assimilation of amphiboles and							
		Band			biotite mica. Mafics increase and the							
					appearance of muscovite mica occurs with depth.							
					Weak ghost foliation and occasional pyrrhotite							
					specks of 0.1% together with possibly very							
					small specks of molybdenum.							
					Generally a very hard unfractured rock.							
					At 18.61m runs into an intensely deformed							
					calc-silicate zone, with extensive chlorite							
					alteration and a number of small pale pink							
					garnet inclusions. Pyrite and pyrrhotite							
					disseminated throughout with additional thin,							
					1-5mm, inter-folii veinlets averaging 5%.							
					(Recovery: 100%)							
18.85	20.62	Muscovite-			Light grey/green, fine grained muscovite-biotite							
		biotite			gneiss often with strongly schistose bands high							
		Gneiss			in micas which are frequently severely chloritised							
					Bronze biotite micas become dark brown at							
					depth with the appearance of subordinate green							

Metres

Diamond Drill Core Record ....Cu Ni Mo....... Project Sheet No. 5 D.D.H. No. SEH1

Metres		GEOLOGICAL LOG		ASSAY RECORD								
From	Rep.Rec	ROCK TYPE	DESCRIPTION	Sample No.	From	Length	Recov.					
18.35	20.62	Muscovite-	hornblende at 20.32m.									
		biotite Gneiss	Pyrite threads distributed mainly along schistose									
		(contd)	cleavage 1.0%.									
			(Recovery:97%)									
20.62	23.60	Garnet	Dark grey/green, fine grained, foliated garnet									
		Amphibolite	amphibolite. Fresh and competent with only very									
			weak chloritisation of a surbordinate biotite									
			content. Occasional quartzo feldspathic veins and									
			a biotite gneiss band between 22.15 and 22.25m,									
			before grading to a biotite gneiss in the									
			basal 0.5m.									
			1% disseminated sulphide blebs and threads.									
			(Recovery:100%)									
23.60	28.92	Biotite Gneiss	Hard, dark grey, medium grained biotite gneiss with									
			frequent biotite and quartzo feldspathic rich									
			banding, containing 0.1% sulphide disseminations.									
			Fine grained, dark green, weakly foliated, fresh									
			amphibolite band at 25.81-26.00m, with accompanying									
			increase to 0.5% sulphide content.									
			Biotite gneiss continues with variable dark green									
			hornblende content, which is proportional to the									
			darkness of the rock and grades finally into the									
			next section.									
			(Recovery:99%)									

Diamond Drill Core Record ....[illegible].......... Project Sheet No. [illegible] D.D.H. No. [illegible]

Metres From	Rep/Rec	ROCK TYPE	DESCRIPTION	Sample No.	From	Length	Recov.				
		GEOLOGICAL LOG		ASSAY RECORD							
28.92	31.75	Hornblende-Biotite Gneiss	Dark grey/green, medium grained, weakly foliated gneiss, with frequent hard white quartzo feldspathic bands and green amphibolite bands particularly between 31.25 and 31.40m. After 30.43 becomes lighter in colour due to a decrease in amphibole content accompanied by frequent pink garnet rich zones of 1-5cm thickness. Disseminated blebs and threads of pyrrhotite varying from 1-3%. (Recovery:100%)								
31.75	34.97	Amphibolite	Fine grained, dark green/grey, fresh but poorly foliated amphibolite with occasional white quartzo feldspathic banding. From32.15-32.40m altered pale green, fine grained band. Soft fissile rock with numerous porphyroblastic garnet rich zones with white quartzo feldspathic discordant fracture filling and banding. Further light green, poorly foliated biotite rich amphibolite with extensive pale green chlorite alteration between 34.10 and 34.60m before a transitional return to fresh amphibolite again. Minor pyrite dissemination throughout of approximately 0.4%. (Recovery:100%)								

Diamond Drill Core Record Cu Ni Mo Project Sheet No. 7 D.D.H. No. SEH1

Metres		GEOLOGICAL LOG		ASSAY RECORD								
From	Reg/Rec	ROCK TYPE	DESCRIPTION	Sample No.	From	Length	Recov.					
34.97	35.99	Biotite Gneiss	Equigranular, bronze mica and quartz gneiss at first regularly banded at 5-6cm intervals before continuing as amottled grey, banded gneiss from 35.35m. Sulphide disseminations only 0.1%. (Recovery: 100%)									
35.99	37.42	Amphibolite	Dark green, coarse grained, foliated amphibolite with rare but large, 1-1.5cm, porphyroblastic pink garnets. Some sections have a very high amphibole content and verge on ultrabasic composition. At 36.80m a lighter band reflects the addition of bronze biotite mica, with less common darker biotite bands altering to chlorite from 37.20m and containing large, 1.0cm, dark green, randomly orientated actinolite laths with all signs of foliation destroyed. Sulphides generally 0.1% but a few narrow bands of 1% disseminated pyrites. (Recovery: 99%)									
37.42	39.71	Biotite Gneiss	Dark grey, coarsely banded biotite gneiss which is generally fresh though often well fractured. Contains a very small amphibolite content which regularly form narrow, green, amphibole rich bands with white quartz veining at 38-38.20m.									

Metres Diamond Drill Core Record ......Cu Ni Mo...... Project Sheet No. 8 D.D.H. No. SBH 1

~~Specimen~~		GEOLOGICAL LOG		ASSAY RECORD								
From	Rep/Rec	ROCK TYPE	DESCRIPTION	Sample No.	From	Length	Recov.					
37.42	39.71	Biotite Gneiss	From 38.85 - 39.25 an amphibolite band has altered to a soft pale green bleached rock, probably a result of chlorite and actinolite alteration of the relevant mafic constituents. Disseminated pyrites specks average 0.5% decreasing to 0.4% from 39.25m. (Recovery 99%)									
39.71m	41.00m	Ultrabasic Gneiss	Dark green, fine but regularly foliated ultrabasic gneiss which is mostly fresh with occasional thin bronze biotite bands, particularly associated with pale green amphibolite at the upper contact. Garnetiferous zone from 40.20-40.40m together with grey siliceous banding. Low sulphides content 0.1% (Recovery 99%)									
41.00	41.35	Amphibolite	Soft narrow, biotite band at the base of the ultrabasic gneiss marks the upper contact of a dark green amphibolite. Fine grained with occasional grey quartz rich areas and apart from significant plagioclase content now present is almost continuous with the section above, with sharp lower contact. (Recovery: 100%)									

Metres **Diamond Drill Core Record** ....Cu Ni Ho............ Project Sheet No. 9 D.D.H. No. DDH 1

FOOTAGE		GEOLOGICAL LOG		ASSAY RECORD							
From	Rep/Rec	ROCK TYPE	DESCRIPTION	Sample No.	From	Length	Recov.				
41.35	42.52	Garnet-Biotite Gneiss	Medium grained pinky/grey biotite gneiss with a high porphyroblastic pink garnet content. Frequently containing a high amphibole content with a distinctive green amphibolite band at 42.02-42.19m. Average 2% of disseminated pyrrhotite except for the sulphide free amphibolite band. (Recovery: 100%)								
42.52	47.75	Biotite Gneiss	Dark grey, well foliated biotite gneiss. Variable banding with frequent light grey leucocratic sections at 43.20-43.30m and 43.55-43.75m and discordant white migmatitic quartz veining from 47.40-47.70m. Occasional small pink garnet inclusions with some dark green amphibolite bands at 42.80-42.93 and from 46.00m onwards. A light bronze coloured biotite mica grades to a dark brown colour at depth with only minor chlorite spots present. Disseminated specks and threads of pyrrhotite between the foliation varies from 2-7% with the highest values associated with quartz rich sections. (Recovery: 100%)								
47.75	48.00	Hornblende Gneiss	Medium to coarse grained, weakly foliated hornblende gneiss, Distinctive speckled texture with 0.2% disseminated specks of pyrrhotite. (Recovery: 100%)								

Metres Diamond Drill Core Record ....Cu Ni Mo........ Project Sheet No. 10 D.D.H. No. SBH 1

~~Footage~~		GEOLOGICAL LOG		ASSAY RECORD								
From	Rep/Lec	ROCK TYPE	DESCRIPTION	Sample No.	From	Length	Recov.					
43.00	52.60	Hornblende-Biotite Gneiss	Grey/green medium grained gneiss with variable amphibole content producing marked colour banding. After 49.05m banding less common with a changefrom bronze to dark brown biotite with very little chlorite alteration. Occasional small pink garnet inclusions in particular after 51.60m, which are frequently associated with sulphides.									
			Initial pyrrhotite dissemination of about 3% decreases to 0.2% from 49.05m with patchy increases to 0.5%.									
			(Recovery: 99%)									
52.60	59.40	Biotite Gneiss	Gradational change to dark grey, coarsely banded biotite gneiss now with a subordinate amphibole content and occasional rich bands. Fine grained with poor banding from 55.56m and from 56m occasional small pink garnet inclusions which form a high percentage from 58.50-59.40m with an associated increase in amphiboles. Usually fresh with only slight chloritic spotting and frequent fracturing along foliation. Disseminated sulphide content generally low at approximately 0.4%.									
			(Recovery:)									
59.40	60.42	Garnet-Biotite Gneiss	Coarsely banded, pink, garnet rich biotite									

from	m.	Recovery	98%	Project: Cu Ni Mo	Purpose	Scout Drilling E.M. Anomaly.
from	m.	Inclination	50°		Logged By	G.S. Roberts
from	m.	Corrected			Date	6:2:76

METRES		GEOLOGICAL LOG				ASSAY RECORD						
From	Represents	Rock Type	Graphic Log	Intersec. Angle	Description	Sample No.	From	Length	Rec.			
0	3.17m	Overburden			Peat cover of 2.40m over weathered hornblende gneiss followed at 3.04m by numerous pink, foliated granite fragments both remnants of a lower drift boulder horizon. (Recovery: 66% - excluding peat)							
3.17m	5.71m	Amphibolite			Dark green, fine grained, weakly foliated amphibolite with porphyroblastic pink garnet zones until 4.68m with higher plagioclase content stronger foliation and regular but thin banding, this becomes a garnet amphibolite gneiss at 3.54-3.64m, 3.75-3.90m, 4.05-4.68m and 5.50 - 5.71m. The latter associated with blebs, veins and wedges of pyrrhotite concordant with the main foliation and averaging 10-15%. From 4.68m weakly foliated amphibolite continues now with few garnets but occasionally white, narrow quartzo feldspathic banding. Disseminated specks and threads of pyrite and pyrrhotite varies from 3% in the upper section to 0.4% in all but the final 0.21m sulphide rich zone. The core is fresh but severely fractured from 3.60-4.10m and 4.32-4.68m with extensive limonitic surfaces. (Recovery: 95%)							

Diamond Drill Core Record — Cu Ni Mo Project — Sheet No. 2 — D.D.H. No. SBH 2

~~Metres~~ FOOTAGE			GEOLOGICAL LOG	ASSAY RECORD								
From	Rep Rec	ROCK TYPE	DESCRIPTION	Sample No.	From	Length	Recov.					
5.71	8.38	Biotite gneiss	Short foliated quartz band from 5.71-5.87m with a few small garnet inclusions before main section of grey, biotite gneiss. Irregular banding with biotite rich schistose bands and small garnet inclusions and discordant narrow quartz veins in lower 0.70m. Divided by distinct dark green, fine grained garnet amphibolite section between 7.13-7.64m. Disseminated sulphide specks generally 0.5% except for 2-3% pyrite blebs along quartz filled fractures and bands after 7.13m. (Recovery: 100%)									
8.38	9.03	Garnet Amphibolite	Fresh dark green, fine grained amphibolite with pink porphyroblastic garnets usually forming regular garnet rich bands and sparse quartz feldspathic veins containing up to 5% pyrites. Otherwise sulphide dissemination 0.5%. (Recovery: 100%)									
9.03	9.56	Garnet Gneiss	Pink, garnetiferous gneiss with regular, coarse grey quartz banding. Pyrite with minor chalcopyrite association averaging 0.4% mostly within lower 10cm of section. (Recovery: 100%)									

