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GOLD FIELDS EXPLORATION P.L.

E.L. 9/66 TYNDALL

Report for Quarter Ending 30-9-82

J. G. PURVIS.

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E.L. 9/66 - TYNDALL

REPORT FOR QUARTER ENDING 30TH SEPTEMBER, 1982.

SUMMARY

Work during the quarter concentrated on three prospect areas - RED HILLS, HENTY FAULT ZONE, and HUXLEY.

At HENTY FAULT ZONE, further drilling was undertaken following relogging of the old drillcore and surveying of new geological sections. Drillhole HFZ 9, completed at 268m, intersected 0.9m of massive sulphide-mainly pyrite with lesser basemetal sulphides. Hole HFZ 10 is currently in progress.

At RED HILLS, relogging of drillcore and compilation of geological sections at 50m intervals, has led to the decision to drill three further holes in the Red Hills Basin. This drilling is planned to commence at the end of October.

At HUXLEY, mapping and geochemical bedrock sampling has been completed on a 10 line km 200m x 25m grid. Several zones of Pb/Zn bedrock anomalies and outcropping Pb/Zn mineralisation have been defined within altered rhyolitic tuffs. Further work is planned.

A. RED HILLS - WORK COMPLETED

Work has focused on the Red Hills Basin which lies immediately to the west of the Red Hills lavas. A 50m x 25m grid, with 800m of baseline and 5.1 km of sidelines, has been accurately surveyed with a theodolite to provide sections at right angles to the strike of the rocks. The sections have been levelled and existing drillhole collars picked up.

Drillholes RH 5, 6R, 7, 8 and 9 (totalling 1780m), have *in doris* been relogged. Fifteen geological sections have been drawn up and a perspex model of the prospect constructed. Some problems were experienced with conflicting survey data for the tracks of the old drillholes, and these are not yet resolved.

Geophysical data, collected in various surveys over the past 25 years, has been collated and is being reviewed by the Consultant geophysicist.

RESULTS:

A 'host horizon' which hosts the 2.8m massive basemetal sulphide body in RH 5, has been identified in RH 9 385m further south, RH 7 245m to the north, and RH 6R 105m beneath RH 5. In all these adjacent holes the host horizon is only weakly mineralised. However, separate lenses of massive sulphide 0.1-0.2m in thickness exist in holes RH 8 and 9, beneath and south of RH 5, and may represent further host horizons.

The geological picture that is being built up suggests that the basin peters out northwards and becomes more extensive and deeper, to the south. The area immediately south of RH 5, particularly between RH 5 and RH 9, is regarded as prospective. A large IP and coincident gravity anomaly exists in this area, and although much of the IP anomaly is clearly due to the presence of black pyritic shales, it is possible part of the geophysical responses could be due to mineralisation.

PLANNED PROGRAMME

Three drillholes totalling approximately 900m are planned in the Red Hills Basin - two between RH 5 and RH 9, and one 200m south of RH 9. It is hoped to commence drilling at the end of October.

B. HENTY FAULT ZONE

WORK COMPLETED

The programme has been aimed at comprehensively testing the massive sulphide first located by costeaning and later intersected in drillhole HFZ 6, in 1974. *In Doris.*

Drillholes HFZ 3, 4, 5 and 6, totalling 750m have been *In Doris.* relogged, and a 1.35 line km 100m x 25m grid accurately

surveyed over the prospect. Plans and section have been produced (see attached report by P.W. English), showing the relationship between the massive sulphide outcrop and drillhole intersection, and the surface geophysical and geochemical data. A diamond drilling programme to further test the massive sulphide horizon is currently in progress.

RESULTS

The work has confirmed that the 1.5m of massive sulphide in the costean is the same body as the 0.6m intersected in HFZ 6 150m further south. Although HFZ 5 105m directly beneath the costean did not intersect massive sulphide, the cherty tuffs that host the massive sulphide in the costean were present in this hole.

The new geological sections, based on relogging of the old holes, suggest that the mineralised sequence is not terminated at depth by either the Henty Fault or the unconformity at the top of the Tyndall Group. A zone several hundred metres long to the south and beneath hole HFZ 6 is indicated as having potential for the development of a sulphide body. A drilling programme to test this zone commenced on 20th September.

Hole HFZ 9, sited to test the sulphide horizon 100m below HFZ 6, was completed at 268m (see summary log below). The hole intersected 0.9m of massive sulphide (mainly pyrite with lesser sphalerite, galena and chalcopyrite), caught up in the edge of the Henty Fault - a massive zone of mylonised volcanics over 16m wide. The massive sulphide was again hosted by cherty tuffs identical to those in the costean. Unfortunately the hole was terminated only 5m beyond the sulphide while still in these cherty tuffs, due to drilling difficulties caused by the fault.

Although the hole demonstrated that the mineralised sequence is present beneath the fault at depth, the

continuing close proximity of the massive sulphide lens to the fault raises the possibility that the mineralisation will eventually terminate against it.

Hole HFZ 10, 100m south of holes HFZ 6 and 9, is currently in progress. *In Doris.*

SUMMARY LOG - HFZ 9

In Doris.

0-32m	FELSIC CRYSTAL-VITRIC ASH-FLOW TUFF AND INTERCALATED BASIC VOLCANICS.
32-78.1m	MASSIVE FELSIC DACITE LAVA.
78.1-86.85m	VARIABLE DACITIC TUFFACEOUS PYROCLASTIC.
86.85-152.45m	MIXED ZONE OF FELSIC ASH FLOW TUFF AND BASIC VOLCANICS.
152.45-203.20m	BASIC VOLCANIC.
203.20-220.10	ALBITISED FELSIC PYROCLASTIC.
220.10-245.60	MIXED ZONE OF BASIC VOLCANICS AND ALBITISED FELSIC PYROCLASTICS.
245.60-261.90	HENTY FAULT ZONE - SERICITIC SCHIST AND MYLONITE AFTER FELSIC VOLCANICS.
261.90-262	SHEARED GRAPHITIC TUFF with 5-10% pyrite and 2-3% chalcopyrite.
262-262.9	SHEARED AND SHATTERED MASSIVE SULPHIDE (Pyrite with lesser chalcopyrite, sphalerite, galena).
262.9-265.1	MASSIVE CHERT. Minor Pyrite.
265.1-268	CHERTY TUFFACEOUS FINE GRAINED SEDIMENT. Soft-sediment disruption to breccio-conglomerate in places. 2% pyrite.

C. HUXLEY

WORK COMPLETED

Systematic geological and geochemical surveys were commenced in the Huxley area following the favourable results of reconnaissance surveys earlier in the year.

A 10 line km 200m x 25m grid was cut and surveyed over the northern part of a belt altered pyritic rhyolitic

tuffs that trends through the prospect. The baseline was extended 3km to the south in preparation for further surveys.

The grid area has been mapped at 1:5000 scale and 358 geochemical samples collected. Most of these samples were taken by power augering into bedrock to avoid the effects of the intense leaching in the skeletal soils.

RESULTS

Several areas with bedrock anomalies in excess of 500ppm Pb and 500ppm Zn have been located. The anomaly peaks are in the order of 1000ppm. Several gossanous zones, some with visible galena and sphalerite, occur in the altered tuffs close to the Owen Conglomerate contact i.e.: in the upper part of the volcanic sequence. These zones gave rock sample values up to 1.1%Pb and 1%Zn (not coincident). A bedrock auger sample close to the high lead value gave a result of 125ppm Ag.

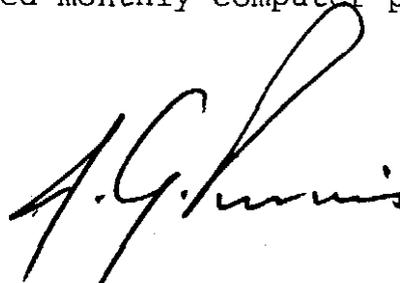
The mapping shows that the geology is extremely complex, with intense structural deformation due to tight folding and a set of NW trending faults.

PLANNED PROGRAMME

Due to difficulties with the access track, continuation of the geological and geochemical surveys has been deferred until summer.

D. EXPENDITURE

Expenditure during the quarter totalled \$76,569 . Details are provided in the attached monthly computer printout sheets.



J.G. PURVIS

Senior Geologist

PROPOSAL FOR FIVE DIAMOND DRILL HOLES
AT THE HENTY FAULT ZONE
MT. TYNDALL E.L. 9/66

SUBMITTED TO: MR. G. PURVIS, GOLD FIELDS EXPLORATION
PTY. LIMITED.

COPY TO: GETTY OIL COMPANY

SUBMITTED BY:

.....*P.W. English*.....
P.W. ENGLISH

DATE: SEPTEMBER, 1982

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SUMMARY

A detailed review of all the work carried out on the Henty Fault Zone (between 42N and 51N) up until 1981 has been completed. This review has included the re-logging of drill holes HFZ3,4,5 and 6, petrological work on sections of the drill core, reinterpretation of the geology, geochemistry and geophysics.

The geology of the Henty Fault Zone is now believed to consist of Queenstown Pyroclastics in the west conformably overlain by the Jukes Formation of the Tyndall Group in the east. The Queenstown Pyroclastics consist of andesitic lavas and tuffs with lenses of trachyandesitic perlites and pitchstones and the Jukes Formation consists of sandy to conglomeratic and brecciated volcanoclastic sediments.

These two groups are separated by a mineralised sequence which formed a restricted sedimentary basin and represents a period of quiescence. This sequence consists of dacitic to rhyolitic lavas and tuffs, tuffaceous sediments, dolomitic cherts and carbonaceous shales and siltstones.

The massive sulphide lens which was exposed in 1974 in a costean on line 49N (7120N) and later intersected in HFZ6 occurs within this mineralised sequence and was probably hosted by the dolomitic chert. The host units to this lens have undergone quartz-sericite-pyrite-carbonate-albite alteration typical of a volcano-hydrothermal system.

There does not appear to be any evidence to suggest that there has been displacement of these sequences by the Henty Fault.

The geological interpretation presented in this report suggests that there is room for down dip, down plunge and along strike extensions to the massive sulphide lens intersected in HFZ6. Five diamond drill holes have been recommended to test for these extensions.

1. INTRODUCTION

A review of the data collected to date on the Henty Fault Zone Prospect in the Mt. Tyndall E.L.9/66 has been carried out at the request of Gold Fields Exploration Pty. Limited. This review has concentrated on the southern section of the Henty Fault Zone, (i.e. 42N to 51N on the old imperial grid) and it does not include a review of the work carried out at the northern end of the Henty Fault Zone (i.e. 52N to 68N).

The work carried out during this review has included the following:-

- (i) Re-logging of the diamond drill core from holes HFZ 3,4,5 and 6 and the submitting of fourteen sections of drill core for petrological description.
- (ii) A review of all previous geological, geochemical and geophysical data collected between 1972 and 1980.
- (iii) The establishment of a new metric grid with theodolite control.
- (iv) An interpretation of the geological, geochemical and geophysical data collected to date.
- (v) The recommendation for the drilling of five more diamond drill holes.

This report presents the data obtained from this work and has a petrological report by Central Mineralogical Services attached in Appendix 2.

2. RE-LOGGING OF DIAMOND DRILL HOLES HFZ 3,4,5 AND 6

The drill core from all these drill holes was located and re-logged. Copies of the new drill logs are attached in Appendix 1. The only core found to be missing was the top 0-159' section of HFZ6. It should be noted that during reboxing of some of these holes in the past, sections of the core in HFZ4 (viz. 315'-340' and 630'-640') have been incorrectly placed in the trays.

All four of these drill holes which cover a strike length of 1200m have cut through readily correlateable lithologies with three basic stratigraphic sequences being recognised. These units consist of;

- (i) an older andesitic lava-tuff lava sequence,
- (ii) a mineralised dacitic-rhyolitic tuff and tuffaceous sedimentary sequence and,
- (iii) a younger volcanoclastic sequence. One hole, HF25 also intersected an orthoconglomerate which is probably younger than the volcanoclastics.

The following is a description of each of these sequences in relation to the petrological information which was obtained after the relogging had been carried out.

2.1. OLDER ANDESITIC LAVA-TUFF LAVA SEQUENCE

During the logging of this sequence two basic units were recognised. The first was a dark green fine to medium grained andesitic lava which was both massive and banded and the other was a more lighter coloured (grey-red pink), leucocratic well banded unit which was thought to contain rafts of more acid (rhyolitic) material in an andesitic matrix.

The petrological work has clarified this picture and shows that in fact the whole sequence consists of basic to intermediate (gabbroic-andesitic) lavas and glomeroporphyritic felsic perlites and pitchstones which have a leucocratic sodic-potassic trachyandesitic composition.

The discussion given in Williams Turner and Gilbert on perlites and pitchstones adequately accounts for the characteristics of this older basic to intermediate sequence. They say, "perlites and pitchstones are intimately mingled, as lenses and irregular streaks, within holocrystalline lavas, presumably because they formed from fractions of quickly vitrified magma that absorbed water vapour expelled from the more slowly cooled, holocrystalline fractions". They also say that "fluidal banding is a conspicuous feature" of these types of rocks and "it is

accentuated by red and brown oxidised streaks formed by streaming of volatiles". The red colouration is probably due to dusty hematite.

This unit probably belongs to the Queenstown Pyroclastics.

2.2 MINERALISED DACITIC-RHYOLITIC TUFF AND SEDIMENTARY SEQUENCE

This sequence has been schematically represented by a longitudinal section shown on the geological plan. It is represented by dacitic-rhyolitic lavas, tuffs, tuffaceous sediments, dolomitic cherts and carbonaceous shales. It is the host to the lead-zinc-copper massive sulphide lens.

