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GOLD FIELDS EXPLORATION PTY. LIMITED

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EXPLORATION LICENCE 9/66

TYNDALL

TASMANIA.

ANNUAL REPORT

1982-1983

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F.G. FITZGERALD

P. KOMYSHAN

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C.	HENTY FAULT ZONE	Geochemical Results 1982-83.
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F.	HUXLEY	Geochemical Results 1982-83.
G.	HUXLEY	Petrological Report - A.S. Joyce, Geobase Pty. Ltd.

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7.	RED HILLS	Section 1250N (RH11)	1:1,000
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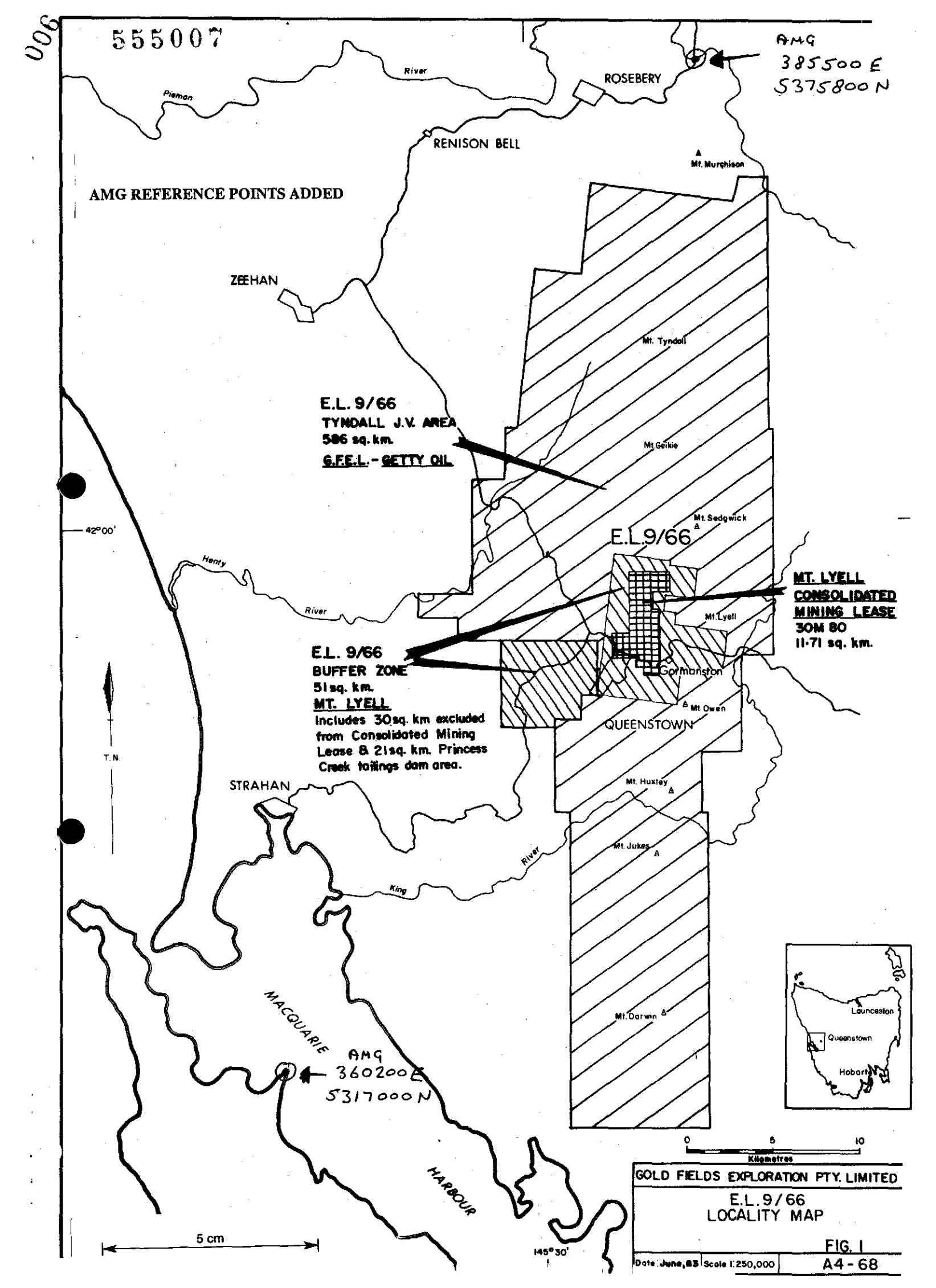
555007
AMG
385500 E
5375800 N
River
Pieman
ROSEBERY
RENISON BELL
Mt. Murchison
AMG REFERENCE POINTS ADDED
ZEEHAN
Mt. Tyndall
E.L. 9/66
TYNDALL J.V. AREA
586 sq. km.
G.F.E.L. - GETTY OIL
Mt. Geikie
Mt. Sedgwick
E.L.9/66
42°00'
Henty
River
MT. LYELL
CONSOLIDATED
MINING LEASE
30M 80
11.71 sq. km.
Mt. Lyell
E.L. 9/66
BUFFER ZONE
51 sq. km.
MT. LYELL
Includes 30sq. km excluded
from Consolidated Mining
Lease & 21sq. km. Princess
Creek tailings dam area.
Gormanston
Mt. Owen
QUEENSTOWN
T.N.
STRAHAN
Mt. Huxley
Mt. Jukes
King
River
MACQUARIE
HARBOUR
AMG
360200 E
5317000 N
Mt. Darwin
Launceston
Queenstown
Hobart
0
5
10
Kilometres
5 cm
145°30'
GOLD FIELDS EXPLORATION PTY. LIMITED
E.L. 9/66
LOCALITY MAP
FIG. 1
Date: June, 83
Scale 1:250,000
A4 - 68

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1. INTRODUCTION (J.G. Purvis)

This report details the results of exploration carried out on the Tyndall E.L.9/66 in the period 1st July 1982 - 30th June 1983.

The E.L. covers 637 sq km of the Cambrian Mt. Read Volcanics in western Tasmania. The exploration reported here was carried out on that 586 sq km of the licence which is the subject of the Joint Venture between G.F.E.L. (60%) and Getty (40%) (see Fig. 1).

Work in the first six months of the year comprised project work at RED HILLS, HENTY FAULT ZONE and HUXLEY. Six diamond drilholes totalling 1751m were put down - 3 at RED HILLS and 3 at HENTY FAULT ZONE.

At RED HILLS the holes all intersected only minor Pb-Zn mineralization and this suggests that the Pb-Zn massive sulphide body discovered in 1976 is much less than one million tonnes. The holes did however delineate a zone of gold mineralization around the massive sulphide, grading about 2 g/t Au. This zone is open at depth.

At HENTY FAULT ZONE the drilling further defined the known body of pyritic massive sulphide as being at least 300m long, 100m wide and 0.5 - 1.5m thick, open at depth and to the south. The sulphide contains erratic, ore-grade values of Cu, Pb, Zn, Ag and Au. However it lies against the Henty Fault and further exploration of it is unwarranted. Gold grades of 7 g/t Au over 0.6m and 5 g/t Au over 1.1m, were detected in the southern part of the 35m thick sequence which hosts the massive sulphide.

At HUXLEY initial gridding, mapping and geochemical surveys have outlined a zone of disseminated Pb-Zn mineralization in altered volcanics.

A comprehensive REVIEW of the entire E.L. and all exploration data collected over the past 16 years, was carried out by a team of 4 geologists during the last 6 months of the year. As a precursor to the Review, Geological Consultant Dr. R. Sillitoe visited areas south of Queenstown in November 1982.

The Review Team's findings are the subject of a separate report and are designed to provide a basis for future exploration on the E.L., which must meet Mines Department requirements of a reduction in E.L. size to 125 sq km by August 1984 and complete relinquishment by August 1987.

The Teams' recommendations include an immediate reduction of the E.L. by 40% to around 375 sq km (345 sq km JV area), and an exploration programme incorporating a high level of drilling, to be completed possibly as early as 1986.

Expenditure in the period 1st July 1982 - 30th April 1983 was $290,652, bringing total expenditure since February 1967 to $4,083,704.

2. RED HILLS (F.G. FitzGerald)

2.1. SUMMARY

A total of 9 drillholes (including RH 13 and 14R drilled in 1982-83) have failed to locate any extensions of the massive sulphide lens intersected in RH 5. Equivalent horizons to the host rock in RH 5 were intersected in most holes. The best mineralization in these holes usually occurs as disseminated sphalerite in the base of this horizon and the top of the underlying pyroclastic sequence. Most lithologies within the Red Hills Basin appear to be high energy deposits and would have been unfavourable for the development of a volcanogenic massive sulphide deposit. Other negative features are the overall low sulphide content and moderately weak alteration of the system. The present drill spacing indicates that the massive sulphide body within the vicinity of RH 5 does not exceed one million tonnes.

However, a potential zone of gold mineralization has been delineated in the vicinity of RH 5. Five drillholes here have intersected significant gold (best assay: 1.5m of 8.1 g/t Au in RH 8),within the host horizon - pyroclastic sequence. This horizon is up to 7.5m thick and although apparently closed off along strike is still open at depth and above RH 5. Potential exists to develop an economic gold ore body which should be tested by further drilling.

No economic mineralization has been intersected in the 5 drillholes (including RH 15 drilled this season), in the southern part of the Red Hills Basin. Suitable host lithologies may extend for 900-1200 metres along strike further south beneath a glacial cover of unknown thickness. There is little evidence of an increase in grade of disseminated lead-zinc mineralization to the south,but until the basin

has been closed off potential for discovery of an ore body still exists and should be tested.

Geological and geophysical evidence indicates that the Red Hills Basin is closed off to the north. However, a weak IP anomaly over a 600m x 100m swamp-covered area commencing 500m along strike north from the basin axis may represent basinal lithologies. The weak geophysical response and lack of geochemical anomalies downgrades interest in the area.

No other units in the Red Hills area, including the previously tested Red Hills Lava, appear to have further economic potential.

2.2. CONCLUSIONS AND RECOMMENDATIONS

1. A zone of gold mineralization has been delineated in the vicinity of RH 5. Five drillholes have significant gold assays which indicate around one million tonnes of 2 g/t Au with possible credits from Pb, Zn and Ag. The zone appears closed off along strike but is open at depth, and above RH 5.

   Additional drilling is recommended: 2 holes (A and B) to test possible high grade extensions of the gold-bearing massive sulphide in RH 5,and 2 holes (C and D) to test the down dip extension of the gold zone in RH 8 (see Fig. 5). Holes A and B should be collared in the vicinity of lines 2550N and 2400N and would be about 150m and 200m long. Holes C and D could be drilled on the same sections and would be approximately 400m long. The drilling of hole D should be conditional on satisfactory results being obtained in the other 3 holes.

2. The massive sulphide intersected in RH 5 has been followed up by 8 drillholes. The drill spacing indicates that the massive sulphide body is less than one million tonnes and no further testing of this target is warranted. The massive sulphide should in future be evaluated only as an integral part of the gold mineralized zone.

3. The main geophysical and geochemical anomalies in the southern part of the Red Hills Basin have been tested by 5 drillholes without intersecting economic base or precious metals. The basin may extend for 1200m along strike to the south beneath glacial cover. Although the grade of mineralization does not appear to increase, the total metal content may be increasing southwards and potential still exists for the discovery of an ore body.

   It is recommended that the southern extension be spatially tested by 2 diamond drillholes (E and F), each 250m long (see Fig. 5). Diamond drilling appears to be the most cost effective method of evaluating the glacial covered area.

4. The Red Hills Basin appears to terminate north of RH 12. A swamp-covered area 600m x 100m lying 500m north of the basin may be underlain by basinal lithologies. Geophysical and geochemical indications are weak. Because of this and the apparent size restrictions, it is recommended that no further work be carried out north of Red Hills.

5. Both the copper and gold potential of the Red Hills Lava have been adequately tested with negative results.

11.4% Pb, 0.3% Cu, 250 g/t Ag and 6.5 g/t Au) between the target positions. A further 7 holes (RH 6 to 12) were drilled in the basin (total 3102m). Although the equivalent host horizon was recognized in some holes and disseminated base metal sulphides intersected in all holes, no extension of the massive sulphide was found.

As part of the search for continuation of the massive sulphide lens additional geophysical surveys were carried out (see section 2.6). In general the results obtained were either inconclusive or negative. Additional geochemical sampling, petrological studies and alteration mapping programmes were carried out to further evaluate the area. Some of the targets generated by this work were tested by drilling.

2.4. WORK COMPLETED 1982-83

Following evaluation of all previous results at Red Hills it was considered that two areas remained inadequately tested:

1. the vicinity of RH 5 massive sulphide and

2. the southern part of the basin.

In preparation to designing a drill programme, drill core from holes RH 5 to RH 9 was re-logged with an emphasis on the lithological and mineralizing controls in the basin rocks.

Section profiles were prepared by cutting grid lines 50m apart along a 1900m base line bearing 171.5° AMG, parallel to the strike of the basin (see Fig. 3). All previous drillholes were plotted onto these sections. Considerable discrepancies between some of the existing survey data were discovered which

2.3. PREVIOUS EXPLORATION

1957-59 Rio Tinto and EZ carried out parallel exploration in the Red Hills - Gooseneck area. Ground EM, magnetic and gravimetric surveys outlined an anomalous zone at least 1500m long. Three holes, GN 1 and 2 (RTAE) and RHP 95 (EZ) were completed within this zone (total 635m). All holes intersected black shales carrying syngenetic pyrite and pyrrhotite which were considered sufficient to explain the anomalies. A fourth hole RHP 94 (376m) was drilled to the north within the flanking Red Hills Lava. No significant base metals were discovered in any holes.

1969-77 Mt. Lyell focused attention on the Red Hills Lava where Cu mineralization had been worked at the turn of the century. Mapping, pole-dipole IP, SP and magnetic surveys, geochemical sampling and a partially successful percussion drill programme lead to 4 diamond drillholes, RH 1 to 4 (total 706m). It was concluded, from the disappointing results, that no bulk low grade Cu potential existed at Red Hills.

1977-82 Mt. Lyell (Goldfields-Getty Joint Venture) turned their attention to the volcanogenic massive sulphide potential in the sedimentary basin immediately west of the Red Hills. Pole-dipole IP surveys had defined a linear anomalous zone at least 1100m long, co-incident, in part, with a sequence of graphitic shales carrying disseminated pyrite and pyrrhotite (the same belt investigated by RTAE-EZ). RH 5 was drilled to test the northern part of the IP anomaly and to intersect the altered contact of the Red Hills Lava. The hole intersected 2.8m of banded massive sulphide (assaying 34.5% Zn,

could not be reliably resolved. Some assumption had to be made in plotting the amended drill profiles, and the position of some drill intersections on the longitudinal plan is approximate only (see Fig. 5).

A longitudinal projection was prepared on which all host rock horizon intersections were plotted (see Fig.5). This showed that the massive sulphide had been adequately tested along strike to the north and down dip below RH 5. However, a gap existed down plunge to the south between RH 8 and RH 9 with potential for a continuation of the sulphide body. Two holes (RH 13 and RH 14R) were drilled to test this zone.

Compilation of all geophysical and geochemical data and an examination of RH 11 drill core,indicated that significant anomalies in the southern part of the Red Hills Basin had been only partially tested. The belt appeared open to the south for 900-1200m beneath glacial deposits. RH 15 was drilled to test these anomalies at the northern edge of the cover. A 30m costean was cut just north of RH 15 over anomalous lead in soils (max. 3500 ppm Pb) delineated on line 72S in 1971 and 1976.

A review of existing data showed that the gold potential of the area had been inadequately evaluated. The RH 5 massive sulphide was re-sampled to clarify the major discrepancy in reported gold assays. Two dump samples from old workings and 62 drill core pulps from earlier drilling were selected and all assayed for gold.

The Red Hills area was included in the Tyndall EL Review. This report includes observations made by the Review Team (M. Jones, G. Purvis and R. Poltock). As part of this Review a suite of 16 core samples were submitted to B. Gulson at the CSIRO for lead isotope studies.

2.5. RESULTS: 1982-83 DRILLING

Three diamond drillholes, RH 13 to 15 (total 1145m), were completed in the Red Hills Basin between November 1982 and January 1983. For detailed drill logs see Appendix B .

2.5.1 HOLE RH 13

RH 13 was designed to test for extensions of the massive sulphide lens 240m along strike to the south from RH 5 and 125m below surface. The hole was completed at 244.0m.

A true thickness of 7.5m of fine-grained siliceous sediments equivalent to the RH 5 massive sulphide host lithology was intersected carrying minor syngenetic base metal sulphides (assaying 9m @ 1.1% Zn, 0.1% Pb, 4 g/t Ag and 0.3 g/t Au). Disseminated sphalerite (assaying 20m @ 1.4% Zn, <0.1% Pb, 2 g/t Ag and <0.1 g/t Au) continued through underlying coarse pyroclastics to the Red Hills Lava contact at 236.7m. Two pyritic black shale units without significant base metals were intersected higher up the hole.

The best assay interval 215.0-218.0m (3m @ 3.08% Zn, 0.35% Pb, 6.5 g/t Ag and 0.9 g/t Au), which straddles the lower host rock-pyroclastic contact, indicates that a gold-bearing zone may exist along strike from RH 5.

2.5.2 HOLE RH 14R

The purpose of RH 14 was to test for down plunge extensions of the massive sulphide 250m south of the RH 5 intersection and 300m below surface. RH 14 was stopped at 101.0m due to excess flattening. RH 14R was re-collared at the same site and

completed at 480.0m.

A probable equivalent to the host horizon in RH 5 was intersected 320m below surface. The mixed fine grained epiclastic sequence carries minor syngenetic base metal mineralization and clasts of apparently disrupted semi-massive sulphide (assay: 12.1m @ 0.9% Zn, 0.4% Pb, 43 g/t Ag and 1.0 g/t Au). The underlying ashy reworked(?) pyroclastics and fine-grained chloritic rocks carried similar disseminated mineralization (best interval: 23.5m @ 0.60% Zn, 0.14% Pb, 0.7 g/t Ag and <0.1 g/t Au).

A thin sequence of unmineralized tuffaceous sandstones and shales intersected higher in the hole may be the down dip remnant of the main black shale horizon at surface.

The best assay interval 365.5-369.7m (4.2m @ 1.29% Zn, 0.47% Pb, 31 g/t Ag and 2.2 g/t Au) from within the host horizon sequence, indicates that the gold horizon in RH 5 and 13 extends to RH 14R.

2.5.3 HOLE RH 15

RH 15 was located to test a lead soil anomaly (max. 3500 ppm Pb) co-incident with IP, EM and gravity anomalies in the southern part of the Red Hills Basin, 1400m south of RH 15 and 150m below surface. The hole was collared at the northern edge of the glacial cover and completed at 320.0m.

A possible lateral equivalent to the RH 5 host horizon was intersected between 190.9 and 200.4m. This sequence of chloritic shales and tuffaceous siltstones (pelitic ash?) is partly silicified

and carries minor base metal sulphides (assay: 12 m @ 0.5% Zn, 0.2% Pb, 11 g/t Ag and <0.1 g/t Au). Disseminated sulphides were encountered in the enclosing ignimbritic sequences (best interval: 14m @ 0.5% Zn, 0.1% Pb, 3 g/t Ag, <0.1 g/t Au).

A sequence of graphitic black shales with minor tuffaceous interbeds was intersected in the upper part of the hole. Although this sedimentary sequence carried up to 5% disseminated pyrite and/or pyrrhotite, no significant development of the mineralized shales intersected in RH 11 250m to the north,was encountered. Best assays in the shales were: 3.9m @ 1.6% Zn, 0.2% Pb, 7 g/t Ag, <0.1 g/t Au, and 35.5m @ 0.4 % Zn, 0.3% Pb, 4 g/t Ag, <0.1 g/t Au.

The geophysical anomalies appear to have been adequately explained by the disseminated pyrite-pyrrhotite mineralization in the graphitic black shale sequence. Sufficient base metal sulphides were encountered within the sedimentary, pyroclastic and host horizon sequences to account for the geochemical anomalies.

2.6. GEOPHYSICS

A summary of all geophysical surveys carried out over the Red Hills area is presented in table 1. As part of the Review, Consultant J.R. Bishop was asked to examine this data, comment on the results and make recommendations. The following conclusions are summarized from Bishop's report (Nov. 1982).

The Turam EM and IP surveys responded strongly to the black shale horizon. The presence of a buried massive sulphide body close to this horizon could be difficult to detect by electrical methods.

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RED HILLS GEOPHYSICAL SURVEYS

TABLE 1.

* plotted anomaly compilation map

		SURVEY METHOD	COVERAGE	RESULTS	COMMENTS
E.M.	1.	Turam (RTAE), 1958	4N-78S (RTAE grid)	Strong responses, apparently co-incident with graphitic shales.	*
	2.	Sirotem (Geoex),1982	4S-40S	No response.	Did not detect black shales defined by Turam survey
	3.	Genie (Scintrex),1982	4S & 29S	Weak response over py-cp-mag veins(?) in Red Hills lava.	Did not detect RH5 massive sulphide or 1Nadit py-cp
I.P.	1.	Pole-dipole(CGG),1971	32N-80S	Strong responses, apparently co-incident with graphitic shales.	*
	2.	Gradient (Scintrex),1977	80S-98S	Response on 80S & 86S, probable southern contiunuation of black shales.	* Lack of response on lines 92S & 98S possibly because coverage not extended far enough west or glacial cover too thick or pyritic black shales terminated.
	3.	Gradient(Scintrex),1978	Profile over RH5	Clear response over black shales, smaller response 100m east.	2nd response over small occurrence dissem.py-gn in fgd siliceous tuffs (ACW) host rock equivalent (FGF)
	4.	Gradient (Scintrex),1978	16N-68N (Red Hills N grid)	Weak response along strike from main IP axis in basin to south.	* Swamp covered, apparently not black shale.
	5.	Dipole-dipole(Scintrex),1982	33S	Good response over black shales, no evidence for contribution from any adjacent body.	Survey done to check (erroneous) results from applied potential survey.
MAGNETICS					
	1.	Vertical field (RTAE),1958	20S-74S (RTAE grid)	Strong responses over parts of Red Hills rhyolitic lava	* Results not evaluated by Bishop, method not
	2.	Vertical field (CGG),1971	32N-80S	complex apparently related to magnetite stockwork. Red	diagnostic for sulphides in Red Hills Basin.
	3.	Total field (Mt.Lyell),1976	8N,0N,8S,16S,24S	Hills basin generally magnetitic low.	
	4.	Total field (Scintrex),1978	16N-68N (Red Hills Ngrid)		
S.P.	1.	(CGG),1971	32N-80S	No response over basin, weak response over lavas.	
GRAVITY					
	1.	(RTAE),1958	20S-78S(RTAE grid)	Will defined anomalies.	* Adequately tested by holes GN1, GN2 & RHP95, satisfactorily explained by density contrasts in rock types.
	2.	(Scintrex),1980	8S, 72S, 86S	Anomalies on 8S & 86S are single point values, results do not agree with RTAE on 72S,	Test surveying only on applacability of method.
DOWN HOLE					
	1.	Specific gravity (EZ),1959	RHP94 & 95		Values used in RTAE evaluation of gravity anomalies
	2.	IP (Scintrex),1978	RH5,6R, 7,8,9 & 10	Black shale responses quite variable, no IP "signature" RH5 charge./resist. response to massive sulphide (197m) & unexplained similar response at 185m.	Apart from RH5 no other survey covered zone of interest because of cave-in too high up hole.
	3.	M.M.R.(Scintrex),1978	RH5	Mineralization traced 40m north.	Test survey, not evaluated by Bishop.
	4.	Applied pot.(Scintrex),1978	RH5		Superceded by later survey.
	5.	Applied pot.(Scintrex),1982	16S-40S(electrode RH5)	Discouraging results	Method assumes mineralization is conductive, I.P. & E.M. surveys suggest it is not, negating survey
	6.	Sirotem (Geoex),1982	RH5	No response to massive sulphide.	Mineralization not significantly conductive, probably due to high sp. content.

As a consequence the Rio Tinto (RTAE) gravity survey is of particular interest. An anomaly compilation map (Fig. 4) shows the gravity and Turam results to be near coincident. Geological considerations suggest that south of RTAE 58S is of more interest because the gravity high lies just east of the Turam. North of RTAE 40S the gravity high is west of the Turam. Both zones, where drilled, have been adequately explained by density variations in the local rock types (Bonniwell, RTAE 1959).

Applied potential surveys were conducted in 1978 and 1982 in an attempt to define the extent of mineralization intersected in RH 5. Results from these surveys suggested a very limited strike length for the mineralization. However, down hole IP and EM (Sirotem) surveys showed that the black shales and massive sulphides were chargeable but not particularly conductive. Thus the results of the applied potential survey are largely negated.

Apart from the down hole geophysics, the only result which may be recognized as a possible separate response due to mineralization is a gradient array IP profile over RH 5. A clear chargeability/resistivity anomaly was defined over the black shales with a weaker, but still clear anomaly 100m to the east. This was related to a small occurrence of disseminated pyrite-galena(?) in fine grained siliceous tuffs (A.C. Walter 1978), which may be equivalent to the host rock (FGF interpretation).

If the mineralization intersected in RH 5 was a consistent 3 to 5m thick with its top at 100m+ from the surface, and it maintained its composition and position relative to the black shales, then it is probable that a substantial tonnage would not be detected by geophysical methods. The drilling, however,

suggests that such a body is not present. To fit ore-body sized sulphides within the existing drill pattern,quite thick models are required (e.g. the 40m maximum thickness of Que River), such bodies would be readily detected by geophysical methods.

Integration of the drilling and geophysical results show no encouragement for economic-sized mineralization [massive sulphide] between lines 00S and 86S. (J.R.Bishop 1982).

2.7. DISCUSSION OF RESULTS

2.7.1. RED HILLS BASIN IN VICINITY OF RH 5

2.7.1.1. RH 5 Interpretation

The following observations and conclusions came from re-logging and re-interpretation of the RH 5 drill core in 1982:-

1. The banded massive sulphide (2.8m true width) shows little evidence of re-texturing or significant re-mobilization so that the assays probably reflect the original grade.

2. Re-sampling the massive sulphide has clarified the discrepancy in the 1977 gold assays and significantly increased the silver value (1982 assay: 2.8m @ 0.32% Cu, 11.35% Pb, 34.5% Zn, 250 g/t Ag and 6.55 g/t Au).