Metres		GEOLOGICAL LOG		ASSAY RECORD								
From	Rep/Rec	ROCK TYPE	DESCRIPTION	Sample No.	From	Length	Recov.	T.S.	P.S.			
9.56m	13.33	Amphibolite	Fine to medium grained, green amphibolite with only a weak foliation and fresh except for pale green alteration of some hornblende, increasing at depth siginificantly from 9.92m with an associated decrease in grain size. From 12.00-13.33m a distinct pale green altered amphibolite section may be uralite derived from an original pyroxene rich rock. The section is competent with minimalfracturingat 9.60-9.85m, containing 5% of 1-3mm blebs of pyrrhotite. Initially disseminated pyrite and pyrrhotite content of between 3-5% decreases to 0.4% after 10m. (Recovery: 97%)	GS1741	12.50	12.55		✓				
13.33	17.50	Ultrabasic Gneiss	Fine to medium grained, fresh, ultrabasic pyroxenite section with dark and light green banding: formed possibly by mineralogical layering of black augite and vitreous, emerald green, chromium diopside. Lighter areas also a result of low plagioclase bearing sections. Foliation weak to absent though regularly fractured with minor epidote and calcite coated surfaces. Sulphides always 0.1%. (Recovery: 100%)	GS1745	16.60	16.65		✓				

FOOTAGE		GEOLOGICAL LOG		ASSAY RECORD								
From	Dep/Rec	ROCK TYPE	DESCRIPTION	Sample No.	From	Length	Recov.	T.S.	P.S.			
17.50	1812	Altered	Dark green, fine grained amphibolite/hornblende									
		Amphibolite	gneiss with pale coloured intergranular quartz,									
			amphibolite zones with a little chlorite alteration.									
			Section highly fractured in numerous directions									
			with extensive calciferous, epidote fillings.									
			Disseminated specks and blebs of pyrrhotite increase									
			from 3 to 5% at depth.									
			(Recovery: 98%)									
18.12	21.39	Amphibolite/	1812-18.28m: initial, fresh brown, biotite gneiss									
		Garnet - Biotite	with sulphides 0.1%.									
		Gneiss banding	18.28-18.40m: fine grained, dark green amphibolite									
			with pink porphyroblastic garnets and pale bading									
			due to higher plagioclase content, with disseminated									
			pyrrhotite blebs 7%.									
			18.40-18.67m: pink, coarsely banded garnet-	GS 1747	18.53	18.58			✓			
			biotite gneiss which from 18.45m contains a									
			sub-massive pyrrhotite matrix of up to 40% until									
			18.55m then decreasing to10% with a frequent chalco-									
			pyrite association of 0.5%.									
			18.67-19.08: fine grained, green foliated amphibolite									
			containing up to 10% disseminated blebs and threads									
			of pyrrhotite along the foliation.									
			19.08-19.80: extensive section of pink, coarsely									

Diamond Drill Core Record .... Project   Sheet No. 5   D.D.H. No. SBH 2

FOOTAGE		GEOLOGICAL LOG		ASSAY RECORD								
From	To	ROCK TYPE	DESCRIPTION	Sample No.	From	Length	Recov.					
18.12	21.39	Amphibolite/ Garnet-Biotite Gneiss banding (cont..)	foliated garnet-biotite gneiss. Fresh with only occasional chlorite patches and slight calciferous fracturing. Disseminated pyrrhotite specks and threads average 2%.									
			19.80-20.04m: dark green, foliated amphibolite with gneissose banding and narrow bands of 10-20% intergranular pyrrhotite.									
			20.04-21.39m: above section grades into a dark grey biotite gneiss with a more subordinate garnet content and biotite rich, schistose bands. High 10% disseminated pyrrhotite content in the first 0.40m decreasing at depth.									
			(Recovery: 100%)									
21.39	23.04	Hornblende Gneiss	Fine grained, dark green, fresh hornblende gneiss with more pronounced foliation and gneissose banding towards the base accompanied by the appearance of biotite mica and narrow garnet rich bands. Minor 0.2% disseminated sulphide specks.									
			(Recovery: 88%)									
23.04	24.45	Garnet-Biotite Gneiss	Dark, pinky, grey well banded garnet-biotite gneiss, with schistose bands containing a high biotite percentage. Disseminated pyrrhotite specks of 7%.									
			(Recovery: 100%)									

Diamond Drill Core Record ....Cu Ni Mo.......... Project Sheet No. 6 D.D.H. No. SBH 2

Metres (~~Footage~~)		GEOLOGICAL LOG		ASSAY RECORD								
From	Rep/Rec	ROCK TYPE	DESCRIPTION	Sample No.	From	Length	Recov.	T.S.	P.S.			
24.45	24.85	Garnet Amphibolite	Fine grained, dark green foliated amphibolite with porphyroblastic garnet inclusions throughout and pyrrhotite specks of approximately 0.4%. (Recovery: 100%)									
24.85	25.62	Biotite Gneiss	Section above grades through biotite- amphibolite gneiss to a biotite gneiss: dark grey, medium grained with poor gneissose banding. The lower 20cm grades again through biotite - amphibolite gneiss to the lower section. Sulphide specks very low at 0.1%. (Recovery: 100%)									
25.62	28.77	Garnet Amphibolite	Fine grained, dark green amphibolite with a high porphyroblastic garnet content and extensive carbonate specking. Becoming medium grained at 26.47m with pale green banding from 27.90m being proportional to the plagioclase content. Frequent white quartzo feldspathic veining until 26.47m and then only very occasional. A competent section but with a large high angle shear zone between 26.15-26.95m with rock breccia cemented by quartz and/or calcite filling, with local chlorite alteration and extensive haematitic staining. Sulphides almost totally absent but those present oxidizing to limonite usually. (Recovery: 99%)	GS 1756	27.60	27.65m		✓				

Diamond Drill Core Record ....Cu.Ni.Mo.......................... Project Sheet No. 7 D.D.H. No. SBH 2

From	Dep/To	GEOLOGICAL LOG ROCK TYPE	DESCRIPTION	ASSAY RECORD Sample No.	From	Length	Recov.				
28.77	32.26	Hornblende gneiss	Sharp contact with a pale grey, leucocratic hornblende gneiss. Mottled at first before becoming strongly foliated with regular, distinct banding together with numerous amphibolite and garnet amphibolite bands on frequent occasions. Quartz bands contain altered mafics and garnet inclusions suggesting a secondary injection origin. A competent rock but with frequent calciferous hairline fractures common with limonitic staining. Sulphide specks 0.1% (Recovery: 94%)								
32.26	41.10	Garnet Amphibolite	Dark green, fine grained, weakly foliated amphibolite with a variable content of pink porphyroblastic garnets. Occasional quartzo-feldspathic banding of 0.5-5.0cm at regular 10-20cm intervals, becoming rare after 38m. Infrequent pale green banding due to a high, coarse intergranular plagioclase content associated with a slight sulphides increase. Major quartz section from 34.34-34.77m with minor altered mafic, garnet and muscovite inclusions particularly adjacent to the sections sharp contacts - forming grey								

Metres

Diamond Drill Core Record ..... Cu Ni Mo ..... Project Sheet No. 8 D.D.H. No. SBH 2

From	Rep/Rec	GEOLOGICAL LOG ROCK TYPE	DESCRIPTION	ASSAY RECORD Sample No.	From	Length	Recov.				
32.26	41.10	Garnet	colouration of an otherwise pale yellow crystalline								
		Amphibolite	quartz with a distinct foliation suggesting this								
		(Continued..)	is a pre or syn-metamorphic injection vein.								
			Conspicuous, soft, friable pale green altered								
			garnet amphibolite from 38.90-39.40. Primary								
			ferromag. minerals have altered to fibrous amphibole								
			and chlorite with plagioclase changing to kaolin.								
			The section has a gradational lower contact from								
			39.20-39.40m to a fresh garnet amphibolite.								
			Competent sections generally with a few variable								
			calcite and limonite coated fractures. Lean								
			sulphide disseminations throughout of only								
			0.4% or less.								
			(Recovery: 98%)								
41.10	41.26	Hornblende	Short but distinct, well foliated and banded								
		Gneiss	hornblende gneiss section: forming a transitional								
			unit between two adjacent lithologies.								
			(Recovery: 100%)								
41.26	46.70	Biotite Gneiss	Strongly foliated, grey biotite gneiss with								
			regular gneissose quartz and schistose biotite								
			rich bands, particularly well developed from 42m.								
			Fine grained and poorly banded from 45.35-46.01m								
			then becoming garnetiferous and well banded with								

Metres Diamond Drill Core Record ....Cu Ni Mo....... Project Sheet No. 9 D.D.H. No. SBH 2

FOOTAGE		GEOLOGICAL LOG		ASSAY RECORD							
From	Rep/Rec	ROCK TYPE	DESCRIPTION	Sample No.	From	Length	Recov.				
41.26	46.70	Biotite Gneiss (cont..)	extensive chlorite alteration of biotite mica. Occasional fractures across foliation from 42.25 -42.55m and a major calcite filled fracture zone between 42.70-43.50m. Sulphides mostly pyrite specks. 0.5%								
			(Recovery: 96%)								
46.70	48.36	Garnet-Hornblende Gneiss.	Section above transitional to green, garnet-hornblende gneiss with a speckled texture and gneissose banding, also zones containing subordinate biotite mica sometimes slightly altered to chlorite. Conspicuous section of leucocratic biotite gneiss divides main unit from 47.42-47.79m - a milky grey foliated quartz with numerous biotite and garnet inclusions and few sulphides. Competent rock other than occasional fractures along foliation Sulphide specks low.								
			(Recovery: 100%)								
48.36	51.72	Biotite Gneiss	Leucocratic mottled grey biotite gneiss with a variable dissemination of pyrrhotite from 2-3% and quartz bands containing 3% disseminated pyrites until 49.26m. Then becomes typical grey biotite gneiss with numerous small garnet inclusions and								

Metres Diamond Drill Core Record .... Project Sheet No. 10 D.D.H. No. SBH 2

FOOTAGE		GEOLOGICAL LOG		ASSAY RECORD								
From	Rep/Rec	ROCK TYPE	DESCRIPTION	Sample No.	From	Length	Recov.					
48.36	51.72	Biotite Gneiss (cont.)	and from 49.50m becomes biotite rich with a frequent schistose development. Disseminated pyrrhotite specks and threads between foliation averages 3% with rare patches and veinlets from 50.55m often associated with chalcopyrite inclusions. Final leucocratic grey biotite gneiss section from 50.10m with bright green altered amphibolite and garnet inclusions, with only a minor pyrrhotite content of 0.4%. (Recovery: 100%)									
51.72	53.21	Garnet Amphibolite	Dark green garnet amphibolite, with pale green altered amphibolite zones and coarse orthoclase feldspar alteration bands at 52.03m. Chlorite alteration present, whilst garnets are frequently porphyroblastic with associated sulphide rims. Disseminated sulphide specks throughout with 10% rich section in lower 10cm. (Recovery: 100%)									
53.21	57.20	Garnet-Biotite/ Hornblende Gneiss	Mottled, leucocratic garnet-biotite gneiss grades to a fine grained, weakly foliated hornblende-biotite gneiss at 53.54m with numerous often porphyroblastic pink garnet inclusions.									

Metres

FOOTAGE		GEOLOGICAL LOG		ASSAY RECORD								
From	Rep/Rec	ROCK TYPE	DESCRIPTION	Sample No.	From	Length	Recov.					
53.21	57.20	Garnet-Biotite/ Hornblende Gneiss (cont.)	Distinct gneissose banding at first and frequent schistose biotite rich sections with minor chlorite alteration. Amphibole content decreases from 54.05m to leave a garnet-biotite gneiss with pale green alteration bands and from 54.70m a biotite gneiss with a granoblastic texture and poor to absent banding. Generally a competent section except for a major calcite filled fracture zone from 56.46-57.07m. Sulphides mostly disseminated pyrites from 0.5-1% with rich patches, particularly from 53.95-54.05m at 10%. (Recovery: 100%)									
57.20	62.15	Amphibolite	Very fine grained, dark green mesocratic amphibolite with a porphyroblastic garnet section from 57.65-58.87m, with carbonate mineral specks common and slightly higher 0.5% sulphide dissemination. Lower section from 58.87m-62.15m typical medium grained amphibolite with a weak folition and [illegible] large garnet inclusions: usually fresh and competent except for some minor calcite filled fractures near the base. Lean sulphide dissemination averages 0.2% (Recovery: 97%)									
			END OF BOREHOLE 62.15m.									