The petrological work has shown that this sequence has undergone strong to moderate quartz-sericite-carbonate-pyrite alteration and strong to weak chlorite alteration. Table No. 1 (page 4) is a summary of the petrological work carried out on rocks from this sequence.

The important features to be noted from this petrological work are:-

- (a) The original host unit to the massive sulphide was probably a dolomitic chert.
- (b) A quartz-sericite-pyrite-albite-carbonate alteration assemblage of the volcano-hydrothermal model has been recognised in the host lithologies to the massive sulphide lens.
- (c) There is more carbonate (calcite and dolomite) associated with this sequence than previously recognised.

The longitudinal section mentioned earlier, shows that this sequence becomes thicker and changes in composition to the south, with the introduction of carbonaceous shale units. This indicates the development of a small sedimentary basin and a period of quiescence.

Table No. 1

Section No.	Hole No.	Depth (ft.)	Description	Alteration
	HFZ6	376 - 378	Massive Pb-Zn-Cu Sulphide Lens	
1206	HFZ6	384	Dacitic lithic tuff - sub-aerial or shallow subaqueous deposition	Strong qtz.-carb-sericite. Minor albite & dolom.
1207	HFZ6	407	Dacitic weakly flow brecciated lava.	Mod. to strong sericite, albite and pyrite.
1208	HFZ6	425	Dacitic lithic tuff with minor dolomite and barite in matrix.	Mod. to strong qtz.-sericite-pyrite.
1209	HFZ6	451	Psammopelitic ash	Mod. to strong albite, qtz. and dolomite
1210	HFZ6	456	Pelitic ash	Mod. to strong chlorite minor albite & seric.
1211	HFZ6	458	Lithic sandstone (volcaniclastic) matrix of quartz, dolomite and barite	Mod. sericite, qtz. and albite.
1212	HFZ5	420	Dolomitic chert. NB. Disseminated Pb-Zn-Cu sulphides between 422' and 425'.	
1213	HFZ5	436	Pelitic ash (similar to 1210)	Mod. to strong qtz.-sericite. Weak chlorite
1214	HFZ5	444	Arkosic siltstone (volcaniclastic)	Strong silicification weak sericite

2.3 VOLCANICLASTIC SEQUENCE

This sequence consists of units of sandy to conglomeratic and brecciated volcaniclastics which have very little matrix. Alteration of this sequence is mainly chloritic with some sections being strongly silicified. The clasts are sub-angular to rounded and vary in size from 5 to 100mm, but are generally 5 to 20mm. Some of the clasts are elongated and tend to be aligned with the primary banding. They consist of dacitic - rhyolitic lavas, and after receiving the petrological information they probably also have trachyandesite clasts which have been derived from the older andesitic sequence.

This unit is believed to correlate with the Jukes Formation of the Tyndall Group.

At the bottom of HFZ5, (viz. 666'-678') there is an ortho-conglomeratic unit which has similarities to the Mt. Owen Conglomerate.

2.4 STRUCTURAL INFORMATION

Three important points in relation to structure can be made from the re-logging of these holes.

Firstly, the measurements taken of the angles of bedding, primary layering or banding and schistosity to the long core axis (L.C.A.) indicates that all these sequences are steeply dipping to the west and they are gently folded.

The second point is that the Henty Fault or Shear Zone has not displaced any of these sequences and therefore does not cut off or displace the mineralised horizon at depth.

The third point is that there is no evidence in these drill holes for an unconformity between the older and younger sequences.

3. PREVIOUS GEOLOGICAL, GEOCHEMICAL AND GEOPHYSICAL INFORMATION

3.1 GEOLOGY

Detailed geological mapping of the Henty Fault Zone was first carried out in 1972-73 and it was later updated in 1977-78. Geological mapping in this area has been severely hampered by the lack of outcrop which is due to development of deep soils, a thin glacial cover and a dense vegetation cover.

The geological mapping carried out up until 1978 showed that the area consisted of Queenstown Pyroclastics in the west and Tyndall Group in the east. These two groups were shown to be separated by the Henty Fault. The Queenstown Pyroclastics were thought to consist of steeply dipping andesitic lavas, tuffs and intrusives with minor acid lavas all of which faced east. There was some doubt as to which unit of the Tyndall Group occurred in the east, but the last view was that it was the Comstock Tuff, which consisted of felsic volcanics and volcanoclastic sediments.

In February 1974 costeaning of an I.P. anomaly exposed a massive sulphide lens with a true width of 1.2m, interbedded with acid tuff. The description of this lens was given as follows; "the mineralisation consists of pyrite, chalcopyrite, galena and sphalerite. It exhibits banding, slump folding, has narrow siltstone bands within it and is obviously syngenetic, having affinities with the Roseberry orebody and more typically the Tasman Crown deposits at Comstock, being silicified, jasper is common, and in a similar stratigraphical position. Chip sampling of the body, which is slightly weathered, gave an average value of: 1.67%Cu, 1.68%Pb, 0.2%Zn, 95 g/tAg, 1.6 g/tAu (N.B. For comparison, the grade of the intersection in HF26 was 2' of 1.11% Cu, 4.0% Pb, 7.0% Zn and 16.7% S).

The position of this massive sulphide lens in the stratigraphy was not clearly stated between 1972 and 1980. However in 1974-75 it was suggested that, "a restricted basin existed

in the vicinity of L49N during the period of formation of the Queenstown Pyroclastics and the Tyndall Group". The occurrence of chert/jasper fragments in the sulphides suggested the presence of the restricted basin with chemical deposition of Fe, S, SiO₂ and base metals.

A room problem for the development of a large sulphide lens had been postulated because of the presence of the Henty Fault Zone and the unconformity between the Queenstown Pyroclastics and the Tyndall Group.

3.2 GEOCHEMISTRY

In the area under study in this report, soil sampling was undertaken over lines of I.P. anomalies in 1973-74. These lines included: 50N, 49N, 48N, 47N, 44N, 43N and 40N. It was stated that, "the soils within the Henty Fault Zone vary from deep residual soils, generally west of the Henty Fault, to shallow transported soils consisting of glacial overburden" in the east.

Anomalous responses of 3x to 4x background were located but the interpretation was made difficult by the lack of geological information. Anomalies on lines 49N, 44N and 42N were subsequently related to subsurface geology, however anomalies on lines 48N and 47N were never explained. It was stated that the anomaly on line 48N was located uphill from the I.P. response, while no mention was ever made of the anomaly on line 47N.

The geochemical anomaly over the massive sulphide lens was found to have a very low amplitude of 60ppm Cu and Pb and 80ppm Zn.

In 1979-80, the original lines between 47N and 51N were repegged and intermediate lines were cut to reduce the line spacing to 100' near the 49N line and to 250' at the extremities of the area. The main purpose of this grid cutting was to carry out an applied potential survey, however at the same time a small

orientation geochemical survey was undertaken. This work concentrated on the A horizon and assays of various fractions of this material. It showed that the humic matter absorbs base metals and was able to weakly detect the sulphide lens.

3.3 GEOPHYSICS

The massive sulphide zone at the Henty Fault Zone has been covered by three geophysical methods viz., in 1972-73 gradient array I.P. and magnetics and in 1979-80 by an applied potential survey.

The gradient array I.P. survey defined two separate anomalies in this area, one between 38N and 44N and the other between 47N and 50N.

The anomaly between 38N and 44N was tested by two drill holes HFZ3 and 4. Both these holes intersected carbonaceous-graphitic shales which were found to be the source of the I.P. anomaly in this area. There were no significant base metal sulphides associated with these shales.

The anomaly between 47N and 50N was centred on line 49N with a 40 m.s. chargeability anomaly. The costeining of this anomaly revealed the exposure of the massive sulphide lens. This anomaly has been tested by two diamond drill holes HFZ5 (L49N) and HFZ6 (L48N). HFZ6 which was drilled vertically below the massive sulphide outcrop intersected only weakly disseminated sulphide mineralisation, the best assays being between 415' and 429.5' of 0.34% Cu and 4.2% FeS₂. HFZ6 which was collared 120m along strike to the south of HFZ25 intersected 2' of massive sulphide (376'-378') with 1.11% Cu, 4.0% Pb, 7.0% Zn and 16.7% S. Because this mineralisation was thought to be "abruptly terminated by an disconformable contact with Comstock Tuffs to the east," no further drilling was recommended.

In 1979-80 an applied potential survey was carried out "to

define the possible strike extensions of the semi-massive sulphide lens exposed in a costean on L49N, 1450E". The result of this survey was that "the conductive sulphides extend from L47.5N to L49.1N i.e. 800' (250m)." However it was concluded that "the proximity of the east dipping Henty Fault and the possible unconformity between the mineralised tuff sequence and younger unmineralised tuffs and lavas (?Tyndall Group) severely restricts the depth extent of this sulphide lens."

4. ESTABLISHMENT OF A METRIC GRID BETWEEN 47N AND 49N

A new metric grid has been recently cut and pegged over the Henty Fault Zone between 47N and 49N to accurately position the two drill holes HFZ5 and 6 in relation to the exposed massive sulphide lens and any of the geochemical and geophysical anomalies.

The results of this grid cutting are shown on the geological plan and sections attached to this report. The sections for 42N and 43N have been constructed from the old imperial data. The base line, 7000E, for the metric grid was surveyed using a theodolite, and the side lines were turned off by the theodolite and then cut using sighter poles.

5. INTERPRETATION OF GEOLOGY, GEOCHEMICAL AND GEOPHYSICAL DATA REVIEWED

5.1 GEOLOGY

The geology of the Henty Fault Zone between 5900N (42N) and 7120N (49N) consists of Queenstown Pyroclastics overlain conformably by the Jukes Formation of the Tyndall Group. A period of quiescence occurred between the formation of these two groups and it is the sequence that formed during this period that is host to the massive sulphide lens.

The Queenstown Pyroclastics in this area consist of andesitic lavas and tuffs with lenses of trachyandesitic perlites and

pitchstones. This sequence is steeply dipping to the west and it is gently folded. The Tyndall Group, represented by the Jukes Formation consists of sandy to conglomeratic and brecciated volcanoclastic sediments.

The mineralised sequence which occurs between these two units is probably more closely related to the Queenstown Pyroclastics and it consists of dacitic to rhyolitic lavas and tuffs, tuffaceous sediments, dolomitic cherts and carbonaceous shales and siltstones. The important points to be recognised during this review are; (i) this sequence probably extends for a much greater distance than originally thought and is in fact part of a basin which thickens to the south, (ii) the units close to the massive sulphide have undergone classical quartz-sericite-pyrite alteration of a volcano-hydrothermal system, and (iii) previously not recognised is the dolomitic content of this sequence. Also barite is probably more widespread throughout this sequence than originally thought.

The massive sulphide lens which occurs in this sequence was probably hosted by a dolomitic chert and has been probably slumped into its present position in dacitic tuffs. This would possibly account for its apparent disconformable relationship between the rhyolite tuffs and the massive sulphide lens in the costean exposure. Also it should be noted that carbonate is also present in the gangue to the massive sulphide.

5.2 GEOCHEMISTRY

The geochemical work carried out over the Henty Fault Zone shows that the glacial cover and the residual soils have been leached at surface making it difficult to outline the mineralised horizon.

One point of interest from the original basic data, shows that in fact L47N had the highest Pb anomaly of 80ppm. The position of this anomaly was accurately located during the new gridding

programme and it plots coincident with the I.P. anomaly and more importantly with the interpreted strike extension of the massive sulphide lens.

5.3 GEOPHYSICS

The gradient array I.P. anomaly along the Henty Fault Zone between 5900N (42N) and 7299N (50N) can probably be interpreted as a sulphide I.P. anomaly between 6650N and 7150N and a graphitic I.P. anomaly between 5900N and 6450N. There is a 300m section of the sulphide I.P. anomaly (between 6650N and 6950N) which has not been tested by drilling. See the geological plan for further details.

The applied potential survey also suggests that the sulphide mineralisation extends to the south and it is not continuous to the north.

6. RECOMMENDATION FOR FIVE DIAMOND DRILL HOLES

Geological sections for drill holes HFZ3,4,5 and 6 showing surface profiles and the geology from the re-logging of these holes are attached to this report. A longitudinal section showing the positions of the mineralised intersections in holes HFZ5 and 6 and the positions of five proposed holes is also attached.

The geological interpretation presented in this report suggests that there is room for down dip, down plunge and along strike extensions of the massive sulphide intersected in HFZ6.

Five drill sites have been proposed and these are shown on the geological plan. They are as follows:-

SITE A (7200N 7048E): This hole has been located to test for the possibility of a northern extension to the massive sulphide lens exposed in the costean on 7120N.

SITE B (6900N 7024E): This hole has been located to test for the along strike extension of the massive sulphide intersected

in hole HFZ6, the gradient array I.P. anomaly and the 80ppm Pb anomaly located on 47N.

SITE C (6800N 6975E): This hole has been located to test for the along strike and down plunge extension of the massive sulphide intersection in HFZ6. It should also determine the connection between the carbonaceous shales to the south and the more cherty tuffaceous sediments in the north.

SITE D (7000N 6927E): This hole has been located to test for the down dip extension of the massive sulphide intersection in HFZ6.

SITE E (6900N 6937E): This hole has been located to test for the down plunge extension of the massive sulphide intersection in HFZ6.