3. Both margins of the massive sulphide are relatively copper rich.

4. The host rock is 15m thick (including massive sulphide). It is a light grey very fine grained rock which is siliceous and indurated close to and within the massive sulphide. The host rock is commonly laminated, has coarser interbeds and some syn-sedimentary brecciation zones.

5. Petrographic work noted possible fine clastic quartz and muscovite grains as well as glass shards, and describes the host rock as either volcanic ash or tuffaceous argillite.

6. The western contact of the host rock appears faulted. The eastern contact is gradational into coarse lithic ignimbrites which appear marginal to talus from the Red Hills Lava. The lava contact is only 20m east of the massive sulphide and indicates a westerly facing for the sequence.

7. There is no evidence of development of a typical chlorite or sericitic foot-wall style of alteration beneath the massive sulphide and a cherty unit in this position suggests a possible easterly facing.

8. Generally the host rock has a low base and precious metal content apart from the massive sulphide and a 30cm band of semi-massive sulphide cement in a breccia zone.

In summary, the grade and style of the mineralization in RH 5 are encouraging but very few other features typical of a large volcanogenic massive sulphide body are evident. In particular the weak alteration, and low overall sulphide content of the adjacent predominantly high energy pyroclastic lithologies, appear an unfavourable environment in which to discover a massive sulphide ore body.

2.7.1.2. Extensions of Host Horizon

An horizon with lithologies equivalent to those hosting the massive sulphide has been delineated by drilling for at least 800m along strike. The horizon thins rapidly away from RH 5 but is consistently intersected 30-40m west of the Red Hills Lava contact.

The horizon is typically a fine grained, light grey, siliceous sediment or pelitic ash with a cherty appearance. Further from RH 5 the sequence is less siliceous, more sericitic or chloritic, and is interbedded with coarse clastic and possible pyroclastic material. Soft-sediment brecciation is often noted.

Generally the host horizon contains minor disseminated sulphides, principally sphalerite. Remobilization is common, and clasts of semi-massive sulphide (e.g. RH 14R) and thin lenses of semi-massive sulphide (e.g.RH 9), are present.

2.7.1.3. Black Shales

The black shale sequence defining the Red Hills Basin extends over 2.5km from RH 12 to GN 2 and beyond. The shales thicken southwards but consistently thin down dip (steeply west) and even pinch out (as in holes RH 7, 12 and 14R). The thinning coupled with opposite facings in the drill core suggest that the sedimentary basin is an in-folded syncline.

The shales are variably graphitic and pyritic (± pyrrhotite) but in general contain only minor base metal sulphides. Minor concentrations of base metals occur in the eastern (basal?) margin of the shales towards the south (see Discussion 2.7.2.). It appears that deposition of the shales is later and unrelated to the massive sulphide formation in RH 5.

2.7.1.4. Gold Potential

Gold assays from the current drill programme as well as from specific units in earlier drilling, have delineated a zone of significant gold mineralization in the vicinity of RH 5. The zone appears to be one horizon which generally straddles the basal part of the host horizon and the upper part of the underlying (?) pyroclastic sequence. The gold horizon varies from 3 to 7.5m in width. Assays for the 5 holes within the zone are shown in Table 2 .

The 5 holes have delineated an inferred one million tonnes at 2 g/t Au with 1.3% Pb, 4.6% Zn and 37 g/t Ag. The horizon appears closed to the north at RH 7 and

TABLE 2. RED HILLS GOLD MINERALIZATION

Hole	Interval	Thickness	Cu%	Pb%	Zn%	Ag g/t	Au g/t	Lithology-position
RH5	196.0-198.8	2.8m	0.3	11.4	34.5	250	6.5	massive sulphide
	196.0-200.0	4.0m	0.4	8.5	26.0	198	5.0	massive sulphide + top host rock
RH6R	306.0-309.0	3.0m	<0.1	0.1	1.6	3	0.7	ignimbrite above host rock
RH8	321.5-326.0	4.5m	<0.1	0.1	1.5	2	3.6	ignimbrite below host rock
	320.0-327.5	7.5m	<0.1	<0.1	1.1	2	2.3	base host rock + ignimbrite
RH13	215.0-218.0	3.0m	<0.1	0.4	3.1	7	0.9	base host rock + ignimbrite
RH14R	365.5-369.7	4.2m	<0.1	0.5	1.3	31	2.2	host rock
	362.0-369.7	7.3m	<0.1	0.5	1.2	30	1.5	host rock

Note: drill thickness ≈true width in all holes at this depth.

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to the south at RH 9,but is open at depth 250m below the surface. Potential also exists to extend the mineralization between RH 5 and the surface, approximately 150m (see Fig. 5).

2.7.1.5. Other Mineralization

Apart from the massive sulphide, the best base metal mineralization occurs either at the eastern (basal?) margin of the host horizon or in coarse pyroclastics (ignimbrites?). No other suitable horizons for the development of a volcanogenic massive sulphide deposit have been identified.

Petrographic work suggests that most of the mineralization within the ignimbrites is later replacement of the fine grained, vitric matrix. Some lithic clasts within the coarser pyroclastics are mineralized indicating at least some pre-existing sulphides. Minor mineralization was also noted around the margins of deformed pumice clasts.

The 20cm semi-massive sulphide lens in RH 8 appears to be a replacement vein within strongly welded ignimbrites.

2.7.2. RED HILLS BASIN-SOUTH

Five drillholes totalling 1176m have been completed to date in the southern part of the Red Hills Basin (see Fig. 3). All holes were collared in black shales and drilled east with holes RH 10, 11 and 15 intersecting the Red Hills Lava margin. A possible lateral equivalent of the host horizon further north was intersected in RH 15 but contained only minor disseminated sulphides. This unit may equate with the

"eastern shale horizon" mapped on the surface by previous workers.

The best mineralization intersected in all the holes (apart from RH 10 drilled into a structurally complex area), occurs in the eastern (basal?) section of the black shale sequence. Holes RH 11 and RH 15 both intersected disseminated galena and sphalerite averaging 0.7% Pb + Zn in a zone 50m thick. Narrow higher grade lenses up to 7% Pb + Zn have been drilled within this sedimentary sequence.

There is no evidence that the grade or thickness of this mineralized zone is changing significantly to the south. However, there appears to be an increase in overall base metal content southwards (see Table 3). The Pb:Zn ratio is also increasing to the south in the Red Hills Basin. It should be noted that the southern most hole GN 2, drilled by Rio Tinto, stopped just east of the main shale sequence and was not assayed, so that this area cannot be considered to be adequately tested. It is also noteworthy that no significant gold assays have been obtained in the southern part of the Red Hills Basin.

A 30 m costean was cut on old line 72S over the lead anomaly outlined in 1971 and 1976 (max. value 3500 ppm Pb). The costean exposed a mixed sequence of green-grey tuffaceous sandstones; graphitic black shales and minor grey meta-siltstones. Up to 5% disseminated pyrite occurs in the black shales but no other sulphides were identified. Two chip samples (each 3m) across the shales and tuffaceous sandstones assayed up to 300 ppm Cu, 6300 ppm Pb, 3740 ppm Zn, 5 g/t Ag and <0.1 g/t Au. A sample

TABLE 3. RED HILLS BASIN METAL CONTENT

Drill hole (north to south)	*assay x thickness Zn	Pb	Au	Zn:Pb	Comments
RH12	5+	1+	0	5.0	ltd. assays>cut off
RH7	8	0.2	0	40	
RH6R	33	8	2.1	4.1	
RH5	106	34	18.7	3.1	hole completely assayed
RH8	15	3	17.5	5.0	
RH14R	28+	9+	9.8	3.1	assays>cut off
RH13	38	3	4.2	12.7	
RH9	57	10	1.5	5.7	1.5m 3.3% Zn, 2.1% Pb
RH10	1	0.4	0	2.5	
RH11	29	11	0	2.6	1.1m 5.8% Zn, 1.6% Pb
RH15	35	21	0	1.6	

* only include assays ≥0.1% Zn or Pb
≥0.2 g/t Au

of black shale float found near by contained an estimated 5% disseminated galena and sphalerite.

South of RH15 the Red Hills Basin rocks are covered by outlier's of Owen Conglomerate and glacial deposits. Holes RH 15 and GN 2 showed this cover to be less than 20m thick. However, south of GN 2 an aerial photo interpretation indicates that the cover is much thicker than 20m. The geophysical responses along the basin terminate abruptly at this point,but the drill results in GN 2 indicate that the black shales continue and may extend along strike for another 700m to Lake Westwood.

2.7.3. RED HILLS-NORTH

Five hundred metres north of the last outcrops of the Red Hills Basin (just north of RH 12), there is a zone of low-lying swampy ground 100m wide extending 600m to the Tyndall Group boundary in the north. The swamp is flanked on the east by the northern continuation of the Red Hills Lavas, and on the west by massive felsic ignimbrites and lavas. It thus lies in the same geological position as the main Red Hills Basin.

A weak IP anomaly (<20msec) coincides with the swamp and may reflect underlying basinal rocks. However, the IP response is too small to be caused by significant sulphide mineralization, and the geochemical soil and rock values in this area are not significant. It is worth noting that samples of the flanking lavas and ignimbrites contain elevated Pb values (up to 1400 ppm), which is unusual.

A major E-W trending electrical discontinuity cuts through the pyroclastics in the 500m zone separating this area from the main basin, confirming a geological break in the basinal lithologies.

2.7.4. RED HILLS LAVA

The copper potential of the rhyolitic lava complex forming the Red Hills has been adequately tested by previous exploration without significant results. However the gold potential had not been evaluated.

Two dump samples were collected from the No. 1 North Adit, a high graded sample and an average mineralized sample. Assay results were: 11.1% Cu, 2.4 g/t Au and 1.1% Cu, <0.1 g/t Au respectively. Nine intervals previously sampled in drillholes RH 2 and RH 4 were selected for gold assays, these being the most pyritic samples with the highest copper values. The gold values were very low (see Appendix A).

It appears that no significant gold mineralization occurs within the Red Hills Lava.

3. HENTY FAULT ZONE (J.G. Purvis)

3.1 SUMMARY

A re-evaluation of the results of previous exploration in the vicinity of the massive sulphide body discovered in 1974, suggested that the structural constraints placed on the body's size by previous workers, may not exist.

This was subsequently confirmed by the results from three further drillholes (HFZ 9-11) put down to test for extensions of the body, two of which (HFZ9 and 10) intersected pyritic massive sulphide.

Holes HFZ 6,9,10 and the surface exposure, delineate a syngenetic pyritic massive sulphide body at least 300m long, 100m wide and from 0.5-1.5m thick, open at depth and to the south. The Henty Fault parallels the body along its western side, being localised within the soft rocks of the hydrothermal alteration zone beneath it. It is unlikely the two will separate, which with the consistent thinness of the massive sulphide, makes it an unattractive exploration target.

The basemetal content of the massive sulphide is variable and of only moderate tenor, but the precious metal contents are significant and increase towards the south, being 7 g/t Au and 126 g/t Ag in the southernmost hole HFZ 10. This hole also intersected a second mineralized chert horizon 28m above the main massive sulphide, and this assayed 5.1 g/t Au over 1.1m.

A drillhole is recommended to test the gold potential of the +35m thick mineralized host sequence to the south of HFZ 10.

No other exploration potential is recognized in the Henty Fault Zone area.

3.2 CONCLUSIONS AND RECOMMENDATIONS

1. The structural constraints placed on the potential size of the massive sulphide body by earlier workers, are not tenable. Both the Henty Fault and the Tyndall Group contact parallel the massive sulphide in strike and dip, and do not cut it off at depth.

2. Holes HFZ 6, 9, 10 and the surface exposure in the costean, delineate a pyritic massive sulphide body at least 300m long, 100m wide and from 0.5-1.5m thick, open at depth and to the south (see Fig. 23*). The body has a variable basemetal content in the range of 1-4% Cu, 2-11% Pb + Zn, and a significant precious metal content in the range of 40-125 g/t Ag and 1-7 g/t. Au.

3. The massive sulphide is clearly of bedded syngenetic type and everywhere lies on the eastern margin of the Henty Fault. Because the fault is localised within the hydrothermally altered zone or pipe that underlies the massive sulphide body, there is little hope that the two will separate.

4. This feature, combined with the consistent thinness of the massive sulphide, makes the sulphide body an unattractive exploration target and no further work specifically to test it can be recommended.

5. The development in the southernmost hole HFZ 10, of a second mineralized horizon 28m stratigraphically above the main sulphide body and well away from the fault, is very significant. This mineralization is characterised by elevated gold values (up to 5.1 g/t Au over 1.1m in pyritic chert overlying thin bands of semi-massive pyrite).

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* Annual Report, Appears as Fig. 13 in Review Report.

This, and the 7 g/t Au value in the main sulphide body intersection in this hole, indicate a trend southwards of increasing gold content in the mineralized host sequence.

6. Given this trend, the gold grades in HFZ 10, and the +35m thickness of mineralized host sequence, it is concluded there is sufficient room and potential for the existence of a body of economic gold mineralization in the 800m undrilled gap between HFZ 10 and HFZ 3 further to the south.

7. One drillhole is recommended to test this gold potential. The holes should be located 200m south of HFZ 10 and intersect the host sequence 200m below surface. The possibility of collaring this hole in the Tyndall Group rocks and drilling westwards, to lessen the meterage required and avoid possible problems with the fault, should be considered.

8. The geology at the southern end of the Henty Fault Zone, drilled by holes HFZ 3 ,4,7 and 8, is difficult to correlate with that in the vicinity of the massive sulphide body. However, the holes traversed the critical zone from the western sequence of ignimbrites and basic volcanics to the Tyndall Group, without intersecting any significant basemetal or precious metal mineralization, and effectively define the southern limit of the prospective zone.

9. The weak py-cp mineralization in chloritised tuffaceous sediments at the northern end of the Henty Fault Zone has been adequately tested by the previous drilling with negative results.

3.3 INTRODUCTION

3.3.1 WORK COMPLETED PRE-1982

Systematic exploration of the Henty Fault Zone area commenced in 1968-69 with gridding on a quarter-mile spacing. The grid was soil sampled, mapped and covered by ground EM and magnetics. No anomalies of significance were outlined.

An old shaft was located on line 63N at the northern end of the area, with pyrite-magnetite-chalcopyrite in chloritic volcanics on the dump. A costean was excavated here exposing 40' of 1.22% Cu within quartz-chlorite schists after altered tuffaceous sediments. This mineralization was later drilled by holes HFZ 1 & 2 in 1973, which showed that the mineralization was patchy and weak - best intersection being 250' of 0.11% Cu (including 5' @ 0.6% Cu), in HFZ 1. (Pb and Zn values were <300 ppm).

Several zones of pyritic quartz-sericite schist with traces of chalcopyrite were outlined towards the northern end of the HFZ area, mainly immediately west of the fault. This led to the grid being tightened up to 600' spacing in 1972-73 with further mapping and a gradient array IP survey. The IP got 17 strong anomalies in 8 groupings, including one over the old working on 63N. Other anomalies coincided with the pyritic schist zones near the fault. A sharp, shallow 40 m.sec. chargeability anomaly was detected on Line 49N immediately east of the fault. This response was later shown to be due to the massive sulphide body.

In 1973-74 a major programme of pole-dipole IP, soil geochemistry, costeaning and diamond drilling, was commenced to evaluate the IP anomalies.

The soil geochemistry gave very low values (average <20 ppm for Cu, Pb, Zn), with"anomalies" up to a maximum of only 85 ppm Pb. The massive sulphide body, covered by 50cm of glacials, gave a soil value of only 15 Pb, 15 Zn and 15 Cu. The known mineralization on 63N gave a soil anomaly of 700 Cu (possibly contaminated by the shaft dump material). Costeaning of the IP anomalies was only partially successful.

Eight drillholes totalling 1744m, were put down on the IP anomalies between November 1973 and January 1975. HFZ 1 & 2 as already mentioned, tested the mineralization around the old shaft on 63N. HFZ 3 & 4 drilled on lines 42 & 43N, intersected black shales and only traces of basemetal sulphides - the best intersection was 10' @ 0.12% Cu in HFZ 3.

While HFZ 3 & 4 were being drilled, a costean was cut over the IP anomaly on 49N. The costean exposed 1.5m of bedded pyritic massive sulphide assaying 1.67% Cu, 1.68% Pb, 0.2% Zn, 95 g/t Ag and 1.6 g/t Au, hosted by vitric and cherty tuffaceous sediments immediately east of the fault. Hole HFZ 5 drilled 120m beneath the costean was barren, but HFZ 6 125m further south, intersected 0.55m of massive sulphide assaying 1.11% Cu, 4% Pb, 7%Zn, 85 g/t/ Ag and 2 g/t/ Au. The massive sulphide lay against the Henty Fault, and the Mt. Lyell geologists inferred that the mineralization would be pinched out at depth between the fault and the Tyndall Group 'unconformity' to the east. Apart from an Applied Potential survey in 1979-80, which showed that sulphides extended at least 250m along strike, no further exploration was carried out in the vicinity of the massive sulphide body until 1982-83.

Holes HFZ 7 and 8 were drilled on IP anomalies with coincident weak soil geochemical values, on lines 40N and 38N at the southern end of the HFZ. The holes intersected weak mineralization, the best intersections being 8' @ 3100 Cu, 2500 Pb, 5300 Zn in pyritic altered ignimbrites(?) in HFZ 7, and 10' @ 385 Cu, 1425 Pb, 4550 Zn in similar rocks in HFZ 8.

3.3.2 WORK COMPLETED 1982-83

A cursory review of the geology in holes HFZ 5 & 6 (drilled in 1974), suggested that the structural limitations placed on the potential size of the massive sulphide body by the interpretations of earlier workers, may not exist. To test this idea, contract geologist P.W. English was asked to re-evaluate all data and drillcore over a 1700m zone between lines 42 - 51N (roughly from HFZ 4 to HFZ 5). His report (less plans) is presented in Appendix E*. As part of this work, English relogged holes HFZ 3-6; reviewed and interpreted all the geological, geochemical and geophysical data; theodolited in a small metric grid aligned magnetic E-W over the massive sulphide body; and drew up new geological sections.

English concluded that there was room for extensions of the massive sulphide and showed that there was little evidence to suggest the massive sulphide would be cut off by the Henty Fault and/or the Tyndall Group contact. He recommended five holes (A-E totalling 1040m), but only three totalling 606m were drilled: A = HFZ 11 (88m) located 80m north of HFZ 5 and the costean; D = HFZ 9 (268m) located 80m down-dip from HFZ 6; and E = HFZ (250m) located 100m south of HFZ 6.

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* Annual Report.

The Henty Fault Zone was included in the 1983 Review of the Tyndall E.L. The observations and conclusions of the Review Team on the potential of the prospect are incorporated in this report, which appears in both the 1982-83 Annual Report and the Review Report.

3.4 DISCUSSION OF RESULTS

3.4.1 VICINITY OF THE MASSIVE SULPHIDE BODY

Detailed results of the 1982-83 drilling are given in the drill logs in Appendix D and in Figs.22-29. (Annual Report); and Figs12-13(Review Report).

To summarize: HFZ 9, 80m down-dip below the 0.55m* of massive sulphide in HFZ 6, intersected 0.7m of pyritic massive sulphide assaying 1.1%Cu, 1.1.% Pb, 2.1% Zn, 41 g/t Ag and 1.3 g/t Au. HFZ 10, 100m south of HFZ 9 and at the same RL, intersected 0.6m of pyritic massive sulphide assaying 3.75% Cu, 1.3% Pb, 0.6% Zn, 126 g/t Ag and 7 g/t Au. A 1.1m thick interval of sulphidic chert located 28m stratigraphically above the massive sulphide in HFZ 10,assayed 5.1 g/t Au. The significance of this intersection is discussed in detail later. HFZ 11, drilled a shallow depth 80m north of the costean, was barren (although like barren hole HFZ 5, it did intersect the massive sulphide host horizon). These two holes effectively define the northern limit of the sulphide body.

The massive sulphide is hosted by altered, cherty, sulphidic tuffaceous sediments. It occupies a consistent stratigraphic position and is clearly one continuous body. Holes HFZ 6, 9, 10, and the exposure in the costean, delineate a massive sulphide body at least 300m long, 100m wide and from 0.5-1.5m thick, open at depth and to the south (see Fig.23**). The body has a variable base metal content in the order of 1-4% Cu, 2-11% Pb + Zn, and significant precious metal

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* all widths quoted are true widths.

** Annual Report. Appears as Fig.13 in Review Report.

values in the order of 40-125 g/t Ag and 1-7 g/t Au.

The sequence in the vicinity of the massive sulphide body is now fairly well defined. West of the Henty Fault is a thick sequence of steeply-dipping markedly bi-modal volcanics, comprising albitised felsic welded ignimbrites, cut by dykes and sills of chloritised basic volcanics (basalts and micro-gabbros). Some complex zones of intermixing suggest these two suites of volcanics were formed contemporaneously.

The Henty Fault marks a rock type change to a steeply west-dipping, east-facing bedded sequence of sulphidic cherts and altered sulphidic tuffaceous sediments. These rocks host the massive sulphide body. Minor thin intercalations of deformed black tuff-shales are present in the altered zone beneath the sulphide but are not seen in the generally-siliceous rocks above it.

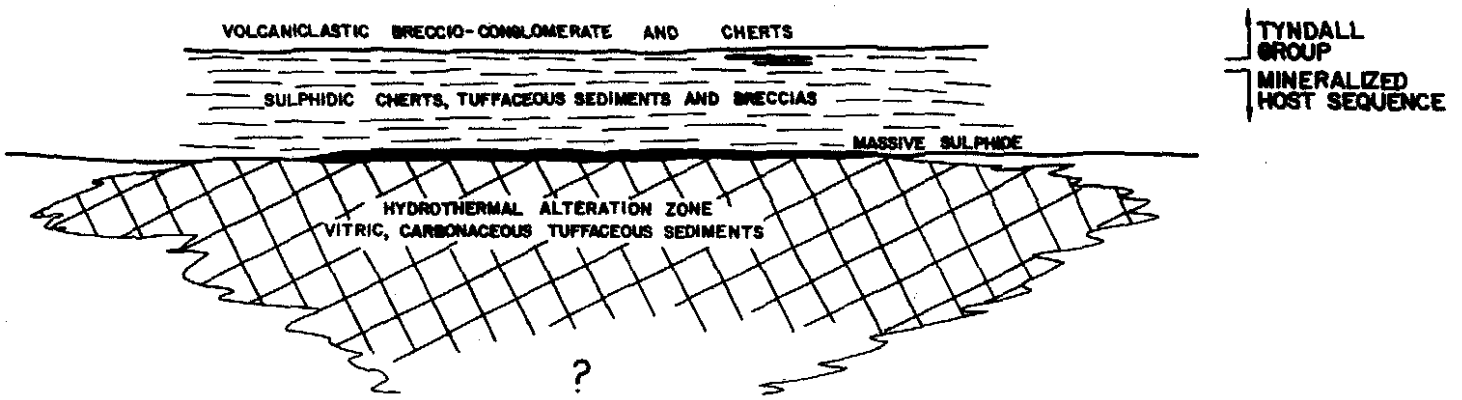
This sequence is overlain to the east by barren volcaniclastic breccio-conglomerates and cherts of the Tyndall Group. In keeping with the Tyndall Group elsewhere, these rocks are characterised by clasts of quartz-phyric volcanics. The contact between the Tyndall Group and the underlying mineralized sequence is conformable although locally sheared. The presence of cherts (grey and sulphidic in the mineralized sequence, pink or white and barren in the Tyndall Group), would suggest that the depositional environment of the two sequences was similar and that no great time break is represented by the contact.

The massive sulphide body lies on the eastern margin of the Henty Fault. The fault dips west at about 65° in this area and parallels strike.

It comprises a zone of intense fracturing and mylonisation up to 20m wide. The change of rock type from the western sequence of ignimbrites and basic volcanics to the eastern sequence of mineralized tuffaceous sediments, occurs in the middle of the mylonised zone.

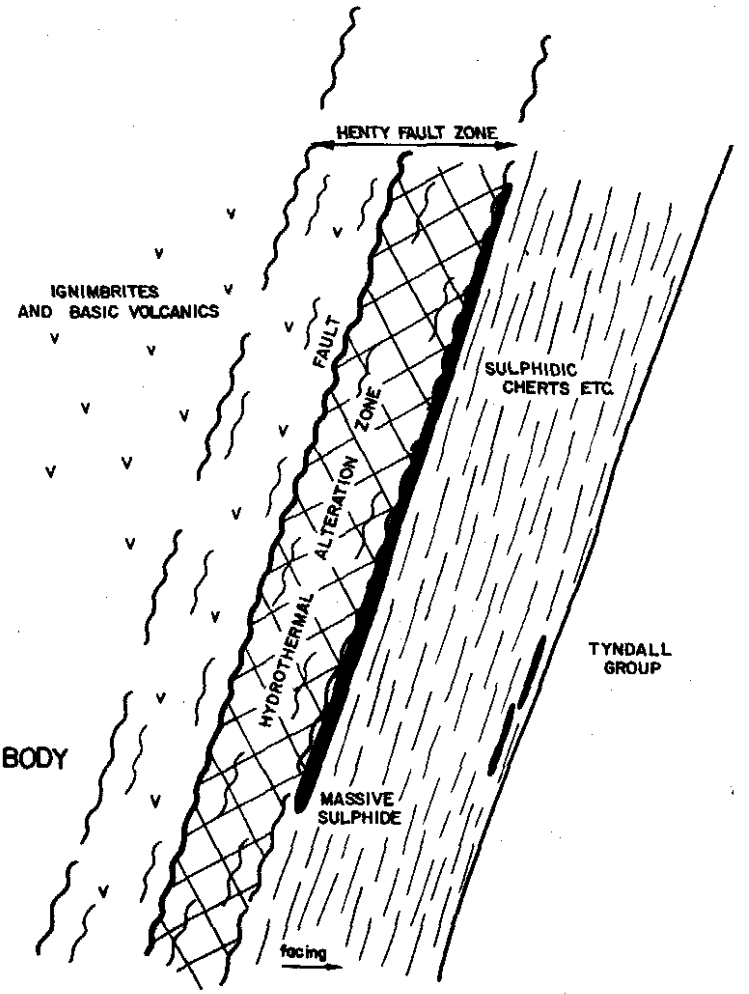
The massive sulphide is clearly seen in the costean to be of bedded syngenetic type. It always lies against the fault zone, and it is apparent that the fault in this area is localised within the soft rocks of the intense hydrothermal alteration zone or pipe that originally formed beneath the massive sulphide body (see sketch). This would explain the tremendous width of deformation associated with the fault in this area (it is much weaker to the south - see later). However, because of its localisation within the alteration zone, the fault will continue to parallel the massive sulphide in both strike and dip, and there is little hope that the sulphide body will separate from it - an important unfavourable feature of the prospect.