Consolidated Gold Fields Limited

DIAMOND DRILL CORE RECORD

Date Started	7:2:76	Collar Elevation		Area	SCOURIE
Date Completed	8:2:76	Orientation	020° Grid N.	Length	36.01m
from m.		Recovery	99%	Purpose	Scout Drilling E.M. Anomaly
from m.		Inclination	50°	Logged By	G.S. Roberts
from m.		Corrected		Date	17:2:76

Project: Cu Ni Mo

METRES		GEOLOGICAL LOG				ASSAY RECORD						
From	Represents	Rock Type	Graphic Log	Intersec. Angle	Description	Sample No.	From	Length	Rec.			
0	0.66m	Overburden			Peat cover with Laxfordian pink, medium grained, foliated granite boulder at base of drift from 0.26-0.66m. (Recovery: 80% excluding peat)							
0.66	4.80	Banded Garnet-Amphibolite			Garnet amphibolite with frequent feldspathic quartzo bands. Dark green fine to medium grained, weak, changeable foliated amphibolite with a variable pink porphyroblastic garnet content and extensive carbonate mineral spotting. Grey, foliated quartzo feldspathic bands throughout with major section from 1.69-2.39m containing altered mafics and garnet inclusions with amphibolite bands. Amphibolite fresh and competent, but with major limonite fracture zone ~~terminating section~~ from 4.48-4.80m. Disseminted specks and threads of pyrite low with some very rare chalcopyrite specks and weak sulphide depletion through the quartz bands. (Recovery: 90%)							
4.80	6.10	Quartzo Feldspathic Band			Strongly foliated, mottled, grey quartzo feldspathic rich band. Extensive amphibolite muscovite and garnet inclusions suggest this may							

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Metres **Diamond Drill Core Record** ....Cu.Ni.Mo..................... Project Sheet No. 2 D.D.H. No. SBH 3

~~FOOTAGE~~		GEOLOGICAL LOG		ASSAY RECORD							
From	Rep/Rec	ROCK TYPE	DESCRIPTION	Sample No.	From	Length	Recov.	T.S.	P.S		
4.80	6.10	Quartzo	be a leucocratic hornblende gneiss. Discrete								
		Feldspathic Band	high angle limonitic hairline fractures and very								
			minor sulphide specks only.								
			(Recovery: 100%)								
6.10	9.68	Garnet	Medium grained, green, weakly foliated amphibolite								
		Amphibolite	with 1-5mm pink garnet porphyroblasts and extensive	GS1797	8.30-8.35m			✓			
			carbonate spotting. Frequent quartz bands throughout								
			but decreasing in garnet and plagioclase content								
			and becomes fine grained at depth. Section from 9.30m								
			pale green, granular and almost garnet free,								
			indicating alteration of amphibole content.								
			Competent rock with only occasional minor fractures								
			along foliation. Minor sulphide specks and filaments								
			of 0.4%.								
			(Recovery: 97%)								
9.68	10.46	Biotite Gneiss	Dark grey, strongly foliated and banded gneiss								
			with a few small garnet inclusions and intially								
			transitional with the previous unit with a pale								
			green altered amphibole content. Sulphides negligible.								
			(Recovery: 95%)								
10.46	12.45	Amphibolite	Initially a medium to coarse grained, green	GS1801	11.41-11.46m			✓			
			foliated garnet amphibolite, low in sulphide. At								
			10.61 becomes a typical fine grained, green								

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Metres Diamond Drill Core Record ....Cu Ni Mo............ Project Sheet No. 3 D.D.H. No. SBH 3

~~FOOTAGE~~		GEOLOGICAL LOG		ASSAY RECORD							
From	Rep/Rec	ROCK TYPE	DESCRIPTION	Sample No.	From	Length	Recov	T.S.	P.S.		
10.46	12.45	Amphibolite (cont..)	amphibolite with a negligible garnet content except for a porphyroblastic zone at 11.56-11.67m. Occasional pale, bleached bands between 10.65-10.97m and 11.30-11.56m, decreasing from 11.90m but with ~~an increase in the plagioclase~~ content and appearance of minor carbonate spotting. Conspicuous high angle, discordant biotite schist bands at 11.25m and 11.67-11.90m, possibly a result of shearing within the amphibolite. Sulphide content low throughout. (Recovery: 99%)								
12.45	15.30	Biotite Gneiss with sulphide banding.	Grey, well foliated biotite gneiss with well developed gneissose banding and occasional high mica schistose zones. Dark brown biotite mica gives way in predominance to a distinctive bronze coloured mica at 13.85m, with the occasional appearance of carbonate specks. At 14.52m becomes fine grained with poor gneissose banding and an increase in chlorite development which from 14.90-15.15m forms a distinct section of pale green biotite gneiss, where most biotite has altered to chlorite. Two distinct sulphide bands: at 13.76-13.85m a sub-massive pyrrhotite, plagioclase matrix of 15-20% sulphides containing some 1-2% of chalcopyrite and	GS1804	15.20-15.25m				✓		

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Metres **Diamond Drill Core Record** ....Cu.Ni.Mo...................... Project   Sheet No. 4   D.D.H. No. SBH 3

~~FOOTAGE~~		GEOLOGICAL LOG		ASSAY RECORD								
From	Rep/Rec	ROCK TYPE	DESCRIPTION	Sample No.	From	Length	Recov.					
?.45	15.30	Biotite Gneiss with sulphide banding(Cont.)	some pale green alteration patches. From 15.15-15.26m a further band of 20-30% sub-massive sulphide, biotite amphibolite matrix, with two distinct sulphide types of pyrrhotite and pyrite and a strong 20° phase contact between the two; neither containing any significant amount of chalcopyrite. Otherwise the sulphide content is low except for an increase to a 1-5% disseminated pyrrhotite zone adjacent to the main sulphide bands. (Recovery: 100%)									
15.30	18.38	Biotite-Hornblende gneiss	Fine to medium grained foliated biotite-hornblende gneiss with regular quartzo feldspathic gneissose banding; frequently containing biotite gneiss zones with only a subordinate amphibole content. Variable percentage of small, pink garnet inclusions and biotite schist banding from 17.59m facilitating fracturing. Initially 1% disseminated sulphides with an increase at depth and two rich bands at 18.07-18.09m (10%) and 18.25-18.35m (5%). (Recovery: 100%)									
?.38	18.80	Garnet Amphibolite	Sharp but gradational contact with unit above to a dark green, fine grained, foliated, porphyro-? blastic garnet amphibolite. Only a weak dissemination of sulphide specks. (Recovery: 100%)									

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Metres Diamond Drill Core Record ....Cu Ni Mo.......... Project Sheet No. 5 D.D.H. No. SBH 3

~~FOOTAGE~~		GEOLOGICAL LOG		ASSAY RECORD							
From	Rep/Rec	ROCK TYPE	DESCRIPTION	Sample No.	From	Length	Recov.				
18.80	19.60	Hornblende Gneiss	Fine-medium grained, foliated hornblende gneiss with regular gneissose quartzo feldspathic banding. Occasional garnet inclusions and patches of pale green amphibole and chloritised biotite. Significant biotite content marks gradational change to lower 10cm of section. Minor sulphide dissemination only. (Recovery: 100%)								
19.60	24.43	Garnet-Biotite Gneiss	Grey, well foliated and coarsely banded biotite gneiss with a high percentage of pink porphyroblastic garnets. Mixed dark and bronze biotite mica with only rare alteration to chlorite. Numerous amphibolite rich sections and grey foliated quartzo feldspathic bands of up to 3% often associated with the garnet content. Also a narrow pyrite wedge at 21.18m. Main unit divided by a section of altered garnet amphibolite from 22.12-22.70m. Well foliated and extensively bleached from 22.45-22.55m with discordant migmatitic quartz lenses containing up to 5% pyrrhotite specks including a minor chalcopyrite and pyrite content. Gneiss continues at 22.70m with some carbonate specks and rare green chloritic bands. Competent with only occasional								

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Metres **Diamond Drill Core Record** Cu Ni Mo Project Sheet No. 5 D.D.H. No. SBH 3

~~FOOTAGE~~		GEOLOGICAL LOG		ASSAY RECORD								
From	Rep/Rec	ROCK TYPE	DESCRIPTION	Sample No.	From	Length	Recov.					
18.80	19.60	Hornblende Gneiss	Fine-medium grained, foliated hornblende gneiss with regular gneissose quartzo feldspathic banding. Occasional garnet inclusions and patches of pale green amphibole and chloritised biotite. Significant biotite content marks gradational change to lower 10cm of section. Minor sulphide dissemination only. (Recovery: 100%)									
19.60	24.43	Garnet-Biotite Gneiss	Grey, well foliated and coarsely banded biotite gneiss with a high percentage of pink porphyroblastic garnets. Mixed dark and bronze biotite mica with only rare alteration to chlorite. Numerous amphibolite rich sections and grey foliated quartzo feldspathic bands of up to 3% often associated with the garnet content. Also a narrow pyrite wedge at 21.18m. Main unit divided by a section of altered garnet amphibolite from 22.12-22.70m. Well foliated and extensively bleached from 22.45-22.55m with discordant migmatitic quartz lenses containing up to 5% pyrrhotite specks including a minor chalcopyrite and pyrite content. Gneiss continues at 22.70m with some carbonate specks and rare green chloritic bands. Competent with only occasional									

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Metres Diamond Drill Core Record ......Cu Ni Mo...... Project Sheet No. 6 D.D.H. No. SBH 3

FOOTAGE		GEOLOGICAL LOG		ASSAY RECORD								
From	Rep/Rec	ROCK TYPE	DESCRIPTION	Sample No.	From	Length	Recov.					
19.60	24.43	Garnet-Biotite Gneiss (cont..)	fracturing along the foliation. (Recovery: 100%)									
24.43	25.44	Quartzo feldspathic band.	Grey and white, foliated quartzo feldspathic section and very few inclusions of garnet, biotite and sulphides with yellow probably altered ferromag. alteration patches. Divided sharply from 24.78-25.16m by grey biotite gneiss with highly micaceous bands producing a strong schistosity and an increase in pyrrhotite and chalcopyrite threads from 0.5% to 1%. Sharpness of quartz rich bands and the biotite gneiss contacts suggests the former is not a leucocratic equivalent of the latter. (Recovery:100%)									
25.44	27.68	Garnet-Biotite Gneiss	Strongly foliated, well banded garnet-biotite gneiss with schistose zones high in mica often altering to sericite across fractures. Occasional narrow amphibolite rich bands until 25.83m when a change to a more leucocratic section occurs: containing yellow ferromag. alteration spots and only a few garnets after 26.10m. Pyrrhotite specks vary up to 1% with occasional chalcopyrite of 0.1% (Recovery: 100%)									
27.68	27.92	Garnet-Hornblende Gneiss	Short transitional section of green, foliated									

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Metres — Diamond Drill Core Record — Cu Ni Mo Project — Sheet No. 7 — D.D.H. No. SBH 3

FOOTAGE		GEOLOGICAL LOG		ASSAY RECORD			
From	Rep/Rec	ROCK TYPE	DESCRIPTION	Sample No.	From	Length	Recov.
27.68	27.92	Garnet-Hornblende Gneiss (cont..)	garnet amphibolite with gneissose banding and thin bronze biotite rich sections. Sulphides lean. (Recovery: 100%)				
27.92	30.80	Amphibolite	Fine-medium grained, light green, foliated amphibolite, with occasional narrow biotite gneiss bands; becoming fine grained and schistose at 28.33-28.50m with weak alteration and sulphide enrichement within the adjacent amphibolite contact. Following a 12cm quartzo feldspathic band at 28.88m the amphibolite obtains a more speckled texture with extensive carbonate specks and porphyroblastic garnet inclusions. Average pyrrhotite content of 0.4% with patches of up to 1%. From 29.30 returns to a typical green, foliated amphibolite which from 30.29-30.35m becomes bleached from chlorite and Kaolin alteration. Some fractures along foliation throughout section with conspicuous zone of calcite filled hairline fractures from 29.00-29.30m. (Recovery: 100%)				
30.80	33.14	Ultrabasic	Fine-medium grained, weakly foliated, very dark ultrabasic section as seen elsewhere with return to amphibolite in basal 30cm of the section. Bleached alteration zones from 31.10-31.43m and 31.75-32.06m - the				