7. LIST OF APPENDICES

- APPENDIX 1. Copies of the new drill logs for drill holes HFZ3,4,5 and 6.
- APPENDIX 2. Copy of the petrological report by Central Mineralogical Services.

8. LIST OF PLANS

Figure No.	Title	Scale
1.	Henty Fault Zone Diamond Drilling Plan and Diagrammatic Section of Mineralised Horizon	1:2000
2.	Longitudinal Section 7075N	1:1000
3.	Longitudinal Section 7000E	1:1000
4.	Geological Section Line 42N HFZ4	1:1000
5.	Geological Section Line 43N HFZ3	1:1000
6.	Proposed Drill Section Line 6800N	1:1000
7.	Proposed Drill Section Line 6900N	1:1000
8.	Geological Section Line 7000N HFZ6	1:1000
9.	Geological Section Line 7120N HFZ5	1:1000
10.	Proposed Drill Section Line 7200N	1:1000

APPENDIX 1

GOLD FIELDS EXPLORATION PTY. LIMITED
DRILL CORE LOG AND ASSAY DATA

PROJECT: TYNDALL E.L. 9/66

HOLE NUMBER: HFZ 3

Page: 3.

ULV. PRESS

INTERVAL		RECOVERY		DESCRIPTION	ASSAY DATA (ppm)												
From	To	m	%		Sample No.	From	To	Rec. %	Cu	Pb	Zn	FeS ₂	Ag	Au	Ba	Ca	Mn
				layering becomes stronger towards the base and the sericitic alteration also becomes moderate to strong. Primary layering at 231' is 45°/LCA. From 233' to 234' there is a 300mm wide milky quartz vein.													
231'	264'			THIN BEDDED RHYOLITIC VITRIC TUFF - Buff to orange, fine to medium grained, thinly bedded vitric tuff. Bedding on average is 2-5mm thick and in places is highly contorted suggesting original slumping of a water laid tuff, e.g. at 262.5'. This unit also contains three graphitic bands, 40, 80 and 120mm thick at 249', 250' and 252' respectively. There is moderate to strong alteration throughout and schistosity is parallel to primary bedding.													
64'	281'			GRAPHITIC THIN BEDDED TUFFACEOUS SHALES AND SILTSTONES - Black to dark green, shaley to fine sandy texture with well laminated sections. Has varying amount of carbonaceous matter which is now graphitic - possibly some chlorite alteration. Bedding at 268' is 40°/LCA. Remarks: Trace of pyrite.													
281'	314'			RHYOLITIC TUFFACEOUS VITRIC SHALEY-SANDSTONE - Buff-grey green, shaley to sandy tuff, generally massive, but does have some weakly bedded sections. Some thin 2-20mm graphitic shale lenses. Weakly schistose, parallel to primary bedding. Weak sericite and chlorite alteration. Remarks: Trace of pyrite.		265'	270'		25	< 10	100	< 1					
						270'	275'		10	< 10	100	< 1					
						275'	280'		20	< 10	100	< 1					
						280'	285'		60	15	80	< 1					
						285'	290'		50	25	130	< 1					
						290'	295'		30	10	75	< 1					
314'	365'			CARBONACEOUS - GRAPHITIC THIN BEDDED TUFFACEOUS SHALE - SILTSTONE - Black-grey, carbonaceous with quartzose silty bands 1-5mm thick. Bedding is very regular, with only minor evidence of slumping. Strong schistosity has developed and in places the carbonaceous matter becomes graphitic. The section between 350'-365' is well bedded 50°/LCA and the carbonaceous beds become wispy and the overall composition more quartzose. This section also contains 1-8mm thick pyrite beds, giving a total pyrite		295'	300'		45	15	125	< 1					
						300'	305'		45	25	85	< 1					
						305'	310'		25	50	155	< 1					
						310'	315'		60	35	110	< 1					
						315'	320'		60	15	65	< 1					
						320'	325'		55	15	65	< 1					
						325'	330'		50	15	80	< 1					
						330'	335'		70	< 10	75						

GOLD FIELDS EXPLORATION PTY. LIMITED
DRILL CORE LOG AND ASSAY DATA

PROJECT: TYNDALL E.L. 9/66

HOLE NUMBER: HFZ 4

Page 3

INTERVAL		RECOVERY		DESCRIPTION	ASSAY DATA											
From	To	m	%		Sample No.	From	To	Rec. %	Cu	Pb	Zn	Aq				
				N.B. The core between 316.5' to 340' has been mixed up by ?dropping tray or when core was transferred to new core tray.												
				CHANGE												
343	382			RHYOLITIC THIN BEDDED VITRIC SHALEY TUFF - Buff, fine-grained shaley tuff, well bedded, with beds 1-5mm thick, schistose and has moderate sericite alteration. Some wispy thin quartz beds. Bedding at 375' is 30°/LCA. Remarks: Trace of disseminated pyrite.												
382	409			GRAPHITIC THIN BEDDED TUFFACEOUS SHALE - SILTSTONE - Black shaley silty tuff with varying amount of carbonaceous matter, which is now graphitic. Beds are 1-5mm thick. Bedding at 390' is 30°/LCA. Numerous milky quartz-calcite veinlets 2-10mm both crosscutting and parallel to the bedding.												
409	474			RHYOLITIC TUFFACEOUS SHALEY - SANDSTONE - Buff to light green generally massive, sandy tuff, with some 1-2mm feldspar crystals in a quartz-sericite-chloritic matrix. Quartz grains are 1-3mm in diameter. Between 413' - 414' there is a bright green mineral possibly a ?mica. This unit contains numerous quartz-carbonate veinlets 2-10mm wide - some of the carbonate is possible siderite. Remarks: Trace of pyrite.												
474	541			CARBONACEOUS- GRAPHITIC THIN BEDDED SHALE - SILTSTONE. Black-grey carbonaceous shale and quartzose silt beds 1-5mm thick. Bedding is highly contorted in places indicating sedimentary slumping. Black shale lenses become wispy in places, possibly eroded after deposition by coarse silty phase. Schistosity is parallel to bedding and where schistose the carbonaceous material becomes graphitic. Moderate amount of quartz-chlorite-carbonate veins 2-5mm thick cross cutting and parallel to bedding. Some of the white mineral in these veins is possibly ?barite indicated by S.G. of total core in its original state before splitting. Bedding at 535' is 40°/LCA and at 520' is 45°/LCA	475'	480'	5'	55	290	970	<1					
					480'	485'	5'	50	140	280	<1					
					485'	490'	4½'	40	170	470	<1					
					490'	495'	4'	30	170	590	<1					
					495'	501'	6'	45	35	150	<1					
					501'	513'	12'	25	65	260	<1					
					513'	520'	7'	30	130	480	<1					
					520'	525'	5'	25	15	85	<1					
					525'	530'	4'	40	250	930	<1					
					530'	535'	5'	30	310	850	<1					
					535'	540'	4'	80	60	05	<					

APPENDIX 2

Central Mineralogical Services



39 Beulah Road
Norwood, S.A. 5067
Telephone 42 5659

Mr. J.G. Purvis
Senior Geologist
Gold Fields Exploration Pty. Ltd.
P.O. Box 835
BURNIE / TAS. 7320

3rd September, 1982

REPORT CMS 82/8/21

YOUR REFERENCE: Letter dated 16.8.1982
JGP/9003/5

DATE RECEIVED: 19th August, 1982

SAMPLE NOS.: 1201 - 1214

SUBMITTED BY: J.G. Purvis

WORK REQUESTED: Petrology

H.W. Fander for

H.W. Fander, M. Sc.

DATE	4 SEP 1982
FILE No.	9003/5
L.N.	1/1
G.P.	✓
P.R.	
J.R.	
S.F.	
P.D.	
FILE	

REPORT CMS 82/8/21

Fourteen samples of diamond drill core from the vicinity of a massive sulphide occurrence in the Mount Read Volcanics were received for petrological examination. Representative thin-sections were prepared and examined in oblique incident and transmitted light. Offcuts were stained for K-feldspar and, where applicable, carbonates. Petrological descriptions are attached, with some rocks described in relative detail and others partly by analogy. Descriptions include interpretative and comparative comments.

Summary

With minor exceptions, these rocks are altered and mildly regionally metamorphosed felsic intermediate to acid volcanics. They can be subdivided into two fairly distinct groups, essentially leucocratic trachyandesitic and dacitic, on the basis of relict and inferred primary mineralogy. Lithologies include lavas, tuffs and psammopelitic ashes. Alteration features are consistent with essentially synvolcanic ("deuteric or volcano-hydrothermal") effects, mildly enhanced by a low-greenschist facies regional overprint. Trachyandesites are characterised by albite-epidote-chlorite and dacites by quartz-albite-sericite-carbonate assemblages respectively.

Minor lithologies include an altered microgabbro, a chert, and an arkosic sandstone with an authigenic quartz-carbonate-barite cement; field relationships are unknown to the writer, but this suite as a whole bears several potential analogies with the "Rosebery-type" volcano-sedimentary ores in terms of host rock lithology and alteration effects.

D. Cowan, B. Sc.

REPORT CMS 82/8/21Petrological Descriptions1201

(T.S. 43177) K-stain negative.

This rock is an altered and mildly sheared microgabbro representing a minor basic intrusive or, alternately, and dependant on field relationships, the core of a relatively thick flow.

The rock consists essentially of weakly epidote-chlorite ("saussurite")-stained albite pseudomorphs of plagioclase laths and epidote-chlorite semi-pseudomorphs of lath-like to subophitic pyroxene. A sparse chloritic mesostasis is present, and incipiently leucoxenised primary Ti-magnetite is evenly disseminated throughout. Accessories include traces of quartz in ill-defined amygdales (mean 250 μ), rare pyrite subhedra and minor traces of calcite.

The relict fabric is incipiently feldspar-porphyritic "doleritic" (subophitic) with a mean sizing about 100 μ . A weak but penetrative slaty cleavage postdates minor epidote-chlorite veinlets and reflects a low-greenschist facies regional event more or less isograded with the ?deuteric alteration assemblage.

1202

(T.S. 43178) K-stain positive.

This is an altered and sheared fragmental of felsic intermediate affinities. Primary compositional detail is obscured, although general features are consistent with a leucocratic (i.e. ferromag silicate-deficient) trachyandesite. The broad term, keratophyre, is appropriate.

The sectioned area includes variously ill-defined lava clasts of sub- to fine millimetric dimensions, with irregular, mutually moulded shapes modified by a weak but penetrative slaty cleavage (sim. 1201). Texturally, the rock could be interpreted as a clastic lava (tuff lava) or a lithic (-crystal) tuff and, due to the effects of mild shearing, this distinction is tenuous, although an extrusive mode of origin is inferred.

Mineralogy comprises albitised/epidote-stained plagioclase (laths, phenocrysts, glomerophenocrysts), microcrystalline K-feldspar (groundmass of clasts, sparse ill-defined matrix), pervasive chlorite and accessory epidote-clinozoisite. Fine-grained pyrite is disseminated throughout along with leucoxenised primary opaques. The pyrite is locally concentrated into discontinuous pre-tectonic veinlets of epidote and/or chlorite. Quartz is a minor accessory alteration phase, and the overall alteration pattern is closely analogous to that in 1201.

1203

(T.S. 43179) K-stain positive.

This rock can be categorised as a glomeroporphyritic felsic pitchstone of sodi-potassic trachytic composition.

Frequent single to clustered feldspar phenocrysts (to 2 mm) are compositionally sanidine with subordinate albite. These include composite types and represent inverted/exsolved sanidine-anorthoclase. These features are more or less evenly disseminated throughout a weakly but pervasively chlorite-stained, cryptocrystalline to microfelsitic (partly devitrified)

potassic groundmass with microscopic patches (mean 50 μ) of felsitic quartz. The rock is flow-structured, weakly compositionally banded, and incipiently flow-brecciated.

Accessories include conspicuous fine leucoxenised opaques, minor traces of apatite and rare ill-defined, leucoxene-stained semi-pseudomorphs of ferromag silicate (?amphibole) microphenocrysts. Sericite is a minor accessory alteration phase, and minor traces of cloudy epidote are present. A weak but penetrative slaty cleavage essentially parallels the flow fabric.

1204

(T.S. 43180) K-stain positive.

This is a devitrified, altered and sheared felsic intermediate lava (or pitchstone) with compositional affinities to 1202. The main contrast lies in the flow-banded, but relatively homogeneous fabric. Inferred primary composition is leuco-trachyandesitic.

The rock is porphyritic to weakly glomeroporphyritic, with sparsely disseminated to frequent weakly epidote-stained albite pseudomorphs of plagioclase (to 1 mm), minor silicified K-feldspar phenocrysts, and rare leucoxene-stained quartz pseudomorphs of amphibole. These features are enclosed in a variably epidote- and chlorite-stained felsitic groundmass reflecting a weak but more or less pervasive perlitic structure, variably obliterated by partial recrystallization/preferred orientation. Primary accessories are (leucoxenised) opaques and traces of apatite.

The groundmass reflects patchy pre-tectonic silicification, partly controlled by the perlitic structure and related to sporadic (sheared, recrystallized) comb-structured quartz veinlets, typically at a high angle to the flow fabric. These features exhibit mutually intersecting relationships with sparse concordant veinlets of epidote and chlorite. The sectioned area includes minor disseminations and crude spongy films of fine-grained pre-tectonic pyrite, and rare late (post-tectonic) crosscutting films of calcite.

1205

(T.S. 43181) K-stain positive.

This "leuco-trachyandesite" is essentially quite similar to 1204, the main contrasts reflecting variations in the fabric and alteration pattern.