The two structural constraints placed on the potential size of the sulphide body by earlier workers (e.g: Reid & Meares 1981), viz: that the mineralization would be pinched out at depth between the fault and the Tyndall Group 'unconformity', are not tenable. Both features parallel the massive sulphide in strike and dip, the Tyndall Group boundary being conformable. Although the massive sulphide is sometimes broken up by the adjacent fault, there is no evidence within the fault zone in the way of massive sulphide fragments or highly sulphidic zones, to suggest that it has sheared off any significant proportion of the original thickness of the massive sulphide



HENTY FAULT ZONE
MASSIVE SULPHIDE BODY

A. PRE - FAULTING



HENTY FAULT ZONE
MASSIVE SULPHIDE BODY

B. POST FAULTING

body.

In the southern-most hole, HFZ 10, the host tuffaceous sediment sequence is + 35m thick, and there is a second development of semi-massive bedded pyrite (0.35m thick) towards the stratigraphic top of the sequence, some 28m above the main massive sulphide zone. Although this semi-massive pyrite contains only minor metal values (0.5 g/t Au, 11 g/t Ag), a 1.1m thick bed of sulphidic chert immediately stratigraphically overlying it assayed 5.1 g/t Au, with 0.45% Cu.

These results indicate the development of a second horizon of mineralization, characterised by significant gold values, well away from the fault zone and open to the south (it is not present in the holes further north). The high gold content of the main massive sulphide body in HFZ 10 (7 g/t Au) is much higher the gold grades in the massive sulphide elsewhere, and also suggests a trend of increasing gold content southwards in the host sequence.

Given these grades, the +35m thickness of the mineralized host sequence here,and the 800m long gap between HFZ 10 and the next hole to the south (HFZ 3), it would appear there is sufficient room and potential for the development of a body of economic gold mineralization south of HFZ 10, and this possibility should be tested by drilling.

3.4.2 SOUTHERN HENTY FAULT ZONE

This area was drilled in 1974-75 by holes HFZ 3,4,7 and 8, sited to test IP anomalies and weakly anomalous soil geochemistry. The anomalies were found to be due more to black and grey shales than sulphides.

Only minor basemetal sulphides were intersected in the holes. The best intersections were from pyritic altered ignimbrites(?) in holes HFZ 7 + 8 which assayed 0.31% Cu, 0.25% Pb, 0.53% Zn over 8' in HFZ 7, and 0.14% Pb, 0.45% Zn over 10' in HFZ 8. There was no significant basemetal values in HFZ 3 or 4.

No gold assaying was carried out on the core until this year. Although no anomalous values have yet been detected, some of the stratigraphically critical zones remain unsampled. This work is continuing.

The geology in the holes is difficult to correlate with that further north in the vicinity of the massive sulphide body, due partly to the fact that the Henty Fault splits into west and east branches in this area - the latter being the main fault zone. English relogged holes HFZ 3 and 4 and his sections are shown in Figs.28,29*. Following the drilling of HFZ 9-11, the author briefly re-examined HFZ 3 and 4, and has overlain on the sections one possible interpretation of the stratigraphy. The geology can be divided into three broad rock groupings,apparently separated by the branches of the Henty Fault (which here are much more poorly expressed than further north):

- the normal western sequence of ignimbrites and basic volcanics

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* Annual Report.

- a central sequence of weakly altered, poorly pyritic, grey to black tuffaceous shales, siltstones, sandstones and other sediments.

- the normal eastern sequence of Tyndall Group volcaniclastic sediments and cherts.

The problem is the identity of the central sedimentary sequence. This may represent the along-strike facies equivalent of the mineralized host sequence further north, or an infaulted slice of Dundas Group equivalents - the northern extremity of the sequence exposed at West Tyndall and Henty River. This latter interpretation is supported by the geology in holes 7 and 8 further south, where hematitic siltstones and altered basic-intermediate lavas (similar to those at Henty River), occur in this central sedimentary sequence.

However, not withstanding the geological complexities, it is clear that the holes at the southern end of the Henty Fault Zone have tested right across the potentially prospective stratigraphy without significant results.

3.4.3 NORTHERN HENTY FAULT ZONE

The most significant feature of this area is the mineralization around the old shaft on line 63N, which was drilled by HFZ 1 & 2 in 1973. The mineralization occurs in chloritised, fine grained tuffaceous sediments lying immediately west of the Henty Fault. These rocks are associated with sheared, altered basic volcanics (flows?), minor crystal tuffs and ignimbrites. This sequence appears to be the same as the unmineralized rocks to the west of the fault further south.

The altered tuffaceous sediments contain dispersed pyrite-magnetite mineralization with minor chalcopyrite. It occurs as disseminations, some stratiform and (rarely) semi-massive (up to 6cm wide), but mostly in quartz veinlets and fractures. Hole HFZ 1 intersected 250' averaging 0.11% Cu with a best interval of 0.6% Cu. Lead and zinc values were <300 ppm. Hole HFZ 2 was much worse.

The mineralization may originally have been syngenetic and remobilized by the fault into fractures and veins. The holes adequately tested the mineralization and no potential remains in this northern area.

3.5 HENTY-ANTHONY HYDRO ELECTRICITY SCHEME

Part of the proposed HEC Henty-Anthony scheme involves the building of a small dam on the Henty River (roughly between holes HFZ 7 & 8), and the formation of a Lake extending north along the Henty Fault Zone to the vicinity of HFZ 3 (see Fig.22*). A main access road is to be built along the eastern side of the Henty Fault Zone - just to the east of the massive sulphide body.

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* Annual Report. Appear as Fig. 12 in Review Report.

4. HUXLEY (P. Komyshan)

4.1. CONCLUSIONS AND RECOMMENDATIONS

1. The unit of fine grained, bedded hematitic tuffs outcropping on the western side of the Great Owen Fault south from Nasty knob, contains significant amounts of Pb and Zn sulphides and is considered highly prospective. This unit may extend to south of Windy Ridge - a distance of at least 1.5km (see Fig. 30).

2. Mineralized fine grained tuffs in the vicinity of Island Ridge contain up to 1% Zn and are also prospective. The large area covered by glacial debris in the vicinity of this mineralization needs to be tested by geophysical methods.

3. Fine grained, sericitized and pyritized volcanics east of the rhyolite body on Dighem Ridge (e.g. Mountain Maid Workings), although not appearing to contain significant base metals,were not mapped in detail in this survey and may have exploration potential.

4.2. INTRODUCTION

The 200 x 25m Huxley grid of 11 line kms, was established south of Whip Spur to follow up a number of stream sediment anomalies and an airborne E.M. (Dighem) anomaly (see Meares et. al., 1982). The grid was established from a base line bearing 161° AMG from a datum on Nasty Knob (on Whip Spur). Work during the 1982-83 field season consisted of detailed mapping and bedrock geochemical sampling.

The Huxley area was also evaluated by the Review Team, whose findings are reported separately.

4.3. GEOCHEMISTRY

Bedrock samples were collected by power auger at 25m intervals, where glacial cover permitted, and assayed for Cu, Pb, Zn, Ag by A.A.S. at Mt. Lyell. Cu, Pb, Zn, Ag assays are shown on Figures 31, 32 , 33 , 34 . Detailed sample descriptions and assays are given in Appendix F .

Anomalous values are associated with three mapped areas of mineralization (see Fig. 30):

1. To the east of Nasty Knob: Gossanous outcrops appear to be derived from syngenetic galena, sphalerite (and some Ag) mineralization, with minor associated disseminated pyrite, in fine grained altered pyroclastics. Best Assays:

   Sample No 0106 .03% Cu, 1.1% Pb, 0.2% Zn, 22 ppm Ag.
   Sample No 0136 0.1% Cu, 4.2% Pb, 0.6% Zn, 31 ppm Ag.
   Sample No 0232 <0.01% Cu,0.04% Pb,<0.01% Zn,210 ppm Ag.

2. On Island Ridge: Disseminated sphalerite and only minor disseminated pyrite occurs within disrupted altered sediments and pyroclastics. Best assay:

   Sample No 0033 0.03% Cu, 0.03% Pb, 1.0% Zn, 6 ppm Ag.

3. On Windy Ridge: Disseminated fine grained and coarse grained pyrite occurs within fine grained altered pyroclastics. Best assay:

   Sample No 0044 0.07% Cu, 0.1% Pb, 0.11% Zn, 3 ppm Ag.

   It should be noted that these anomalous areas were not detected during soil sampling on the 800' x 25' grid in 1974-75, which obtained very few anomalous values.

4.4 GEOLOGY

4.4.1. Introduction

Mapping on broad units has previously been carried out in the area by Wells (1972), Brophy (1976), and Corbett (1978). Mapping this year was confined to the Cambrian Central Sequence rocks as defined by Corbett (1978). Extensive glacial deposits and structural complexity within the mapped area has hampered detailed geological evaluation.

4.4.2. Stratigraphy

4.4.2.1. Cambrian

The structural complexity and the large area of glacial cover precludes detailed elucidation of the stratigraphy. Only one facing was determined.

a) Vicinity of Nasty Knob: (see Fig. 30). Nasty Knob is a probable lava dome composed of pink to patchy green, partly albitized rhyolite. To the east this rhyolite is flanked by weakly mineralized (py,cp), chloritic tuffaceous sediments, and minor agglomerates. This unit is overlain (?) to the east by a brecciated rhyolitic lava or agglomerate. Directly south of Nasty Knob the agglomerate-lava is locally overlain by reworked crystal tuffs. This sediment may have been deposited before an east-dipping unit of fine grained, sericitised vitric crystal tuffs which directly overlie the agglomerate east of Nasty Knob. Towards the east the pyroclastics become finer grained with distinct 5-10mm thick beds of hematitic crystal tuffs and some bedded hematite. The unit is strongly sericitised

and contains disseminated pyrite and variable base metal sulphides. Gossan development near the contact with the Owen Conglomerate indicates possible syngenetic Pb-Zn sulphides within this unit. The presence of hematite, finer grained pyroclastics, sediments and sulphides indicate a possible correlation with rock found in the upper part of the Central sequence, (immediately below the Tyndall Group), at Comstock and Howard's Anomaly.

Fine grained mineralized crystal tuffs on Island Ridge and immediately to the south, may be part of the same unit. The rocks on Island Ridge which contain up to 1% Zn, have been described by Joyce 1982, (see Appendix G , Samples 0028, 0030, 0033, 0038), as sericitised fine grained laminated sediment probably containing chert and siltstone. These rocks are considered to be suitable hosts for massive sulphides.

Fine grained mineralized pyroclastics with some hematite, on the eastern end of Windy Ridge can also be correlated with the mineralized rocks east of Nasty Knob (see Fig. 30). Joyce 1982 described sample 0043 (from this area), as a sericitised acid pyroclastic which "may represent a tuffaceous host rock to massive sulphide, or footwall rock close to the massive sulphide horizon" (see Appendix G). Minor disrupted mineralized shale and chert within this area "may represent horizons above or laterally equivalent to a massive sulphide horizon" (Samples 0042, 0045; see Appendix G). To the east of Island Ridge a massive lensoid body of

rhyolitic welded agglomeratic ignimbrite occurs within the fine grained pyroclastics. The relationship of the ignimbrite to the fine grained pyroclastics is not clear.

b) South of Windy Ridge to Huxley Saddle: The relationship of the fine grained mineralized pyroclastics of eastern Whip Spur, Island Ridge and eastern Windy Ridge, to the relatively unaltered rocks to the south is not clear. A mapped NW trending fault on Windy Ridge, and an interpreted NE trending fault, separate these two areas (see Fig. 30). The structure between Huxley Saddle and Windy Ridge appears to be a relatively simple anticlinal fold hinge,consisting of an interbedded sequence of dacitic and rhyolitic tuffs and agglomerates. The rocks, although chloritized in places, do not show the intense sericitization or sulphide mineralization seen on Island Ridge.

The finer grained tuffs east of Dighem Ridge (near Conglomerate Creek), show some sericitization but were not clearly defined by this mapping.

At the base of Windy Ridge there occurs an unusual unit described by Corbett (1978) as a "flow breccia". This unit consists of contorted beds of siliceous fine to medium grained crystal tuff, probably disrupted by intense deformation and strong cleavage development. The unit occurs within the core of an anticline.

c) West of Nasty Knob: Outcropping on Whip Spur west of the rhyolite lava of Nasty Knob, is a massive leucocratic, rhyolitic,

feldspar-phyric welded ignimbrite, described by Corbett (1978) as being a lava. Pale green wispy textures (fiamme?) within the rock indicate its ignimbritic character. This unit which outcrops in the core of an anticline, is overlain to the east by a fine grained cherty sediment, and is probably older than the mineralized fine grained pyroclastics of Island Ridge and eastern Nasty Knob. To the west, the ignimbrite is overlain by a siliceous fine grained tuffaceous sediment, which is in turn concordantly overlain by the Whip Spur agglomerate sequence of Corbett (1978).

The apparent intrusive relationship of the ignimbrite with the Whip Spur agglomerate as envisaged by Corbett (1978) can be explained by faulting. The Whip Spur agglomerate is probably the core of a syncline as indicated by: (1) easterly dips and facings within the agglomerate (recorded by Corbett 1978), and (2) rhyolitic welded ignimbrite outcrops on the western side of Whip Spur. The Whip Spur sequence of agglomerates, tuffs and shales is unmineralized and relatively unaltered. The massive ignimbrite, although sericitized is also unmineralized, and is not considered to be a prospective unit.

Pink, massive rhyolitic lava outcropping on Dighem Ridge and in Conglomerate Creek, may be the northern extent of the rhyolites of Mt. Huxley. The relationship between the lava and the ignimbrite is not understood.

d) South of Huxley Saddle: This area was not mapped in any detail and no positive

correlations can be made, given the structural complexity of the rocks to the north. This area should be mapped in detail before assumptions are made about exploration potential.

4.4.2.2. Ordovician

a) Jukes Breccia: A purple hematitic volcaniclastic conglomerate, outcropping at the base of the Owen Conglomerate on Mt. Huxley, unconformably overlies the Cambrian volcanics. Two similar outcrops of volcaniclastic conglomerate occuring east of Nasty Knob are probably fault wedges between the Cambrian volcanics and Owen Conglomerate.

b) Owen Conglomerate: Siliceous pink cobble conglomerates and sandstones disconformably overlie the Jukes Breccia on Mt. Huxley, and outcrop on Mt. Owen. This unit also contains minor black shale (e.g. eastern end of Whip Spur). Contact of the conglomerate with the Cambrian volcanics on the western side of Mt. Owen appears to be faulted. Ordovician sandstone occurs as a 1 m thick wedge within a fault on Island Ridge.

4.4.3. Structure

1. The primary control to the structure is a probable N-NNW trending depositional basin.

2. The main constituents of the structure are two phases of deformation and associated faulting.

3. The first deformation phase (D1) developed N-NNW - trending large scale folds within competent units (e.g. Owen Conglomerate),

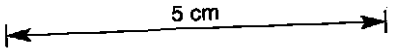
and small scale tight folds within fine grained units (e.g. south of Island Ridge) with a corresponding axial planar cleavage (S1) (see Fig. 30). Major NNW - trending faults such as the Great Lyell Fault, may be related to the D1 deformation phase. At the Cambrian/Ordovician boundary on the western slopes of Mt. Owen, displacement along the fault may be in the order of hundreds of meters. Faults within the Cambrian rocks paralleling the Great Lyell Fault have been recognized. On Island Ridge a 1m thick wedge of pink sandstone (an Owen Conglomerate unit) with surrounding breccia, occurs within the Cambrian Volcanics. This indicates a major fault 300m west of and paralleling the Great Lyell Fault.

4. The second deformation phase D_2 involved the development of a strong overprinting NW - trending cleavage S_2, and strong NW - trending shear? faulting. Only minor NW - trending folding was developed during the D_2 deformation phase.

APPENDIX A.

RED HILLS

1982-83 Assays - rock samples and drill core from pre - 1982 holes.



GOLD FIELDS EXPLORATION PTY. LTD. **SAMPLE RECORD AND ANALYTICAL DATA SHEET** COLLECTED BY: REVIEW TEAM 1983

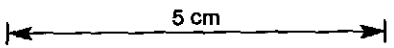
PROJECT TYNDALL, EL 9/66 PROSPECT RED HILLS SAMPLE STORAGE REQ'D: LABORATORY: LYELL/RESLISON DATE DISPATCHED:

1:250.000 SHEET: TYPE OF SAMPLE ROCK, DRILL CORE SAMPLE PREP. REQ'D: REQ Nos. ?, 0181, 0184 ANALYSIS REQ'D: DATE RECEIVED:

SAMPLE NUMBER	LOCATION	DESCRIPTION	ANALYSES Cu	Pb	Zn	Ag	Au (FA)	S%	Sn	WO_3
1101	RH9 drill site	s/bo/c: Highly manganiferous altered vitric tuff	360*	70	450	<2				
1102	Unused drill site ≈200m SW RH13	o/c: pyritic (5-10%) black tuff-shale	330*	1080	650	<2				
1103	approx. 80m NE of 1102	o/c: Black shale with 2-3% bedded pyrite	250*	1600	480	4				
1104	Same site as 1103	o/c: Leached altered tuff with 5% black specks	220*	70	60	2				
1105	No.1 N adit, dump	adit dump: semi massive py+cp in chlorite	11.1%				2.4			
1111	RH5 196.0-198.8m	sawn drillcore (80% of half core) Massive sulphide	3200	11.35%	34.5%	250	6.55		<10	
0531	L72S, 2000'W costean	o/c: Chip sample ≈3m. Black graphitic pyritic shale	300	6300	3740	5	<0.1	1.7		
0532	L72S, 2000'W costean	o/c: Chip sample ≈2m. Green tuffaceous siltstone	20	420	90	1	<0.1	<0.1		
0535	L8S ≈ 3000'W 40m N road	Dump sample, old shaft. Qtz vein in rhyolite lava, cp, gn, py	5800	1040	130	43	1.1 & 1.5	1.4		
0536	L15S ≈ 100m W RH12 on road	o/c: MnOx zone in grain brikes?, tr gn	210	2130	2420	1	<0.1	<0.1		
2682	trench ≈ 300m ESE No.1 N adit	o/c: Fine grained lava(?) with mag. chlorite, py.	100	110	120	1	<0.1	3.4	<10	<10
2683	75m N of L20N/150E	o/c: Fine grained volcanics with dissem mag.	10	1400	40	1	<0.1	0.2	10	20
2684	75m N of L20N E side of swamp	o/c: Lava with qtz, chl, mag. stockwork	50	730	130	1	0.2	<0.1	10	70
2685	E end L20N, small open cut	o/c Chloritized lava with py, mag.	160	890	120	2	<0.1	6.0	<10	<10
2759	No.1 N adit, dump	adit dump: chl-mag rhyolitic lava - vein/dissem py-cp.	1.09%	340	150	4	<0.1	1.7	<10	60
RH5 COSTEAN	320' - 330'	Re assay old pulps				<2	<0.1			
	330' - 340'	"				4	<0.1			
	340' - 350'	"				<2	<0.1			
	410' - 420'	"				<2	<0.1			
	420' - 430'	"				<2	<0.1			
	430' - 440'	"				<2	<0.1			

* Probable contamination in Mt Lyell lab.

5 cm



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

COLLECTED BY: Review Team 1983

PROJECT: TYNDALL EL 9/66 PROSPECT: RED HILLS SAMPLE STORAGE REQ'D: LABORATORY: LYELL DATE DISPATCHED:

1:250.000 SHEET: TYPE OF SAMPLE: ROCK, DRILL CORE SAMPLE PREP. REQ'D: REQ. Nos. 0194, 0193 ANALYSIS REQ'D: DATE RECEIVED:

SAMPLE NUMBER	LOCATION		DESCRIPTION	ANALYSES								
				Cu	Pb	Zn	Ag	Au(FA)	S%			
	RH5 COSTEAN	440'-450'	Re assay old pulps				<2	<0.1				
		450'-460'	"				<2	<0.1				
		460'-470'	"				<2	<0.1				
		470'-480'	"				<2	<0.1				
		480'-490'	"				<2	<0.1				
		490'-500'	"				<2	<0.1				
		500'-510'	"				<2	<0.1				
	RH2	245'-250'	Drill core pulps Red Hills Lava					<0.1	4.3			
		300'-305'	" "					<0.1	2.1			
	RH4	249.0-250.5m	" "					0.1	9.5			
		250.5-252.0m	" "					0.3	9.2			
		252.0-253.5m	" "					<0.1	1.8			
		264.5-265.5m	" "					<0.1	0.5			
		265.5-267.0m	" "					<0.1	1.4			
		267.0-268.5m	" "					<0.1	1.3			
		268.5-270.0m	" "					<0.1	1.3			

5 cm

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

PROJECT: TYNDALL EL 9/46 PROSPECT: RED HILLS SAMPLE STORAGE REQ'D: LABORATORY: FOX (NSW) DATE DISPATCHED:

1:250,000 SHEET: TYPE OF SAMPLE: DRILL CORE SAMPLE PREP. REQ'D: REQ N° 0136 ANALYSIS REQ'D: DATE RECEIVED:

SAMPLE NUMBER	LOCATION		DESCRIPTION	ANALYSES * check assays							
				Cu	Pb	Zn	Ag	Au (FA)			
RH5	201.0	202.5m	Drill core pulps - host horizon equivalent				5.65	0.052			
	202.5	204.0m	" "				0.88	0.019			
	204.0	205.5m	" "				0.72	<0.005			
	205.5	207.0m	" "				0.98	0.012			
	207.0	208.5m	" "				3.27	0.038			
	208.5	210.0m	" "				0.22	<0.005			
	210.0	211.5m	" "				0.40	0.005			
	211.5	213.0m	" mineralized ignimbrites				1.37	*0.395 0.343			
	213.0	214.5m	" "				1.77	*0.690 0.721			
	214.5	216.0m	" "				2.70	*0.745 0.569			
	216.0	217.5m	" "				0.14	*0.645 0.584			
RH8	315.5	317.0m	" host horizon equivalent					0.034			
	317.0	318.5m	" "					0.034			
	318.5	320.0m	" "					0.069			
	320.0	321.5m	" "					0.292			
	321.5	323.0m	" mineralized ignimbrites					* 3.050 3.161			
	323.0	324.5m	" "					* 0.700 0.639			
	324.5	326.0m	" "					* 1.750 1.961			
	326.0	327.5m	" "					0.259			

5 cm

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

PROJECT TINDALL EL 9/66 PROSPECT RED HILLS SAMPLE STORAGE REQ'D LABORATORY Fox (NSW) DATE DISPATCHED:

1:250.000 SHEET TYPE OF SAMPLE DRILL CORE SAMPLE PREP. REQ'D REQ N° 0186 ANALYSIS REQ'D DATE RECEIVED:

SAMPLE NUMBER	LOCATION	DESCRIPTION	ANALYSES Cu	Pb	Zn	Ag	Au (ppb)
RH9	309.5 – 311.0m	Drill core pyrs - host horizon equivalent?					0.020
	311.0 – 312.5m	" "					0.104
	312.5 – 314.0m	" "					0.446
	314.0 – 315.5m	" "					0.116
	315.5 – 317.0m	" "					0.146
	317.0 – 318.5m	" "					0.143
	318.5 – 320.0m	" "					0.068
	320.0 – 321.5m	" "					0.053
	321.5 – 323.0m	" "					0.051
	323.0 – 324.5m	" "					0.072
	324.5 – 326.0m	" "					0.109
	326.0 – 327.5m	" "					0.201
	327.5 – 329.0m	" "					0.052
	329.0 – 330.5m	" "					0.052
	330.5 – 332.0m	" "					0.082
	332.0 – 333.5m	" "					0.172
	333.5 – 335.0m	" "					0.039
	335.0 – 336.5m	" "					0.124
RH10	377.5 – 379.0m	" "					0.036
	379.0 – 379.3m	" "					0.121
	379.3 – 381.0m	" "					0.051

5 cm

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

PROJECT: TYNDALL EL 9/86 PROSPECT: RED HILLS SAMPLE STORAGE REQ'D: LABORATORY: Fox (NSW) DATE DISPATCHED:

1:250.000 SHEET: TYPE OF SAMPLE: DRILL CORE SAMPLE PREP. REQ'D: REQ 0186 ANALYSIS REQ'D: DATE RECEIVED:

SAMPLE NUMBER	LOCATION		DESCRIPTION	ANALYSES								
				Cu	Pb	Zn	Ag	Au (ppm)				
RH 11	164.0 -	165.5m	Drill core p/ps - black shales					0.007				
	165.5 -	167.6m	" "					0.018				
	167.6 -	168.7m	" "		Sample missing							
	168.7 -	170.0m	" "					0.016				
	170.0 -	171.5m	" "					0.008				
	171.5 -	173.0m	" "					<0.005				
	179.0 -	180.5m	" - tuffaceous sediments					0.006				
	180.5 -	182.0m	" "					<0.005				
	195.0 -	196.5m	" "					<0.005				
	196.5 -	198.0m	" "					0.029				
	198.0 -	199.5m	" "					0.051				
	199.5 -	201.0m	" "					0.014				
	201.0 -	202.5m	" "					0.029				

APPENDIX B.

RED HILLS

Drill Logs: including assays and petrology;
holes RH5, 6R, 7, 8 and 9 - relogged 1982-83
and holes RH13, 14, 14R and 15 - drilled 1982-83.

014

RELOG AUGUST 1982

GOLD FIELDS EXPLORATION PTY. LIMITED
DRILL CORE RECORD

HOLE NO.:	RH5
STATE :	Tasmania

ULV. PRESS

PROJECT	Red Hills
DESIGNED BY	Stevens-Hoare/Broph
RELOGGED BY	F.G. FitzGerald
COMMENCED	14-2-77
COMPLETED	1-3-77

PURPOSE

To test pole-dipole IP anomaly on line 32S and the altered contact on the western flank of the Red Hills Lavas.

LOG SUMMARY / GENERAL COMMENTS

2.75m (true thickness) of banded massive sulphide intersected 196.0-198.8m Host rock 15m thick is light grey fine grained siliceous "cherty" sediment derived largely from ashy pyroclastics. Minor base metal mineralization occurs away from the massive sulphide in the host rock and parts of underlying and overlying ignimbritic rocks. Pyritic black shale intersected 30.1-66.7m responsible for IP anomaly but contains no base metals. Red Hills lava intersected at 221.2m.