Metres Diamond Drill Core Record Cu Ni Mo Project Sheet No. 8 D.D.H. No. SBH 3

[illegible]		GEOLOGICAL LOG		ASSAY RECORD								
From	Rep/Rec	ROCK TYPE	DESCRIPTION	Sample No.	From	Length	Recov.					
30.80	33.14	Ultrabasic	latter being a thoroughly soft, friable decomposed									
		(cont.)	section of chlorite, kaolin and asbestiform alteration									
			with numerous calcite filled shears from 31.20-32.05m.									
			(Recovery: 98%)									
33.14	36.01	Biotite Gneiss	Typical grey, well banded biotite gneiss with									
			frequent leucocratic sections becoming coarse grained									
			at 35-35.60m. Rare garnet inclusions, carbonate									
			and muscovite flakes. Sulphides lean with thin									
			haematite filaments along foliation at 34m.									
			Competent with only occasional fractures.									
			(Recovery: 100%)									
			END OF BOREHOLE: 36.01m									

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DIAMOND DRILL CORE RECORD

Date Started	9:2:76	Collar Elevation			
Date Completed	12:2:76	Orientation	020° Grid N.		
from	m.	Recovery	98%		
from	m.	Inclination	50°		
from	m.	Corrected			

Project: Cu Ni Mo

Area	SCOURIE
Length	46.27m
Purpose	Scout Drilling ~~E.M. Anomaly~~
Logged By	~~G.S. Roberts~~
Date	21:3:76

METRES		GEOLOGICAL LOG				ASSAY RECORD						
From	Represents	Rock Type	Graphic Log	Intersec Angle	Description	Sample No.	From	Length	Rec.			
0	0.94m	Overburden			Peat cover lies directly on a weathered bedrock surface, with no apparent base of drift boulder cover as found at most other SBH sites. No core recovery.							
0.94	1.83	Biotite Gneiss			Grey, fine-coarse grained, strongly foliated biotite gneiss, with small pink garnet inclusions from 1.40m together with minor chlorite specks and a slight increase in sulphide content from 0.1% to 0.5%. (Recovery: 91%)							
1.83	3.73	Hornblende Gneiss			Light green, medium grained granular hornblende gneiss/amphibolite, with initial 5cm zone of bleaching. Contains bronze biotite rich bands from 3.13m and from 3.40-3.70m a conspicuous discordant white quartz vein terminates this section. The vein contains numerous patches of pale yellow micaceous alteration products and very few small garnet inclusions. Short biotite gneiss section divides the main unit from 2.97-3.13m. Lean sulphide dissemination throughout. (Recovery: 95%)							

Metres Diamond Drill Core Record Cu Ni Mo Project Sheet No. 2 D.D.H. No. SBH 4.

~~FOOTAGE~~		GEOLOGICAL LOG		ASSAY RECORD								
From	Rep/Rec	ROCK TYPE	DESCRIPTION	Sample No.	From	Length	Recov.					
3.73	6.76	Biotite Gneiss	Grey, fine-medium grained biotite gneiss with only occasional well developed gneissose banding and a strongly leucocratic section from 6.30m containing a few small garnet inclusions and carbonate specks. Divided by two distinct sections: from 4.20-4.64m a green foliated amphibolite with porphyroblastic garnet inclusions and minor sulphides and from 4.64-5.30m a pink coarse banded garnet-biotite gneiss with occasional chlorite alteration specks and a strong association of pyrites and chalcopyrite with the garnet inclusions. Otherwise a low dissemination of pyrite and little fracturing. (Recovery: 98%)									
6.76	9.14	Biotite-Hornblende Gneiss	Initially a medium grained, green hornblende gneiss, with a high percentage of garnet porphyroblasts, and extensive carbonate specks. Essentially a garnet amphibolite but with a better foliation and strong gneissose banding. From 7.50m decreases in garnet content but obtains significant addition of biotite mica to form a biotite - hornblende gneiss; well banded with 7-10% disseminated pyrrhotite threads and subordinate chalcopyrite content. Continuing from 8m with a strong but changeable foliation									

Metres **Diamond Drill Core Record** Cu Ni Mo Project Sheet No. 3 D.D.H. No. SBH 4

~~FOOTAGE~~		GEOLOGICAL LOG		ASSAY RECORD							
From	Rep/Rec	ROCK TYPE	DESCRIPTION	Sample No.	From	Length	Recov.				
6.76	9.14	Biotite-Hornblende Gneiss	and discordant migmatitic quartz bands plus micaceous and amphibolitic rich bands with some slight chloritic spotting and high 5% dissemination of pyrrhotite threads and patches. Final section from 8.42m grades into a garnet-biotite-hornblende gneiss with a significant reappearance of garnet inclusions and continued migmatitic bands at 8.60-8.70m. Eventually from 8.85m a decrease in grain size, biotite content and banding grades into next unit. (Recovery: 99%)								
9.14	10.15	Garnet Amphibolite	Fine grained, dark green, well foliated garnet amphibolite containing large porphyroblastic garnet inclusions of 0.2-0.8mm diameter. Sections often very dark and may approach more ultrabasic quality until at 9.60m section becomes a lighter green colour with the gradual appearance of carbonate and chlorite spots and from 9.95m the disappearance of the garnet content. Lean pyrrhotite dissemination up to 0.5% only. (Recovery: 100%)								

Metres Diamond Drill Core Record ....Cu Ni Mo.......... Project Sheet No. 4 D.D.H. No. SBH 4

FOOTAGE		GEOLOGICAL LOG		ASSAY RECORD							
From	Rep/Roc	ROCK TYPE	DESCRIPTION	Sample No.	From	Length	Recov.				
10.15	11.80	Amphibolite	Fine grained, dark green, well foliated amphibolite with intially a variable but often high subordinate biotite content and few if any garnet inclusions. At 11.10-11.28m biotite-hornblende gneiss with some minor chlorite alteration before returning to a light green, possibly altered amphibolite. Sulphide dissemination generally low throughout. (Recovery: 96%)								
11.80	13.60	Biotite-Hornblende Gneiss	Medium grained biotite-hornblende gneiss with gneissose banding and a variable porphyroblastic garnet content. From 12.50m section of foliated micaceous amphibolite soon returning to a biotite-hornblende gneiss with frequent chlorite alteration of the biotite content and garnet rich banding decreasing after 13.15m. Base grades into next section with gradual decrease of the hornblende content. Sulphide dissemination averages 0.3-0.5% with narrow pyrrhotite, chalcopyrite fracture filling at top and 5% rich dissemination associated with quartz bands at 13.33m. (Recovery: 99%)								

Metres Diamond Drill Core Record ....Cu Ni Mo.......... Project Sheet No. 5 D.D.H. No. SBH 4

FOOTAGE		GEOLOGICAL LOG		ASSAY RECORD								
From	Rep'Rec	ROCK TYPE	DESCRIPTION	Sample No.	From	Length	Recov.					
13.60	14.12	Biotite Gneiss	Grey, medium grained biotite gneiss with strong gneissose banding. Very minor chlorite alteration spots and carbonate specks, with weak hornblende content. Sulphide dissemination 0.5% increasing to 3% from 14.10m. Amphibole content gradually increases near base to a biotite-hornblende gneiss.									
			(Recovery: 99%)									
14.12	16.29	Biotite-Hornblende Gneiss	Increase in amphibole contrnt forms a well banded green biotite-hornblende gneiss with some carbonate spotting, few if any garnets and a lean sulphide dissemination of 0.5%.									
			(Recovery: 100%)									
16.29	17.44	Biotite Gneiss	Another gradual decrease in hornblende content and return to biotite gneiss, with no chlorite alteration and pyrrhotite, chalcopyrite specks of 0.5% untul 17m when both increase togather with a minor amphibole reappearance.									
			(Recovery: 100%)									
17.44	19.33	Amphibolite	Fine-medium grained, green, weakly foliated micaceous amphibolite, weakly garnetiferous with bleached alteration zones at 17.70-17.80m and 18.27-18.37m before short sections of fresh, grey, biotite gneiss at 17.80-18.05m and 18.37-18.48m.									

Metric Diamond Drill Core Record — Cu Ni Mo Project — Sheet No. 6 — D.D.H. No. SBH 4

FOOTAGE		GEOLOGICAL LOG		ASSAY RECORD								
From	Rep. Rec	ROCK TYPE	DESCRIPTION	Sample No.	From	Length	Recov.					
17.44	19.33	Amphibolite (cont..)	Strong quartz banding, frequent garnet inclusions and pyrrhotite bands of up to 3%. From 18.48 conspicuous pale green section of altered micaceous amphibolite: a soft, friable rock with extensive chlorite alteration, schistose muscovite bands shearing and a sharp lower contact with dark green amphibolite. (Recovery: 100%)									
19.33	20.76	Biotite-Hornblende Gneiss	Gneissose amphibolite with initially garnetiferous and garnet-biotite rich bands and slight bleaching of a lower amphibolite section at 19.60-19.80m. Thin section of leucocratic biotite-hornblende gneiss containing frequent garnet inclusions with some chloritic alteration and associated disseminated pyrites up to 1%. (Recovery: 100%)									
20.76	21.90	Garnet Amphibolite.	Green, medium grained amphibolite at first with weak plagioclase and biotite rich bands. From 21.25 contains porphyroblastic garnets with extensive chlorite and carbonate development but only minor disseminations of sulphide. (Recovery: 100%)									
21.90	23.00	Amphibolite	Fine grained, green gneissose amphibolite with									

Metres Diamond Drill Core Record Cu Ni Mo .... Project Sheet No. 7 D.D.H. No. SBH 4

FOOTAGE		GEOLOGICAL LOG		ASSAY RECORD							
From	Rep/Rec	ROCK TYPE	DESCRIPTION	Sample No.	From	Length	Recov.				
21.90	23.00	Amphibolite (cont..)	some thin micaceous bands forming weak sections and a few garnet inclusions. (Recovery: 94%)								
23.00	24.59	Ultrabasic Gneiss	Similar to unit above but with less plagioclase and biotite content and a very high percentage of ferromags. Light and dark green mineral banding and a pale green alteration sections at 23.83-24.10m and 24.40-24.59m Very low sulphide content. (Recovery: 100%)								
24.59	25.60	Amphibolite	Ultrabasic section grades sharply to a green foliated, medium grained amphibolite: frequent pale green bleached zones, with very few garnet inclusions, and quartzo feldspathic veins between 25.11-25.30m. High 3% disseminated sulphides in first 20 cm then reduced to 1%. mostly pyrite. (Recovery: 100%)								
25.60	26.32	Biotite Gneiss	Section of grey, strongly foliated biotite gneiss divides main amphibolite unit. Frequent but not high percentage of porphyroblastic garnets with micaceous amphibolite band at 26.17-26.21m and a low sulphide content throughout. (Recovery: 100%)								
26.32	28.40	Amphibolite	Dark green, weakly foliated amphibolite continues								

Metres **Diamond Drill Core Record** Cu Ni Mo Project Sheet No. 8 D.D.H. No. SBH 4

FOOTAGE		GEOLOGICAL LOG		ASSAY RECORD							
From	Rep/Rec	ROCK TYPE	DESCRIPTION	Sample No.	From	Length	Recov.				
26.32	28.40	Amphibolite (cont..)	with a subordinate bronze biotite content, changing at 27.22m to a darker rock with occasional quartz bands and garnet inclusions, low sulphide content throughout. Bleached alteration zone from 26.80-27.22m								
			(Recovery: 97%)								
28.40	29.32	Biotite Gneiss	Grey, well banded biotite gneiss with regular chlorite altered bands and darkening towards the base with occurence of hornblende. Extensive fracturing of variable attitude across lower contact from 29.15-29.40m with minor calcite infilling. Low sulphide content of 0.5% throughout.								
			(Recovery: 100%)								
29.32	30.08	Altered Amphibolite	Sharp change to very soft, friable pale buff/grey altered amphibolite. Well developed between 29.39-29.55m and 29.75-30.08m with formation of fibrous, probably asbestiform altered amphibolite and middle section of only partially altered patches.								
			(Recovery: 98%)								
30.08	36.61	Garnet-Biotite Gneiss	Pinky grey garnet-biotite gneiss with strong gneissose banding and garnet biotite bands with chlorite spot alteration often developed.								