Frequent epidote-stained/albitised plagioclase phenocrysts are accompanied by relatively rare adularia pseudomorphs of K-feldspar (?sanidine) and isolated ill-defined epidote semi-pseudomorphs of phenocrystal amphibole. These are embedded in a partly recrystallized and orientated felsitic (devitrified) groundmass which reflects patchy albitisation and minor silicification and is pervaded by a network of epidote-chlorite-healed microfractures. These features disrupt the weakly flow-banded groundmass and give the rock a weakly lithic fragmental aspect in hand specimen.

In common with the associated altered volcanics, a weak but penetrative slaty cleavage postdates the alteration as reflected, for example, in sheared epidote films and rare, similarly sheared microveinlets of quartz, albite and adularia. Accessory leucoxenic semi-opaques and sparse apatite are present. There is no detectable pyrite.

1206

(T.S. 43182) K-stain negative.

This is a relatively altered and sheared volcanic, interpreted on relict textural grounds, as a lithic tuff. Compositional features are obscured, although the rock is intermediate-acid (?dacitic) in contrast to the felsic intermediate types (i.e. 1202, 1203, 1204, 1205).

Mineralogy comprises microcrystalline quartz, sericite and dolomite-ankerite in varying proportions, with relatively minor poorly twinned albite, and disseminated leucoxenic semi-opaques. Texturally, the rock consists of poorly to moderately sorted, angular to irregular lithic clasts (< 1 - 5 mm diameter), comprising about 50 % of the area sectioned and partly flattened by a weak slaty cleavage, with a matrix of sericite and carbonate. Clasts are texturally homogeneous, consisting essentially of sericite- and dolomite-stained felsitic quartzofeldspathic material (devitrified obsidian, pitchstone). Sparse fine to medium sand-sized quartz grains and ill-defined quartz-carbonate-sericite-altered feldspar crystal fragments are a minor accessory clastic component. There are no detectable shards.

Sparse pre-tectonic carbonate-quartz veinlets are present and are locally displaced by a network of late carbonate-healed microfractures. Minor traces of fine-grained pyrite are disseminated throughout the matrix and lithic clasts. Finer textural detail is obscured by shearing effects and there is little to choose between subaerial and shallow subaqueous modes of deposition.

1207

(T.S. 43183) K-stain negative.

This rock consists of abundant albitised phenocrystal feldspar laths and clusters (glomerophenocrysts, to 400 μ) in a sericite- and dolomite-stained crypto- to microcrystalline quartzofeldspathic matrix with disseminated, partly recrystallized quartz amygdales (mean 150 μ). A perlitic devitrification structure is defined by microfilms of sericite and carbonate and is partly obscured ("flattened") by a weak but penetrative slaty cleavage. The rock is weakly banded in terms of the distribution of phenocrysts, includes minor ill-defined lithic clasts texturally and compositionally similar to the matrix, and is interpreted as a broadly dacitic, weakly flow-brecciated lava (trend tuff lava).

Fine-grained pyrite is thinly disseminated throughout in crude spongy films along the weak tectonic cleavage. Accessory leucoxenic semi-opaques and rare apatite are present. Sporadic late syn- to post-tectonic carbonate films are analogous to those in 1206.

1208

(T.S. 43184) K-stain negative.

This pyritic quartz-sericite phyllite represents a devitrified, altered and mildly sheared pumiceous acid fragmental. Major constituents are sericitised and silicified felsitic obsidian clasts and preferentially silicified pumice clasts. The fabric is confused by boudinaging of relatively silicified zones by the slaty cleavage, but clasts exhibit evidence of moulding consistent with a subaerial lithic tuff or a pumiceous lava flow breccia (tuff lava). Problematically, the finer critical textural detail is obscured by secondary features.

Quartz pseudomorphs of feldspar crystals and crystal fragments are thinly disseminated throughout and frequently include fine-grained pyrite disseminations. There is no evidence of phenocrystal or crystal quartz and, in common with 1206 and 1207, this rock is thus of dacitic rather than strictly rhyolitic character. Recognisable clasts are poorly sorted in the 250 μ to 4 mm range and exhibit marked orientation/flattening.

Fine-grained pyrite (max. 150 μ) is relatively quite conspicuous, comprising about 5 % of the area sectioned. The coarser grains are accompanied by incipient pressure shadows. Sporadic, relatively pyritic sericite films parallel the slaty cleavage.

Accessory traces of dolomitic carbonate and rare microscopic clots of barite are minor phases in the quartz-sericite-pyrite alteration assemblage. General features are consistent with "volcano-hydrothermal" alteration, although the sericitisation is no doubt enhanced by low-greenschist facies regional effects.

1209

(T.S. 43185) K-stain weakly positive.

This rock can be classified as a psammopelitic ash and is more or less typical of blanket-type (subaerially transported) ashes. As such it may represent a useful marker horizon.

The rock consists largely of microcrystalline quartzofeldspathic material of microfelsitic character and probably representing devitrified microshards, although there is no positive microtextural evidence. Silt- to medium sand-sized, splintery to subangular, albitised/calcite-stained plagioclase and relatively minor quartz grains are disseminated throughout, comprising < 1 to about 30 % of the rock, with a banded (i.e. bedded) distribution. Accessories include silt-sized detrital white mica flakes, apatite, leucoxenic semi-opaques, and rare zircons.

Fine to ultrafine pyrite is thinly disseminated throughout, and traces are associated with microscale veinlets of quartz, albite and dolomitic carbonate of diagenetic character. These features predate a very incipient slaty cleavage. In common with 1206, 1207 and 1208, this rock is of (devitrified, albitised) broadly dacitic affinities.

1210

(T.S. 43186) K-stain negative.

This is a relatively massive pelitic ash with affinities to 1209. It consists largely of sericite-stained, crypto- to microcrystalline quartz and albite with vague relict shardy microtextures. Silt-sized angular quartz and albite particles comprise 1-5 % of the rock, with a weakly bedded distribution, and are supplemented by rare fine to medium sand-sized angular quartz, sparse silt-sized leucoxenic semi-opaques, traces of apatite, and rare zircons.

Sporadic diagenetic quartz veinlets are intersected and displaced by frequent chloritic microfractures. These predate a weak slaty cleavage which also crenulates minor veinlets of cloudy dolomite-ankerite. Traces of extremely fine-grained pyrite are partly concentrated in the chloritic microfractures.

1211

(T.S. 43187) K-stain negative.

This rock is an altered and mildly sheared lithic sandstone. The sediment is moderately to well sorted in the fine to medium sand range and weakly bedded.

The detrital framework (65-70 % of area sectioned) consists of angular to subangular quartz (50 %) with subordinate ill-defined chert and silicified felsitic lava clasts (30 %) and sericite-carbonate-stained albite (20 %). Leucoxenic semi-opaques are disseminated throughout and, together with the ill-defined felsitic lava clasts, give the rock a certain reworked volcanic character. There are no definite primary tuffaceous features.

The matrix/cement consists of weakly sericite-stained cherty quartz with intergranular clots of cloudy dolomite-ankerite and minor interspersed aggregates of barite. There are no detectable sulphides.

1212

(T.S. 43188) K-stain negative.

This is a recrystallized dolomitic chert, consisting of microgranular quartz with disseminated dolomite rhombs and thinly disseminated sub- to euhedral (recrystallized, syngenetic) pyrite. The sulphide is weakly bedded in an otherwise homogeneous rock.

Sporadic fractures are healed with discontinuous veinlets of calcite grading into relatively wide quartz-calcite veins. These include occasional quartz-intergranular blebs and spongy films of chalcopyrite in addition to traces of pyrite, and are texturally late (post-recrystallization) features, although mildly stressed and thus conceivably predating the weak regional metamorphism.

1213

(T.S. 43189) K-stain negative.

A sericitic pelitic ash, this rock is essentially similar to 1210. The rock is weakly laminated and includes sporadic interbeds (to 3.5 mm) of arkosic silty (mildly reworked tuffaceous) fine sandstone. The bulk consists of sericite-stained microcrystalline quartz and sericitised, closely intergrown feldspar (?albite). Vague, but diagnostic shardy microtextures are more or less pervasive and, on the basis of relict shapes, appear to reflect mild reworking. Angular to subangular silt-sized clastic quartz is thinly disseminated throughout. The sandy interbeds have a devitrified/sericitic ashy matrix and include thinly disseminated leucoxenic semi-opaques and zircons. Finer compositional detail is obscured, although in common with 1210, the rock is of broadly dacitic character.

An incipient slaty cleavage postdates sporadic sericite films and veinlets, locally including accessory ankeritic carbonate, and not uncommonly discontinuous films of chlorite. The host rock is weakly stained with rhombs of dolomite-ankerite. Minor late crosscutting fractures are healed with veinlets of calcite and cloudy sideritic carbonate.

1214

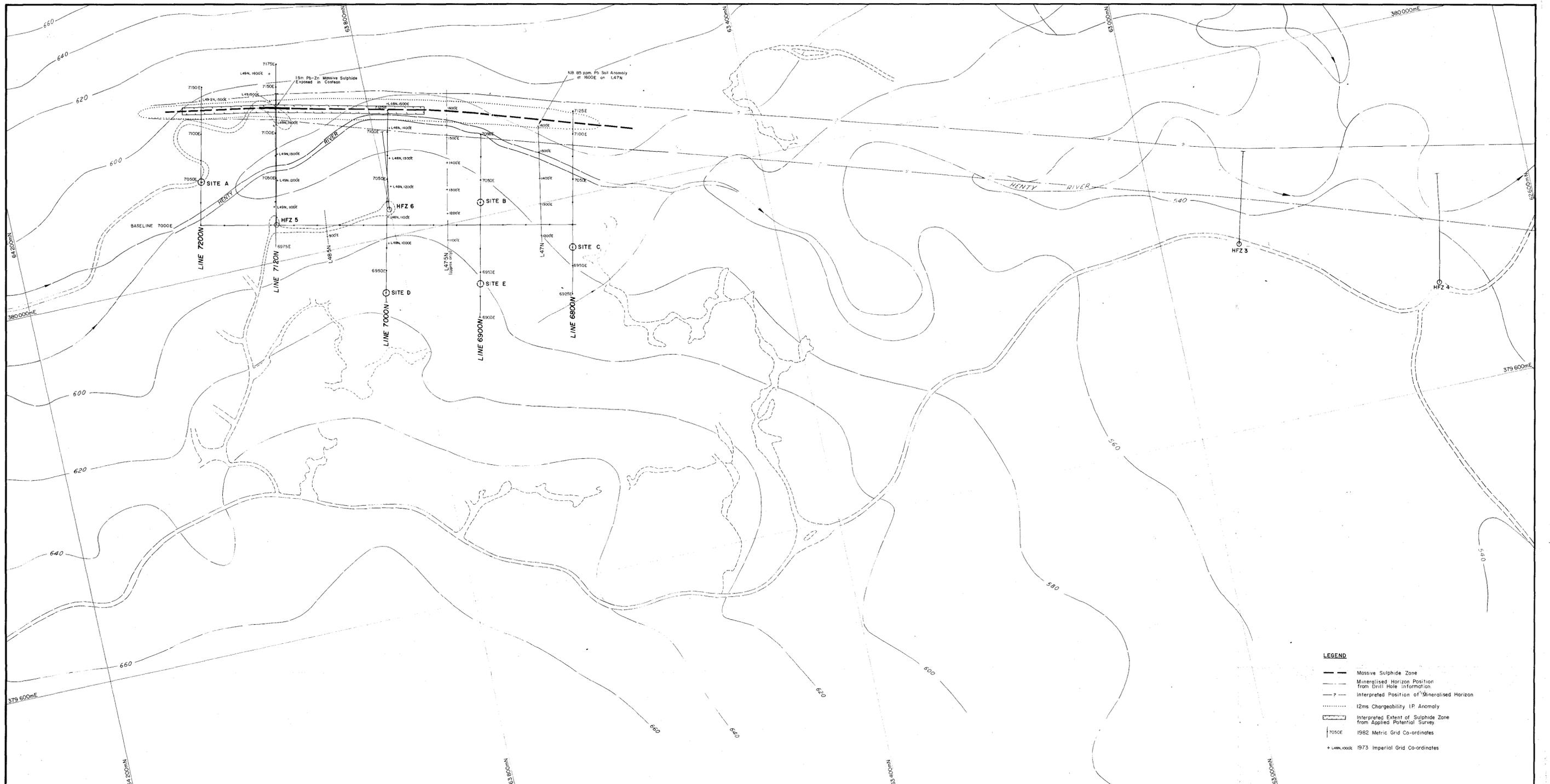
(T.S. 43190) K-stain negative.

This is a weakly sericitised arkosic siltstone. Finer details are partly obscured by recrystallization and a weak, but penetrative slaty cleavage although the rock is of reworked ashy tuffaceous character.

Major constituents are variably recrystallized silt-sized clastic splintery to subangular quartz and albite and an ill-defined micro-crystalline matrix of similar composition. Sporadic fine to medium sand-sized quartz and albite grains are thinly disseminated throughout with a semi-banded distribution enhancing faint bedding laminations on a sub- to fine millimetric scale. Accessory detrital components include very thinly disseminated zircons, leucoxenic semi-opaques and rare muscovite flakes.

In comparison with the finer-grained and distinctly pelitic vitric ashy 1210 and 1213, this rock is relatively siliceous. Sericite is pervasive in trace amounts, but the main alteration features are frequent veinlets of quartz, albite and dolomite-ankerite of "diagenetic" character and including rare, fine-grained pyrite disseminations. These features are variably recrystallized in response to the weak slaty cleavage and predate sporadic late (syn- or post-tectonic) straight-walled veinlets of sideritic carbonate.