ASSAY SUMMARY

INTERVAL From	INTERVAL To	Cu	Pb	Zn	Ag	Au	S							COMMENTS
30.0	66.0	0.01%	0.03%	0.05%			1.9%							Black shales with syngentic pyrite.
96.0	98.0	0.02%	0.25%	0.82%			2.1%							Best mineralization in overlying ignimbritic sequence
172.0	175.0	0.41%	0.01%	0.05%			1.3%							mainly remobilized vein style.
196.0	198.8	0.32%	11.35%	34.5%	250	6.55	20.6%							Banded massive sulphide.
211.5	219.0	0.03%	0.02%	0.43%	1.2	0.6	1.6%							Best mineralization in underlying ignimbritic sequence.

LOCATION

NORTHING	5365140
EASTING	382296
R.L.	830.3
GRID	A.M.G.
LENGTH	237.7m

HOLE CONDITION

SIZE Hole Size	SIZE Depth
NXCU	11.9m
NQ	237.7m

SIGNIFICANT CORE LOSS INTERVALS From	To	% Lost
0.0	22.3	32
43.9	58.2	29
193.4	201.9	12

POOR GROUND CONDITION ZONES From	To	Condition

HOLE CONDITIONS AFTER COMPLETION

NX casing left in collar of hole.
Hole open to 200m in April '82.

SURVEY DATA (Note: Bearing type must be same as Project Grid Type)

SURVEY Depth	Bearing	Dip	INTERVAL From	To	Distance	VERTICAL D.Sin.Dip	R.L.	HORIZONTAL D.Cos.Dip	Prog.Total
Collar	103.3°	-50°							
19.4		-50°							
25.5		-50.5°							
37.7		-51°							
56.0		-51°							
68.2		-50.5°							
80.4	105°	-49.5°							
92.6	105°	-48°							
104.8	105°	-47.5							
115.9	104°	-47.5°							
128.1	104°	-46.5°							

SURVEY Depth	Bearing	Dip	INTERVAL From	To	Distance	VERTICAL D.Sin.Dip	R.L.	HORIZONTAL D.Cos.Dip	Prog.Total
140.3	103°	-45°							
152.5	102°	-44°							
164.7	101°	-43.5°							
176.9	100.5°	-43°							
189.1	100.5°	-43°							
201.3	101°	-43°							
213.5	100°	-42°							
225.7	099°	-41°							
237.7	099°	-41°							

555062

015

GOLD FIELDS EXPLORATION PTY. LIMITED

DLV. PRESS

PROJECT: Red Hills

DRILL CORE LOG AND ASSAY DATA

HOLE NUMBER: RH5

Page: 1.

INTERVAL From	INTERVAL To	RECOVERY m	RECOVERY %	DESCRIPTION
0.0	30.1	30.1	75	PYROCLASTICS (IGNIMBRITE?)
				Fine-med. grained, light green to grey pyroclastic rock. Coarser bands with prominent relict feld.crys. 1-3mm, zones up to 8m thick define primary foliation e.g. 45°/LCA @ 13.7m.
				Generally finer grained with diffuse dark elongate patches which may represent original vitric component up to 2cm long.
				Mod. pervasive sericite, minor chlorite and silicification.
				Mod. cleavage particularly in coarser bands.
				Scattered qtz-carb veins.
				Mineralization: Minor dissem. and veinlet py throughout much weaker in the fine grained more massive sections.
				0.0-11.3m zone of oxidation vuggy cavities filled with Fe oxide and up to 2% relict py. Some recrys. py blebs and small stringers.
				11.3-16.0m fracture fill Fe + Mn oxides common, minor py often elongated along cleavage.
				16.0-30.1m Minor Fe oxide fractures-veinlets, very minor dissem. py.
				Comment: Appears to be ignimbritic sequence overlying the black shale horizon. Possibly variable welding in different units .
				Petrographic work recognized relict shard and pumice textures @ 24.2m.
30.1	66.7	36.6	85	BLACK SHALES
				Predominantly black fissile graphitic shales with very minor tuffaceous siltstone-sandstone interbeds. 30.1-31.0m transition zone where pyroclastic rocks above disrupt blacks shales, appears conformable contact. Bedding not prominent, some fine laminations e.g. 65°/LCA @ 38.5m, 60°/LCA @ 50.0m.
				Well devt. slatey cleavage typically 40-45°/LCA.
				31.0-39.0m scattered qtz-carb-py veins.
				41.8-54.7m core very broken (due to friable rock)
				Mineralization: Abundant pyritic min, mostly fine dissem (syngenetic) often deformed along cleavage, also common vein py, some in qtz-carb veins. Up to 5% py. 66.7m 25cm of massive bedded py @ 50°/LCA. No other mins. evident.

ASSAY DATA in ppm unless otherwise shown

Sample No.	From	To	Rec. %	Cu	Pb	Zn	S
N/A	0.0	2.0	45	100	40	160	0.1%
	2.0	4.0	56	130	170	100	0.4%
	4.0	6.0	66	160	200	60	0.1%
	6.0	8.0	78	130	240	70	0.1%
	8.0	10.0	64	140	260	150	0.2%
	10.0	12.0	61	100	130	810	0.2%
	12.0	14.0	75	90	30	380	0.2%
	14.0	16.0	80	150	70	370	0.1%
	16.0	18.0	72	490	60	760	0.3%
	18.0	20.0	66	170	30	570	0.2%
	20.0	22.0	68	130	270	300	0.1%
	22.0	24.0	100	100	40	570	0.1%
	24.0	26.0	100	100	80	790	0.2%
	26.0	28.0	93	120	80	950	0.2%
	28.0	30.0	90	110	70	1270	0.2%
	30.0	32.0	90	180	320	580	1.3%
	32.0	34.0	88	110	300	820	1.4%
	34.0	36.0	98	180	430	770	1.8%
	36.0	38.0	100	80	610	880	1.7%
	38.0	40.0	100	80	620	1090	1.8%
	40.0	42.0	98	100	580	800	1.5%
	42.0	44.0	98	110	250	330	1.8%
	44.0	46.0	90	120	240	320	1.6%
	46.0	48.0	72	160	180	250	2.2%
	48.0	50.0	64	180	240	300	2.4%
	50.0	52.0	60	140	160	160	2.4%
	52.0	54.0	58	120	250	350	1.8%
	54.0	56.0	66	180	190	590	1.5%
	56.0	58.0	70	710	190	390	2.1%
	58.0	60.0	95	200	230	500	2.0%
	60.0	62.0	100	240	340	650	1.9%
	62.0	64.0	90	80	280	390	1.6%
	64.0	66.0	90	70	410	320	3.7%

555063

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GOLD FIELDS EXPLORATION PTY. LIMITED

ULV. PRESS

PROJECT: Red Hills

DRILL CORE LOG AND ASSAY DATA

HOLE NUMBER: RH5

INTERVAL From	INTERVAL To	RECOVERY m	RECOVERY %	DESCRIPTION	Sample No.	From	To	Rec. %	Cu	Pb	Zn	S
									ASSAY DATA in ppm unless otherwise shown			
66.7	179.5	112.8	98	IGNIMBRITES	N/A	66.0	68.0	98	30	160	360	3.1%
				Fairly uniform fine grained pale green-grey hard rock. Upper		68.0	70.0	98	30	0.13%	0.40%	1.2%
				contact appears gradational over 25cm into black shales. Common		70.0	72.0	100	90	240	280	1.3%
				diffuse dark clasts, often streaky in appearance and usually		72.0	74.0	100	0.10%	0.11%	780	2.3%
				elongated along a crude foliation. Possiby represents original		74.0	76.0	98	60	160	270	1.5%
				vitric or pumaceous material. Foliation sub parallel to weak		76.0	78.0	98	20	140	150	0.8%
				cleavage e.g. 58°/LCA @ 120.5m. Fine grained relict feld. crys.		78.0	80.0	100	180	0.22%	0.28%	3.9%
				<1mm in size also common especially in slightly coarser zones,		80.0	82.0	100	20	170	230	2.2%
				usually white, sometimes pink in colour e.g. 146.4-151.4m.		82.0	84.0	96	40	220	270	2.6%
				Minor qtz crys. up to 3mm occur sporadically.		84.0	86.0	95	20	220	430	1.1%
				Somewhat "blotchy" appearance due to differing alteration, pred-		86.0	88.0	96	40	860	0.43%	1.0%
				ominantly a green-grey moderate pervasive sericitic alteration,		88.0	90.0	100	60	350	490	2.9%
				in between cream coloured more siliceous alteration possibly		90.0	92.0	100	70	220	560	1.5%
				reflected more intensly welded parts of ignimbrite flows e.g.		92.0	94.0	98	60	480	0.17%	1.5%
				83.1-99.8m. Chloritic alteration usually minor, but moderate		94.0	96.0	97	40	440	0.11%	1.0%
				over some sections e.g. 99.8-122.6m and always present in darker		96.0	98.0	98	210	0.25%	0.82%	2.1%
				devitrified pumaceous clasts. Some patches of cream carbonate		98.0	100.0	97	10	550	600	1.2%
				alteration also developed e.g. 114.0m.		100.0	102.0	93	30	400	580	0.8%
				Qtz-carb±chl±sulphide veins are quite abundant indicating the		102.0	104.0	95	20	150	420	0.3%
				brittle nature of the welded ignimbritic sequence. Veins usually		104.0	106.0	97	30	80	240	0.4%
				2-5mm thick but do occur up to 35cm thick e.g. 69.1m, 167.3m		106.0	108.0	98	40	110	140	0.3%
				and 168.5m. Veins often sub parallel to cleavage and appear		108.0	110.0	98	240	80	100	0.2%
				related to later structured deformation and "sweat-out" event		110.0	112.0	100	240	150	140	0.2%
				e.g. 45° @ 98.6m, 50°/LCA @ 129.0m and 60°/LCA @ 163.8m.		112.0	114.0	100	130	160	180	0.2%
				78.4-79.0m possible structural zone,much veining, brecciation		114.0	116.0	100	90	110	150	0.2%
				and sulphide cement.		116.0	118.0	100	80	110	110	0.1%
				114.1-114.4m crush zone with common white carb-chl-ser veins.		118.0	120.0	100	100	100	120	0.3%
				164.7-165.0m breccia zone, angular clasts in qtz-carb-chl-		120.0	122.0	100	250	340	190	1.0%
				py cement.		122.0	124.0	100	70	150	280	0.2%
				Mineralization Variably mineralized throughout, predominantly		124.0	126.0	98	480	140	130	0.6%
				as fracture fill base metals and assoc. with qtz-carb±chl veins.		126.0	128.0	96	80	520	580	0.3%
				Minor dissem. sulphide, predominantly fine grained py.		128.0	130.0	100	60	340	250	0.2%
				66.7-99.8m. Abundant veining with py≥sp>gn with trace to minor		130.0	132.0	100	50	50	90	0.1%
				cpy usually 1-2% sulphide but locally 5-10% sulphide e.g. 69.1m		132.0	134.0	100	60	110	90	0.1%
				vein 15cm thick,78.4-79.0m breccia-fracture zone with sulphidic		134.0	136.0	100	50	100	90	0.1%

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GOLD FIELDS EXPLORATION PTY. LIMITED

ULV. PRESS

PROJECT: Red Hills

DRILL CORE LOG AND ASSAY DATA

HOLE NUMBER: RH5

INTERVAL From	INTERVAL To	RECOVERY m	RECOVERY %	DESCRIPTION
				cement est. 10% py 2% sp, 2% gn 0.5% cpy, 92.9-96.8m veins av.
				5% py, 3% sp minor gn.
				99.8-122.6m marked decrease in sulphide, mainly vein py minor
				dissem. py.
				122.6-157.2m still <1% sulphide mainly vein py but minor sp, tr
				gn.
				157.2-164.7m increase in sulphide mainly py veinlets, some recrys
				blebs py, some cpy esp. 157.4-158.3m, minor sp, trace gn in veins
				164.7-172.1m Only minor sulphide mainly py assoc. with qtz-carb
				veins or as breccia cement e.g. 164.7-165.0m with minor sp.
				172.1-179.5m Increase in sulphide assoc. with increase in
				chloritic alteration mainly vein/fracture py, minor cpy best
				interval 172.7-173.3m.
				Comment: Appears to be sequence of ignimbrites, mostly quite,
				welded. Detailed petrographic work (Amdel report) frequently
				mentions devitrification textures, relict glass shards, spher-
				ulites etc. Scattered mineralization almost entirely related
				to remobilized later fracture-fill and veinlet structures.
179.5	196.0	16.5	96	STRONGLY WELDED IGNIMBRITE
				Pale orange to pink/red with green patches fine grained hard
				blocky rock. Striking feature is brecciated nature of much of
				the core with angular clasts similar to Red Hills felsic lava
				in cream coloured ashy matrix. Appears gradational contact with
				upper units as well as textural similarities to these rocks.
				Very little primary structure preserved apart from small flecks
				of relict crys. and dark relict fiammé? The blocky clasts(?)

ASSAY DATA in ppm unless otherwise shown

Sample No.	From	To	Rec. %	Cu	Pb	Zn	S
N/A	136.0	138.0	100	70	80	130	0.1%
	138.0	140.0	100	70	60	90	0.1%
	140.0	142.0	96	120	290	180	0.2%
	142.0	144.0	95	70	0.19%	0.11%	0.2%
	144.0	146.0	98	50	510	230	0.1%
	146.0	148.0	100	60	350	340	0.1%
	148.0	150.0	100	50	130	240	0.1%
	150.0	152.0	96	80	400	720	0.2%
	152.0	154.0	92	110	100	180	0.2%
	154.0	155.5	100	80	70	140	0.2%
	155.5	157.0	100	90	60	230	0.2%
	157.0	158.5	100	0.29%	330	460	2.3%
	158.5	160.0	100	0.15%	180	350	1.0%
	160.0	161.5	100	600	180	620	0.9%
	161.5	163.0	98	150	90	180	0.4%
	163.0	164.5	98	100	100	150	0.4%
	164.5	166.0	100	90	130	0.17%	1.2%
	166.0	167.5	98	70	90	90	0.9%
	167.5	169.0	97	180	90	50	0.6%
	169.0	170.5	98	90	100	80	1.2%
	170.5	172.0	98	120	110	260	2.1%
	172.0	173.5	100	0.60%	120	370	1.9%
	173.5	175.0	100	0.22%	70	550	0.6%
	175.0	176.5	100	140	50	100	0.3%
	176.5	178.0	100	100	40	70	0.4%
	178.0	179.5	100	270	0.17%	710	0.4%
	179.5	181.0	100	100	90	110	0.2%
	181.0	182.5	96	720	520	240	3.5%
	182.5	184.0	97	100	80	100	0.3%
	184.0	185.5	95	160	150	150	2.5%
	185.5	187.0	100	260	140	120	0.9%
	187.0	188.5	100	90	190	170	0.6%
	188.5	190.0	100	160	170	0.18%	0.6%
	190.0	191.5	100	90	160	740	0.4%

555065

GOLD FIELDS EXPLORATION PTY. LIMITED

ULV. PRESS

PROJECT: Red Hills

DRILL CORE LOG AND ASSAY DATA

HOLE NUMBER: RH5

INTERVAL From	INTERVAL To	RECOVERY m	RECOVERY %	DESCRIPTION	* Amdel assay ** re assay 1982 Sample No.	From	To	Rec. %	ASSAY DATA in ppm unless otherwise shown Cu	Pb	Zn	S	Ag	Au	Hg*	Ba*	Cd*	As*
				tend to be quite hard and siliceous where as the surrounding	N/A	191.5	193.0	100	90	190	0.10%	0.6%						
				matrix is slightly cleaved and moderately sericitic with variable		193.0	194.0	95	500	130	290	0.4%						
				chloritic alteration. Some apparent chl. alteration of feld.		194.0	195.0	86	700	100	0.35%	1.0%	7	<1	<0.02	0.27%	7	35
				crys. e.g. 180.6-188.0m. Minor qtz-carb-chl veining.		195.0	196.0	78	0.13%	900	0.15%	3.0%	12	<1	<0.02	0.27%	5	75
				194.6-196.0m broken core related to fault?														
				Mineralization: Generally low sulphide predominantly fine dissem.														
				py and minor po, also micro fractures and minor veinlets of														
				sulphide. Basal 30cm marked increase in mineralization related														
				to underlying massive sulphide (see discussion below).														
				179.5-194.6m est. <0.5% sulphide overall mainly py, minor dissem.														
				po e.g. 190.6-191.2m, minor dissem sp at 191.2m.														
				194.6-196.0m marked increase in sulphides, py>sp veins and blebs.														
				Comment: Appears to be intensly welded rhyolitic ignimbrite														
				with lava breccia appearance in part. In fact petrographic work														
				(Amdel report) has difficulty deciding if rock derived from														
				lava flow or welded vitric pyroclastic. Fragmental nature and														
				presence of inferred fiammé favour latter interp.														
													average of 3 assays					
196.0	198.8	2.8	95?	MASSIVE SULPHIDE	N/A	196.0	197.0	90	0.20%	8.8%	31.0%	20.3%	154	5.8	2.1	70	760	10
				Banded fine grained massive sulphide. Upper contact possibly		197.0	198.0	95	0.35%	12.2%	34.5%	22.1%	169	4.2	2.2	<20	830	110
				faulted with overlying welded ignimbritic (lava breccia?), alth-		198.0	199.0	95	0.33%	12.3%	28.5%	19.3%	151	7.5	2.0	60	750	60
				ough appears gradational in part from pale khaki sericitic rock														
				with5cm massive py-cpy into 8cm grey fine grained siliceous	1111**	196.0	198.8		0.32%	11.35%	34.5%		250	6.55				
				("cherty") rock with stringers of py-cpy straight into massive														
				sulphide. Care is needed with the interpreted lithological-														
				mineralogical relationships here because all core is split and														
				has been moved several times. The massive sulphide itself shows														
				well developed fine banding in places, elsewhere appears to														
				have been disrupted and slightly brecciated. Some bedding defined														
				by sp-gn layers e.g. 75°/LCA @ 197.6m, 80°/LCA @ 198.2m. Possible														
				slumping evident also e.g. bedding 30°/LCA @ 196.05m. No														
				evidence for recrystallization of sulphides.														
				198.3-198.55m thin layer of grey cherty host rock with angular														
				clasts up to 1cm in size.														
				The main part of the sulphide body is predominantly sp-gn but														

GOLD FIELDS EXPLORATION PTY. LIMITED

ULV. PRESS

PROJECT: Red Hills

DRILL CORE LOG AND ASSAY DATA

HOLE NUMBER: RH5 Page: 5.

INTERVAL From	INTERVAL To	RECOVERY m	RECOVERY %	DESCRIPTION	*Amdel assay Sample No	From	To	Rec. %	ASSAY DATA in ppm unless otherwise shown Cu	Pb	Zn	S	Ag	Au(FA)	Hg*	Ba*	Cd*	As*
				both the upper and lower margins contain more py-cpy. In the														
				classic sulphide zoning this would imply opposite facings. No														
				clear footwall zone is evident. Lower contact with fine														
				grained siliceous rocks obscured by broken core.														
				Comment: Appears to be a classic volcanogenic massive sulphide,														
				no evidence for remobilization hence assays reflect original														
				tenor of base and precious metals. The host lithology is a fine														
				grained siliceous rock, possibly derived from ashy pyroclastics.														
				This host horizon maybe faulted on the upper (western) side.														
198.8	211.0	12.2	98	SILICEOUS FINE GRAINED SEDIMENT - HOST ROCK		199.0	200.0	100	0.51%	700	0.25%	4.1%	44	0.4	0.02	80	12	200
				Grey fine grained siliceous rock, cherty appearance close to		200.0	201.0	100	500	100	0.25%	2.5%	6	< 1	<0.02	270	< 1	20
				massive sulphide. Further down hole becoming less siliceous		201.0	202.5	100	460	230	200	2.3%	5.7	0.05				
				and medium grained with dark green very fine grained often dis-		202.5	204.0	100	150	110	180	0.6%	0.9	0.02				
				rupted units. Good bedding as thin laminations in finer units		204.0	205.5	100	210	80	210	1.0%	1.0	<0.01				
				e.g. 60°/LCA @ 199.8m or as contact between bands in coarser		205.5	207.0	100	370	70	540	1.2%	3.3	0.01				
				units e.g. 83°/LCA @ 208.8m. Some of darker (chloritic) beds		207.0	208.5	100	950	190	0.10%	5.4%	0.2	0.04				
				are more massive and unbedded. Evidence of some disturbance		208.5	210.0	100	110	20	200	0.3%	0.4	<0.01				
				while rock semi-consolidated from incipient fragmental-brecciated		210.0	211.5	100	750	50	310	1.0%	1.4	<0.01				
				appearance in part e.g. 199.6m where matrix infill of qtz-clay														
				barite?-py+minor cpy and 208.1-208.4m where much disruption														
				and matrix of semi-massive sulphide mainly py minor sp. Minor														
				qtz-carb±sulphide veins.														
				Mineralization: Sharp decrease in min. beneath massive sulphide														
				Mainly fine dissem. (syngenetic?) py and minor sp. Some remobil-														
				ized vein and fracture sulphide particularly in syn-sed breccia														
				zones (see above).														
				Comment: Host rock to massive sulphide. Distinctive lithology														
				probably ashy material derived largely from vitric pyroclastics														
				but with some clastic input. Petrographic work (Amdel report)														
				indentifies possible volcanic glass as well as minor sedimentary														
				quartz and muscovite. Soft sediment disruption has occured in														
				places. Generally low sulphide content mainly syngenetic in														
				origin. Not strongly hydrothermally altered. No true footwall														
				feeder zone to massive sulphide developed.														

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GOLD FIELDS EXPLORATION PTY. LIMITED

DLV. PRESS

PROJECT: Red Hills

DRILL CORE LOG AND ASSAY DATA

HOLE NUMBER: RH5

INTERVAL From	INTERVAL To	RECOVERY m	RECOVERY %	DESCRIPTION	Sample No	From	To	Rec. %	ASSAY DATA Cu	Pb	Zn	S	Ag	Au(FA)
									in ppm unless otherwise shown					
211.0	221.2	10.2	100	LITHIC IGNIMBRITE										
				Grey to green medium to coarse grained pyroclastic with										
				prominent dark fiammé up to 1cm long. Upper contact appears										
				gradational into overlying ashy rocks suggesting genetic relat-										
				ionship. General increase in grain size and quantity of lithic										
				clasts down hole. Clasts predominantly fine grained pale to										
				pink/red felsic lava, also minor dark vitric material. Both										
				subangular to subrounded mostly <1cm in size. Also common										
				relict K-feld crys., some are euhedral, some broken fragments,										
				up to 4mm long, often pink alteration colour e.g. 212.0m.	N/A	211.5	213.0	100	250	110	990	1.5%	1.8	0.55
				Crude foliation in upper section defined by orientation of		213.0	214.5	100	300	230	0.11%	1.2%	2.7	0.72
				elongated and deformed relict pumice, vitric material and lithic		214.5	216.0	100	280	200	0.52%	1.8%	0.1	0.57
				clasts e.g. 65°/LCA @ 216.8m. Generally only weak cleavage and		216.0	217.5	100	200	100	0.91%	1.3%	0.1	0.58
				weak pervasive sericitic and patchy weak to moderate chloritic		217.5	219.0	100	250	60	750	0.8%		
				alteration.		219.0	220.5	100	160	20	60	1.0%		
				218.3-221.2m appears to be zone of abundant lithic lava clasts		220.5	222.0	100	550	20	100	0.4%		
				transitional to Red Hills lava margin.										
				Mineralization: Moderately mineralized mainly as course blebs										
				and stringers of py and sp up to 5% over short intervals,										
				apparently related to chloritic alteration e.g. 216.6-216.8m										
				but generally 1-2% sulphide py>sp. Basal section has rounded										
				clusters of py up to 1.5cm diam. e.g. 220.3m.										
				Comment Rock is clearly ignimbritic in origin, but proximal										
				to probable talus margin of Red Hills lava dome.										
				Mineralization style suggest post emplacement deposition possibly										
				into porous pyroclastic sequence.		222.0	223.5	100	560	10	70	0.3%		
						223.5	225.0	100	130	10	70	0.2%		
221.2	237.7	16.5	97	RED HILLS RHYOLITIC LAVA		225.0	226.5	100	130	30	50	0.2%		
				Fine grained to aphanitic blotchy red and dark green brecciated		226.5	228.0	100	110	10	50	0.2%		
				rock, Upper contact with coarse pyroclastics marked by 15cm zone		228.0	229.5	96	120	10	30	0.2%		
				packed with pink felsic lava blocks. Characteristic fragmental		229.5	231.0	95	320	10	40	0.3%		
				appearance, blocks of lava generally rounded with diffuse		231.0	232.5	92	70	10	80	0.6%		
				margins due to differing pink-red (hematitic) and green		232.5	234.0	94	150	10	70	0.3%		
				(chloritic) alteration styles. Some zones more massive dark		234.0	235.5	95	200	20	60	0.4%		
				rock e.g. 234.0-237.7m. No foliation or cleavage evident.		235.5	237.5	95	230	10	80	0.3%		

021

555068

GOLD FIELDS EXPLORATION PTY. LIMITED

DLV. PRESS

PROJECT: Red Hills

DRILL CORE LOG AND ASSAY DATA

HOLE NUMBER: RH5

INTERVAL		RECOVERY		DESCRIPTION	ASSAY DATA			
From	To	m	%		Sample No.	From	To	Rec. %
				Numerous thin veins of qtz-carb and mineralized irregular fractures.				
				Mineralization Mostly related to veins and fractures although some discrete patches or recrys. clots. Mainly py with minor cpy. Locally 5% sulphide but overall est. <0.5% .				
				Comment Probably rubble margin of Red Hills lava, moderately altered with chlorite-hematite patches, weakly developed stockwork style mineralization.				
				END OF HOLE				

022

RELOG AUGUST 1982.

GOLD FIELDS EXPLORATION PTY. LIMITED

DRILL CORE RECORD

555069

HOLE NO.: RH 6 R

STATE : TASMANIA

ULV. PRESS

PROJECT	Red Hills
DESIGNED BY	Walter/Brophy
RE LOGGED BY	F.G. FitzGerald
COMMENCED	16-3-77
COMPLETED	28-4-77

PURPOSE

To test down dip extensions of mineralization intersected in RH 5.