Metres Diamond Drill Core Record ....Cu.Ni.Mo.......... Project Sheet No. 9 D.D.H. No. SEH 4

FOOTAGE		GEOLOGICAL LOG		ASSAY RECORD								
From	Rep/Rec	ROCK TYPE	DESCRIPTION	Sample No.	From	Length	Recov.					
30.08	36.61	Garnet-Biotite Gneiss (cont..)	Occasional low amphibole content or amphibolite bands causing a darkening of colour and weakening of the gneissose banding. From 32m garnet content decreases with an associated increase in biotite content and frequent chlorite spot alteration particularly at 34.00-34.10m.									
			Conspicuous dark green, fine grained, foliated biotite amphibolite section divides the main gneiss unit from 34.55-35.06m with chlorite alteration common and only a low sulphide content of 0.4%									
			Returns at 35.06m to a dark grey well foliated but weakly banded biotite gneiss with pink porphyroblastic garnet inclusions throughout and some chloritic alteration. Fracturing along the foliation weakness is common throughout but extensive fracture zones also exist at 30.05-30.45m 30.60-31.00m and31.30-31.50m. Disseminated pyrrhotite specks and threads occur throughout up to 1% sometimes with a minor chalcopyrite association. From 33.00-33.70m frequent narrow but rich bands of disseminated pyrrhotite are common, averaging 3%, again with a low chalcopyrite content.									
			(Recovery: 98%)									

Metres Diamond Drill Core Record ....Cu Ni Mo.................... Project Sheet No. 10 D.D.H. No. SBH 4

FOOTAGE		GEOLOGICAL LOG		ASSAY RECORD								
From	Rep/Rec	ROCK TYPE	DESCRIPTION	Sample No.	From	Length	Recov.					
36.61	46.27	Biotite Gneiss	Grey, medium grained, strongly foliated biotite gneiss with only a weak gneissose banding and a bronze biotite content occasionally altering to chlorite. From 37.65m hornblende content increases to form short sections of hornblende - biotite gneiss with a decrease in the sulphide content. Conspicuous discordant fracture divides main biotite gneiss at 38.85-39.05m with a banded quartz/pyroxene gneiss filling and pyrrhotite specks along a fractured contact. Section is competent throughout except for a few high angle hairline fractures with a pale green carbonate filling across mostly leucocratic sections. Lean sulphide dissemination throughout of 0.4-1%.									
			(Recovery: 97%)									
			END OF BOREHOLE : 46.27m									

Consolidated Gold Fields Limited

DIAMOND DRILL CORE RECORD

Date Started	17:2:76	Collar Elevation	
Date Completed	20:2:75	Orientation	045° Grid N.
from	m.	Recovery	96%
from	m.	Inclination	50°
from	m.	Corrected	

Project: Cu Ni Mo

Area	Scourie
Length	35.34m
Purpose	Scout Drilling E.M. Anomaly
Logged By	G.S. Roberts
Date	26:3:76

METRES		GEOLOGICAL LOG				ASSAY RECORD						
From	Represents	Rock Type	Graphic Log	Intersec. Angle	Description	Sample No.	From	Length	Rec.			
0	1.25	Overburden			Peat overburden appears to lie directly on a bedrock surface again with no base of drift boulder contact as seen elsewhere. No core recovery.							
1.25	2.66	Ultrabasic Gneiss			Dark green, strongly foliated ultrabasic rock, competent and fresh except possibly for some pale altered patches. Equal constituents of black and vitreous, green minerals possibly corresponding to augite and chrome diopside thus constituting a pyroxenite rock. Sulphide content very low at 0.1%. (Recovery: 59%)							
2.65	3.13	Garnet-Biotite Gneiss			Pale grey, medium grained biotite gneiss with irregular gneissose banding and numerous porphyroblastic garnet inclusions. Small fracture zone at 3.00-3.12m with heavy limonitic surface coatings and low sulphide content. (Recovery: 100%)							
3.13	3.43	Garnet Amphibolite			Sharp transition to a green, foliated garnet amphibolite with extensive conjugate fracturing from 3.30-3.60 with heavy limonite staining. Sulphide content low. (Recovery: 100%)							

Consolidated Gold Fields Limited

Diamond Drill Core Record ....Cu Ni Mo.......... Project Sheet No. 2 D.D.H. No. SBH 5

Footage		GEOLOGICAL LOG		ASSAY RECORD								
From	To	ROCK TYPE	DESCRIPTION	Sample No.	From	Length	Recov.	T.S.	P.S.			
3.43	4.01	Biotite Gneiss	Grey banded, biotite gneiss frequently with a high amphibole content tending towards a hornblende-biotite gneiss. Competent and fresh with a low sulphide content. (Recovery: 100%)									
4.01	5.04	Pyrrhotitic Amphibolite	Hornblende-biotite gneiss grades to a light green, foliated amphibolite with some occasional pink porphyroblastic garnets. From 4.04m disseminated pyrrhotite threads and blebs constitute 8% of the core with up to 2% associated chalcopyrite. At 4.11m this becomes a sub-massive matrix of 30% pyrrhotite, minor pyrite and chalcopyrite with the amphibolite rock. Main sulphide zone is between 4.04-4.51m with up to 10% mixed sulphides continuing until 4.74m and at 4.89-5.04m. Narrow sulphide and quartz sulphide filled fractures common from 4.60-4.90m. (Recovery: 100%)	GS1873	4.20m	4.25m			✓			
5.04	5.51	Garnet-Hornblende Gneiss	Green, strongly foliated hornblende gneiss with occasional porphyroblastic garnet. Low sulphide content. (Recovery: 100%)									

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Diamond Drill Core Record .... Cu Ni Mo .... Project Sheet No. 3 D.D.H. No. SBH 5

~~Metreage~~ FOOTAGE		GEOLOGICAL LOG		ASSAY RECORD								
From	To	ROCK TYPE	DESCRIPTION	Sample No.	From	Length	Recov.					
5.51	7.43	Ultrabasic Gneiss	Dark green, fine grained ultrabasic rock with a strong foliation and regular, narrow green and black colour banding. Becomes coarse grained from 6.72m with a poor foliation and no banding, appears to be almost completely hornblende which is probably after pyroxene. Low sulphide content initially increases at 7.30m and 7.42m the latter in association with a quartz band, and at 7.35m a thin 1.5cm chalcopyrite lense.									
			Section divided sharply between 6.40-6.72m by a fine grained, light green, poorly foliated mesocratic amphibolite with up to 0.5% disseminated sulphides.									
			(Recovery: 100%)									
7.43	8.30	Garnet Amphibolite	Green, medium grained, foliated amphibolite with pink porphyroblastic garnet inclusions and occasional greissose banding. Lean sulphide dissemination of 0.5% only.									
			(Recovery: 100%)									
8.30	11.22	Amphibolite	Typical, green, foliated amphibolite with very occasional garnet porphyroblastic and a subordinate pale brown biotite content. Becomes fine grained and mesocratic at depth, with no alteration throughout									

Consolidated Gold Fields Limited

Meterage Diamond Drill Core Record ....Cu Ni Mo......................... Project Sheet No. 4 D.D.H. No. SBH 5

Meterage From	To	Rock Type	Description	Sample No.	From	Length	Recov.	T.S.	P.S.			
8.30	11.22	Amphibolite (cont.)	and only regular fracturing along the foliation weakness. Low sulphide content of 0.2% (Recovery: 100%)									
11.22	12.07	Garnet Amphibolite	Usual green, foliated garnet amphibolite with a coarse grained, quartzose section between 11.70-12.05m associated with a high 5% content of specks and patches of pyrites, frequently associated with the garnet content. (Recovery: 100%)									
12.07	13.83	Amphibolite	Initial section from 12.07-12.30m is a pale green, filrous, altered amphibolite with sheared, pale green micaceous alteration bands at the contacts. From 12.30m becomes a fine grained, green, weakly foliated amphibolite with rare banding and no alteration. Contains a small percentage of light brown biotite mica which at 13.58m increases to produce essentially a biotite amphibolite section. Low sulphide content. (Recovery: 97%)									
13.83	16.30	Ultrabasic Gneiss	Typical dark green, strongly foliated and finely banded ultrabasic gneiss, possibly of pyroxenite composition. Pale green alteration patches common from 14.60 with weaker foliation.	GS1884	15.25m	15.30m			✓			
				GS1885	15.80m	15.85m			✓			

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Meterage Diamond Drill Core Record ....Cu Ni Mo........ Project Sheet No. 5 D.D.H. No. SBH 5

Meterage		GEOLOGICAL LOG		ASSAY RECORD								
From	To	ROCK TYPE	DESCRIPTION	Sample No.	From	Length	Recov.					
13.83	16.30	Ultrabasic Gneiss (cont.)	and less banding present. Bleached asbestiform alteration becomes extensive from 15.90-16.00m forming a soft friable section susceptable to frequent random fracturing. Low disseminated sulphide content.									
			(Recovery: 97%)									
16.30	17.80	Hornblende Gneiss	Green, fine to medium grained hornblende gneiss with narrow but regular gneissose banding and often small pink garnet inclusions. Fresh competent core until at the base coarse garnetiferous and biotite bands cause fracturing to terminate this section. Low sulphides content.									
			(Recovery: 100%)									
17.80	18.65	Ultrabasic Gneiss	Light green, very fine grained foliated ultra-basic gneiss becomes darker and banded from 18.15m. Competent rock with a very low sulphide content.									
			(Recovery: 92%)									
18.65	19.60	Hornblende Gneiss	As 16.30-17.80m section but initially for 0.25m with a high garnet content. Also a conspicuously coarse grained and leucocratic from 18.92-19.02m and some white, possibly apatite spotting. Sulphide content averages 0.5% but with richer disseminated bands.									
			(Recovery: 96%)									

MeterageDiamond Drill Core Record Cu Ni Mo Project Sheet No. 6 D.D.H. No. SBH 5

~~FEET~~		GEOLOGICAL LOG		ASSAY RECORD							
From	Rep. Rec	ROCK TYPE	DESCRIPTION	Sample No.	From	Length	Recov.				
19.60	21.62	Ultrabasic Gneiss	Another section of dark green and black banded ultrabasic gneiss, probably of pyroxenite composition. Fresh with pale sections due to lack of banding and mixing of the basic mineral constituents. Negligible sulphide content. (Recovery: 96%)								
21.62	22.43	Hornblende Gneiss	Fine grained dark green hornblende gneiss with well developed gneissose banding, carbonate spotting and until 21.80m is garnetiferous. Minor sulphide dissemination of specks and blebs throughout of 0.5% with above average central section up to 1% (Recovery: 100%)								
22.43	23.95	Garnet-Biotite Gneiss	Pinky/grey, fine grained, strongly foliated garnet-biotite gneiss, with narrow gneissose banding. Subordinate green amphibole content with only very little chlorite altered biotite present. Low sulphide content. (Recovery: 100%)								
23.95	25.00	Hornblende-Biotite Gneiss	Short section of hornblende gneiss containing only very little biotite mica soon grades into a hornblende-biotite gneiss with a marked increase in the mica content. Well foliated with thin....								