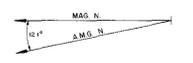
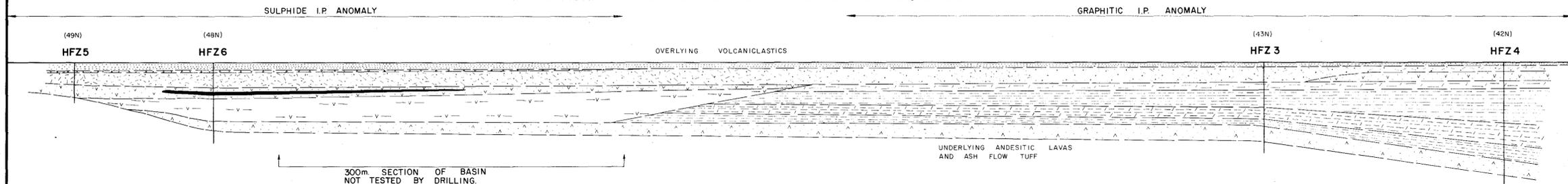
D. Cowan, B. Sc.



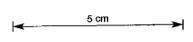
- LEGEND**
- Massive Sulphide Zone
 - - - Mineralised Horizon Position from Drill Hole Information
 - · - · - · - Interpreted Position of Mineralised Horizon
 - · - · - · - 12ms Chargeability I.P. Anomaly
 - · - · - · - Interpreted Extent of Sulphide Zone from Applied Potential Survey
 - 7050E 1982 Metric Grid Co-ordinates
 - + L49N, 1600E 1973 Imperial Grid Co-ordinates

NORTH SOUTH

DIAGRAMMATIC SECTION OF MINERALISED SEQUENCE



693058



300m SECTION OF BASIN NOT TESTED BY DRILLING.

↑ PROPOSED DRILL LOCATIONS

- LEGEND**
- | | |
|---|---|
| INNER MARGIN | OUTER BASIN |
| <ul style="list-style-type: none"> Massive Cherty - Tuffaceous Sediment Lithic Lapilli Tuff Pyritic Cherty - Tuffaceous Sediment Silicified Rhyolitic Vitric Tuff contains 15-20% Massive Sulphide Lenses Andesitic Chloritic Thin Bedded Vitric Tuff Rhyolitic - Dacitic Felsic Tuff | <ul style="list-style-type: none"> Massive Cherty - Tuffaceous Sediment Pyritic Cherty - Tuffaceous Sediment Rhyolitic Vitric Tuff Siliceous & Chloritic Sandy and Tuffaceous Sediments Laminated Chloritic & Carbonaceous Tuffaceous Shale Rhyolitic Tuffaceous Shale - Sandstone Thin Bedded Graphitic Tuffaceous Shale & Siltstone Rhyolitic - Dacitic Felsic Tuff |

GOLDFIELDS EXPLORATION PTY LIMITED

EL9/66
HENTY FAULT ZONE

**DIAMOND DRILLING PLAN AND
DIAGRAMMATIC SECTION OF
MINERALISED SEQUENCE**

SCALE 1:2000

0 20 40 60 80 Metres

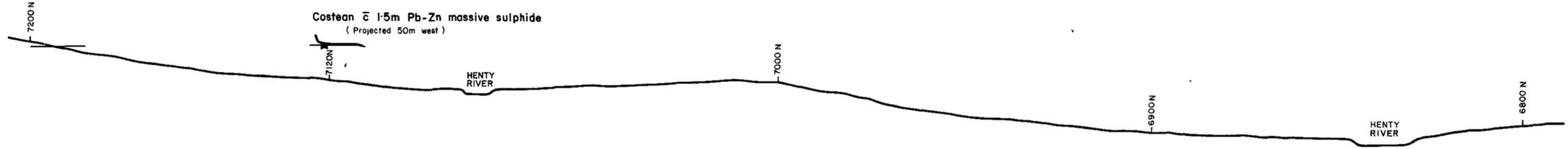
FILE NO

FIG 1

DRAWN BY : PWE
DRAFTSMAN: T.G.O.S.
DATE : Sept '82
REVISIONS : J.G.P.
PWE Oct. '82

NORTH

SOUTH



Site A
(Projected 20m west)

HFZ5 no mineralisation
(on section)

HFZ6 0.6m Pb-Zn massive sulphide
(Projected 5m west)

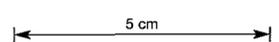
Site B
(Projected 3m west)

Site C
(Projected 17m east)

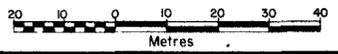
Site D
(Projected 12m east)

Site E
(Projected 20m east)

693059

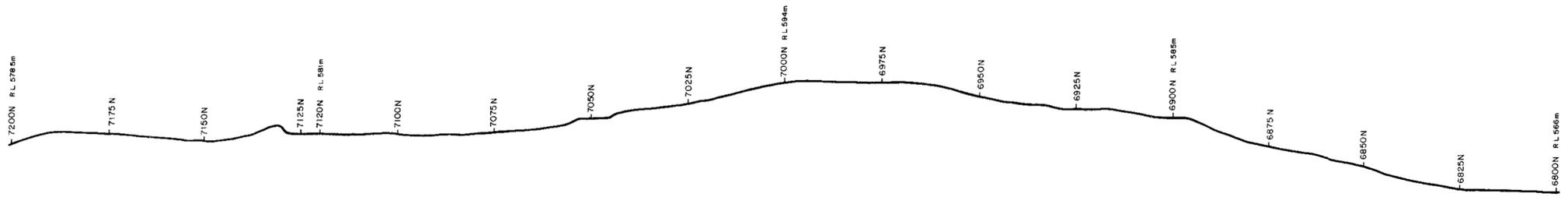


GOLDFIELDS EXPLORATION PTY LIMITED	
E.L.9/66 HENTY FAULT ZONE	DRAWN BY PWE
	DRAFTSMAN TGDS
LONGITUDINAL SECTION 7075N.	DATE Aug 1982
	REVISIONS
	82-1852
LOOKING EAST	FILE NO
SCALE 1:1000	FIG 2



NORTH

SOUTH



R.L. 550m

R.L. 550m

R.L. 500m

R.L. 500m

R.L. 450m

R.L. 450m

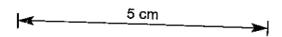
R.L. 400m

R.L. 400m

R.L. 350m

R.L. 350m

693060



GOLDFIELDS EXPLORATION PTY LIMITED

E.L.9/66
 HENTY FAULT ZONE
LONGITUDINAL SECTION 7000E.
 (BASE LINE)
 LOOKING EAST

DRAWN BY	PWE
DRAFTSMAN	TGDS
DATE	Sept 1982
REVISIONS	
	82-1852
FILE NO	

SCALE 1:1000

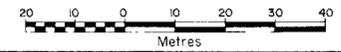
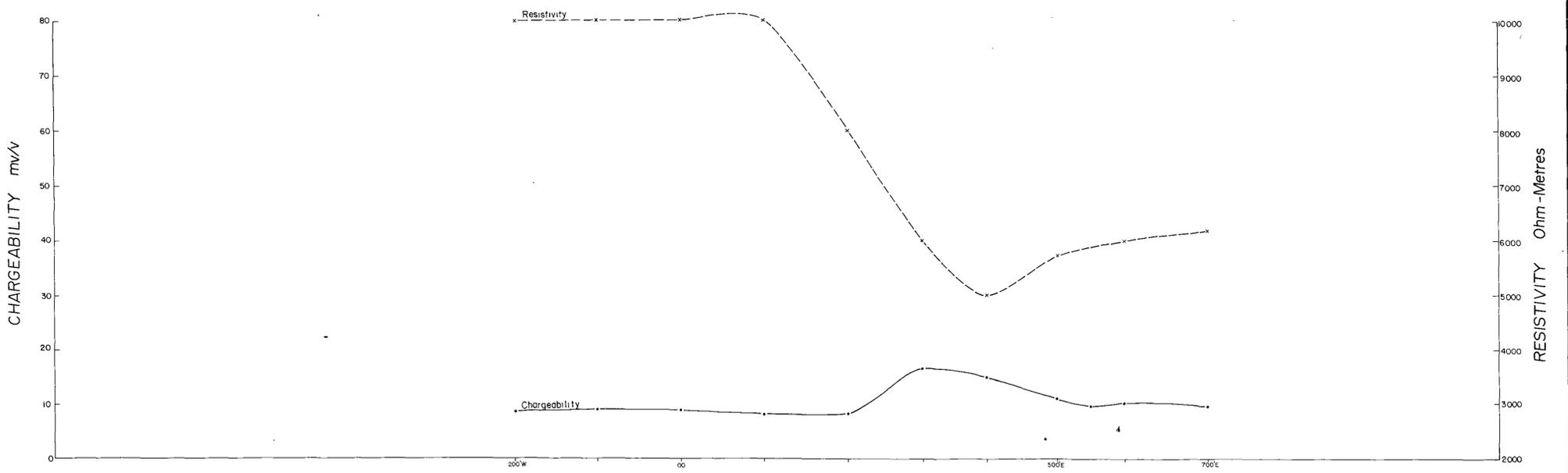
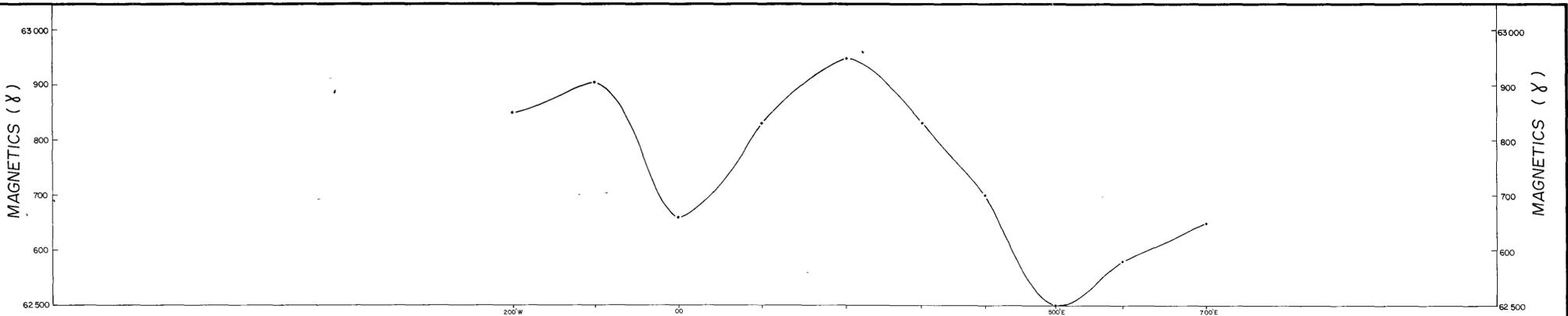
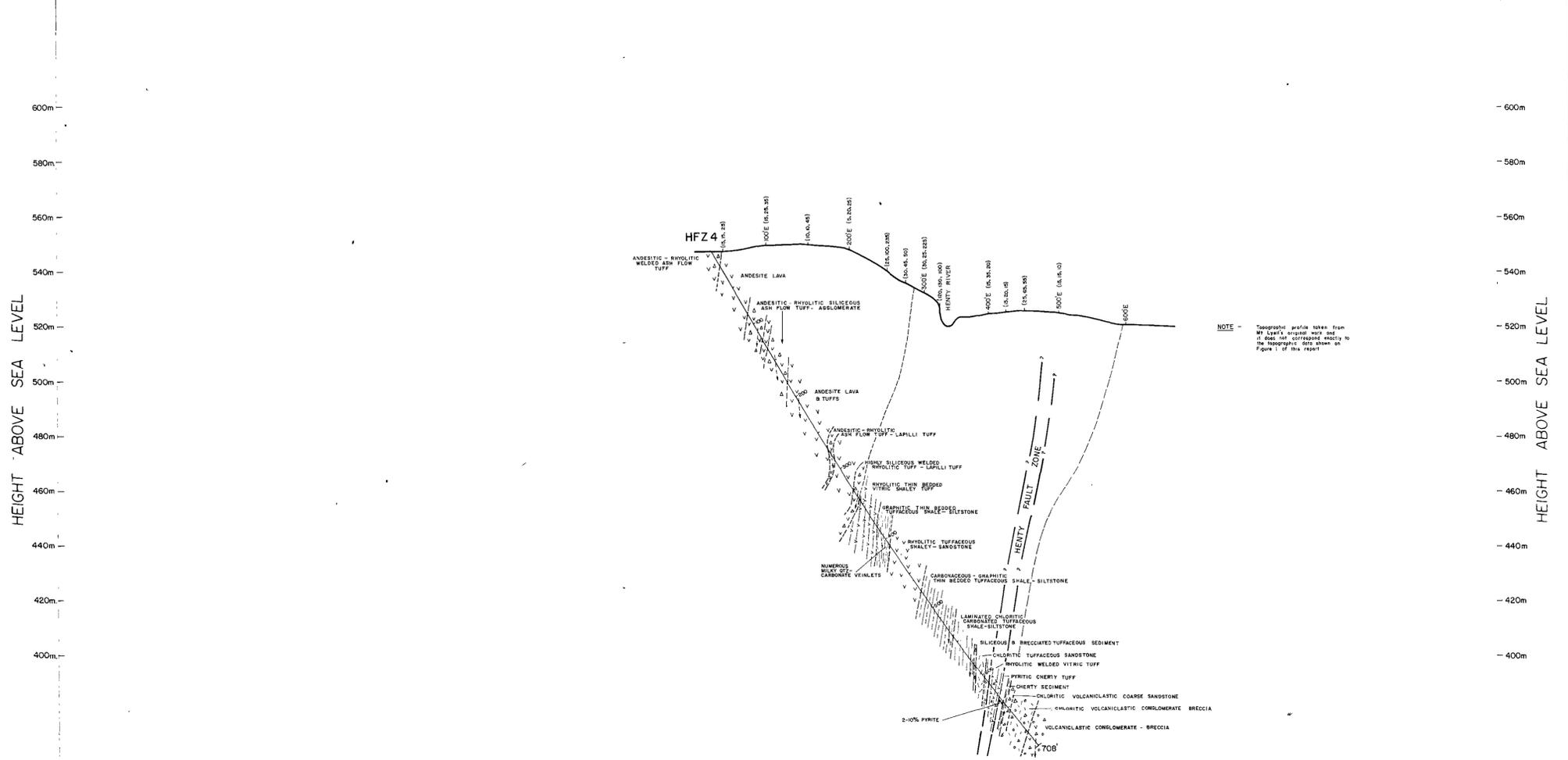


FIG 3



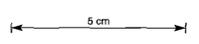
DRILLING PROFILE LINE 42N.