LOG SUMMARY / GENERAL COMMENTS

Possible equivalent to RH 5 host rock intersected 312.5-314.9m carrying minor base metals. If this is equivalent lithology then host horizon has thinned markedly at depth and to north of RH 5. Adjacent coarse pyroclastics (ignimbrites?) contain better dissem. and vein base metals. No black shales intersected, possible lateral equivalent sediments 151.9-167.7m contain much pyroclastic material and show the same rapid thinning of main shales at depth & to north of RH5. Red Hills lava intersected at 368.9m.

ASSAY SUMMARY

INTERVAL From	INTERVAL To	Cu	Pb	Zn	Ag	Au	COMMENTS
274.5	292.5	0.01%	0.38%	0.58%			Veins and dissem. min in weakly welded ignimbrites.
306.0	309.0	0.02%	0.07%	1.62%	2.8 g/t	0.7 g/t	
313.5	315.0	0.02%	0.22%	1.02%	6.8 g/t	<0.2 g/t	Host rock equivalent, fine siliceous sediment.
315.0	328.5	0.03%	0.02%	0.79%	2.1 g/t	<0.2 g/t	Coarse ignimbrites with blebs & stringers of sulphide.
incl 324.0	327.0	0.05%	0.02%	1.36%	2.2 g/t	<0.2 g/t	Best mineralisation within above ignimbritic sequence.

LOCATION

NORTHING	5365182
EASTING	382136
R.L.	819.3
GRID	A.M.G.
LENGTH	453.85

HOLE CONDITION

SIZE Hole Size	SIZE Depth
NXCU	90.0
NQ	322.7
BQ	453.85

SIGNIFICANT CORE LOSS INTERVALS From	To	% Lost
0.0	17.1	no core
17.1	34.1	69
34.1	69.9	25
284.4	289.9	16

POOR GROUND CONDITION ZONES From	To	Condition

HOLE CONDITIONS AFTER COMPLETION

Hole commenced 9.0m down RH6 (stopped at 157.25m due to excess flattening). Drilled out of original hole using NX casing. Full core was recovered from RH6R at 36.5m.
No casing left in top of hole. Hole collar cannot be located due to later bulldozing.

SURVEY DATA (Note: Bearing type must be same as Project Grid Type)

SURVEY Depth	SURVEY Bearing	SURVEY Dip	INTERVAL From	INTERVAL To	INTERVAL Distance	VERTICAL D.Sin.Dip	VERTICAL R.L.	HORIZONTAL D.Cos.Dip	HORIZONTAL Prog.Total
Collar	101°	-55°							
24.4	N.D.	-53°							
48.8	N.D.	-53°							
73.2	N.D.	-52°							
92.7	N.D.	-51°							
104.9	N.D.	-50°							
117.1	N.D.	-48°							
129.3	N.D.	-47°							
153.7	N.D.	-45°							
172.0	095°	-44°							
183.8	093°	-42°							
196.0	093°	-40°							

SURVEY Depth	SURVEY Bearing	SURVEY Dip	INTERVAL From	INTERVAL To	INTERVAL Distance	VERTICAL D.Sin.Dip	VERTICAL R.L.	HORIZONTAL D.Cos.Dip	HORIZONTAL Prog.Total
208.2	092°	-39.5°							
220.4	091°	-37°							
244.8	090°	-35°							
269.2	090°	-34°							
293.6	090°	-33°							
305.8	090°	-32°							
333.0	090°	-30°							
373.0	089°	-27°							
413.0	089.5°	-24.5°							
453.0	089°	-22°							

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023

GOLD FIELDS EXPLORATION PTY. LIMITED

ULV. PRESS

PROJECT: Red Hills

DRILL CORE LOG AND ASSAY DATA

HOLE NUMBER: RH 6 R

Page: 1.

INTERVAL From	INTERVAL To	RECOVERY m	RECOVERY %	DESCRIPTION	ASSAY DATA Sample No.	From	To	Rec. %
17.0	56.1	39.1	54	COARSE LITHIC IGNIMBRITES Green to orange medium to coarse grained lithic rich pyroclastic. Agglomeratic texture with angular-subangular clasts up to 5cm in size in fine ashy or vitric matrix. Predom. red and pale felsic lava, also dark green diffuse (relict pumice?) clasts and white relict feld. crys. ≤ 1mm. Crude foliation defined by rough alignment of elongated clasts-deformed pumice e.g. 45°/LCA @ 39.4m. Subtle colour banding between darker more sericitic/chloritic zones and paler more siliceous zones is generally in the direction of this foliation. Some sections less agglomeratic e.g. 41.3-47.4m are probably different parts of flow units. Generally mod. pervasive sericite and variable chlorite with resultant mod. cleavage developed during later deformation. Cleavage mostly sub parallel foliation. Siliceous sections tend to be more massive possibly more strongly welded e.g. 33.6-39.2m, some distinct fiammé. Generally minor quartz veining apart from 51.9m where quartz-carb.-chl.-ser. vein 15cm thick @ 50°/LCA. Overall very minor mineralization as fine dissem. py, occasionally recrys. blebs py 1-2mm in size. Veins are unmin.				
56.1	92.2	36.1	87	WELDED IGNIMBRITES Grey-green medium to fine grained pyroclastic. Gradational contact with above unit, in places appears to be similar finer equivalent with common small lithic clasts predominantly feld. crys. and fiammé and relict glass shards < 5mm. General elongation of these clasts and similar darker and paler colour banding defines crude foliation e.g. 45°/LCA @ 57.4m, 45°/LCA @ 70.4m. The common dark relict vitric clasts give rock a speckled or blotchy appearance depending on relative size and amt. of flattening. Similar alteration style to above - generally mod. pervasive sericite with more siliceous (paler) and chloritic (darker) zones e.g. 63.4m. Mod. cleavage developed throughout e.g. 50°/LCA @ 86.0m. Again only minor unmineralized veins evident e.g. 57.7m 2cm vein quartz-carb-chl				

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GOLD FIELDS EXPLORATION PTY. LIMITED

DRILL CORE LOG AND ASSAY DATA

ULV. PRESS

PROJECT: Red Hills

HOLE NUMBER: RH 6 R

Page: 2.

INTERVAL From	INTERVAL To	RECOVERY m	RECOVERY %	DESCRIPTION	ASSAY DATA Sample No.	From	To	Rec. %
				@ 35°/LCA. Sequence virtually unmineralized apart from tr.				
				dissem py.				
				Comment: Probably sequence of pumice and ash ignimbrites related to predominantly block and ash ignimbrites higher up				
				the hole.				
92.2	131.8	39.6	87	MIXED COARSE PYROCLASTICS AND PORPHYRITIC BASALTS				
				Generally grey medium to quite coarse grained lithic pyroclastics				
				apparently intruded by swarm of thin porphyritic basalts.				
				PYROCLASTICS Made up of abundant clasts of cream carbonate				
				rich pods 0.5-3cm long forming up to 50% of rock, dark relict				
				pumiceous material and less common more angular felsic lava				
				fragments both fawn and red-brown and up to 4cm long set in				
				finer grey ashy matrix often containing altered feld.crys.				
				and fragments. Matrix sometimes appears to wrap around clasts				
				or squeeze along fractures within them. Some finer grained				
				sections within sequence appear to be lithic poor zones which				
				maybe more intensly welded e.g. 127.5-127.9m. In general lithic				
				clasts and probable fiammé are elongated along mod. cleavage				
				direction e.g. 50°/LCA @ 107.1m. Similar alteration style				
				to above with striking difference being the carbonate which				
				appears to be later alteration, original nature of replaced				
				clasts is unclear. Likewise this sequence of interpreted				
				coarse ignimbrites is mostly unmineralized apart from tr.				
				dissem py. and minor coarse py. within some qtz-carb-chl veins				
				which are quite common in places and up to 15cm thick e.g.				
				94.2m which also has tr. gn.				
				PORPHYRITIC BASALTS 8 distinct bodies of dark green-grey por-				
				phyritic mafic rock within the ignimbritic sequence above				
				were intersected ranging from 2cm up to 1.95m thick as detailed				
				below:				
				108.1m, 4cm thick; 108.5m,3cm, contacts 40° & 55°/LCA;				
				109.8m, 70cm, 45°; 117.5, 2.5cm; 120.8m, 30cm, 60°;				
				123.7-125.65m, 1.94m, 45° & 35°; 126.3, 2cm; 128.3m, 60cm, 30°.				
				Generally the contacts of these thin bodies appear concordant				

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GOLD FIELDS EXPLORATION PTY. LIMITED

DRILL CORE LOG AND ASSAY DATA

PROJECT: Red Hills

HOLE NUMBER: RH 6 R

INTERVAL From	INTERVAL To	RECOVERY m	RECOVERY %	DESCRIPTION	ASSAY DATA Sample No	From	To	Rec. %
				with crude foliation-cleavage, however in detail they are quite complex. Sometimes the enclosing pyroclastics appear to have disrupted even intruded the porphyry, other times the converse is observed. All bodies have thin chilled and bleached margins which argues against the smaller ones being blocks caught up in the ignimbrite. Phenocrysts of euhedral plagioclase up to 1cm long usually ≤5mm, smaller phenocrysts of altered possible mafic (pyroxene?) mineral and fine acicular crystals are set in micro crystalline to aphanitic groundmass. All bodies are moderately magnetic. Some have conc. of phenos. along margins. The body 120.8-121.1m contains a band of grey pyroclastic material 1cm thick within it and which appears the same as the enclosing rock. This along with the nature of the contacts of some bodies suggests that they maybe extrusive flows rather than intrusive sills (?). The porphyries are only weakly altered (chloritic), slightly weathered and unmineralized.				
				Comment: The exact nature of the porphyritic basalt "swarm" is ambiguous, the general conformable nature would suggest very thin flows or bifurcating(?) sills rather than dykes. The enclosing coarse pyroclastics appear to be variably welded, lithic ignimbrites. The striking carbonate alteration is unusual				
131.8	151.9	20.1	98	WELDED IGNIMBRITES: Fine to medium grained fawn-grey fairly uniform rock. Minor coarser units with possible chips of felsic lava appear similar to lithic ignimbrites higher up hole e.g. 144.6-145-4m. Mostly structureless sequence with common white relict feld. crys. ≤1mm and occasional darker relict deformed pumice(?) clasts. Generally weaker pervasive alteration, sericite, only minor chlorite. Only weak cleavage developed e.g. 40°/LCA @ 153m. Zones of possible silicification present. 140.4-142.1m breccia zone with mod. chloritic alteration, diffuse pods and sweat out veins of white carbonate and some veinlet sulphides. Elsewhere scattered veins of qtz-carb-chl veins up to 0.5cm				

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GOLD FIELDS EXPLORATION PTY. LIMITED

PROJECT: Red Hills

DRILL CORE LOG AND ASSAY DATA

HOLE NUMBER: RH 6 R

INTERVAL From	INTERVAL To	RECOVERY m	RECOVERY %	DESCRIPTION
				thick, sometimes mineralized.
				Mineralization: Generally low sulphide content apart from minor
				base metals associated with veins-fractures. 139.5m qtz-carb
				veins 70°/LCA with py and minor cpy. 140.4-142.1m sulphides
				in veins assoc. with chl-carb alteration est. 5% py ≤1% sp
				minor gn, cpy.
151.9	167.7	15.8	98	MIXED SEDIMENTARY AND PYROCLASTIC SEQUENCE
				Mixed sequence of grey fine grained siliceous epiclastics,
				grey-green fine grained ashy shale, fine to medium grained
				grey to fawn welded ignimbrites(?) and coarse agglomeratic
				pyroclastics. Quite a complex zone with several structural
				zones. Some bedding evident in siliceous sediments, beds up
				to 20cm thick e.g. 65°/LCA @ 152.0m, 60°/LCA @ 156.7m. Some
				contacts more irregular e.g. 154.55m between fine tuff and
				grey "cherty" rock approx 80°/LCA. Interpreted ignimbrites
				have both faulted contacts e.g. 165.6m and apparent gradational
				contacts e.g. 160.5m with fine epiclastics(?) suggesting genetic
				relationship. They have common dark "streaks", deformed pumaceous
				material and cream feld. crys. up to 2mm. Agglomeratic pyroclas-
				tics appear similar to those higher up hole with felsic lava
				clasts and possible vitric material. Apart from apparent
				silicifaction of finer seds. the other lithologies have weak-
				mod. sericite and carbonate alteration. Zones of broken core
				153.6-154.7m, 155.7-157.3m, 159.1m & 165.5-167.7m possible
				related fault structures. Common qtz-carb-sulphide veins
				throughout, strongest associated with structural zones.
				Mineralization: Variable throughout, mostly vein and fracture
				fill, some dissem. blebs and stringers of sulphide.
				151.9-159.2m est. 5% py minor sp mainly vein/fracture, minor
				dissem. py. locally up to 10% py and 2% sp over 10cm in coarser
				pyroclastics.
				159.2-165.2m minor py in welded ignimbrites.
				165.2-165.5m est. 6-8% py <1% sp as blebs-stringers assoc.
				with carb-ser alteration and fault structures(?)

ASSAY DATA Sample No.	From	To	Rec. %

GOLD FIELDS EXPLORATION PTY. LIMITED

ULV. PRESS

PROJECT: Red Hills

DRILL CORE LOG AND ASSAY DATA

HOLE NUMBER: RH 6 R

INTERVAL From	INTERVAL To	RECOVERY m	RECOVERY %	DESCRIPTION	Sample No.	From	To	Rec. %	ASSAY DATA in ppm unless otherwise shown Cu	Pb	Zn
				165.5-167.7m up to 5% py both frac. and vein over 30cm within							
				grey shales-siltstones, rest minor py. No assays.							
				Comment: Structural complications hinder interpretation of							
				these lithologies. Possibly all related pyroclastics.							
167.7	271.4	103.7	95	IGNIMBRITES							
				Uniform fine-medium grained fawn to grey, hard rock. Generally							
				structureless apart from dark streaks which may represent							
				extremely deformed pumice and subtle colour banding reflecting							
				different concentrations of khaki sericitic and orange siliceous							
				alteration. These define foliation which is well developed							
				in places e.g. 53°/LCA @ 182.1m, 45°/LCA @211.0m, 60°/LCA							
				@ 214.4, 57°/LCA @ 228.1m, 60°/LCA @ 238.3m, 60°/LCA @ 260.0m.							
				Generally quite uniform grainsize with no obvious lithic							
				clasts, some minor variations, all appears fine sand size.							
				Scattered small feld. crys ≤ 1mm are recognizable. No clear							
				fiammé although from 256.8m down hole dark streaks are more							
				clearly related. Overall only weak alteration mainly sericite							
				increasing from 236m on minor zones of chlorite and occasional							
				carbonate e.g. 238.9-241.6m. Similarly veins poorly developed,							
				some qtz-carb, mostly barren e.g. 176,8-178.2m, 216.4-220.2m,							
				but with tr min. deeper in hole (see below).							
				202.1m 3cm qtz breccia zone with blebs py.							
				227.4-227.8m broken core, Fe ox. fractures @ 60°/LCA.							
				237.0 5cm crush zone within 3m fine grained khaki ash.							
				256.8-258.4m broken core, slightly schistose.							
				268.9-271.4mfault zone, broken core in clay-sericite matrix.							
				Mineralization: Overall only trace of min. mainly as scattered							
				dissem. py. Deeper in hole some minor to trace sulphide occurs							
				in veins.							
				221.3-227.3m fine dissem py <1% related to inc. sericite.							
				229.6-232.5m up to 5% py mainly in qtz-carb ± chl veins.							
				235.1m qtz-carb-py veins @ 55°/LCA.							
				245.5m qtz-carb-chl vein 5cm thick with gn-sp minor cpy.							
				252.1-252.4m qtz-carb-chl veins some py,tr gn.							

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GOLD FIELDS EXPLORATION PTY. LIMITED

DLV. PRESS

PROJECT: Red Hills

DRILL CORE LOG AND ASSAY DATA

HOLE NUMBER: RH 6 R

INTERVAL From	INTERVAL To	RECOVERY m	RECOVERY %	DESCRIPTION	Sample No.	From	To	Rec. %	ASSAY DATA in ppm unless otherwise shown Cu	Pb	Zn	Ag	Au
				Comment Regularity, thickness and general structureless nature									
				of rock support interpretation of sequence of variously welded									
				ignimbrites which are virtually unmineralized c.f. petrographic	N/A	270.0	271.5	95	210	1030	0.29%		
				report sample 211.0m interp. tuffaceous arenite.		271.5	273.0	92	70	80	720		
						273.0	274.5	94	130	100	430		
271.4	312.5	41.1	98	LESS WELDED IGNIMBRITES		274.5	276.0	98	130	570	0.57%		
				Mixed fine to coarse grained fawn to grey-green rock. Finer		276.0	277.5	100	120	480	0.80%		
				units are more uniform, massive with scattered feld. crys < 1mm		277.5	279.0	100	250	750	1.59%		
				and occasional green amorphous (altered) phenocrysts 2mm in		279.0	280.5	100	90	370	0.74%		
				size in fine ashy groundmass e.g. 271.4-276.1m, 279.8-282.2m,		280.5	282.0	98	160	220	0.17%		
				308.5-312.5m. Rest of sequence coarser grained with relict		282.0	283.5	96	100	210	0.34%		
				feld crys. 2-5mm, pale diffuse clasts, (not carb) and darker		283.5	285.0	90	100	620	0.24%		
				(deformed pumice) 0.5-2cm long. Contacts between units mostly		285.0	286.5	80	350	1.17%	1.11%		
				gradational, although sharper at 284.9m 65°/LCA.		286.5	288.0	92	140	0.75%	0.47%		
				Generally this sequence is more strongly altered, particularly		288.0	289.5	94	80	0.47%	0.47%		
				the coarser units which have mod. pervasive chlorite. Some		289.5	291.0	98	130	0.84%	0.71%		
				of the finer pale units are slightly siliceous.		291.0	292.5	100	150	1.12%	0.54%		
				Scattered veins of qtz-carb-chl. throughout, often mineralized.		292.5	294.0	98	60	0.16%	0.21%		
				Some epidote in veins e.g. 275.1-275.5m.		294.0	295.5	98	70	0.49%	0.38%		
				Mineralization Marked increase in min. related to stronger		295.5	297.0	96	60	0.35%	0.29%		
				chloritic alteration, best in coarser (unwelded?) units where		297.0	298.5	98	80	390	630		
				blebs, stringers and dissem sulphides occur. Vein mineralization		298.5	300.0	97	70	130	240		
				common throughout all units.		300.0	301.5	95	40	390	300		
				271.4-276.1m est. 1% sulphide py=gn=sp mostly veins up to		301.5	303.0	96	150	950	0.23%		
				5mm.		303.0	304.5	94	60	630	0.28%		
				276.1-279.8m est. 5% sulphide py>sp>>gn both diss. & vein up		304.5	306.0	96	60	330	620		
				to 1cm.		306.0	307.0	95	140	320	0.52%		
				279.8-282.2m est. 2-3% sulphide py>sp locally 5% mostly dissem.		307.0	308.0	90	500	0.14%	3.6%	2.8	0.7
				282.2-308.5m est. 2-4% sulphide sp≥py, minor gn tr cpy best		308.0	309.0	98	100	300	0.73%		
				zones 5-8% sulphide over 1-2m sections, mostly dissem, best		309.0	310.0	100	40	140	310		
				gn higher up hole.		310.0	311.0	100	330	30	460		
				308.5-312.5m sharp decrease in sp, with ≤1% dissem py.		311.0	312.0	100	70	40	410		
				Comment: Appears to be sequence of ignimbrites, generally									
				less welded, more strongly altered and mineralized. Maybe									
				related to massive unit above as basal parts of large flows.									

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GOLD FIELDS EXPLORATION PTY. LIMITED

DEV. PRESS

PROJECT: Red Hills

DRILL CORE LOG AND ASSAY DATA

HOLE NUMBER: RH 6 R

INTERVAL From	INTERVAL To	RECOVERY m	RECOVERY %	DESCRIPTION	Sample No.	From	To	Rec. %	ASSAY DATA in ppm unless otherwise shown Cu	Pb	Zn	Ag	Au
312.5	314.9	2.4	100	FINE GRAINED SEDIMENT (HOST ROCK EQUIVALENT?)									
				Green -brown fine grained phyllite, slightly siliceous and									
				cherty in appearance. Core very broken, no bedding determined.									
				Upper contact appears sharp with fine crystal rich pyroclastic.									
				Lower contact obscured by thick vein. Appears moderate pervasive									
				sericite, some qtz-carb ± chl. veins.	N/A	312.0	313.5	100	110	150	320		
				Mineralization Moderately mineralized increasing downhole		313.5	315.0	100	190	0.22%	1.02%	6.8	<0.2
				from <1% to 7% sulphide over basal 10 cm. Mostly fine dissem.									
				min py>sp, minor gn.									
				314.5-314.9m qtz-carb-chl-epidote vein with py, sp, gn minor									
				cpy.									
				Comment Maybe equivalent to host rock horizon in RH5. However									
				this unit must have thinned considerably to north and at									
				depth from RH5 intersection.									
314.9	341.2	26.3	98	COARSE IGNIMBRITES									
				Medium-coarse grained dark grey lithic pyroclastic rock. Upper									
				contact obscured by 40cm vein, maybe faulted. Abundant lithic									
				clasts of pink felsic lava up to 2cm but mostly 2-5mm, dark									
				green fiammé, altered (pink) relict feld crys and more diffuse									
				pale clasts (less deformed pumice?). Elongation of clasts									
				and vitric material gives crude foliation in places e.g.									
				315.5m 60°/LCA. Lava clasts vary from angular to sub rounded,									
				mostly sharp margins but some alteration resorbtion(?). Generally		315.0	316.5	95	300	620	0.67%		
				weak pervasive sericite and weak to moderate chlorite alteration.		316.5	318.0	96	100	90	0.47%		
				Only weak cleavage throughout.		318.0	319.5	92	190	200	0.63%	2.1	<0.2
				PORPHYRITIC BASALT DYKE 321.2-322.6m Sharp contacts both		319.5	321.0	92	200	130	0.97%		
				@ 45°/LCA across general foliation of ignimbrites. Dark		321.0	322.7	94	360	90	0.16%		
				green fine grained rock with chilled slightly bleached margins		322.7	324.0	100	300	190	0.75%	1.7	<0.2
				becoming medium grained towards the centre. Fine accicular		324.0	325.5	100	350	100	1.10%	1.3	<0.2
				crystals aligned parallel to contacts, elsewhere relict pheno-		325.5	327.0	100	550	280	1.62%	3.0	<0.2
				crysts of feld(?) up to 1cm in size now extensively replaced		327.0	328.5	100	520	50	0.76%	2.5	<0.2
				by carbonate. Mod. magnetic. Probably intrusive feeder of		328.5	330.0	100	440	40	150		
				sills or flows intersected higher in hole.		330.0	331.5	100	260	60	640		
				Mineralization: Moderately to well mineralized especially		331.5	333.0	100	250	20	420		

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GOLD FIELDS EXPLORATION PTY. LIMITED

DLV. PRESS

PROJECT: Red Hills

DRILL CORE LOG AND ASSAY DATA

HOLE NUMBER: RH 6 R

INTERVAL From	INTERVAL To	RECOVERY m	RECOVERY %	DESCRIPTION
				higher in sequence, predominantly blebs and finer dissem.
				sulphides with lesser fracture-vein (remobilized) min.
				314.9-316.7m est. 5-7% sulphide py>sp, minor gn, cpy mostly
				assoc. with qtz veins, also dissem.
				316.7-321.2m est. 1-2% sulphide sp=py mostly blebs-stringers.
				322.6-328.8m est. 5-6% sulphide py=sp minor gn,cpy, coarse
				blebs.
				328.8-341.2m base metals decrease markedly, still 3-5% py,
				minor cpy towards base of section.
341.2	368.9	27.7	98	PYROCLASTICS - RED HILLS LAVA TALUS
				Dark grey very coarse pyroclastic. Abundant blocks of pink-
				red felsic lava up to 30cm in size, set in fine vitric matrix
				with common fiammé and relict glass shards. Many lava clasts
				appear broken with diffuse (resorbed?) margins. Feld crys
				1-2mm are also common throughout matrix. Overall blotchy
				appearance due to green (chlorite) and pink-red (hematitic)
				alteration patches. Microfractures with pale brown (siderite?)
				fill are common e.g. 349.3m, orientated @ 65°/LCA.
				Mineralization: Moderate mineralization mostly as blebs
				and stringers of py-sp. Some clasts of lava contain blebs
				of py-cpy. Best zone 359.5-363.9m est. 5% py, 2% sp.
				Rest of core est. 1-2% py ≤0.5% sp, minor cpy.
				Comment: Appears to be close to margin of Red Hills lava,
				possibly talus breccia with pyroclastic (ashy) matrix.
368.9	387.4	18.5	99	RED HILLS LAVA - BRECCIA
				Blotchy red and dark green brecciated lava rubble. Blocks
				of felsic lava with distinct margins as well as quite diffuse
				patches of pink-red (hematitic) alteration (after blocks?)
				Mod. chloritic alteration of matrix, perhaps disguising origin-
				al fabric of rock. Rock tends to be blocky, no obvious foliation

ASSAY DATA in ppm unless otherwise shown

Sample No.	From	To	Rec. %	Cu	Pb	Zn	Ag	Au
N/A	333.0	334.5	100	240	10	130		
	334.5	336.0	100	160	10	190		
	336.0	337.5	100	500	30	180		
	337.5	339.0	100	630	50	350		
	339.0	340.5	100	280	20	350		
	340.5	342.0	100	170	90	500		
	342.0	343.5	100	250	30	140		
	343.5	345.0	100	230	<100	240		
	345.0	346.5	100	250	<100	750		
	346.5	348.0	100	180	<100	0.16%		
	348.0	349.5	98	420	<100	<100		
	349.5	351.0	98	580	<100	<100		
	351.0	352.5	97	730	540	350		
	352.5	354.0	100	430	<100	120		
	354.0	355.5	100	120	<100	350		
	355.5	357.0	98	120	340	550		
	357.0	358.5	96	120	<100	1.16%		
	358.5	360.0	98	250	<100	0.83%		
	360.0	361.5	100	340	280	1.16%		
	361.5	363.0	100	310	<100	200		
	363.0	364.5	100	570	<100	110		
	364.5	366.0	100	200	<100	220		
	366.0	367.5	100	270	200	310		
	367.5	369.0	98	0.17%	<100	130		
	369.0	370.5	98	170	<100	140		
	370.5	372.0	98	310	<100	<100		
	372.0	373.5	100	360	<100	<100		
	373.5	375.0	100	110	<100	<100		
	375.0	376.5	100	60	<100	900		
	376.5	378.0	100	60	<100	<100		

555078

031

GOLD FIELDS EXPLORATION PTY. LIMITED

DLV. PRESS

PROJECT: Red Hills

DRILL CORE LOG AND ASSAY DATA

HOLE NUMBER: RH 6 R

INTERVAL From	INTERVAL To	RECOVERY m	RECOVERY %	DESCRIPTION
				or cleavage. Possibly auto-brecciated margin of Red Hills Lava flow. Some qtz-carb-chl veins up to 5mm thick with py and minor cpy. Also granular py and some recrys. stringers py, tr. cpy throughout up to 1% sulphide.
387.4	453.8	66.4	98	RED HILLS LAVA Dark green fine grained massive rock with some red zones/patches. Slightly porphyritic with pink altered feld. phenocrysts up to 4mm. 387.4-390.8m core broken appears mod. sericite and cleavage, possible banding @ 50°/LCA. Rest of core generally competent with chloritic and hematitic alteration throughout. Mineralization: Blebs of py-cpy, wide spread but minor, some vein-fracture sulphide. Overall <1% sulphide. 390.8 6cm semi-mass. py minor cpy. 446.1-453.8m common qtz-chl-carb. veins 5-10cm thick with py-cpy, some mag.
				END OF HOLE

ASSAY DATA in ppm unless otherwise shown

Sample No.	From	To	Rec. %	Cu	Pb	Zn
N/A	378.0	379.5	100	110	<100	0.15%
	379.5	381.0	100	140	<100	310
	381.0	382.5	100	370	<100	110
	382.5	384.0	100	470	<100	<100
	384.0	385.5	100	840	<100	<100
	385.5	387.0	100	310	<100	<100
	387.0	388.5	100	0.11%	<100	<100
	388.5	390.5	100	570	<100	<100
	390.5	391.5	98	0.46%	<100	<100
	391.5	393.0	96	700	<100	<100
	393.0	394.5	98	310	<100	<100
	394.5	396.0	98	840	<100	<100
	396.0	397.5	100	380	<100	<100
	397.5	399.0	100	750	<100	<100

Sample Number : 0501 RH6R 211.0m

Identification : Deformed, sericitic, dacitic arenite with fracture-controlled traces of disseminated pyrite

Description :

The hand specimen is a core sample of fine-grained, yellowish grey to light olive grey rock with streaky foliation or laminations. There are several patches of white carbonate, about 3mm in size.