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Metres Diamond Drill Core Record .... Cu Ni Mo .... Project Sheet No. 7 D.D.H. No. SBH 5

FOOTAGE		GEOLOGICAL LOG		ASSAY RECORD								
From	To	ROCK TYPE	DESCRIPTION	Sample No.	From	Length	Recov.					
23.95	25.00	Hornblende-Biotite Gneiss (cont.)	grey banding and a few small garnet inclusions particularly at the top. Very little sulphide content. (Recovery: 100%)									
25.00	25.42	Acid Gneiss	Pale medium grained, quartz rich band with a high plagioclase and orthoclase feldspar content, with hornblende-biotite gneiss banding. Zone tightly folded with 3% pyrrhotite concentration within the fold core. Further similar but less extreme bands in underlying section at 25.90-26.10m and 26.65-26.90m suggests that this borehole may pass only down dip of these tightly folded gneisses. (Recovery: 93%)									
25.42	34.88	Biotite Gneiss	Fine to medium grained, grey biotite gneiss well foliated with a variable development of gneissose banding. Frequent leucocratic and garnetiferous sections, also acid gneiss zones as described above with pyrrhotite inclusions and additional zones at 34.59-34.67m and 34.80-34.87m without sulphides but containing altered ferromagnesium inclusions. At 27.45m one grey, quartz band contains soft grey metallic specks which are probably molybdenite together with some minor pyrites specks. Biotite									

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Meterage Diamond Drill Core Record ....Cu Ni Mo.......... Project Sheet No. 8 D.D.H. No. SBH 5

Meterage		GEOLOGICAL LOG		ASSAY RECORD								
From	To	ROCK TYPE	DESCRIPTION	Sample No.	From	Length	Recov.					
25.42	34.88	Biotite Gneiss (cont..)	mica varies in percentage and in colour from bronze to dark brown but is usually fresh with only minor local chloritic alteration spots. Numerous fractures throughout usually along the foliation and with a variable calcite filling. Mixed pyrite and pyrrhotite dissemination decreases at depth from 3% to 0.5% with local concentrations around garnets and within the upper acid gneiss zones.									
			(Recovery: 99%)									
34.88	35.34	Garnet Gneiss	Pink, well foliated and coarse banded garnet gneiss; essentially a grey quartz plagioclase gneiss with a high, usually porphyroblastic garnet content and minor associated biotite mica which is often altered to chlorite. Only a low disseminated sulphide content.									
			(Recovery: 100%)									
			END OF BOREHOLE : 35.34m									

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SULPHIDE LOG / SAMPLE SHEET

Sheet No 1 | D.D.H. No. SBH. 1

Sample No.	From	To	Rock Type	Length	Recovery	Assay Results Percentage: Pb	Zn	Cu.	Ni.	Vol. %: Sulphide	Graphite	Description
GS 1297	1.47m	2.47m	Amphibolite	1m	100%	20	31	104	93	1%		Disseminated pyrite and pyrite specks.
1298	2.47m	3.48m	Garnet Gneiss	1m	99%	12	76	171	181	2%		Patchy dissemination of pyrite specks and threads betw zon
1299	3.48m	4.41	Amphibolite	1m	100%	8	43	85	60	0.2%		Disseminated pyrite specks only. Additional Garnet Amphibolite content.
1300	4.41	5.43	Amphibolite	1m	98%	10	45	63	78	2%		Dissemination of pyrite and pyrrhotite specks increasin from 1 to 3% at the base.
1701	5.43	6.42	Biotite Gneiss	1m	100%	10	99	61	64	0.5%		Disseminated specks of pyrite evenly distributed.
1702	6.42	7.42	Biotite Gneiss	1m	100%	14	116	70	57	0.5%		As above
1703	7.42	8.42	Biotite Gneiss	1m	100%	12	54	66	63	0.5%		As above.(Additional Garnet Amphibolite content)
1704	8.42	9.37	Garnet Amphibolite	1m	100%	8	26	131	69	1%		Disseminated pyrite and pyrrhotite specks throughout, fracture filling at 8.90m.
1705	9.37	10.37	Altered Amphibolite	1m	100%	10	33	115	60	2%		Patchy dissemination of pyrite specks varies from 1-3
1706	10.37	11.39	Amphibolite	1m	98%	16	83	110	137	0.2%		Disseminated pyrite and pyrrhotite specks. (Additional Biotite Gneiss content)
1707	11.39	12.47	Biotite Gneiss	1m	93%	14	57	28	34	0.5%		Disseminated pyrite and pyrrhotite specks.
1708	12.47	13.47	Biotite Gneiss	1m	100%	16	64	37	45	<0.1%		As above
1709	13.47	14.47	Biotite Gneiss	1m	100%	12	69	23	58	<0.1%		As above
1710	14.47	15.84	Biotite Gneiss	1m	73%	14	79	27	60	<0.1%		As above
1711	15.84	16.63	Biotite Gneiss	1m	100%	12	56	86	165	2%		Small blebs of pyrite and pyrrhotite of 1-3% mainly associated with amphibolitegneiss. Narrow pyrrhotite/ amphibolite wedge at 16.25m.(Additional [illegible] content)
1712	16.63	17.63	Quartzo feldspathic band	1m	100%	12	23	21	34	<0.1%		Rare specks of pyrite and pyrrhotite, possibly also some very small molybdenum specks.
1713	17.63	18.63	Biotite Gneiss	1m	100%	14	22	12	12	<0.1%		Rare disseminated sulphide speck.

Consolidated Gold Fields Limited

SULPHIDE LOG / SAMPLE SHEET

Sheet No. 2

D.D.H. No. SBH 1

Sample No.	From	To	Rock Type	Length	Recovery	Assay Results Percentage Pb	Zn	Cu.	Ni.	Vol. % Sulphide	Graphite	Description
GS 1714	18.63m	19.32m	Biotite Gneiss	1m	100%	14	64	111	137	<0.1%		As above
1715	19.32	20.40	Biotite Gneiss	1m	93%	12	165	130	126	<0.1%		As above
1716	20.40	21.40	Garnet Amphibolite	1m	100%	20	56	77	118	1%		Disseminated blebs and threads of pyrites and pyrrhotite
1717	21.40	22.40	Garnet Amphibolite	1m	100%	22	47	34	43	1%		As above
1718	22.40	23.41	Garnet Amphibolite	1m	100%	20	39	89	55	1%		As above
1719	23.41	24.41	Biotite Gneiss	1m	100%	14	63	57	47	<0.1%		Minor specks of pyrites only.
1720	24.41	25.41	Biotite Gneiss	1m	100%	18	78	15	22	<0.1%		As above
1721	25.41	26.31	Biotite Gneiss	1m	100%	18	73	36	49	0.2		Disseminated pyrites specks usually 0.1% but increas to 0.5% in amphibolite rich band.
1722	26.31	27.31	Biotite Gneiss	1m	100%	20	81	55	38	<0.1%		Minor specks of pyrites only.
1723	27.31	28.32	Biotite Gneiss	1m	100%	18	81	38	43	<0.1%		As above
1724	28.32	29.50	Biotite-Hornblende Gneiss	1m	85%	18	107	63	64	2%		Disseminated specks of pyrrhotite varying from 1-3% Additional hornblende biotite content.
1725	29.50	30.50	Hornblende Biotite Gneiss	1m	100%	14	47	44	33	2%		As above
1726	30.50	31.50	Hornblende Gneiss	1m	100%	24	75	106	130	2%		As above
1727	31.50	32.50	Amphibolite	1m	99%	18	35	55	83	0.4%		Disseminated pyrite specks.
1728	32.50	33.50	Amphibolite	1m	99%	12	31	35	50	0.4%		As above
1729	33.50	34.34	Amphibolite	1m	100%	12	26	80	348	0.4%		As above

Consolidated Gold Fields Limited

SULPHIDE LOG / SAMPLE SHEET

Sheet No. 3

D.D.H. No. SBH 1

Sample No.	From	To	Rock Type	Length	Recovery	Assay Results Percentage Pb	Zn	Cu.	Ni.	Vol. % Sulphide	Graphite	Description
GS 1731	35.34m	36.32m	Biotite Gneiss	1m	100%	16	45	109	58	<0.1%		Disseminated pyrite specks. Additional Amphibolite content.
1905	36.32	37.32	Amphibolite	1m	99%	12	43	38	200	0.5%		Generally 0.1% disseminated sulphides, but with occasional 1% rich bands.
1906	37.32	38.32	Biotite Gneiss	1m	99%	10	59	83	59	0.5%		Disseminated pyrite specks
1907	38.32	39.32	Biotite Gneiss	1m	99%	12	50	66	278	0.4%		As above
1908	39.32	40.32	Biotite Gneiss	1m	99%	14	53	62	396	<0.1%		As above (Additional Ultrabasic Gneiss content)
1909	40.32	41.33	Ultrabasic Gneiss	1m	100%	14	33	32	520	0.1%		As above
1910	41.33	42.33	Garnet-Biotite Gneiss	1m	100%	16	67	90	176	2%		Disseminated pyrite specks
1911	42.33	43.33	Biotite Gneiss	1m	100%	22	112	127	112	3%		As above ~~&~~ with 5-7% in quartz rich sections
1912	43.33	44.33	Biotite Gneiss	1m	100%	14	69	73	86	3%		As above
1913	44.33	45.31	Biotite Gneiss	1m	100%	10	70	42	72	1%		As above
1914	45.31	46.31	Biotite Gneiss	1m	100%	20	63	122	115	5%		Disseminated pyrrhotite specks and threads
1915	46.31	47.31	Biotite Gneiss	1m	100%	12	64	31	62	1%		As above
1916	47.31	48,31	Amphibolite	1m	99%	18	59	38	77	0.5%		As Above (Additional Biotite Gneiss content)
1917	48.31	49.31	Hornblende Gneiss	1m	99%	16	65	37	50	2%		As above(Additional Biotite Gneiss content)
1918	49.31	50.41	Hornblende Gneiss	1m	99%	18	75	46	82	0.4%		As above(Additional Biotite Gneiss content)
1919	50.41	51,41	Hornblende Gneiss	1m	100%	16	68	43	81	0.4%		As above(Additional Biotite Gneiss content)

Consolidated Gold Fields Limited

SULPHIDE LOG / SAMPLE SHEET

Sheet No: 4

DDH. No.: SBH 1

Sample No.	From	To	Rock Type	Length	Recovery	Assay Results Percentage Pb	Zn	Cu.	Ni.	Vol. % Sulphide	Graphite	Description
GS 1921	52.41m	53.37m	Biotite Gneiss	1m	100%	20	117	33	72	0.4%		Disseminated pyrrhotite specks
1922	53.37	54.37	Biotite Gneiss	1m	100%	18	90	38	58	0.4%		As above
1923	54.37	55.37	Biotite Gneiss	1m	100%	18	109	41	79	0.4%		As above
1924	55.37	56.37	Biotite Gneiss	1m	100%	20	108	40	83	0.5%		As above
1925	56.37	57.37	Biotite Gneiss	1m	100%	18	100	38	72	0.5%		As above
1926	57.37	58.37	Biotite Gneiss	1m	100%	16	85	52	98	0.5%		As above
1927	58.37	59.37	Biotite Gneiss	1m	100%	18	97	53	101	0.5%		As above
1928	59.37	60.42	Garnet-Biotite Gneiss	1m	99%	16	118	96	214	0.5%		Disseminated pyrite specks in close association with the garnets. [illegible]

Consolidated Gold Fields Limited

SULPHIDE LOG / SAMPLE SHEET

Sheet No 1 | DDH. No. SBH 2

Sample No.	From	To	Rock Type	Length	Recovery	Assay Results Percentage Pb	Zn	Cu.	Ni.	Vol. % Sulphide	Graphite	Description
GS 1732	3.17m	4.10m	Amphibolite	1m	95%	12	49	177	101	2%		Disseminated specks and blebs of pyriteand pyrrhotite along main rock foliation.
1733	4.10	5.20	Amphibolite	1m	95%	16	65	139	129	2%		As above
1734	5.20	6.20	Amphibolite	1m	99%	26	76	204	202	1%		Minor sulphide dissemination with pyrrhotite veins and wedges from 5.50-5.70m averaging 10-15%
1735	6.20	7.21	Biotite Gneiss	1m	99%	10	69	87	103	0.4%		~~(Additional Biotite Gneiss content)~~ Disseminated pyrite specks only.
1736	7.21	8.21	Biotite Gneiss	1m	100%	20	76	110	108	2%		Minor sulphide dissemination with 3% sulphide rich quartz veins.
1737	8.21	9.21	Garnet Amphibolite	1m	100%	12	53	126	128	0.4%		Sulphide rich quartz veins, otherwise little sulphide. ([illegible])
1738	9.21	10.15	Garnet Gneiss	1m	100%	24	36	160	267	4%		Occasional disseminated pyrite specks. (Additional Amphibolite content)
1739	10.15	11.15	Amphibolite	1m	100%	12	18	36	104	0.4%		As above.
1740	11.15	12.16	Amphibolite	1m	99%	14	18	28	69	0.4%		As above.
1741	12.16	13.28	Altered Amphibolite	1m	89%	10	20	31	118	0.4%		As above.
1742	13.28	14.28	Ultrabasic	1m	100%	16	86	95	625	0.2%		As above.
1743	14.28	15.28	Ultrabasic	1m	100%	22	21	58	1040	<0.1%		Absent to very low disseminated sulphide specks only.
1744	15.28	16.25	Ultrabasic	1m	100%	20	14	53	940	<0.1%		As above.
1745	16.25	17.25	Ultrabasic	1m	100%	16	23	45	960	<0.1%		As above.
1746	17.25	18.18	Altered Amphibolite	1m	100%	18	41	78	580	4%		Disseminated specks and blebs of pyrrhotite.
1747	18.18	19.16	Amphibolite	1m	100%	16	60	560	340	15%		Sub-massive 40% pyrrhotite matrix from 18.45-18.55m decreasing then to 10% with 0.5% chalcopyrite associati ~~(Additional Garnet-Biotite Gneiss)~~
1748	19.16	20.16	Amphibolite	1m	100%	16	73	310	198	2%		Disseminated blebs and threads of pyrrhotite (Additional Garnet - Biotite Gneiss content)