NOTE - Topographic profile taken from M.P. Leffler's original map sheet. It does not correspond exactly to the topographic data shown on Figure 1 of this report.

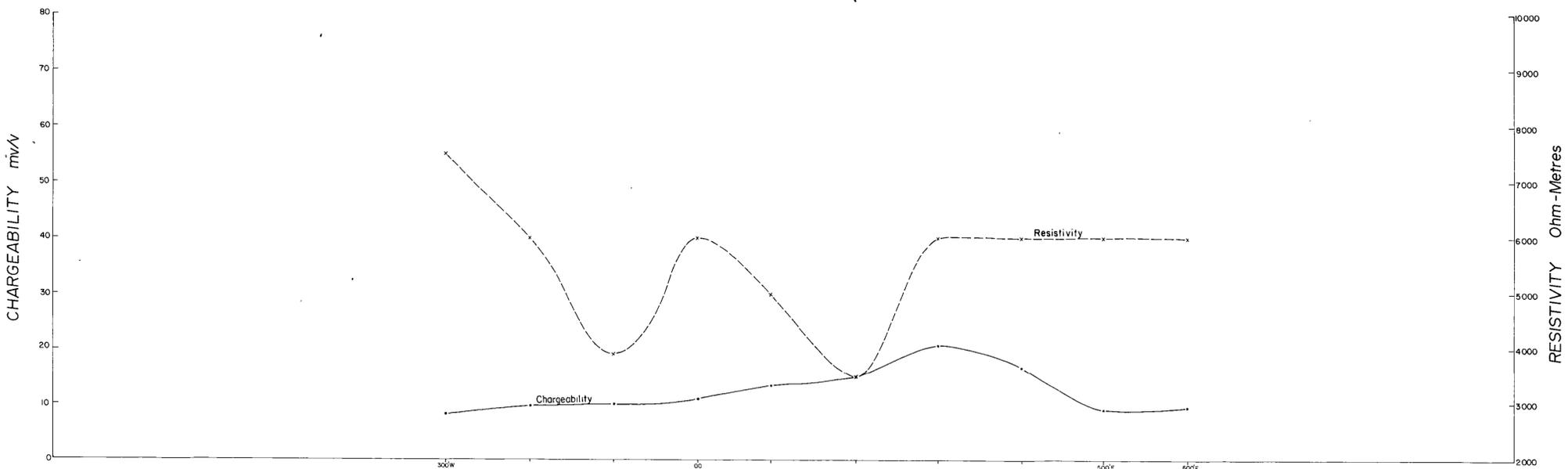
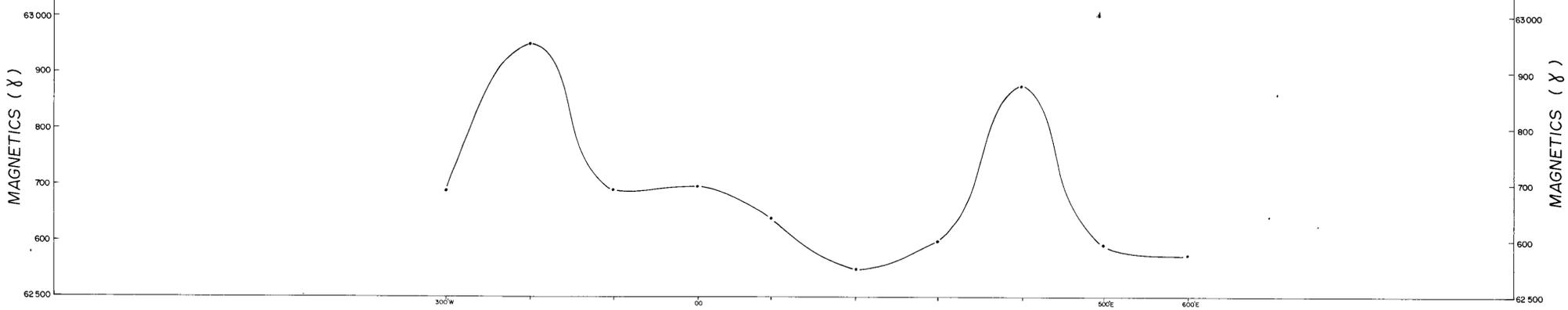
- LEGEND**
- Geological Contact
 - Bedding
 - Primary layering - flow banding
? bedding, ash flow layering
 - Cu ppm, Pb ppm, Zn ppm
 - 1973 Imperial Grid Co-ordinates

693061

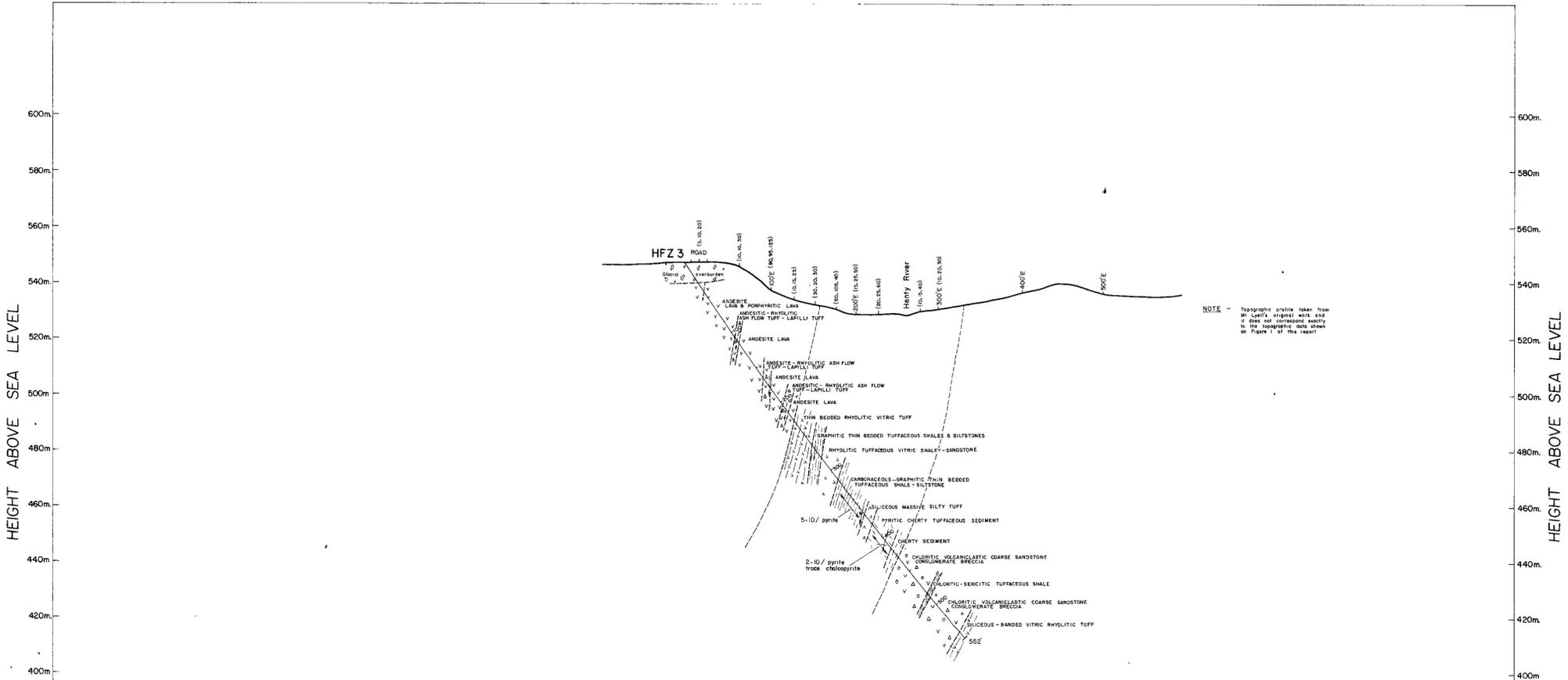


GOLDFIELDS EXPLORATION PTY LIMITED	
EL.9/66	DRAWN BY PWE
HENTY FAULT ZONE	DRAFTSMAN TGDS
GEOLOGICAL SECTION LINE 42N.	DATE Sept '82
HFZ4	REVISIONS JGP
LOOKING NORTH	PWE Oct '82
SCALE 1:1000	FILE NO
20 10 0 10 20 30 40 Metres	FIG 4

HFZ4



DRILLING PROFILE LINE 43N.



- LEGEND**
- Geological Contact
 - Bedding
 - Primary layering - flow banding
 - bedding, ash flow layering
 - (xx.xx.xx) Cu ppm, Pb ppm, Zn ppm
 - 1973 Imperial Grid Co-ordinates

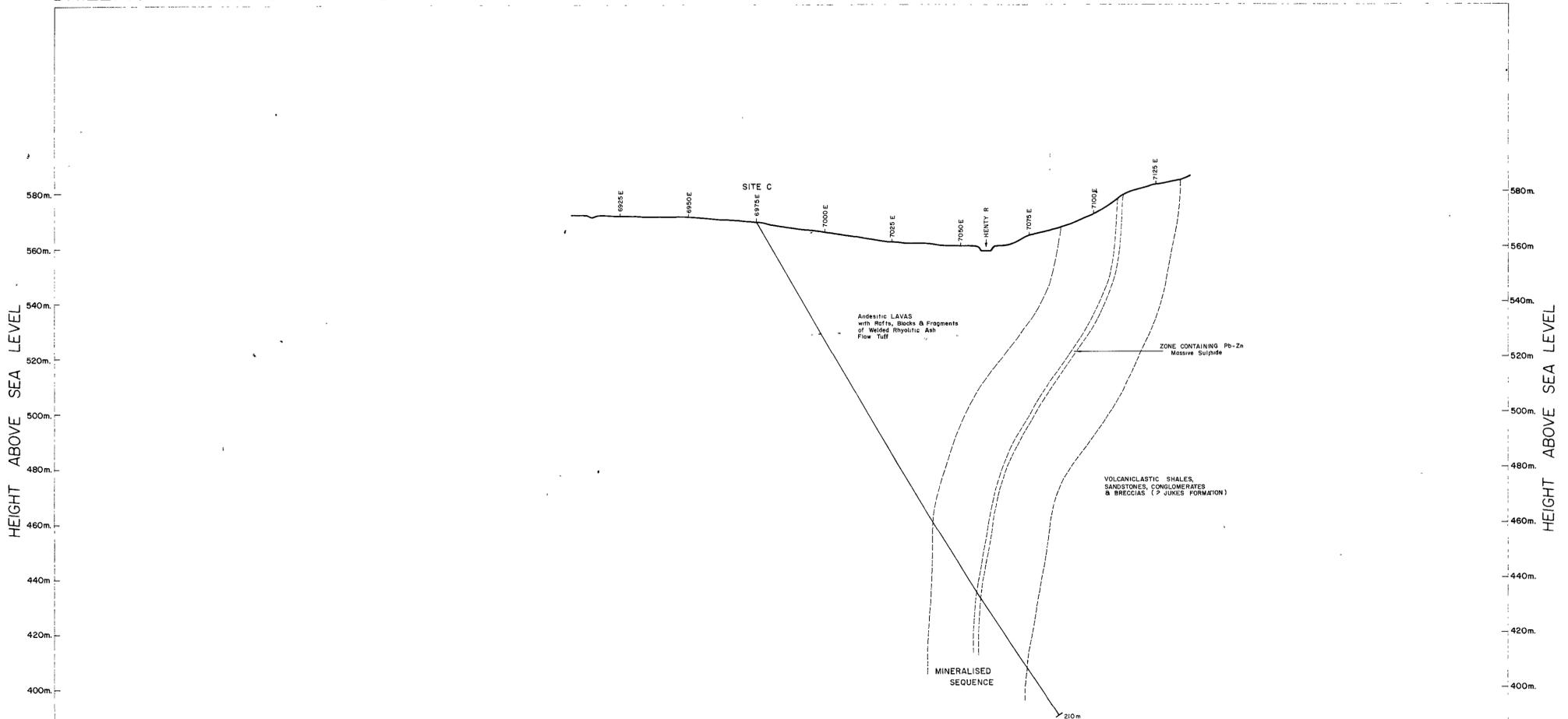
693062

5 cm

HFZ 3

GOLDFIELDS EXPLORATION PTY. LIMITED	
EL.9/66	
HENTY FAULT ZONE	
GEOLOGICAL SECTION LINE 43N.	
HFZ3	
LOOKING NORTH	
SCALE 1:1000	FILE NO
20 10 0 10 20 30 40 Metres	FIG 5

DRILLING PROFILE LINE 6800N.