A cobaltinitrite staining test revealed no K-feldspar.

In thin section the sample is seen to consist mainly of twinned plagioclase grains, up to about 1mm in size, untwinned albite and quartz, generally finer than about 0.3mm, carbonate and schistose sericite. Overall the textures suggest a deformed and recrystallized, tuffaceous sediment.

Somewhat leucoxenized, secondary sphene is a common accessory as aggregates after some former mafic mineral. Green chlorite is an inconspicuous accessory mineral and there are a few crystals of zircon.

A replacement type vein, about 1mm wide and composed of strained quartz and minor carbonate, parallels the sericite foliation and is jacketed by several millimetres of disseminated, very fine pyrite and minor chlorite. A second zone of disseminated, fine pyrite jackets an extremely thin vein of sericite and pyrite. There are several barren, discordant, carbonate veins.

An approximate mode of the sample is :

25-35%	quartz
8-10%	twinned plagioclase
40-50%	untwinned plagioclase
15-25%	sericite
1-2%	carbonate (most calcite, but some slightly coloured)
0.3-0.5%	leucoxenized sphene
0.1%	chlorite
tr	zircon
0.1%	pyrite

Comments and Interpretation :

The sample is thought to represent a deformed and partly recrystallized sediment derived from dacitic tuffaceous material. A lack of shard-type textures, moderate uniformity in grainsize of quartz and most feldspar and generally equidimensional grain shapes for feldspar and quartz support the interpretation as a sediment.

The foliation in the sample cannot safely be interpreted as primary bedding and is attributable to local variations in the abundance of sericite.

Disseminated pyrite, adjacent to quartz, carbonate and pyrite veining, was introduced probably before deformation.

555079

032

Sample Number : 0502 RH6R 280.0m

Identification : Recrystallized, fine, rhyolitic, vitric crystal tuff with disseminated pyrite and sphalerite

Description :

The hand specimen is a core sample of fine-grained, speckled, greenish grey rock with disseminated sulphides and inconspicuous, fine, fracture veins.

The sample accepted a bright yellow stain when tested with cobaltinitrite, indicating the presence of abundant K-feldspar. Tiny, siliceous, vitric shard textures are plainly visible in the stained sample.

In thin section the main fabric of the sample is seen to consist of altered and partly recrystallized clasts of feldspar and quartz (0.2 to 0.5mm in size) along with coarsely silicified, formerly vitric shards (commonly 0.5mm long), set in a cryptocrystalline matrix which is rich in K-feldspar.

Many of the quartz phenoclasts are ovoid and appear to have been partly digested by reaction with the adjacent, potassic matrix. The feldspar is mainly albite as subhedral aggregates. Some is partly replaced by fine sericite and by pale brown subhedral carbonate.

Subhedral and anhedral, pale brown carbonate (manganiferous or ferruginous) is widely distributed as disseminations and as thin fissure and replacement veins.

Euhedral pyrite and anhedral, transparent, golden brown sphalerite are conspicuous accessory minerals as disseminated grains and aggregates up to 0.3mm in size. Minor green chlorite is loosely associated with the sulphides.

An approximate mode is :

25-30%	quartz
10-15%	albite
40-50%	K-feldspar
4-6%	carbonate (manganiferous or ferruginous)
3-5%	sericite
2-3%	pyrite
1-2%	sphalerite
1-2%	chlorite

Comments and Interpretation :

The sample is fairly confidently interpreted as having originated as an unwelded or poorly welded fine vitric crystal tuff of rhyolitic composition, but it has been extensively recrystallized and pervasively mineralized by pyrite and sphalerite. It has not been significantly sheared, nor heavily sericitized.

RE LOG AUGUST 1982

555080

033

HOLE NO. : RH 7

STATE : TASMANIA

GOLD FIELDS EXPLORATION PTY. LIMITED

DRILL CORE RECORD

DLV. PRESS

PROJECT	Red Hills
DESIGNED BY	Walter/Brophy
RE LOGGED BY	F.G. FitzGerald
COMMENCED	3-5-77
COMPLETED	30-5-77

PURPOSE

To test northward extension of mineralization intersected in RH 5.

LOG SUMMARY / GENERAL COMMENTS

Possible equivalent to RH 5 host rock intersected 197.8-199.6m but carrying no evident base metals. This siliceous shale-siltstone sequence contains much interbedded coarse clastic-pyroclastic rock indicating that the host horizon has thinned dramatically to the north. A zone of moderate base metal in ignimbrites 248.5-253.0m probably equates with similar mineralization in RH5. Minor base metals associated with basal section of black shale sequence. Red Hills lava intersected at 286.5m.

ASSAY SUMMARY

INTERVAL From	INTERVAL To	Cu	Pb	Zn	Ag	Au								COMMENTS
248.5	253.0	0.25%	0.04%	1.87%	3.2 g/t	<0.2 g/t								Coarse lithic ignimbrite with blebs of sulphide

LOCATION

NORTHING	5365337
EASTING	382177
R.L.	822.5m
GRID	A.M.G.
LENGTH	322.0

HOLE CONDITION

SIZE Hole Size	SIZE Depth
NXCU	18
NQ	322

SIGNIFICANT CORE LOSS INTERVALS From	To	% Lost
0.0	15.0	52
108.95	122.65	59
241.75	260.30	29

POOR GROUND CONDITION ZONES From	To	Condition
111.8	116.0	Major fault zone in black shales.

HOLE CONDITIONS AFTER COMPLETION

All casing pulled from hole.
Open hole depth not determined Oct. 1982.

SURVEY DATA (Note: Bearing type must be same as Project Grid Type)

SURVEY Depth	Bearing	Dip	INTERVAL From	To	Distance	VERTICAL D.Sin.Dip	R.L.	HORIZONTAL D.Cos.Dip	Prog.Total
Collar	090.7°	-55°							
20.0	ND	-55.5°							
44.4	ND	-54.5°							
56.6	ND	-54°							
68.8	ND	-53°							
93.2	ND	-51°							
117.6	ND	-50°							
129.8	ND	-49°							
138.0	089°	-48°							
157.3	ND	-47.5°							
169.5	ND	-46.5°							

SURVEY Depth	Bearing	Dip	INTERVAL From	To	Distance	VERTICAL D.Sin.Dip	R.L.	HORIZONTAL D.Cos.Dip	Prog.Total
193.9	ND	-45.5°							
206.1	ND	-45°							
230.5	ND	-44°							
254.9	ND	-42.5°							
267.1	ND	-41°							
279.3	ND	-40°							
291.5	ND	-39°							
303.7	ND	-38.5°							
315.9	ND	-37°							
322.0	088°	-36°							

034

555081

GOLD FIELDS EXPLORATION PTY. LIMITED

ULV. PRESS

PROJECT: Red Hills

DRILL CORE LOG AND ASSAY DATA

HOLE NUMBER: RH 7

INTERVAL From	INTERVAL To	RECOVERY m	RECOVERY %	DESCRIPTION
0.0	15.0	15.0	48	AGGLOMERATIC IGNIMBRITE Medium-coarse grained green-grey pyroclastic with common white (felsic lava?) angular clasts up to 5cm long mostly ≤1cm. Relict white feld. crys. + lava chips 1-5mm are common in clastic groundmass. Colour banding, dark green (chlorite) and grey (siliceous) defines crude foliation e.g. 45°/LCA @ 2.0m. From 10m on rock finer grained more vitric material with possible fiammé. Appears mod. chlorite and sericite with well developed cleavage e.g. 48°/LCA @ 4.0m. Zone of partial oxidation, thin Fe-Mn ox fracture-fill.
15.0	28.9	13.1	97	WELDED IGNIMBRITE Grey-green to buff fine grained uniform rock. Gradational upper contact suggests genetically related. Streaky dark material (relict fiammé) and alteration colour banding defines foliation e.g. 50°/LCA @21.2m. Occasional coarser bands within are enhanced by an increase in alteration e.g. 23.8-24.7m. Generally weak-mod. pervasive sericite and chlorite. Mostly poorly developed cleavage but increasing with alteration down hole and sub par-allel to foliation. Virtually unmineralized apart from tr. fine grained py.
28.9	32.1	3.2	98	PORPHYRITIC BASALT SILLS Two bodies of dark green-porphyritic mafic rock 25cm and 160cm thick separated by buff coloured welded ignimbrite 29.15-30.5m. Both have sharp chilled contacts @ 50°/LCA which are bleached and conformable with the foliation within the enclosing ignim-brites. The basalts (see petrographic report) are composed of equant feld. phenocrysts up to 1cm in size and dark green (relict pyroxene?) 2-3mm set in a fine to aphanitic groundmass. A tendancy for crystals to cluster and be aligned along the contact. The rocks are moderately magnetic but unmineralized. Comment: Exact nature of emplacement of basalt is unclear. The petrographic report suggests intrusive contacts and the conformable relationships would imply sills rather than dykes.

ASSAY DATA Sample No.	From	To	Rec. %

035

555082

GOLD FIELDS EXPLORATION PTY. LIMITED

DLV. PRESS

PROJECT: Red Hills

DRILL CORE LOG AND ASSAY DATA

HOLE NUMBER: RH 7

INTERVAL From	INTERVAL To	RECOVERY m	RECOVERY %	DESCRIPTION	ASSAY DATA Sample No.	From	To	Rec. %
32.1	95.7	63.6	99	WELDED IGNIMBRITES Grey to buff-orange fine grained, hard uniform rock. Generally structureless apart from dark streaky fabric possibly due to completely deformed fiammé giving crude foliation e.g. 55°/LCA @ 45.6m, 40°/LCA @ 57.4m. Scattered very fine relict feld. cryst ≤1mm. Some subtle colour banding as before, between grey, more sericitic and hard orange more siliceous altered zones. Overall appears alteration moderately weak, with very little cleavage developed. Subtle fragmental appearance evident particularly in more blocky (more intensly welded?) sections. 71.3-72.5m thin zone which appears slightly coarser grained with small white lithic clasts or altered crystals 2-4mm. Qtz-carb-chl-pink (potassic?) veins are scattered throughout section generally increasing down hole mostly ≤1cm thick but up to 25cm e.g. 87.0, 94.8m all barren apart from 51.7m 1.5cm veins minor py and tr sp, 54.6-55.4m veins with py. Apart from these veins and very minor fine dissem py the rock is unmineralized. Some Fe ox along fractures.				
95.7	110.7	15.0	90	MIXED SEDIMENTARY SEQUENCE Sequence of grey shales, tuffaceous sandstones and possible pyroclastic rocks. Upper contact possibly faulted, defined by qtz-Kfeld vein at approx 10°/LCA into fine-mod grained crystal tuff. Some bedding and sharp contacts between units e.g. 45°/LCA @ 96.9m, 70°/LCA @ 99.5, 50°/LCA @ 99.8m, 80°/LCA @ 110.7m. Elsewhere contacts gradational and irregular. Units vary from few cm thick to 5.6m thick. No true black shales but some fine-grained siliceous grey siltstones have slightly "cherty" appearance e.g. 100.2-100.3m. The pyroclastic rocks tend to be grey fine-medium grained with fragmental appearance made up of feld crys.(often broken), relict glass shards and lithic clasts ≤2mm. Appears to have been considerable disruption and deformation, bedding/contacts are irregular, even well developed cleavage is contorted in places with possible kink bands e.g. 106.3m, generally increasing down hole. Moderate-strong sericite				

555083

GOLD FIELDS EXPLORATION PTY. LIMITED

ULV. PRESS

PROJECT: Red Hills

DRILL CORE LOG AND ASSAY DATA

HOLE NUMBER: RH 7 Page: 3.

INTERVAL From	INTERVAL To	RECOVERY m	RECOVERY %	DESCRIPTION	ASSAY DATA Sample No.	From	To	Rec. %
				developed particularly in coarser units, some pervasive and patchy carbonate alteration. Irregular qtz-carb±py veins throughout. Mineralization: Marked increase in sulphide from overlying ignimbrites but almost all py as dissem, recrys grains and assoc. with veins. Py. best in tuffaceous sediments but overall minor <0.5% apart from last 40cm where very sharp increase up to 10% dissem. py in grey phyllite. Comment: Appears to have been influxes of coarser pyroclastic material into a small sedimentary basin disrupting the quieter sedimentation.				
110.7	124.1	13.4	32	BLACK SHALES Predominantly black shales with minor grey speckled tuffaceous siltstone-sandstone. Upper contact sharp, lower contact also sharp @ 75°/LCA, no facings evident. Possible bedding 75°/LCA @ 122.4m but generally not determined because of broken nature of core. Considerable core loss & clay pug zones indicate major structure esp. 114.65-114.95m where almost no core recovered. Generally black shales low graphite content. Mod. slatey cleavage at different angle to bedding e.g. 86°/LCA @ 122.4m but in different plane. Mineralization: Moderately pyritic throughout often fine grained crystals coalesced along cleavage, est. 1-2% py. From 121.5m on blebs of py up to 5%, basal 20cm massive py overlying blebs and stringers of py and minor sp in grey volcaniclastic sandstone. No other base metal visible.				
124.1	173.1	49.0	98	PYROCLASTICS (IGNIMBRITES) Mostly light grey fine grained uniform sequence, becoming buff-orange and hard further down hole. Upper contact with interp. sed. sequence quite gradational over several metres. In fact similar pyroclastic rock cont. into basal part of black shales as thin interbeds suggesting some reworking of upper section. Rock generally structureless apart from crude foliation due to colour (alteration) banding and streaked relict vitric				

555084

GOLD FIELDS EXPLORATION PTY. LIMITED

ULV. PRESS

PROJECT: Red Hills

DRILL CORE LOG AND ASSAY DATA

HOLE NUMBER: RH 7

INTERVAL From	INTERVAL To	RECOVERY m	RECOVERY %	DESCRIPTION	ASSAY DATA Sample No.	From	To	Rec. %
				material e.g. 30°/LCA @ 136.2m, 55°/LCA @ 151.1m, 53°/LCA @ 164.8m. Minor feld. crys. evident. Overall only weak sericite and weak cleavage developed. Some pervasive and blotchy carbonate alteration especially in basal slightly coarser units. Qtz-carb-chl-Kfeld(?) veins fairly common up to 7cm thick often with coarse py. Mineralization: Generally weak min, mostly fine dissem. py sometimes coarser recrys. pods and veins. Some hem-mag assoc. with py in veins. No base metals identified. 127.3-151.1m est ≤1% py with last 3m up to 5% py mainly veins. 157.1-160.4m est 1-2% py mostly dissem, also veins with minor hem-mag. 160.4-173.1 est <0.5% py mostly fine dissem. crys. Comment: Probably sequence of ignimbrites both welded and un-welded. Upper section maybe slightly reworked and part of ash fall pyroclastics. Overall relationship between units.				
173.1	197.8	24.7	100	LITHIC IGNIMBRITES *Grey med-coarse grained fragmental rock with common lithic clasts.* Gradational contact with general increase in grain size down hole. Lithics predominantly pink felsic lava clasts up to 0.5cm, altered feld. crys fragments, dark relict vitric material up to 1cm long. Rock has fragmental appearance with blocks of felsic material several cm. in size in khaki sericitic ashy matrix. Increase in pervasive sericite and cream carbonate common as patchy alteration, after feld. crys. and as sweat out veins. Cleavage better developed than above sequence but still mod-weak. Some qtz-carb veins mostly unmin. Minor fine dissem py throughout but <0.5%py overall. 193.6m tr. cpy assoc. with qtz veins.				
197.8	199.6	1.8	98	*FINE GRAINED SEDIMENT (HOST ROCK HORIZON?)* Grey to fawn fine grained shale-siltstone, partly siliceous. Upper contact sharp @ 53°/LCA, lower contact gradational into med. grained pyroclastics. Mostly thin bands 2-10cm thick of				

555085

GOLD FIELDS EXPLORATION PTY. LIMITED

ULV. PRESS

PROJECT: Red Hills

DRILL CORE LOG AND ASSAY DATA

HOLE NUMBER: RH 7

INTERVAL From	INTERVAL To	RECOVERY m	RECOVERY %	DESCRIPTION	Sample No.	From	To	Rec. %	ASSAY DATA in ppm unless otherwise shown Cu	Pb	Zn
				fawn shale disrupted by and interbedded with coarser silty-tuffaceous sandstone units. Coarser units contain very fine feld. crys, mostly euhedral suggesting little reworking. Mod. sericite and silicification of finer units, often conc. along irregular planes. Cleavage still fairly weak. Some carb. veinlets.							
				Mineralization: Only minor dissem. py throughout.							
				Comment: Maybe equivalent to host rock horizon in RH 5 however contains considerable coarser clastic-pyroclastic(?) material and no evident base metal mineralization. If this interpretation is correct then host horizon has thinned dramatically to north of RH 5 with no massive sulphide potential.							
199.6	248.2	48.6	95	WELDED IGNIMBRITES							
				Grey fine-medium grained uniform pyroclastic. Ocassionally fawn-orange hard (silicified) zones within generally weak-mod sericitic alteration and streaky relict vitric material which defines foliation in places e.g. 50°/LCA @ 205.8m, 199.6-214.8m mod carb alteration both within groundmass, alteration of feld crys and as diffuse patches and sweat out veins. Deeper in hole carbonate decreases mainly veinlets e.g. 224.4m where almost stockwork formed. Chlorite alteration generally weak but increasing down hole particularly from 218m on. 214.8- 248.2m relict glass shards 1-4mm in size are abundant and appear less deformed (less welded?) than higher up hole.							
				244.4-248.7m broken core with probable fault breccia and gouge.	N/A	244.0	245.5	80	90	0.11%	0.28%
				Mineralization: Generally low sulphide throughout, mainly fine dissem py. Basal 15m minor base metal min. assoc. with qtz-carb-chl-Kfeld(?) veins occurs.		245.5	247.0	75	120	900	900
						247.0	248.5	67	150	200	700
				199.6-214.0m est <0.5% py mainly dissem, some veinlets.							
				214-218m est 1-2% py as dissem, blebs & veins assoc. with chlorite.							
				218-233.5m est ≤0.5% py mainly dissem.							
				233.5-248.2m est <1% sulphide, mainly py tr. to minor gn-sp related to veins, some blebs sp. e.g. 244.7-245.2m.							

555086

GOLD FIELDS EXPLORATION PTY. LIMITED

ULV. PRESS

PROJECT: Red Hills

DRILL CORE LOG AND ASSAY DATA

HOLE NUMBER: RH 7

INTERVAL From	INTERVAL To	RECOVERY m	RECOVERY %	DESCRIPTION	ASSAY DATA in ppm unless otherwise shown: Sample No.	From	To	Rec. %	Cu	Pb	Zn	Ag	Au
248.2	286.5	38.3	86	COARSE PYROCLASTICS- RED HILLS LAVA TALUS	N/A	248.5	250.0	81	0.62%	400	2.35%	5.3	<0.2
				Buff-dark green coarse lithic pyroclastic with common clasts of		250.0	251.5	85	0.20%	300	2.10%	3.7	<0.2
				pink-red felsic lava increasing in size and quantity down hole.		251.5	253.0	87	0.12%	400	1.39%	2.3	<0.2
				Gradational contact with overlying ignimbrites (even though		253.0	254.5	86	580	500	1.62%	1.6	<0.2
				possible fault contact), shows genetic relationship. Lava		254.5	256.0	50	300	100	800		
				clasts mostly angular vary from few mm to blocks or rafts		256.0	257.5	65	180	200	700		
				up to 1m in size e.g. 261.9-262.8m. Often clasts have sharp		257.5	259.0	84	210	100	500		
				margins but some more diffuse, obscured by chloritic/hematitic		259.0	260.5	36	150	100	300		
				alteration and possibly partially resorbed. Fiammé are common		260.5	262.0	76	110	100	200		
				especially 248.2-255.2m up to 2cm long. Scattered feld. crys.									
				& fragments often altered pink in coarse matrix. Alteration									
				moderate-strong chlorite, hematite and some sericite and									
				silica giving overall blotchy appearance accentuating									
				brecciated fabric. Possible fault zone at 255.1m, much rubble									
				qtz vein, marks end of best mineralization and beginning									
				of big blocks of lava. 273.4-274.0 breccia zone with minor									
				qn-sp veins.									
				Mineralization: Good blebs of sulphide in upper part decreasing									
				rapidly down hole. Py with minor cpy cont. into lava talus									
				zone as discrete grains, euhedral crys & minor veins, mostly									
				associated with chlorite alteration which sometimes rims grains/									
				clusters py.									
				248.2-255.1m est 3-4% sulphide sp>cp, minor py, gn mostly									
				coarse blebs.									
				255.1-273.9m est. 1-2% py very minor base metals, py granular,									
				minor veins.									
				275.2-286.5m est. 1-2% py minor hem-mag veins, tr. cpy with									
				py clots/aggregates up to 3cm diameter.									
				PORPHYRITIC BASALT 273.9-275.2m Dark khaki porphyry, contacts									
				obscured by broken core, thin chilled margins 2-3cm. Upper									
				contact has conc. acicular phenos of feld up to 0.5cm long.									
				Rest of body fine crystalline with equant feld phenos up									
				to 0.8cm, dark green spots ≤1mm (altered mafic mins?). Rock									
				mod. magnetic.									
				Comment: Basalt appears to be intrusive dyke, possible feeder									

555087

GOLD FIELDS EXPLORATION PTY. LIMITED

DEV. PRESS

PROJECT: Red Hills

DRILL CORE LOG AND ASSAY DATA

HOLE NUMBER: RH 7 Page: 7.

INTERVAL From	INTERVAL To	RECOVERY m	RECOVERY %	DESCRIPTION	ASSAY DATA Sample No.	From	To	Rec. %
				to sills intersected higher up hole. Enclosing coarse pyroclastic				
				appears to be a marginal talus breccia of the Red Hills Lava.				
				The upper part of this sequence is ignimbritic and maybe				
				the equivalent mineralized ignimbrite intersected in RH 5.				
286.5	322.0	35.5	97	RED HILLS LAVA				
				Pink-red blotches in grey-green fine grained rock. The only				
				distinction from the above unit is the slightly less fragmental				
				appearance of the rock. Still has apparent brecciated fabric				
				with blocks of felsic lava, sometimes discrete angular clasts				
				other times quite diffuse, set in ashy(?) sericitic and chloritic				
				matrix. Some lava clasts appear porphyritic with feld. phenos				
				up to 2mm.				
				Much of colour variation related to alteration style pink-				
				red hematitic-silicification, grey-green sericite-chloritic				
				alteration.				
				Mineralization: Cont. as above mainly py as clots and aggregates				
				up to 3cm, some cavity fill with qtz. No base metals evident.				
				Some qtz-mag. veins 296.6m Est 1-2% py overall decreasing				
				down hole.				
				END OF HOLE				

Sample Number : 0505 RH7 30.5m

Identification : Intrusive contact between basalt and non-sericitic, recrystallized, rhyolitic, vitric crystal tuff

Description :

The hand specimen is a core sample which displays a sharp contact between fine-grained greyish black, finely porphyritic rock and dark greenish grey rock of finely pyroclastic appearance.

A cobaltinitrite staining test revealed that fine K-feldspar is abundant in the pyroclastic rock, but present only as rare xenocrysts within a thin, chilled margin on the dark porphyry.

In thin section the pyroclastic rock displays a poorly preserved texture consistent with a rhyolitic crystal vitric tuff, heavily modified by fine recrystallization. The present mineral assemblage is quartz, albite- K-feldspar, calcite, chlorite and minor, partly oxidized iron sulphide. There are two 0.2mm wide veins of hematized carbonate, probably former siderite.

The dark rock has a strongly porphyritic texture with euhedral and subhedral phenocrysts, about 0.5mm in size, set in an extremely finely crystalline groundmass. The main phenocrysts are very fresh bytownite, but there are also carbonate-sericite pseudomorphs of a formerly stumpy, monoclinic mineral. The groundmass consists of plagioclase laths, brownish carbonate and opaque plates.

An approximate mode is :

8-10%	bytownite phenocrysts
4-5%	sericite-carbonate pseudomorphs of former phenocrysts
55-65%	groundmass plagioclase
20-25%	groundmass carbonate
3-5%	opaque oxides

A brown, chilled margin, about 1mm wide is developed evenly along the contact with the pyroclastic rock. The contact appears intrusive. Late calcite veins cut the contact.