Consolidated Gold Fields Limited

SULPHIDE LOG / SAMPLE SHEET

Sheet No 2

D.D.H. No SBH 2

Sample No.	From	To	Rock Type	Length	Recovery	Assay Results Percentage				Vol. %		Description
						Pb	Zn	Cu.	Ni.	Sulphide	Graphite	
GS 1749	20.16m	21.16m	Biotite Gneiss	1m	100%	14	131	405	230	7%		10% disseminated pyrrhotite decreasing after 0.40m of section.
1750	21.16	22.37	Hornblende Gneiss	1m	83%	22	75	64	71	0.2%		Disseminated sulphide specks.
1751	22.37	23.37	Hornblende Gneiss	1m	100%	24	53	61	530	.5%		As above
1752	23.37	24.37	Garnet-Biotite Gneiss	1m	100%	16	111	195	160	7%		Disseminated specks and threads of pyrrhotite
1753	24.37	25.13	Garnet Amphibolite	1m	100%	20	49	49	57	0.3%		Disseminated specks of pyrrhotite confined to almost entirely upper garnet amphibolite unit
1754	25.13	26.13	Biotite Gneiss	1m	100%	14	44	62	52	<0.1%		(Additional Biotite Gneiss Content) Disseminated sulphide specks.
1755	26.13	27.12	Garnet Amphibolite	1m	100%	32	161	38	78	<0.1%		As above
1756	27.12	28.15	Garnet Amphibolite	1m	100%	24	76	49	46	<0.1%		As above
1757	28.15	29.15	Garnet Amphibolite	1m	100%	18	43	53	35	<0.1%		As above (Additional Amphibolite Gneiss content)
1758	29.15	30.15	Hornblende Gneiss	1m	100%	14	25	28	18	<0.1%		As above
1759	30.15	31.46	Hornblende Gneiss	1m	76%	16	25	36	21	<0.1%		As above
1760	31.46	32.46	Hornblende Gneiss	1m	100%	16	41	58	39	<0.1%		As above
1761	32.46	33.31	Garnet Amphibolite	1m	100%	18	34	102	50	0.4%		As above
1762	33.31	34.31	Garnet Amphibolite	1m	100%	22	39	67	44	0.4%		As above
1763	34.31	35.31	Garnet Amphibolite	1m	100%	12	21	68	26	<0.1%		As above
1764	35.31	36.21	Garnet Amphibolite	1m	100%	12	35	107	41	0.4%		As above
1765	36.21	37.21	Garnet Amphibolite	1m	100%	14	42	124	52	0.4%		As above

Consolidated Gold Fields Limited

SULPHIDE LOG / SAMPLE SHEET

Sheet No 3 | DDH. No. SBH 2

Sample No.	From	To	Rock Type	Length	Recovery	Assay Results Percentage Pb	Zn	Cu.	Ni.	Vol. % Sulphides	Graphite	Description
GS 1766	37.21m	38.21	Garnet Amphibolite	1m	100%	16	43	127	49	0.4%		Disseminated sulphide specks with possible small chalcopyrite content.
1767	38.21	39.13	Garnet Amphibolite	1m	100%	18	37	112	52	0.1%		Disseminated sulphide specks confined to fresh garnet amphibolite (with alteration)
1768	39.13	40.13	Garnet Amphibolite	1m	100%	10	34	132	48	<0.1%		As above (with alteration)
1769	40.13	41.21	Garnet Amphibolite	1m	93%	12	39	103	45	0.1%		Disseminated sulphide specks
1770	41.21	42.21	Biotite Gneiss	1m	100%	16	52	27	44	<0.1%		As above
1771	42.21	43.11	Biotite Gneiss	1m	100%	12	53	20	39	<0.1%		As above
1772	43.11	44.27	Biotite Gneiss	1m	86%	18	70	19	51	<0.1%		As above
1773	44.27	45.27	Biotite Gneiss	1m	100%	16	46	25	32	<0.1%		As above
1774	45.27	46.25	Biotite Gneiss	1m	100%	16	101	79	45	0.5%		Occasional sulphide bleb thread
1775	46.25	47.25	Garnet Biotite Gneiss	1m	100%	12	47	36	36	<0.1%		Disseminated specks of sulphide rare.
1776	47.25	48.26	Garnet Hornblende Gneiss	1m	99%	10	39	17	23	0.1%		As above [illegible]
1777	48.26	49.26	Leucocratic Biotite Gneiss	1m	100%	10	25	27	34	3%		Disseminated pyrrhotite specks up to 5% in main gneiss with up to 3% associated with quartz bands
1778	49.26	50.25	Biotite Gneiss	1m	100%	20	145	153	95	10%		Threads & blebs of pyrrhotite disseminated along foliated planes with 10% pyrrhotite up till 50m includin 1% chalcopyrite.
1779	50.25	51.25	Leucocratic Biotite Gneiss	1m	100%	8	10	18	12	0.4%		Disseminated pyrrhotite specks.
1780	51.25	52.10	Garnet Amphibolite	1m	100%	14	38	17	43	0.4%		As above -
1781	52.10	53.10	Garnet Amphibolite	1m	100%	10	24	24	59	5%		Disseminated sulphide specks with rich band at base
1782	53.10	54,10	Garnet Biotite Gneiss	1m	100%	10	70	145	97	1%		(Additional Hornblende Gneiss content) 53.95-54.05m Disseminated pyrites specks with rich bands from

Consolidated Gold Fields Limited **SULPHIDE LOG / SAMPLE SHEET**

Sheet No 4 — D.D.H. No SBH 2

Sample No.	From	To	Rock Type	Length	Recovery	Assay Results Percentage Pb	Zn	Cu	Ni	Vol. % Sulphide	Graphite	Description
GS 1783	54.10m	55.08m	Garnet-Biotite Gneiss	1m	100%	16	81	59	79	0.5%		Disseminated pyrite specks.
1784	55.08	56.08	Biotite Gneiss	1m	100%	12	82	57	49	0.5%		As above
1785	56.08	57.13	Biotite Gneiss	1m	95%	16	71	145	59	0.5%		As above
1786	57.13	58.13	Amphibolite	1m	100%	10	25	90	40	0.2%		As above
1787	58.13	59.10	Garnet Amphibolite	1m	100%	8	19	160	57	0.5%		As above
1788	59.10	60.10	Amphibolite	1m	100%	14	16	36	126	0.2%		As above
1789	60.10	61.06	Amphibolite	1m	99%	10	17	77	68	0.2%		As above
1790	61.06	62.15	Amphibolite	0.95m	87%	12	16	76	60	0.2%		As above

Consolidated Gold Fields Limited

SULPHIDE LOG / SAMPLE SHEET

Sheet No 1

DDH. No. SBH 3

Sample No.	From	To	Rock Type	Length	Recovery	Assay Results Percentage Pb	Zn	Cu.	Ni.	Vol. % Sulphide	Graphite	Description
GS 1791	0.66m	1.66m	Banded Garnet Amphibolite	1m	100%	14	45	87	34	1%		Disseminated specks and threads of pyrite with possibly very minor chalcopyrite associated.
1792	1.66	2.64	Banded Garnet Amphibolite	1m	100%	10	36	53	30	0.4%		As above
1793	2.64	4.33	Banded Garnet Amphibolite	1.35m	80%	12	44	93	51	0.4%		As above
1794	4.33	5.38	Quartzo Feldspathic Band	1m	95%	10	29	20	24	0.2%		Very minor sulphide disseminations only.
1795	5.38	6.38	Quartzo Feldspathic Band	1m	100%	10	30	43	23	0.2%		As above
1796	6.38	7.35	Garnet Amphibolite	1m	100%	12	31	103	38	0.4%		As above
1797	7.35	8.35	Garnet Amphibolite	1m	96%	14	42	121	44	0.4%		As above
1798	8.35	9.35	Garnet Amphibolite	1m	96%	10	39	93	40	0.4%		As above
1799	9.35	10.42	Biotite Gneiss	1m	94%	14	40	25	35	0.2%		As above
1800	10.42	11.42	Amphibolite	1m	100%	12	32	51	365	<0.1%		As above
1801	11.42	12.44	Amphibolite	1m	98%	18	47	12	125	<0.1%		As above
1802	12.44	13.44	Biotite Gneiss	1m	100%	12	61	6	47	<0.1%		As above
1803	13.44	14.44	Biotite Gneiss	1m	100%	10	64	210	73	10%		Main pyrrhotite band of 15-20% from 13.76-13.85m with minor chalcopyrite association and from 15.15-15.26m of 20-30% pyrite.
1804	14.44	15.40	Biotite Gneiss	1m	100%	25	115	315	89	15%		and pyrrhotite with little chalcopyrite. Otherwise pyrrhotite disseminations very from 1-5% adjacent to the sulphide bands.
1805	15.40	16.39	Biotite Gneiss	1m	100%	12	56	13	40	0.8%		Disseminated pyrrhotite specks.
1806	16.39	17.39	Biotite-Hornblende Gneiss	1m	100%	14	83	19	30	1%		As above
1807	17.39	18.39	Biotite-Hornblende Gneiss	1m	100%	12	70	61	42	2%		As above

Consolidated Gold Fields Limited

SULPHIDE LOG / SAMPLE SHEET

Sheet No 2 | DDH. No. SBH 3

Sample No.	From	To	Rock Type	Length	Recovery	Assay Results Percentage Pb	Zn	Cu.	Ni.	Vol. % Sulphide	Graphite	Description
GS 1808	18.39m	19.39	Garnet Amphibolite	1m	100%	10	56	20	19	0.1%		Minor sulphide specks only.
1809	19.39	20.39	Garnet-Biotite Gneiss	1m	100%	14	60	28	34	0.4%		Disseminated pyrrhotite specks.
1810	20.39	21.39	Garnet-Biotite Gneiss	1m	100%	14	61	130	65	0.5%		As above with small pyrrhotite wedge at 22.[illegible]8m
1811	21.39	22.40	Garnet-Biotite Gneiss	1m	100%	16	29	146	79	1%		Disseminated sulphide specks often associated withthe garnet content and a small wedge at 22.50m
1812	22.40	23.39	Garnet-Biotite Gneiss	1m	100%	16	65	32	149	0.5%		Disseminated sulphide specks.
1813	23.39	24.38	Garnet-Biotite Gneiss	1m	100%	18	139	89	78	0.4%		As above
1814	24.38	25.38	Quartzo Feldspathic Band	1m	100%	20	56	28	48	0.8%		Disseminated specks with increase from 0.5% to 1% sulphides at the gneiss contact.
1815	25.38	26.38	Garnet-Biotite Gneiss	1m	100%	16	65	39	25	0.5%		Pyrrhotite specks with minor chalcopyrite content.
1816	26.38	27.37	Garnet-Biotite Gneiss	1m	100%	12	42	13	12	0.5%		As above, with sulphides increasing within amphibolite rich bands.
1817	27.37	28.35	Garnet-Amphibolite Gneiss	1m	100%	14	49	58	29	0.4%		Minor sulphide disseminations only.
1818	28.35	29.34	Garnet-Hornblende Gneiss	1m	100%	14	29	76	40	0.2%		As above
1819	29.34	30.34	Amphibolite.	1m	100%	14	22	25	57	0.2%		As above
1820	30.34	31.37	Amphibolite &Ultrabasic	1m	97%	14	24	65	330	0.1%		As above
1821	31.37	32.37	Ultrabasic	1m	99%	16	35	98	605	0.1%		As above - section contains alteration zone.
1822	32.37	33.33	Amphibolite &Ultrabasic	1m	100%	16	51	56	75	0.1%		Minor sulphide dissemination only.
1823	33.33	34.33	Biotite Gneiss	1m	100%	18	49	38	12	0.1%		As above
1824	34.33	35.33	Biotite Gneiss	1m	100%	16	55	52	16	0.1%		As above

Consolidated Gold Fields Limited

SULPHIDE LOG / SAMPLE SHEET

Sheet No 3

D.D.H. No. SBH 3

Sample No.	From	To	Rock Type	Length	Recovery	Assay Results Percentage Pb	Zn	Cu	Ni	Vol. % Sulphide	Graphite	Description
GS 1825	35.33m	36.01m	Biotite Gneiss	0.68m	100%	16	66	32	12	0.1%		Minor sulphide dissemination only.