693063

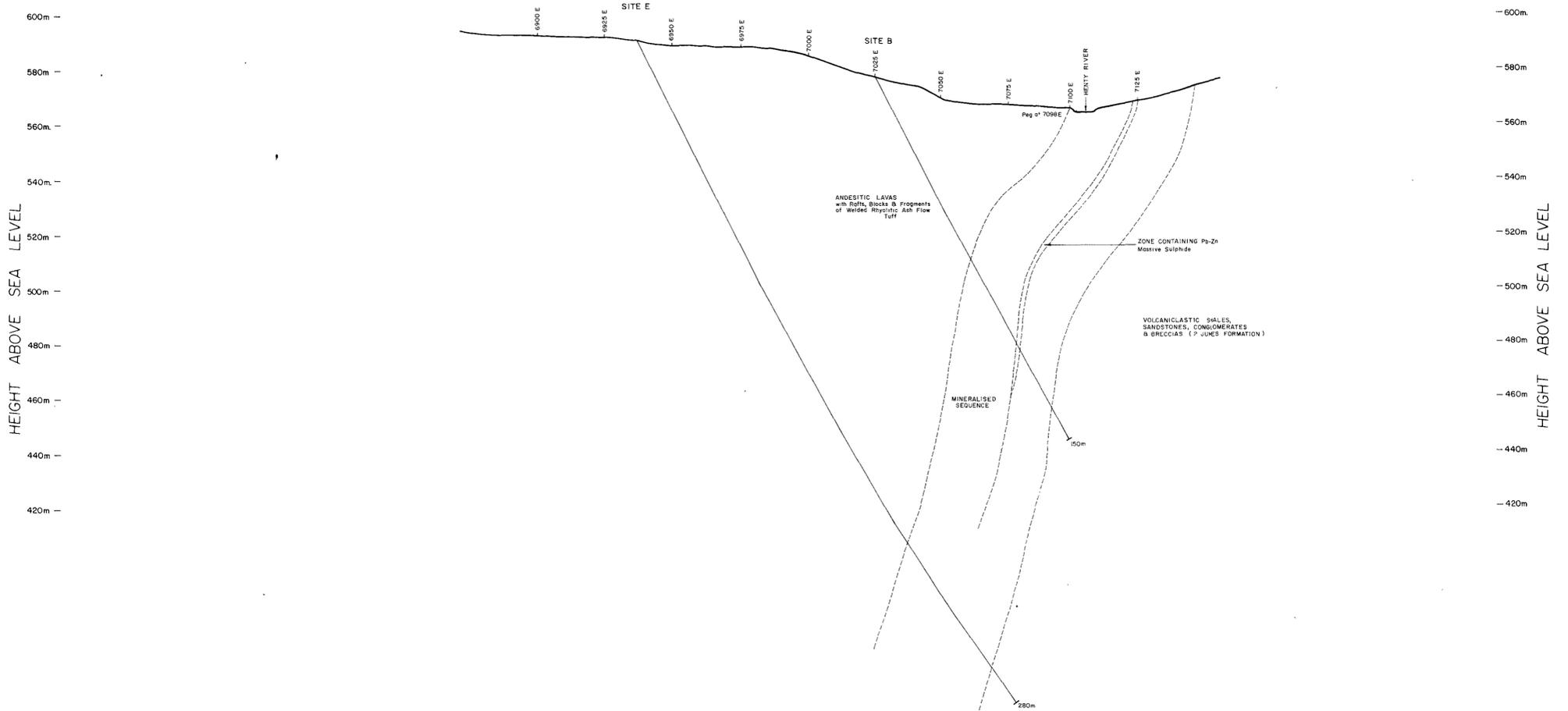
5 cm

GOLDFIELDS EXPLORATION PTY LIMITED	
E.L.9/66 HENTY FAULT ZONE	
PROPOSED DRILL SECTION LINE 6800N.	
LOOKING NORTH	
DRAWN BY	PWE
DRAFTSMAN	T.G.D.S.
DATE	Aug 1982
REVISIONS	
	82-1852
FILE NO	
	FIG 6

Hole	Coordinates	Proposed Depth	Proposed Inclination	Magnetic Bearing
Site C	6800N 6975E	210m.	60°	090°

SCALE 1:1000

DRILLING PROFILE LINE 6900N.

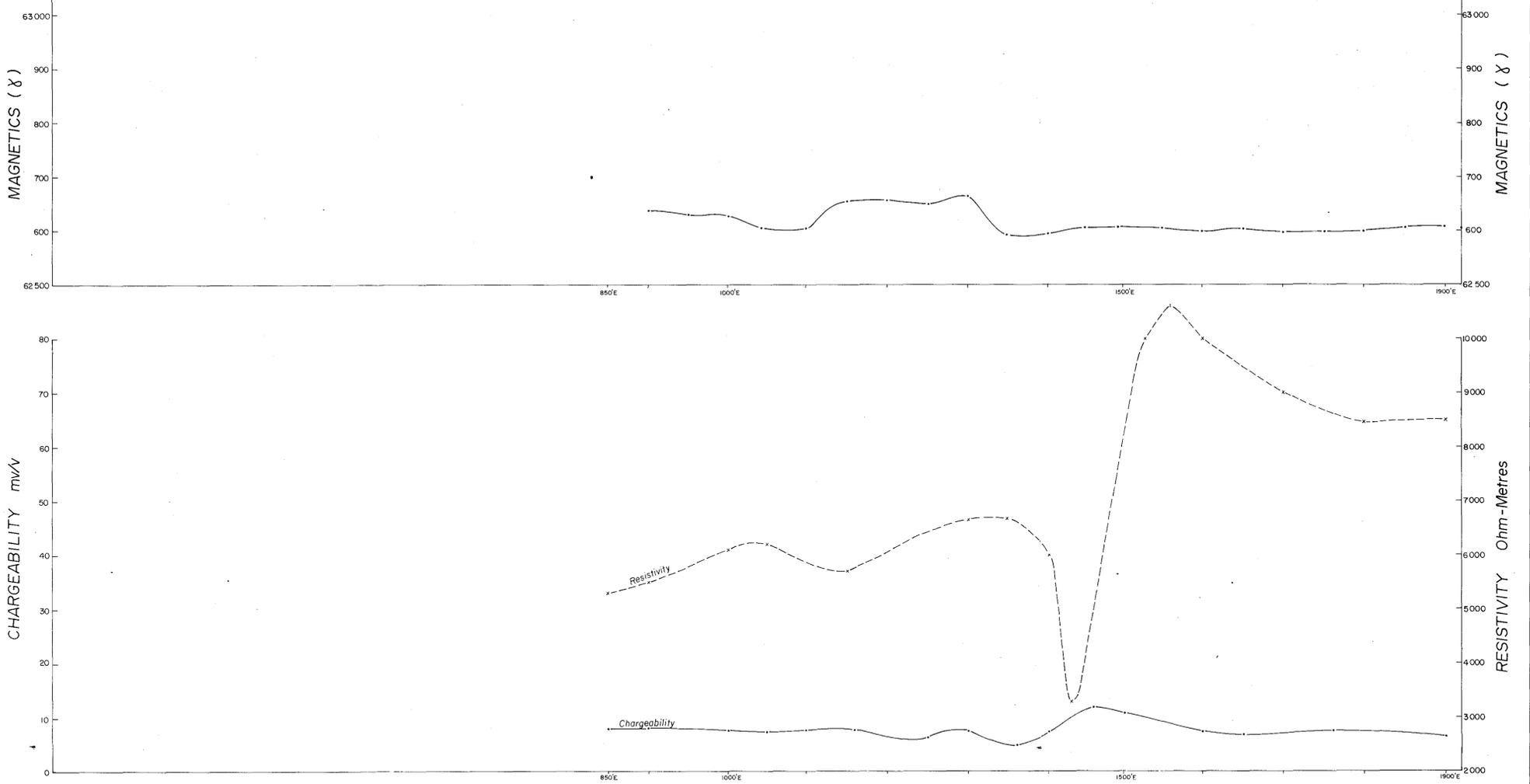


693064

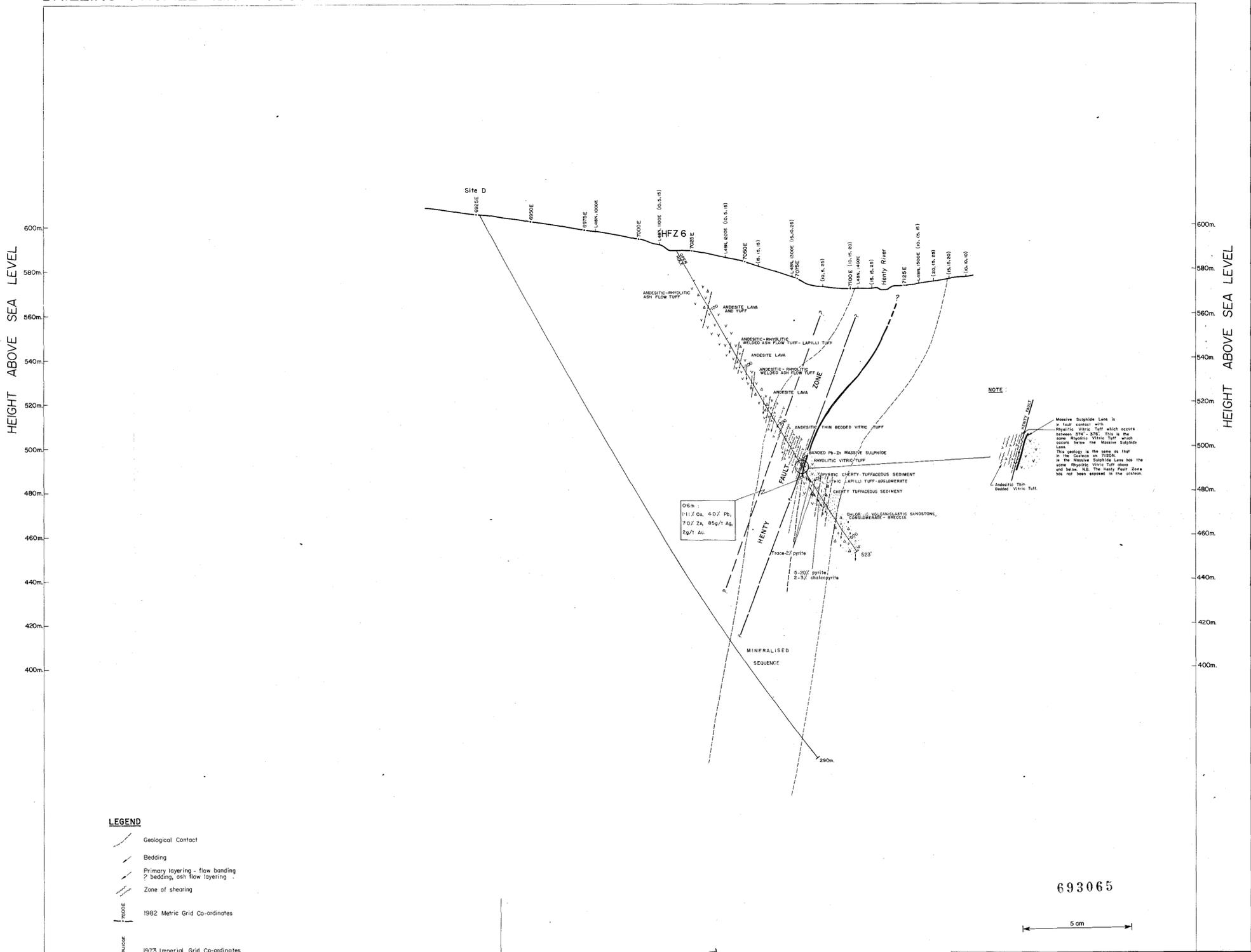
5 cm

Hole	Co-ordinates	Proposed Depth	Proposed Inclination	Magnetic Bearing
Site B	6900N 7024E	150m	62°	090°
Site E	6900N 6937N	280m	63°	090°

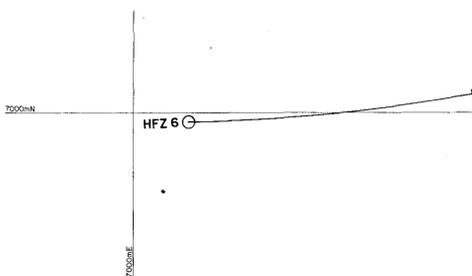
GOLDFIELDS EXPLORATION PTY LIMITED	
E.L. 9/66 HENTY FAULT ZONE	
PROPOSED DRILL SECTION LINE 6900N.	
LOOKING NORTH	
SCALE 1:1000	20 40 0 20 30 40 Metres
DRAWN BY PWE	FILE NO
DRAFTSMAN T.G.D.S.	82-1852
DATE Aug 1982	FIG 7
REVISIONS	



DRILLING PROFILE LINE 7000N.