Chlorite-carbonate fissure veins occur in the dark rock.

Comments and Interpretation :

The dark rock is basaltic and it is considered to display an intrusive chilled margin against a recrystallized, but non-sericitized, rhyolitic, crystal vitric tuff.

The margin is evenly chilled, seems discordant and includes rare xenocrysts of potassic feldspar. There are no vesicles, such as might be expected in chilled lava. On the negative side, there are no recognisable metamorphic or metasomatic effects on the tuff.

The sericite-carbonate alteration of phenocrysts within the basalt which seem to have been pyroxene is unusual. Perhaps the "sericite" mineral is some other mineral, possibly talc.

Sample Number : 0507 RH7 204.7m

Identification : Sericite schist derived from acid vitric lithic tuff

Description :

The hand specimen is a core sample of fine-grained, medium light grey rock with short dark green streaks, possibly representing vitric structures.

The sample reacted weakly with cobaltinitrite stain in a fashion encountered with some forms of potassic sericite. No K-feldspar is indicated.

In thin section the sample is seen to have a crudely schistose, recrystallized texture with remnant clastic structures interpretable with moderate confidence as representing former lithic, vitric and pumice fragments. The lithic and pumice fragments now consist of quartz, albite, sericite, green chlorite and calcite and were about 2 to 5mm in size. Probably former vitric shards consist variously of sericite or of green chlorite. Much of the sample displays only secondary textures.

Very fine iron sulphide, probably pyrite, occurs as local concentrations partly replacing a few clasts. Some pyrite also occurs in late calcite fracture veins.

An approximate mode is :

8-12%	quartz
15-25%	albite
50-60%	sericite
5-8%	chlorite
5-8%	calcite
tr	pyrite

Comments and Interpretation :

The textures of the rock are incompatible with a sedimentary parent, but are consistent with a deformed and recrystallized tuff which contained vitric shards, pumice and lithic clasts. The term "sericite schist" would adequately describe the rock in its present form.

The parental rock was acid, but because of the sericitic alteration it is unclear whether it was rhyolitic or dacitic.

Sample Number : 0508 RH7 269.9m

Identification : Sericite schist with disseminated aggregates of pyrite, accompanied by local chloritic alteration

Description :

The hand specimen is a core sample of fine-grained, light olive grey rock with irregularly distributed patches of sulphide enveloped by dark green patches of alteration up to about 30mm in size.

A cobaltinitrite staining test revealed disseminated K-feldspar as phenocrysts or phenoclasts, about 1 to 2mm in size and a few subhedral crystals intergrown with pyrite. The matrix enclosing the phenoclasts also accepted a pervasive stain, but in a fashion more consistent with potassic sericite than K-feldspar.

In thin section the bulk of the sample is seen to consist of schistose sericite and fine-grained, anhedral quartz, about 0.02mm in grainsize. Partly recrystallized, residual phenoclasts of K-feldspar (generally orthoclase, but secondary microcline in one case) are sparsely disseminated through the schist. Tiny aggregates of secondary rutile are trace constituents.

Tiny stringers of brown carbonate are a minor constituent, generally discordant at small angles to the schistosity and later than the pyrite aggregates.

Subhedral pyrite forms a few aggregates as large as 5mm, intergrown with secondary quartz and secondary K-feldspar (apparently orthoclase). Sericite is depleted near the pyrite and bright green chlorite is abundant. The chlorite abundance decreases outwards from the pyrite clusters to reach trace proportions about 10 - 15mm away. Minor, extremely fine clusters of opaque oxides occur within some pyritic aggregates.

An approximate mode of the sample is :

20-30%	quartz
60-70%	sericite
4-6%	K-feldspar
0.3-0.4%	carbonate (ferruginous and/or manganiferous)
0.1-0.3%	rutile
2-3%	pyrite
5-8%	chlorite
0.1-0.3%	opaque oxide

Comments and Interpretation :

The sample can be described as a sericite schist with disseminated pyrite, accompanied by local chloritic alteration.

Few primary textures are preserved, but the parent rock was probably a rhyolitic tuff.

Whilst deformation and sericitic alteration is pervasive, chloritic alteration is localized as patches surrounding irregularly disseminated aggregates of pyrite intergrown with secondary quartz and K-feldspar. Minor carbonate occurs only as fine veins later than the sulphide and chlorite.

043

RE LOG AUGUST 1982

GOLD FIELDS EXPLORATION PTY. LIMITED

DRILL CORE RECORD

55509

HOLE NO.: RH 8

STATE : Tasmania

ULV. PRESS

PROJECT	Red Hills
DESIGNED BY	A.C. Walter
RELOGGED BY	F.G. FitzGerald
COMMENCED	31-10-77
COMPLETED	16-11-77

PURPOSE

To test southern extension of mineralization intersected in RH 5 on line 32S (Red Hills imperial grid) down dip from RH 5.

LOG SUMMARY / GENERAL COMMENTS

Probable equivalent host rock horizon to RH 5 intersected 316.2-321.5m. Only minor base metal mineralization encountered and horizon has thinned markedly to south and down dip from RH 5 intersection. Underlying coarse ignimbritic rock carries some sphalerite and is similar to the equivalent RH 5 section. Black shale sequence intersected 175.6-231.6m. carries syngenetic pyrite but no significant base metals.
Red Hills lava intersected at 362.0m. carrying minor chalcopyrite.

ASSAY SUMMARY

INTERVAL From	INTERVAL To	Cu	Pb	Zn	Ag	Au	COMMENTS
281.0	282.5	0.02%	1.42%	1.70%	9 g/t	0.2 g/t	Ignimbrite with 10cm. vein semi-massive sulphide.
315.5	321.5	<0.01%	0.02%	0.37%	1 g/t	0.1 g/t	Host rock horizon-fine grained ashy sediment.
321.5	326.0	0.04%	0.05%	1.52%	2 g/t	3.6 g/t	Coarse ignimbrites.
365.0	378.5	0.22%	<0.01%	<0.01%	<1 g/t		Red Hills rhyolitic lava.

LOCATION

NORTHING	5365101
EASTING	382158
R.L.	801.4m
GRID	A.M.G.
LENGTH	380.0m.

HOLE CONDITION

SIZE Hole Size	SIZE Depth
HQ(tri. cone)	3.0m
NQ	281.0m
BQ	380.0m.

SIGNIFICANT CORE LOSS INTERVALS From	To	% Lost
3.0	5.5	20
170.0	185.0	23
226.6	233.7	36

POOR GROUND CONDITION ZONES From	To	Condition

HOLE CONDITIONS AFTER COMPLETION

3m. HQ casing placed in top of hole and left.
Hole open to 158m. October 1982.

SURVEY DATA (Note: Bearing type must be same as Project Grid Type)

SURVEY Depth	SURVEY Bearing	SURVEY Dip	INTERVAL From	INTERVAL To	INTERVAL Distance	VERTICAL D.Sin.Dip	VERTICAL R.L.	HORIZONTAL D.Cos.Dip	HORIZONTAL Prog.Total
Collar	117.5°	-60°							
15.0	ND	-58°							
27.0	ND	-57°							
39.0	ND	-54.5°							
53.0	115°	-53°							
65.0	113°	-50°							
77.0	112°	-48°							
89.0	109°	-45.5°							
101.0	108°	-45°							
113.0	106°	-42°							
125.0	105°	-39°							
137.0	104°	-37.5°							

SURVEY Depth	SURVEY Bearing	SURVEY Dip	INTERVAL From	INTERVAL To	INTERVAL Distance	VERTICAL D.Sin.Dip	VERTICAL R.L.	HORIZONTAL D.Cos.Dip	HORIZONTAL Prog.Total
149.0	103°	-36°							
158.0	102°	-33.5°							
174.0	ND	-33°							
188.0	ND	-30.5°							
210.0	ND	-30°							
234.0	098°	-28°							
258.0	ND	-27°							
282.0	ND	-26°							
306.0	094°	-29.5°							
330.0	094°	-19°							
354.0	093°	-18°							
378.0	094°	-18°							

044

555091

GOLD FIELDS EXPLORATION PTY. LIMITED

DRILL CORE LOG AND ASSAY DATA

OLV. PRESS

PROJECT: Red Hills

HOLE NUMBER: RH 8

Page: 1.

INTERVAL From	INTERVAL To	RECOVERY m	RECOVERY %	DESCRIPTION
0.0	63.6	63.6	98	REWORKED PYROCLASTICS?
				Fawn-light grey, mostly fine grained rock. Appears to be close packed fine crystals in ashy, sericitic matrix. No clear bedding but crude foliation defined by colour (alteration?) banding e.g. 43°/LCA @ 6.4m, 30°/LCA @ 29.2m, 35°/LCA @ 57.2m. In places rock has welded ignimbritic appearance e.g. 47.6-52.5m but no fiammé observed. Elsewhere rock more clastic in appearance with granular carbonate clasts, often elliptical in shape 1-5mm in size possibly graded e.g.38.2-47.6m.
				Alteration variable throughout, mostly weak-mod sericite, moderate carbonate both pervasive and sweat out features and some silicification particularly of more ignimbritic rock. Minor pink alteration occurs as blotches and as alteration of feld. crys. e.g. 15.0-18.5m.
				Cleavage generally weak.
				Scattered qtz-carb±chl±Kfeld veins 1-5mm thick rarely up to 1.4m e.g. 18.5m. Most veins are barren. In fact the rock is virtually unmineralized apart from tr. dissem py. Partial oxidation 0-18.5m.
				Comment: Different parts of section have features related to either pyroclastical welded ignimbrite or volcaniclastics. Petrographic work favours the latter (57.2m) but similarities with less ambiguous ignimbrites, lack of bedding, overall uniformity favour the former interpretation. Perhaps a sequence of mixed origins.
63.6	99.2	35.6	98	WELDED IGNIMBRITES
				Grey-buff coloured fine grained uniform structureless rock. Similar to above sequence, obviously related. More distinct dark streaks which may represent completely deformed pumice-glass shards. Crude colour banding foliation in places e.g. 47°/LCA @ 83.9m. Relict feld. crys 2-3mm now carbonate altered. Pervasive and sweat out cream carbonate alteration common forming up to 25% of rock in sections e.g. 79.3-83.0m. Otherwise only weak khaki sericite throughout and some silicification.

ASSAY DATA Sample No.	From	To	Rec. %

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GOLD FIELDS EXPLORATION PTY. LIMITED

ULV. PRESS

PROJECT: Red Hills

DRILL CORE LOG AND ASSAY DATA

HOLE NUMBER: RH 8

INTERVAL From	INTERVAL To	RECOVERY m	RECOVERY %	DESCRIPTION	ASSAY DATA Sample No.	From	To	Rec. %
				Cleavage only weak. Very rare fine grained py crys. only min. evident.				
99.2	132.7	33.5	100	COARSE PYROCLASTICS Grey-green med-coarse grained lithic rich rock, agglomeratic in places. Upper contact appears gradational. Common lithic clasts of pink felsic lava, mostly sub angular and up to 2cm long, fine grained white carbonate altered clasts up to 4cm long, dark green irregularly shaped clasts/possible relict pumice,vitric material(?) and minor possible grey shale clasts. Scattered relict feld. crys 1-3mm throughout in the ashy matrix. Some apparent "beds" of finer and coarser units poorly developed e.g. 115.6m, 121.7m. with contacts often at high angle to core e.g. 75°/LCA @ 122.1m. General elongation of clasts defines crude foliation e.g. 40°/LCA 2 116.2m. Overall cleavage more strongly developed with schistose matrix tending to wrap around lithic clasts, general trend e.g. 45°/LCA @ 104.4m, 50°/LCA @ 131.3m. which is sub-parallel to foliation. Mod pervasive sericite, weak-mod. chlorite alteration throughout. Generally much weaker carbonate alteration to above sequence mostly confined to discrete "sweat-outs" apart from thin unit 100.4-102.8m. Qtz-carb veins widely scattered, mostly barren. Only tr. dissem. py. smeared along cleavage. PORPHYRITIC BASALT SILLS 2 bodies of dark green porphyritic basic rock within the above sequence of pyroclastics viz: 126.9-128.2m. and 129.8-131.3. Both have sharp contacts, approx. 60°/LCA but in detail contacts somewhat irregular showing disruption of wall rock with torn up pieces within margin. Both have chilled margins with thin bleached contacts & conc. of acicular crys & prismatic feld. crys. Rest of body scattered phenocrysts of feld(?) now altered and possible amygdales up to 1cm diameter often with green (chloritic?) reaction rims set in aphanitic to fine crystalline mod. magnetic groundmass. General coarsening of bodies towards centre. Apart from apparent chloritic alteration, thin carb veinlets cut bodies				

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GOLD FIELDS EXPLORATION PTY. LIMITED

DRILL CORE LOG AND ASSAY DATA

PROJECT: Red Hills HOLE NUMBER: RH 8 Page: 3.

INTERVAL From	INTERVAL To	RECOVERY m	RECOVERY %	DESCRIPTION	Sample No.	From	To	Rec. %	Cu	Pb	Zn	Ag
									ASSAY DATA in ppm unless otherwise shown			
				which are unmineralized.								
				Comment: Suggest that grossly conformable porphyritic basalts are sills intruding lithic-agglomeratic ignimbritic sequence which is more strongly altered but still virtually unmineralized.								
132.7	172.5	39.8	94	IGNIMBRITES?								
				Light grey-fawn becoming green fine grained hard uniform rock. Upper contact appears gradational into orange coloured hard (welded?) pyroclastic. No obvious primary layering throughout sequence although some grain size variation mostly enhanced by different alteration styles. Subtle foliation developed								
				in places e.g. 35°/LCA @ 136.2m, 50°/LCA @ 140.6m. No clear	N/A	137.5	139.0	100	10	18	95	<1
				fiamme evident but dark streaks may represent deformed pumice		139.0	140.5	100	12	30	75	<1
				or vitric material. Apart from these only other features are		140.5	142.0	100	25	0.20%	95	1
				relict feld.crys. ≤1mm long in generally fine "sandy" matrix. Rock mod-strong silicified esp. 132.7-137.7m, 144.3-146.4m. with weak-mod pervasive sericite particularly in khaki bands. Minor pervasive carbonate but common qtz-carb veins and irregular "sweat outs" some up to 5cm thick with minor Kfeld? -								
				epidote assoc. e.g. 147.0-147.6m.	N/A	170.0	171.5	80	42	15	80	<1
				Mineralization: Still very minor but increasing down hole		171.5	173.0	80	15	50	165	<1
				both fine grained dissem py & rare thin veinlets.								
172.5	231.6	56.0	85	BLACK SHALES	N/A	173.0	174.5	63	70	125	245	2
				Black graphitic shales with minor interbedded grey tuffaceous		174.5	176.0	63	45	650	235	2
				siltstone. Upper contact faulted with 20cm clay pug then 172.5-		176.0	177.5	85	85	0.17%	815	3
				175.6m med grained crystal tuff with relict feld crys 1-3mm		177.5	179.0	85	55	235	130	1
				in schistose sericitic-carbonate matrix. Contact with main		179.0	180.5	73	80	485	0.14%	2
				body of black shales obscured by broken core but appears grad-		180.5	182.0	88	130	280	0.24%	2
				ational over 15cm. Shales mostly finely laminated e.g.55°/		182.0	183.5	83	415	315	715	4
				LCA @ 177.8m., 30°/LCA @ 188.3m, 40°/LCA @ 194.8, 50°/LCA @		183.5	185.0	83	90	195	0.16%	1
				207.4m, 60°/LCA @ 219.2m. Some evidence of slump folding within		185.0	186.5	94	95	280	715	1
				coarser beds e.g. 206.2m. Rock mod. fissile with well developed		186.5	188.0	97	105	385	635	1
				slatey cleavage typically at angle 10-50° to bedding e.g. 80°/LCA		188.0	189.5	98	125	125	630	<1
				@ 188.3m, 47°/LCA @ 219.2m, 70°/LCA @ 222.5m. Basal contact		189.5	191.0	100	95	160	315	<1

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GOLD FIELDS EXPLORATION PTY. LIMITED

DLV. PRESS

PROJECT: Red Hills

DRILL CORE LOG AND ASSAY DATA

HOLE NUMBER: RH 8

INTERVAL From	INTERVAL To	RECOVERY m	RECOVERY %	DESCRIPTION	Sample No.	From	To	Rec. %	ASSAY DATA in ppm unless otherwise shown Cu	Pb	Zn	Ag
				sharp but irregular with some evidence of induration.	N/A	191.0	192.5	100	100	110	240	<1
				Apart from possible sericite alteration best seen in coarser		192.5	194.0	100	125	125	255	1
				tuffaceous units white carbonate gash veins are common throughout.		194.0	195.5	100	115	115	240	1
				226.0-229.5 very broken core, possible structural zone.		195.5	197.0	100	90	165	235	1
				Mineralization: This sedimentary sequence well mineralized		197.0	198.5	93	115	130	240	<1
				throughout, mainly syngenetic py with very minor base metals		198.5	200.0	93	205	140	305	1
				observed. Py often streaked along cleavage but still bedded.		200.0	201.5	100	100	255	500	1
				172.5-175.6m est. 5% py mainly stringers, veins, tr. cpy.		201.5	203.0	94	90	520	0.14%	1
				175.6-231.6m est. 2-3% py locally 5-8% py, mainly fine dissem.		203.0	204.5	95	120	390	820	2
				crys, some recrys & sweat-out, minor granular (framboidal?)		204.5	206.0	100	105	195	310	1
				clots e.g. 229.9m, 179.6-182.2m minor sp.		206.0	207.5	95	75	80	300	<1
						207.5	209.0	97	70	95	315	<1
						209.0	210.5	98	105	195	420	1
						210.5	212.0	97	75	205	400	1
						212.0	213.5	70	120	195	540	1
						213.5	215.0	89	85	240	370	1
						215.0	216.5	92	95	140	140	1
						216.5	218.0	97	65	135	105	<1
						218.0	219.5	100	200	315	205	1
						219.5	221.0	100	110	350	190	1
						221.0	222.5	93	90	315	130	1
						222.5	224.0	93	85	540	700	1
						224.0	225.5	97	65	520	0.17%	1
						225.5	227.0	70	75	600	0.18%	1
						227.0	228.5	25	60	710	0.25%	2
						228.5	230.0	30	75	770	850	2
						230.0	231.5	88	60	355	335	1
231.6	254.6	23.0	98	PYROCLASTICS PARTLY REWORKED?		231.5	233.0	88	28	40	120	<1
				Grey-green fine-med. grained crystal pyroclastics. Sharp upper		233.0	234.5	82	25	42	145	<1
				contact with black shales but no angle measured because of		234.5	236.0	92	38	25	270	<1
				broken core. Appears to be overall decrease in grain size down		236.0	237.5	100	20	85	225	<1
				hole from lapilli tuff to fine vitric ashy pyroclastic. No		237.5	239.0	100	28	90	240	<1
				bedding is evident although units of different grainsize suggest		239.0	240.5	100	20	65	275	<1
				some crude sorting. Scattered lithic clasts of angular white		240.5	242.0	100	38	48	235	<1

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GOLD FIELDS EXPLORATION PTY. LIMITED

ULV. PRESS

PROJECT: Red Hills

DRILL CORE LOG AND ASSAY DATA

HOLE NUMBER: RH 8

INTERVAL From	INTERVAL To	RECOVERY m	RECOVERY %	DESCRIPTION	Sample No.	From	To	Rec. %	ASSAY DATA in ppm unless otherwise shown Cu	Pb	Zn	Ag	Au	S
				carbonate altered rock up to 0.5cm in size but no unambiguous	N/A	242.0	243.5	100	28	30	155	<1		
				fiammé seen. Subtle breccia appearance in places with sub-		243.5	245.0	100	25	38	150	<1		
				angular clasts of pyroclastics more or less in situ in pale		245.0	246.5	100	65	90	205	<1		
				khaki sericitic-carbonate ashy matrix e.g. 246.1-246.5m, 249.4-		246.5	248.0	100	165	55	150	<1		
				250.0m & 253.3-254.6m.		248.0	249.5	100	45	130	140	<1		
				Rock generally more strongly altered with mod. pervasive sericite,		249.5	251.0	100	22	380	220	1		
				variable carbonate up to 30% of rock in places and weak chlorite.		251.0	252.5	100	105	175	150	<1		
				Some thin veins & "sweat out" qtz-carb.		252.5	254.0	100	30	200	550	<1		
				233.3-237.4m broken core with chlorite alteration.										
				Mineralization: Generally very weak, mostly fine grained										
				dissem py, minor vein py assoc. with qtz-carb alteration,										
				253.3-254.6m est. 2% py in carb-ser. breccia cement?										
				Comment Unclear whether sequence pyroclastic or epiclastic,										
				general features favour former.										
254.6	283.0	28.4	98	WELDED IGNIMBRITES	N/A	254.0	255.5	97	25	135	325	<1		
				Fawn-grey to orange mostly very fine grained hard rock. Gradat-		255.5	257.0	97	12	42	105	<1		
				ional contact with above sequence. Generally structureless		257.0	258.5	97	15	60	300	<1		
				apart from dark green deformed fiammé and relict vitric material		258.5	260.0	98	95	215	240	<1		
				A thin band of slightly coarser, crystal rich unit containing		260.0	261.5	100	60	285	0.30%	1		
				small lithic clasts occurs.270.2-273.5m. Here apparent sharp		261.5	263.0	100	20	225	670	<1		
				contact 45°/LCA on up hole side but decreasing grainsize gradat-		263.0	264.5	96	15	80	145	<1		
				ional lower contact. Lithic clasts predominantly dark irregular		264.5	266.0	97	12	95	140	<1		
				fine grained rocks with minute relict feld(?) crys, also broken		266.0	267.5	98	25	95	175	<1		
				white fel. crys & fiammé in ashy matrix. Further down section		267.5	269.0	97	15	130	195	<1		
				crude foliation evident e.g. 60°/LCA @ 275.3m and small sub-		269.0	270.5	100	25	145	250	<1		
				rounded pink (felsic lava?) clasts up to 2mm in size occur.		270.5	272.0	100	55	220	550	<1		
				Although basal 3m appears strongly welded ignimbrite short		272.0	273.5	100	12	130	200	<1		
				intervals, up to 10cm appear to be reworked with rounded close		273.5	275.0	100	65	480	520	1		
				packed grains 1-2mm in size forming rock. The sequence is		275.0	276.5	100	50	380	425	<1		
				generally weak-moderately altered, variable sericite, chlorite		276.5	278.0	100	95	800	0.11%	1		
				& silica with minor carbonate throughout. Also common qtz-		278.0	279.5	100	50	85	225	<1	<0.1	0.33%
				carb±epidote±chl. veins, often mineralized.		279.5	281.0	100	20	290	260	1	0.2	0.67%
				Mineralization: Marked increase in mineralization, predominantly		281.0	282.5	100	150	1.42%	1.70%	9	0.2	1.47%
				vein & fracture fill base metals which tend to cluster, only										

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GOLD FIELDS EXPLORATION PTY. LIMITED

ULV. PRESS

PROJECT: Red Hills

DRILL CORE LOG AND ASSAY DATA

HOLE NUMBER: RH 8

INTERVAL From	INTERVAL To	RECOVERY m	RECOVERY %	DESCRIPTION	Sample No.	From	To	Rec. %	ASSAY DATA in ppm unless otherwise shown Cu	Pb	Zn	Ag	Au	S
				minor dissem. & blebs of sulphide.										
				254.6-270.2m minor sulphides mostly in veins up to 60 cm thick										
				with 1-2% py up to 5% sp, minor gn e.g. 260.0m.										
				270.2-275.3m. est. 1-2% sulphide py>sp=gn; tr cpy mostly in										
				carb veins & stringers, minor blebs, asoc. with inc chlorite.										
				275.3-279.4m. est. 1% sulphide py>sp=gn, tr cpy with increasing										
				sp down hole, mostly blebs, also common veins, dissem py.										
				279.4-281.6m. est 2% py dissem no visible base metals.										
				281.6m 11cm thick vein semi massive sulphide, vein trend 65°/LCA										
				but irregular margins, much qtz-carb-chl gangue esp.lower										
				margin, subtle banding 55°/LCA. Top 1 cm appears massive sulphide,										
				overall est 10% sp, 10% gn, 2% py, 1% cpy over 15cm.										
				281.6-283.0m est 1% sulphide sp=gn>py mostly vein.										
				Comment:"Semi-massive" sulphide appears to be replacement										
				vein in chloritic pyroclastic similar to thinner veinlets										
				& fracture-fill within predominantly welded ignimbritic sequence.										
283.0	316.2	33.2	99	IGNIMBRITES	N/A	282.5	284.0	97	425	0.34%	0.24%	1		
				Dark grey-green med-coarse grained rock with small lithic		284.0	285.5	100	50	12	75	<1		
				clasts. Upper contact obscured by broken core. Common small		285.5	287.0	100	30	18	70	<1		
				dark fiammé 1-5mm long & scattered angular- sub rounded pink		287.0	288.5	100	12	12	80	<1		
				felsic lava clasts & feld. crys in med. grained pyroclastic		288.5	290.0	100	22	25	275	<1		
				matrix give rock speckled-striped appearance. Possible primary		290.0	291.5	100	105	20	150	<1		
				layers of fine-med grained rock 3-10mm thick in places e.g.		291.5	293.0	100	18	35	175	<1		
				45°/LCA @ 284.4m, 80°/LCA @ 303.9m.		293.0	294.5	100	12	42	340	<1		
				315.5-316.2m broken core, appears to be agglomeratic rock.		294.5	296.0	100	75	110	235	1		
				283.0-297.0m mod. pervasive chlorite some carbonate well devel-		296.0	297.5	100	325	435	470	6		
				oped cleavage e.g. 55°/LCA @ 290.8m.		297.5	299.0	100	500	155	0.11%	1		
				297.0-304.4m weak-mod chlorite, some sericite less cleaved.		299.0	300.5	100	155	70	950	1		
				304.4-316.2m mod. chlorite, mod. sericite locally strong.		300.5	302.0	100	0.17%	610	0.12%	4		
				Qtz-carb± pink Kfeld? veins throughout up to 1cm thick.		302.0	303.5	100	15	22	310	<1		
				Mineralization: Variably developed, upper more chloritic		303.5	305.0	100	85	140	235	5		
				sequence carries mostly dissem. py. but lower down hole moderate		305.0	306.5	100	25	40	140	1		
				dissem and vein base metal mineralization occurs.		306.5	308.0	100	42	38	135	<1		
				283.0-297.0m minor dissem & blebs py.		308.0	309.5	98	55	75	215	1		

555097

050

GOLD FIELDS EXPLORATION PTY. LIMITED

DEV. PRESS

PROJECT: Red Hills

DRILL CORE LOG AND ASSAY DATA

HOLE NUMBER: RH 8

INTERVAL From	INTERVAL To	RECOVERY m	RECOVERY %	DESCRIPTION	Sample No.	From	To	Rec. %	Cu	Pb	Zn	Ag	Au(FA)
									ASSAY DATA in ppm unless otherwise shown				
				297.0-304.0m. est. 2-3% sulphide, py>sp dissem, blebs, minor	N/A	309.5	311.0	96	40	45	275	<1	
				veins.		311.0	312.5	97	25	25	220	<1	
				304.0-316.2m est. 1-2% sulphide locally 5% over 10cm intervals		312.5	314.0	97	25	45	125	<1	
				py>>sp,tr cpy stringers, fracture-fill, some dissem py even		314.0	315.5	97	190	25	135	<1	
				coarse clots of framboidal (?) py e.g. 308.0m.									
316.2	321.5	5.3	94	FINE GRAINED SILICEOUS SEDIMENT-HOST HORIZON		315.5	317.0	97	70	550	0.15%	1	0.03
				Grey fine grained siliceous sediment, cherty appearance in part.		317.0	318.5	95	75	140	0.33%	1	0.08
				Contacts obscured by broken core, (whole section moderately		318.5	320.0	92	155	135	0.49%	1	0.07
				broken) but appear sharp with enclosing coarse pyroclastics.		320.0	321.5	94	70	155	0.52%	1	0.29
				Bedding between finer & coarser units 3-4mm thick 85°/LCA									
				@ 320.4m. Some tuffaceous beds up to 10cm thick. Overall									
				only moderate silicification, possible sericite also.									
				Mineralization: Increasing base metals down hole esp in coarser									
				units.									
				316.2-317.8m minor sulphide mostly dissem. py.									
				317.8-321.5m est 4-5% sulphide sp>>py as blebs, stringers,									
				fine dissem grains & minor qtz-carb veins.									
				Comment: This appears to be equivalent to host rock horizon									
				in RH 5. Although carrying syngenetic base metal (sphalerite)									
				mineralization no evidence of massive sulphide forming here.									
321.5	334.1	12.6	96	COARSE PYROCLASTICS		321.5	323.0	93	550	260	2.2%	4	8.14
				Grey med-coarse grained lithic, agglomeratic rock. General		323.0	324.5	96	195	820	1.0%	1	0.64
				increase in grain size down hole, possibly gradational upper		324.5	326.0	97	430	390	1.35%	2	1.96
				contact but obscured by broken core. From 325.0m on red felsic		326.0	327.5	97	120	220	0.53%	1	0.26
				lava clasts common from <1cm up to 40cm at base of sequence,		327.5	329.0	98	115	32	900	<1	
				mostly angular. Also common are dark fiammé and feld. crys		329.0	330.5	100	100	25	200	<1	
				fragments. Only weak-mod. pervasive sericite alteration and		330.5	332.0	90	170	15	75	<1	
				very minor chlorite evident. Cleavage only weak but possible		332.0	333.5	98	300	155	350	<1	
				alignment of clasts sub parallel e.g. 70°/LCA @ 327.7m.									
				Mineralization: Well mineralizaed particularly in upper section									
				base metal decreases quickly down hole as grain size increases.									
				321.5-325.0m. est 5% sp, 2% py tr gn, mostly blebs & stringers									
				with minor remobilized veins, fracture-fill.									