Consolidated Gold Fields Limited

SULPHIDE LOG / SAMPLE SHEET

Sheet No: 1

DDH. No.: SBH 4

Sample No.	From	To	Rock Type	Length	Recovery	Assay Results Percentage: Pb	Zn	Cu	Ni	Vol. %: Sulphide	Graphite	Description
GS 1826	0.94m	2.04m	Biotite Gneiss	1m	91%	16	91	78	78	0.4%		Disseminated pyrrhotite specks generally 0.1% increasing to 0.5% at 1.40m possibly with some slight chalcopyrite.
1827	2.04	3.14	Hornblende Gneiss	1m	91%	12	58	55	139	0.4%		Minor sulphide dissemination
1828	3.14	4.14	Hornblende Gneiss	1m	100%	20	76	39	57	0.1%		As above
1829	4.14	5.14	Garnet-Biotite Gneiss	1m	100%	12	74	89	106	0.2%		As above
1830	5.14	6.17	Biotite Gneiss	1m	97%	14	74	43	48	0.1%		As above
1831	6.17	7.17	Biotite Gneiss	1m	100%	14	49	42	64	0.5%		Sulphide specks with occasional thin pyrrhotite, chalcopyrite veinlets.
1832	7.17	8.17	Biotite-Hornblende Gneiss	1m	100%	20	50	187	231	7%		Disseminated pyrrhotite specks with 10% pyrrhotite threads and minor chalcopyrite association from 7.50-8.00m
1833	8.17	9.18	Biotite-Hornblende Gneiss	1m	99%	16	70	66	78	5%		Disseminated pyrrhotite specks, threads and patches.
1834	9.18	10.18	Garnet Amphibolite	1m	100%	14	42	31	45	0.5%		Minor sulphide dissemination of specks, threads & blebs.
1835	10.18	11.18	Amphibolite	1m	100%	14	47	62	53	0.5%		As above
1836	11.18	12.27	Amphibolite	1m	92%	12	39	28	26	0.5%		As above
1837	12.27	13.27	Biotite-Hornblende Gneiss	1m	100%	12	51	27	23	0.4%		As above
1838	13.27	14.28	Biotite Gneiss	1m	99%	14	72	101	43	0.5%		As above
1839	14.28	15.28	Biotite-Hornblende Gneiss	1m	100%	12	54	28	36	0.5%		As above
1840	15.28	16.28	Biotite-Hornblende Gneiss	1m	100%	16	51	15	37	0.5%		As above
1841	16.28	17.23	Biotite Gneiss	1m	100%	16	57	29	40	0.5%		As above
1842	17.23	18.23	Amphibolite	1m	100%	16	84	90	42	0.4%		As above

Consolidated Gold Fields Limited

SULPHIDE LOG / SAMPLE SHEET

Sheet No 2 | DDH. No. SBH 4

Sample No.	From	To	Rock Type	Length	Recovery	Assay Results Percentage: Pb	Zn	Cu	Ni.	Vol. %: Sulphide	Graphite	Description
GS 1843	18.23m	19.23m	Amphibolite	1m	100%	18	29	70	537	0.1%		Weak sulphide dissemination with occasional rich bands
1844	19.23	20.23	Biotite-Hornblende Gneiss	1m	100%	12	54	103	79	0.4%		As above
1845	20.23	21.23	Garnet Amphibolite	1m	100%	12	52	128	28	0.4%		As above
1846	21.23	22.19	Amphibolite	1m	100%	10	46	102	49	0.4%		As above
1847	22.19	23.25	Amphibolite	1m	94%	12	39	57	187	<0.1%		As above
1848	23.25	24.25	Ultrabasic Gneiss	1m	100%	14	30	39	670	0.1%		As above
1849	24.25	25.25	Amphibolite	1m	100%	12	29	139	427	0.5%		As above
1850	25.25	26.23	Biotite Gneiss	1m	100%	12	59	85	53	0.4%		As above
1851	26.23	27.23	Amphibolite	1m	100%	14	39	33	148	0.4%		As above
1852	27.23	28.30	Amphibolite	1m	94%	12	44	35	168	0.4%		As above
1853	28.30	29.30	Biotite Gneiss	1m	100%	16	58	58	64	0.4%		As above
1854	29.30	30.32	Altered Amphibolite	1m	98%	12	34	21	760	0.4%		As above
1855	30.32	31.37	Garnet-Biotite Gneiss	1m	95%	16	81	111	129	0.5%		As above
1856	31.37	32.37	Garnet-Biotite Gneiss	1m	100%	14	77	118	59	0.7%		Disseminated sulphide specks and threads with a minor chalcopyrite association.
1857	32.37	33.37	Garnet-Biotite Gneiss	1m	100%	14	92	132	61	1%		As above with narrow 2-3% rich disseminated sulphide bands from 33.15-33.20m.
1858	33.37	34.42	Garnet-Biotite Gneiss	1m	95%	20	96	76	63	2%		Disseminated sulphide specks and threads with a minor chalcopyrite content and small rich patches up to 5%
1859	34.42	35.42	Garnet-Biotite Gneiss	1m	100%	12	77	36	50	0.5%		Disseminated sulphide specks & threads with decrease across biotite amphibolite band at 34.55-35.[illegible]m

Consolidated Gold Fields Limited

SULPHIDE LOG / SAMPLE SHEET

Sheet No 3

D.D.H. No. SBH 4

Sample No.	From	To	Rock Type	Length	Recovery	Pb	Zn	Cu.	Ni.	Sulphide	Graphite	Description
						Assay Results Percentage				Vol. %		
GS 1860	35.42m	36.42m	Garnet Biotite Gneiss	1m	100%	12	91	84	36	1%		Disseminated sulphide specks.
1861	36.42	37.40	Biotite Gneiss	1m	100%	14	73	46	52	1%		As above
1862	37.40	38.40	Biotite Gneiss	1m	100%	12	58	44	93	0.5%		As above
1863	38.40	39.46	Biotite Gneiss	1m	94%	16	101	32	69	0.5%		As above
1864	39.46	40.46	Biotite Gneiss	1m	100%	18	104	43	96	0.5%		As above
1865	40.46	41.46	Biotite Gneiss	1m	100%	16	106	30	91	0.5%		As above
1866	41.46	42.38	Biotite Gneiss	1m	100%	12	93	49	67	0.5%		As above
1867	42.38	43.38	Biotite Gneiss	1m	100%	16	92	43	71	0.5%		As above
1868	43.38	44.46	Biotite Gneiss	1m	93%	18	110	41	83	0.5%		As above
1869	44.46	45.44	Biotite Gneiss	1m	100%	16	113	25	85	1%		As above
1870	45.44	46.27	Biotite Gneiss	0.71m	85%	14	135	79	61	1%		As above

Diamond Drill Core Record .... Project Sheet No. D.D.H. No.

From	Rep/Rec	GEOLOGICAL LOG ROCK TYPE	DESCRIPTION	ASSAY RECORD Sample No.	From	Length	Recov.				
59.40	60.42	Garnet-Biotite	gneiss. Variable, 0.2-0.5% pyrite specks								
		Gneiss	associated with large pink garnets usually enclosed								
			by bronze biotite mica.								
			(Recovery 99%)								
			END OF BOREHOLE 60.42m								

Consolidated Gold Fields Limited

SULPHIDE LOG / SAMPLE SHEET

Sheet No

DDH No. SBH 5

Sample No.	From	To	Rock Type	Length	Recovery	Assay Results Percentage Pb	Zn	Cu	Ni	Vol. % Sulphide	Graphite	Description
GS 1871	1.25m	2.85m	Ultrabasic Gneiss	1m	62%	10	52	29	801	<0.1%		Very occasional sulphide speck only.
1872	2.85	3.80	Garnet-Biotite Gneiss	1m	100%	8	47	38	62	0.5%		Disseminated sulphide specks(Additional Amphibolite content
1873	3.80	4.80	Pyrrhotite Amphibolite	1m	100%	12	49	1360	640	20%		Disseminated sulphide threads averaging 10% throughout with 30% sub-massive sulphide matrix band from 4.11-4.21m Predominately pyrrhotite, with small pyrite & chalcopyrite association.
1874	4.80	5.78	Garnet-Hornblende Gneiss	1m	100%	10	46	159	620	0.[illegible]%		Large section of barren ultrabasic rock decreases weak 0.2% content of main lithology.
1875	5.78	6.77	Ultrabasic Gneiss	1m	99%	12	33	34	600	0.3%		Section of garnet amphibolite containing sulphides increases average value of an otherwise barren section.
1876	6.77	7.77	Ultrabasic Gneiss	1m	99%	10	40	317	650	5%		1% disseminated pyrrhotite with 1cm pyrite band at 7.30-7.42m with small chalcopyrite lense at 7.35m.
1877	7.77	8.77	Garnet Amphibolite	1m	100%	10	46	54	44	0.5%		Disseminated sulphide specks.
1878	8.77	9.76	Amphibolite	1m	100%	12	53	11	43	0.1		As above
1879	9.76	10.76	Amphibolite	1m	100%	10	44	27	38	0.1		As above
1880	10.76	11.70	Garnet Amphibolite	1m	100%	12	53	48	45	0.1		As above
1881	11.70	12.70	Garnet Amphibolite	1m	100%	12	51	128	182	2%		As above, with from 11.70-12.05m rich 5% zone of disseminated specks and patches of pyrite often associate with the garnet content.
1882	12.70	13.70	Amphibolite	1m	100%	48	59	42	61	0.1%		Very occasional sulphide specks only.
1883	13.70	14.77	Ultrabasic Gneiss	1m	93%	22	65	45	890	0.1%		As above
1884	14.77	15.77	Ultrabasic Gneiss	1m	100%	18	56	51	950	0.1%		As above
1885	15.77	16.81	Ultrabasic Gneiss	1m	96%	12	65	66	218	0.3%		As above
1886	16.81	17.81	Hornblende Gneiss	1m	100%	12	66	136	133	0.5%		As above with occasional patches up to 1% sulphides.
1887	17.81	18.90	Ultrabasic Gneiss	1m	92%	10	49	67	730	0.1%		Minor disseminated sulphide specks.

Consolidated Gold Fields Limited

SULPHIDE LOG / SAMPLE SHEET

Sheet No. 2 | DDH. No. SBH 5

Sample No.	From	To	Rock Type	Length	Recovery	Assay Results Percentage				Vol. %		Description
						Pb	Zn	Cu	Ni	Sulphide	Graphite	
GS 1888	18.90m	19.90m	Hornolende Gneiss	1m	100%	20	59	103	500	0.5%		Minor disseminated sulphide rich bands.
1889	19.90	20.94	Ultrabasic Gneiss	1m	96%	12	52	37	1210	0.1%		Very occasional sulphide speck.
1890	20.94	21.94	Ultrabasic Gneiss	1m	100%	14	68	48	1030	0.2%		As above
1891	21.94	22.94	Hornblende Gneiss	1m	100%	12	52	124	191	0.4%		As above
1892	22.94	23.80	Garnet-Biotite Gneiss	1m	100%	14	63	122	243	0.4%		As above
1893	23.80	24.80	Hornblende-Biotite Gneiss	1m	100%	12	95	31	41	0.2%		As above
1894	24.80	25.88	Acid Gneiss	1m	93%	16	122	92	74	3%		Pyrrhotite (1%) and pyrite (2%) specks disseminated through gneiss but with concentration at fold core.
1895	25.88	26.88	Biotite Gneiss	1m	100%	44	156	39	61	1%		Disseminated pyrite specks mostly associated with quartz banding.
1896	26.88	27.82	Biotite Gneiss	1m	100%	28	84	39	49	1%		As above
1897	27.82	28.82	Biotite Gneiss	1m	100%	28	114	27	46	1%		As above
1898	28.82	29.83	Biotite Gneiss	1m	99%	12	83	38	70	0.5%		As above
1899	29.83	30.92	Biotite Gneiss	1m	91%	32	64	25	43	0.5%		As above
1900	30.92	31.92	Biotite Gneiss	1m	100%	14	72	25	52	0.4%		As above
1901	31.92	32.93	Biotite Gneiss	1m	99%	10	81	22	49	0.4%		As above
1902	32.93	33.93	Biotite Gneiss	1m	100%	16	101	142	93	1%		As above, with zone of high disseminated sulphide content from 33.40-33.70m.
1903	33.93	34.93	Biotite Gneiss	1m	100%	16	78	98	110	0.4%		As above
1904	34.93	35.34	Garnet Gneiss	0.47m	100%	10	80	70	136	0.5%		As above