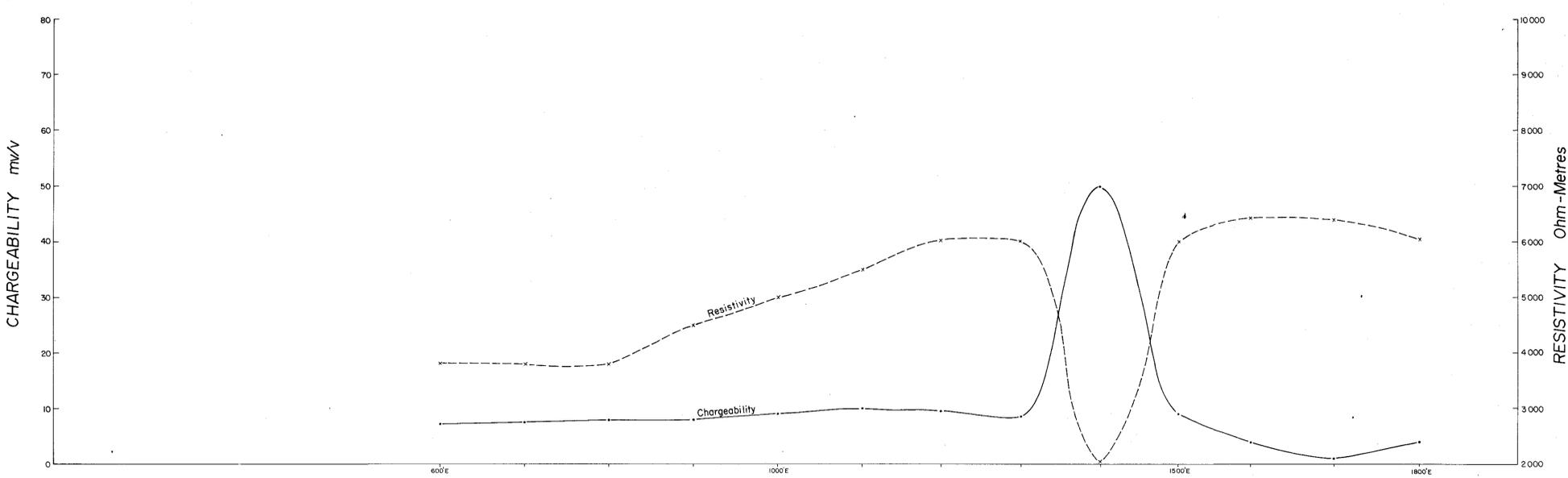
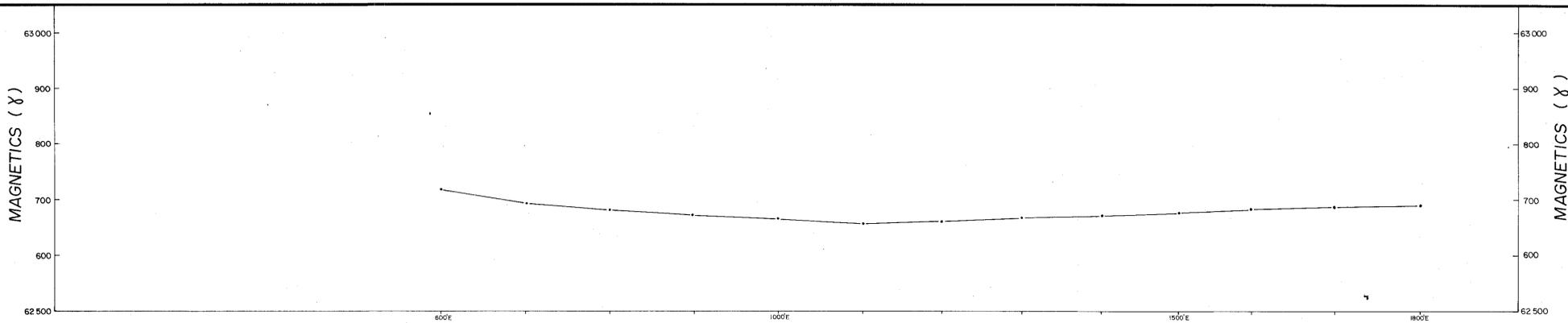


- LEGEND**
- Geological Contact
 - Bedding
 - Primary layering - flow banding? bedding, ash flow layering
 - Zone of shearing
 - 1982 Metric Grid Co-ordinates
 - 1973 Imperial Grid Co-ordinates
 - Cu ppm, Pb ppm, Zn ppm

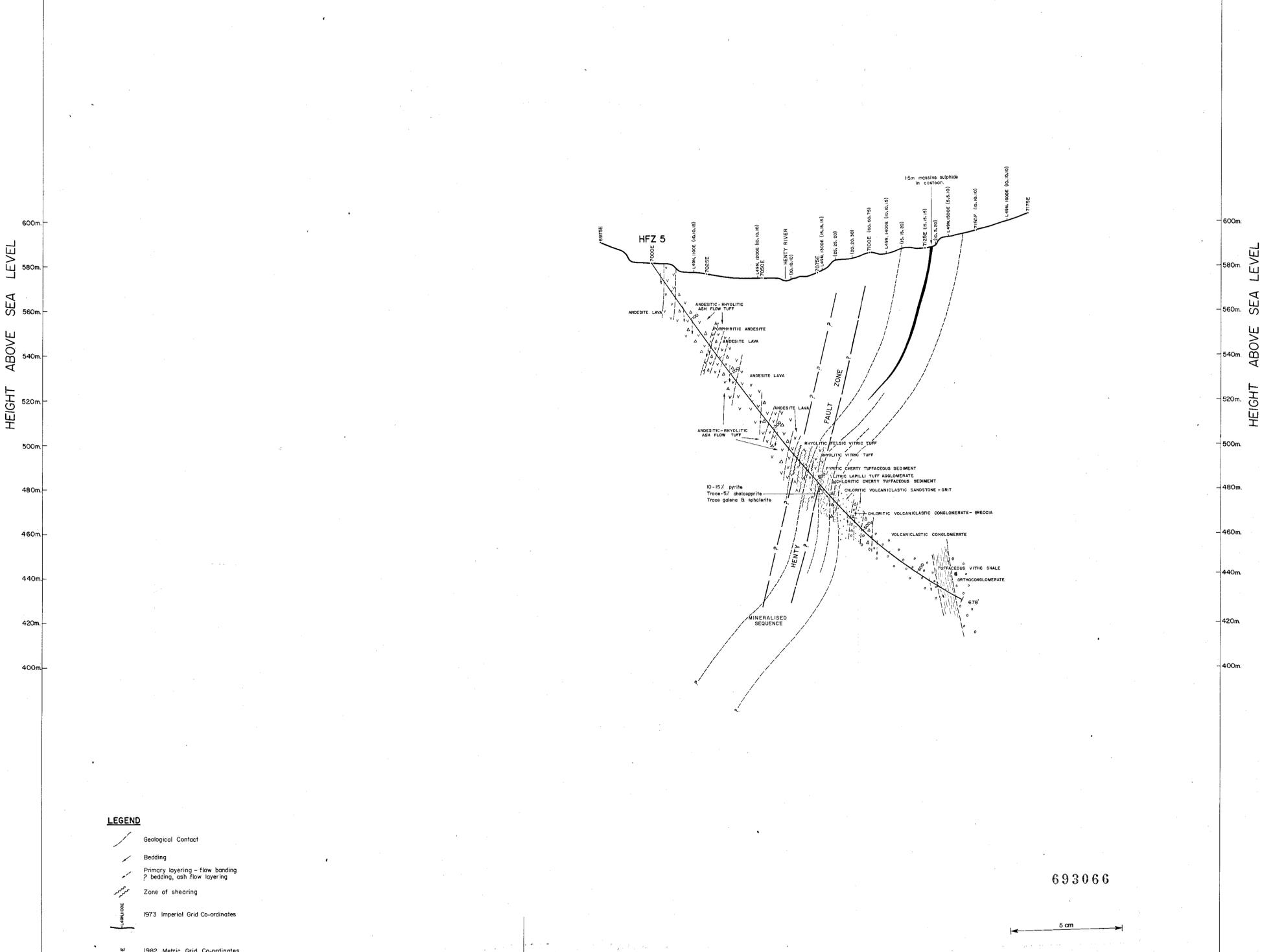


HOLE	Coordinates	Proposed Depth	Proposed Inclination	Magnetic Bearing
Site D	7000N 6927E	290m.	61°	090°

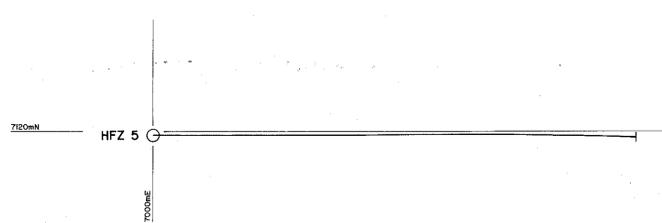
GOLDFIELDS EXPLORATION PTY LIMITED	
EL.9/66 HENRY FAULT ZONE	
GEOLOGICAL SECTION LINE 7000N. HFZ6 & PROPOSED DRILL SITE D	
LOOKING NORTH	
SCALE 1:1000	FILE NO.
DRAWN BY : P.W.E. DRAFTSMAN : T.G.D.S. DATE : Sept 1982 REVISIONS : J.G.P. P.W.E. Oct '82 82-1852	
FIG 8	



DRILLING PROFILE LINE 7120N.



- LEGEND**
- Geological Contact
 - Bedding
 - Primary layering - flow banding
 - ? bedding, ash flow layering
 - Zone of shearing
 - 1973 Imperial Grid Co-ordinates
 - 1982 Metric Grid Co-ordinates
- (10, 20, 30) Cu ppm, Pb ppm, Zn ppm.

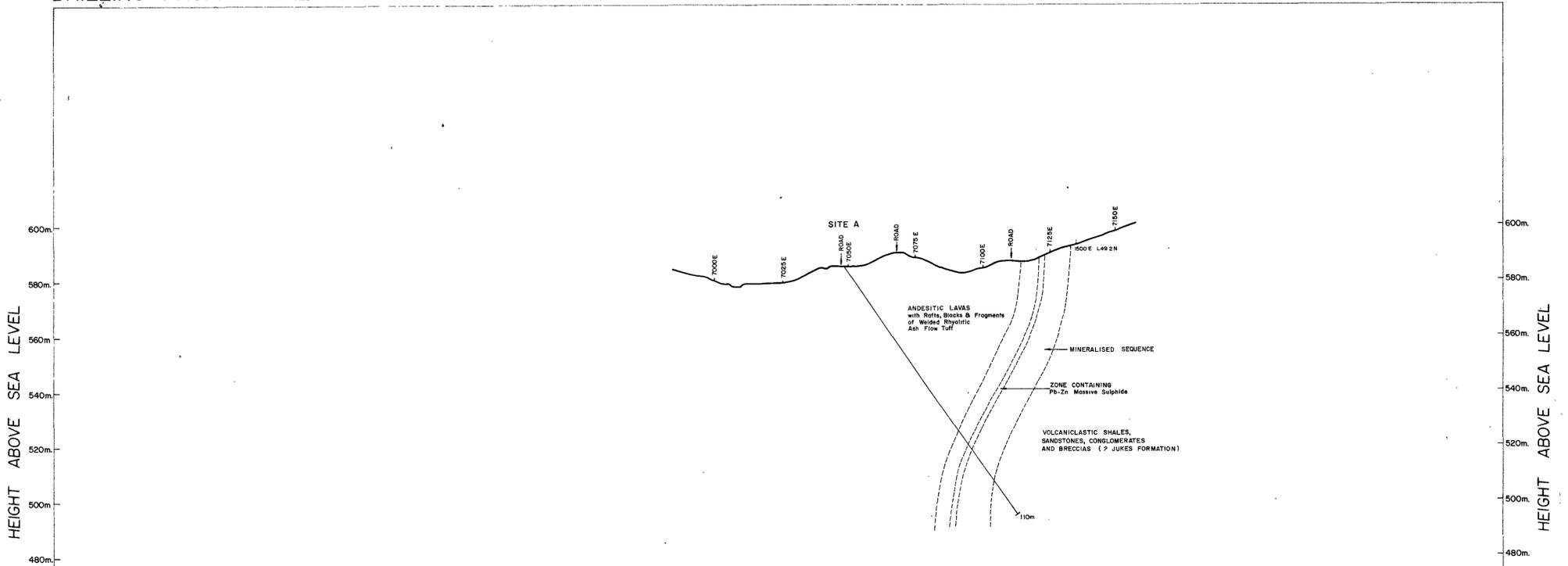


693066

5 cm

GOLDFIELDS EXPLORATION PTY. LIMITED	
EL.9/66	
HENTY FAULT ZONE	
GEOLOGICAL SECTION LINE 7120N.	
HFZ5	
LOOKING NORTH	
SCALE 1:1000	
DRAWN BY : P.W.E.	DRAFTSMAN : T.G.D.S.
DATE : Sept 82	REVISIONS : J.G.P.
P.W.E. Oct 82	82-1852
FILE NO.	FIG 9

DRILLING PROFILE LINE 7200N.



693067



GOLDFIELDS EXPLORATION PTY LIMITED	
E.L. 9/66	
HENTY FAULT ZONE	
PROPOSED DRILL SECTION	
LINE 7200N.	
LOOKING NORTH	
DRAWN BY P.W.E.	FILE NO
DRAFTSMAN T.G.D.S.	FIG 10
DATE : Aug 1982	
REVISIONS	
82-1852	

Hole	Coordinates	Proposed Depth	Proposed Inclination	Magnetic Bearing
Site A	7200N, 7048E	110m.	55°	090°

SCALE 1:1000