GOLD FIELDS EXPLORATION PTY. LIMITED

555098

ULV. PRESS

PROJECT: Red Hills

DRILL CORE LOG AND ASSAY DATA

HOLE NUMBER: RH 8

INTERVAL From	INTERVAL To	RECOVERY m	RECOVERY %	DESCRIPTION	Sample No.	From	To	Rec. %	ASSAY DATA in ppm unless otherwise shown Cu	Pb	Zn	Ag
				325.0-334.1m. est 5% py minor sp, mostly recrys blebs or coarse grained clots up to 1cm diameter. PORPHYRITIC BASALT DYKE 322.9-323.5m dark grey med. grained basic porphyry. Contacts obscured by broken core, possibly 50°/LCA. Chilled margins 5-8cm wide. Phenocrysts of euhedral feld. & ferromag mineral up to 5mm long in crystalline magnetic groundmass. Possibly a feeder dyke to sills intersected higher in hole.	N/A	333.5	335.0	97	990	125	355	<1
						335.0	336.5	98	190	25	255	<1
						336.5	338.0	100	195	100	0.12%	<1
						338.0	339.5	100	90	60	160	<1
334.1	362.0	27.9	98	RED HILLS LAVA TALUS MARGIN		339.5	341.0	100	105	115	290	<1
				Very coarse agglomeratic dark grey rock with red-pink patches,		341.0	342.5	100	150	45	45	<1
				Coarser equivalent to above rock with abundant felsic lava		342.5	344.0	100	150	<5	50	<1
				clasts sometimes with sharp margins often more diffuse with		344.0	345.5	92	75	40	95	<1
				dark green chloritic reaction rims showing possible resorbtion		345.5	347.0	94	25	12	52	<1
				in coarse pyroclastic matrix. Up to 344m definite fiammé		347.0	348.5	96	60	<5	80	<1
				evident further down hole obscured, by alteration. Overall		348.5	350.0	97	135	20	100	<1
				blocky brecciated fabric enhanced by alteration, pink-red		350.0	351.5	100	105	12	90	<1
				(hematitic), green (chloritic) and grey (sericite-siliceous)		351.5	353.0	100	80	30	140	<1
				which is variably developed.		353.0	354.5	100	30	25	95	<1
				Mineralization: Predominantly py with minor cpy as blebs,		354.5	356.0	100	95	22	100	<1
				stringers and minor dissem & fracture fill. Some lava clasts		356.0	357.5	100	150	10	75	<1
				contain coarse grained py. Grains of py in matrix up to 3mm		357.5	359.0	100	170	<5	80	<1
				& rounded. Est. 2-3% py overall, minor cpy.		359.0	360.5	100	28	<5	65	<1
						360.5	362.0	100	550	<5	65	<1
362.0	380.0	18.0		RED HILLS LAVA								
				Dark green-grey and red fine grained felsic lava, much brecc-		362.0	363.5	93	520	65	180	<1
				iation evident. Clasts appear in situ with dark grey fine		363.5	365.0	94	225	20	115	<1
				grained ashy(?) matrix infill. Appears to be autobrecciated		365.0	366.5	98	0.14%	32	95	<1
				rhyolitic lava. Blotchy alteration pink-red (hematitic),		366.5	368.0	99	0.14%	<5	95	<1
				dark green(chloritic) & grey (sericitic) mod-strong throughout.		368.0	369.5	100	650	<5	80	<1
				Numerous qtz-carb-chl. veins up to 5mm thick, usually mineral-		369.5	371.0	100	0.16%	70	125	<1
				ized.		371.0	372.5	97	0.15%	12	130	<1
				Mineralization: Py-cpy min. throughout mostly as blebs and		372.5	374.0	96	0.60%	12	95	<1
				grains, lesser stringers, veins & fracture-fill.		374.0	375.5	90	0.48%	50	185	<1
				360.0-373.5m est 1-2% py minor cpy, 363.0-363.5m up to 0.5%		375.5	377.0	97	0.10%	<5	140	<1
				cpy in qtz-chl veinlets.								

555099

052

GOLD FIELDS EXPLORATION PTY. LIMITED

DLV. PRESS

PROJECT: Red Hills

DRILL CORE LOG AND ASSAY DATA

HOLE NUMBER: RH 8

INTERVAL From	INTERVAL To	RECOVERY m	RECOVERY %	DESCRIPTION	Sample No.	From	To	Rec. %	Cu	Pb	Zn	Ag
				373.5m 10 cm vein semi massive sulphide est. 25% py, 10% cpy.	N/A	377.0	378.5	97	0.10%	10	130	<1
				373.5-380.0m est. 2-3% py, 0.5% cpy mostly blebs, stringers		378.5	380.0	97	790	12	275	<1
				quite variable throughout.								
				END OF HOLE								

ASSAY DATA in ppm unless otherwise shown

Sample Number : 0509 RH8 57.2m

Identification : Rhyolitic tuffaceous siltstone with weak, local sericitic alteration

Description :

The hand specimen is a core sample of fine-grained, light brownish grey rock with a few green streaks.

Cobaltinitrite stain was accepted in a fashion consistent with the presence of abundant, fine K-feldspar.

In thin section the sample is seen to consist of sparse, tabular to equidimensional phenoclasts of plagioclase, about 0.2 to 0.5mm in size, and a few 3mm aggregates of plagioclase, evenly distributed through a finely crystalline matrix of untwinned feldspar, quartz, sericite and colourless to brownish carbonate. There are also a few clasts and many recrystallized clasts of quartz about 0.2mm in size. Much of the plagioclase is partly replaced by brownish carbonate and sericite.

Ill-defined zones of wispy sericite, some crudely controlled by fractures, are present erratically and a crude schistosity is developed locally.

A few late carbonate and quartz-carbonate fissure veins cut the sample.

Tiny pyrite grains are rare constituents of sericitic zones.

An approximate mode is :

2-5%	plagioclase clasts
10-15%	quartz
60-70%	untwinned feldspar (mainly potassic)
4-6%	sericite
8-10%	carbonate (somewhat ferruginous and/or manganiferous)
rare	pyrite

Comments and Interpretation :

Whilst the sample clearly has tuffaceous affinities and its relict primary textures lack rounding, an overall impression is given of crude sorting into silt sized particles with sparse sand-sized clasts. Therefore, it is suggested that the sample be regarded as a rhyolitic tuffaceous siltstone which has experienced mild recrystallization and weak sericitic alteration, accompanied by the introduction of a few tiny grains of pyrite. Some carbonate in the sample represents replacement patches and veins, but some could be an original sedimentary component.

Sample Number : 0512 RH8 164.8m

Identification : Dacitic volcaniclastic arenite with a schistose, sericitic matrix

Description :

The hand specimen is a core sample of light olive grey, rock with a finely sandy appearance on the outer surface of the core and a foliated appearance on broken surfaces.

A cobaltinitrite staining test revealed no K-feldspar.

In thin section the sample is seen to have a moderately sorted, sandy texture, with mineral grains commonly 0.1 to 0.5mm in size set in a crudely schistose, sericitic matrix.

The mineral grains are quartz and twinned plagioclase, both commonly subangular to rounded, ovoid to equidimensional, and partly recrystallized.

Bright green chlorite and secondary rutile are common, minor constituents of the sericitic matrix. Brownish carbonate is common as a partial replacement of plagioclase. An early vein or zone of carbonate, about 2mm wide has been crenulated by the sericitic foliation.

One branching, tiny fissure vein of probable pyrite is a late feature of the rock.

An approximate mode of the rock is :

40-50%	plagioclase
15-20%	quartz
25-30%	sericite
5-7%	carbonate (somewhat ferruginous and/or manganiferous)
0.2-0.4%	chlorite
0.1-0.2%	rutile
rare	pyrite

Comments and Interpretation :

The rock has textures and mineralogy which are quite compatible with a dacitic volcaniclastic arenite which has experienced mild deformation and conversion of its matrix to sericite.

For practical purposes the sample is unmineralized, but there is a tiny amount of probably pyrite in a late fissure vein.

Sample Number : 0514 RH8 282.4m

Identification : Carbonated, moderately sericitized, unwelded rhyolitic tuff with traces of sphalerite

Description :

The hand specimen is a core sample of light brownish grey, fine-grained rock with disseminated, small, dark green clasts.

The sample accepted a bright cobaltinitrite stain in a fashion consistent with abundant, fine K-feldspar and small, siliceous structures, resembling vitric shards became more visible.

In thin section the apparently vitroclastic texture of the stained rock chip is much less conspicuous. There are many composite quartz grains, commonly about 0.5mm in size. Some resemble phenoclasts but others have cuspate and worm-like external forms consistent with former vitric shards.

Simple grains of untwinned albite and cryptocrystalline aggregates of K-feldspar are common.

Sericite and rhombs and anhedral grains of colourless carbonate are abundant as a mesh of largely interstitial grains.

Leudoxenized, secondary sphene, very fine unidentified opaque grains and traces of very fine sphalerite occur separately as disseminated tiny clusters.

An approximate mode is :

25-30%	quartz
45-55%	K-feldspar
3-5%	albite
5-10%	carbonate (possibly dolomite)
10-12%	sericite
0.1-0.2%	leucoxenized sphene
0.1-0.2%	opaques
0.1%	sphalerite

Comments and Interpretation :

It seems likely that the primary rock was an unwelded rhyolitic tuff, but it has experienced extensive recrystallization and development of abundant carbonate and moderate sericite. In view of its commonly rhombic form the colourless carbonate may be dolomite.

Traces of sphalerite are present, but the rock is barely acceptable as a host rock. Perhaps it is a distal facies or a coarse facies marking the upper or lower limit of a host horizon.

555101

054

Sample Number : 0515 RH8 321.8m

Identification : Schistose tuff or pebbly volcaniclastic arenite with abundant replacement by sericite, carbonate and sphalerite

Description :

The hand specimen is a core sample of speckled, light olive grey rock which displays abundant, tiny, dark grey, aligned clasts and a few light grey lithic clasts which are millimetres to centimetres in size.

Cobaltinitrite staining revealed many K-feldspar crystals, up to about 1mm in size, and a large rhyolitic clast, at least 20mm long.

In thin section the large clast is seen to consist of 0.5 to 1mm, partly recrystallized phenocrysts of quartz and K-feldspar set in a fine groundmass which has been largely converted to abundant brown, anhedral carbonate and sericite. Transparent, golden brown sphalerite occurs as anhedral patches about 0.1 to 2mm in size. Sericite in the clast is schistose and the schistosity is continuous into a schistose matrix surrounding the clast.

The remainder of the section consists of partly recrystallized clasts of K-feldspar and a few of quartz, generally about 1mm in size, set in a schistose matrix of sericite with abundant anhedral grains and veinlets of brownish carbonate and with abundant lenticular patches of anhedral, golden brown sphalerite. There are sparse subhedral grains of pyrite. Some of the sphalerite partly replaces feldspar clasts.

An approximate mode of the sample is :

25-30%	K-feldspar (apparently orthoclase)
2-3%	quartz
50-60%	sericite
5-10%	carbonate (ferruginous and/or manganiferous)
4-8%	sphalerite
0.1%	pyrite

Comments and Interpretation :

Prior to deformation, sericitization, carbonatization and mineralization, this sample consisted of K-feldspar phenoclasts, a few quartz phenoclasts and some coarse clasts of rhyolite. It cannot be determined satisfactorily whether the precursor rock was a lithic crystal tuff or a pebbly volcaniclastic arenite.

The alteration and mineralization proceeded by replacement processes after deposition of the clasts and appears to have been synchronous with or subsequent to deformation.

055

RELOG SEPTEMBER 1982

GOLD FIELDS EXPLORATION PTY. LIMITED

DRILL CORE RECORD

555102

HOLE NO.: RH 9

STATE : Tasmania

DEV. PRESS

PROJECT	Red Hills
DESIGNED BY	A.C. Walter
RE LOGGED BY	F.G. FitzGerald
COMMENCED	18-11-77
COMPLETED	1-12-77

PURPOSE

To test RH 5 mineralization to south and down dip from RH 5 on line 40S. (Red Hills imperial grid)

LOG SUMMARY / GENERAL COMMENTS

Probable equivalent to host horizon in RH 5 intersected 310.7-336.3m but containing considerable coarse pyroclastic material. Semi massive sulphide formed several thin layers 1-10cm thick within this mixed sequence. Sphalerite mineralization continues into underlying pyroclastic (ignimbritic) sequence. Pyritic black shales intersected 193.1-210.7m but do not contain base metals. Red Hills lava intersected at 352.4m carrying minor chalcopyrite.

ASSAY SUMMARY

INTERVAL From	INTERVAL To	Cu	Pb	Zn	Ag	Au	S	COMMENTS
309.5	318.5	0.03%	0.32%	1.64%	9.7 g/t	0.16 g/t		Mixed sediments, possible host horizon.
318.5	335.0	0.01%	0.13%	0.32%	2.1 g/t	0.09 g/t		Mixed pyroclastics-sediments, possible host horizon.
335.0	336.5	0.07%	2.12%	3.30%	14 g/t	0.12 g/t	2.6%	20cm semi-massive sulphide in pyroclastic sequence.
336.5	345.5	0.03%	0.14%	1.90%	1.2 g/t	<0.1 g/t	1.2%	Pyroclastic sequence.
345.5	362.0	0.04%	0.02%	0.85%	1.5 g/t	<0.1 g/t	1.2%	Pyroclastic (ignimbritic?) sequence.
362.0	383.0	0.13%	< 0.01%	0.03%	<1 g/t			Red Hills Lava

LOCATION

NORTHING	5364766
EASTING	382164
R.L.	735.4m
GRID	A.M.G.
LENGTH	388.2m

HOLE CONDITION

SIZE Hole Size	SIZE Depth
HQ(tricone)	4.5
HQ	33.2
NQ	333.2
BQ	388.2

SIGNIFICANT CORE LOSS INTERVALS

From	To	% Lost
4.5	21.2	20
30.6	35.0	25
191.0	208.8	19
281.0	284.9	27

POOR GROUND CONDITION ZONES

From	To	Condition

HOLE CONDITIONS AFTER COMPLETION

3m HQ casing left in top of hole.

Hole open to 350m in Sept. 1982.

SURVEY DATA (Note: Bearing type must be same as Project Grid Type)

SURVEY Depth	SURVEY Bearing	SURVEY Dip	INTERVAL From	INTERVAL To	INTERVAL Distance	VERTICAL D.Sin.Dip	VERTICAL R.L.	HORIZONTAL D.Cos.Dip	HORIZONTAL Prog.Total
Collar	093.3°	-65°							
29.0	ND	-58°							
53.0	ND	-54°							
77.0	ND	-49°							
101.0	ND	-43.5°							
125.0	093°	-41°							
149.0	ND	-39°							
173.0	ND	-34°							
197.0	ND	-34°							
221.0	ND	-33°							
245.0	ND	-32°							

SURVEY Depth	SURVEY Bearing	SURVEY Dip	INTERVAL From	INTERVAL To	INTERVAL Distance	VERTICAL D.Sin.Dip	VERTICAL R.L.	HORIZONTAL D.Cos.Dip	HORIZONTAL Prog.Total
269.0	ND	-31.5°							
293.0	ND	-34°							
317.0	ND	-33°							
341.0	094°	-31°							
365.0	095°	-30°							
383.0	096°	-29°							

056

555103

GOLD FIELDS EXPLORATION PTY. LIMITED

DLV. PRESS

PROJECT: Red Hills

DRILL CORE LOG AND ASSAY DATA

HOLE NUMBER: RH 9

INTERVAL		RECOVERY		DESCRIPTION	ASSAY DATA			
From	To	m	%		Sample No.	From	To	Rec. %
0.0	16.6	16.6	80	COARSE PYROCLASTICS				
				Grey med-coarse grained lithic pyroclastic. Zone of partial				
				oxidation which enhances textures. Lithic clasts of fawn-				
				pink fine grained (lava?) up to 2cm, mostly angular, dark green				
				fragments (which may be pumice?) and white-pink relict feld				
				crys. 1-3mm set in fine to medium grained pyroclastic matrix				
				In places clear green-brown amorphous glass fragments 1-4mm				
				in size. Elsewhere pink-red fine grained hard zones, reflecting				
				siliceous (hematitic?) alteration. Generally weak pervasive				
				sericite, minor chlorite along fractures and weak-mod cleavage.				
				Subtle brecciation evident e.g. 13.1-16.6m.				
				No sulphides evident but common dark brown-black Mn ox fracture-				
				fill & veins forming up to 20% of rock.				
16.6	32.3	15.7	83	WELDED IGNIMBRITES				
				Grey-green fine-med grained foliated rock. Clear dark green				
				fiammé 1-4mm, sometimes diffuse margins. Fine grained relict				
				feld. crys ≤1mm are common, now pale brown carbonate. Elongation				
				& orientation of vitric-crystal component defines foliation				
				e.g. 45°/LCA @ 20.7m. Rock appears gradational with above				
				sequence and is clearly related. Overall stronger pervasive				
				sericite and weak chlorite alteration. Scattered qtz-carb-				
				pink (potassic?) veins all barren.				
				21.6-23.5m shear zone with fault gouge 40°/LCA @ 22.6m. Very				
				minor fine grained dissem. py.				
32.3	107.4	75.1	95	LESS WELDED IGNIMBRITES				
				Grey-orange fine grained speckled rock. Quite uniform with				
				appearance of sandstone texture, close packed fine grained				
				crystals. Minor units of finer grained ashy, rock e.g. 68.7-				
				69.1m with upper contact 65°/LCA but no real bedding observed.				
				Lower section has alteration colour banding 1-3mm thick of				
				orange (siliceous) and khaki (sericitic) styles defining crude				
				foliation e.g. 60°/LCA @ 78.0m. Basal 8m rock more massive				
				almost aphanitic, perhaps strongly welded. Overall weak-mod.				

555104

GOLD FIELDS EXPLORATION PTY. LIMITED

ULV. PRESS

PROJECT: Red Hills

DRILL CORE LOG AND ASSAY DATA

HOLE NUMBER: RH 9 Page: 2.

INTERVAL From	INTERVAL To	RECOVERY m	RECOVERY %	DESCRIPTION	ASSAY DATA in ppm unless otherwise shown: Sample No.	From	To	Rec. %	Cu	Pb	Zn	Ag
				pervasive sericite, some silicification. Scattered qtz-carb veins 5-10mm thick with increasing carbonate sweat-out & pods down hole.								
				Mineralization: Mostly very minor dissem py, some vein & dissem py-cpy in basal section. No other min. evident.	N/A	102.0	103.5	100	400	125	240	2
						103.5	105.0	100	0.14%	75	135	3
				100.0-107.4m est ≤ 0.5% py>cpy.								
				Comment: Petrographic work (104.6m) indicates presence of glass shards supporting interpretation of pyroclastic (less welded ignimbritic) rock.								
107.4	130.3	22.9	93	COARSE PYROCLASTICS								
				Light-grey coarse lithic pyroclastics, agglomeratic in places. Gradational upper contact, general increase in grain size and quantity and size of lithic clasts down hole. Lithics are sub-rounded blocks up to 10cm in size, mostly 0.5-2cm, of fawn-pink siliceous porphyritic felsic lava (?), light grey sericitic tuff, possible grey shale and dark green deformed pumice. Clasts are irregular in shape but tend to be elongated along crude foliation e.g. 70°/LCA @ 109.0m. Matrix is fine grained grey ashy material with common relict feld. crys. 0.5mm, mostly orange-brown carbonate altered.								
				Generally mod-strong pervasive sericite, much cream carbonate throughout as pervasive alteration of matrix, as pods (after lithic clasts?) and irregular "sweat outs", forming up to 25% of rock e.g. 126.2-127.9m.								
				Mod. cleavage developed sub parallel to foliation.								
				Some qtz-carb±chl. veins but mostly barren.								
				Only tr.-minor fine grained dissem py.								
				121.3-122.0m broken core, not clearly fault structure.								
				PORPHYRITIC BASALT SILLS								
				Three dark green-brown porphyritic basic intrusive bodies 125.6-126.2m, 127.9-128.2m and 129.7-130.3m. All have sharp contacts (where not obscured by broken core) e.g. 70°/LCA @ 127.9m, 90°/LCA @ 129.7m. 2 lower bodies have chilled, bleached margins,								

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GOLD FIELDS EXPLORATION PTY. LIMITED

ULV. PRESS

PROJECT: Red Hills

DRILL CORE LOG AND ASSAY DATA

HOLE NUMBER: RH 9

INTERVAL From	INTERVAL To	RECOVERY m	RECOVERY %	DESCRIPTION	ASSAY DATA Sample No	From	To	Rec. %
				with concentration of phenocrysts at contacts. In general have phenocrysts of altered feldspar up to 1 cm. in size, some rounded & vesicular-looking with chloritic reaction rims in crypto-crystalline groundmass. Upper body mod. magnetic, lower 2 weakly magnetic but more highly altered (sericitic?). Some thin carbonate veinlets within bodies but are barren. Lower contact 25cm thick vein of qtz-carb-chl-py.				
130.3	130.8	0.5	85?	BLACK SHALE Black shale-dark tuffaceous siltstone. Possibly faulted upper contact with broken core into 25cm thick qtz-carb vein. Rest of core mod broken, mostly graphitic shales with minor khaki-grey coarser clastics down hole. No bedding determined. Increasing sericitic alteration down hole, only weak cleavage developed. Mineralization: up to 5% py as blebs up to 7mm long, also thin veinlets. No base metals visible.				
130.8	157.0	26.2	96	HYDROTHERMAL BRECCIA? Pale grey-white breccia in grey siliceous matrix. Fairly sharp upper contact although some of the siliceous cement appears to extend 20cm into overlying tuffaceous unit. Clasts of white very fine grained siliceous rock (felsic lava?) from few mm up to more than 10cm in size, angular to subangular. No other lithologies observed in clasts. From 140m on blocks less apparent, matrix reduced and rock appears more like broken massive felsic rock. Very small relict feld. crys ≤1mm are evident within lava clasts. The grey matrix is fine grained very siliceous almost cherty cement. Minor pale green sericitic alteration of matrix in places. 154.1-157.0 lower contact zone has blocks of lava often with more diffuse margins, some pink chips and crys. of feld up to 4mm within grey med. grained pyroclastic(?) matrix. Numerous small dark fiammé, glass shards also occur here. Mineralization: Predominantly fine grained py in matrix, some thin vein py and small patches within matrix. No base metals				

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GOLD FIELDS EXPLORATION PTY. LIMITED

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PROJECT: Red Hills

DRILL CORE LOG AND ASSAY DATA

HOLE NUMBER: RH 9

INTERVAL From	INTERVAL To	RECOVERY m	RECOVERY %	DESCRIPTION	Sample No.	From	To	Rec. %	ASSAY DATA in ppm unless otherwise shown Cu	Pb	Zn	Ag	S
				evident.									
				130.8-131.0m est 5% py.									
				138.0-147.5m est. 1-2% py, less brecciation and cement.									
				147.5-154.1m est. 5% py.									
				154.1-157.0m est. 1-2% py decreasing down hole, related to qtz-carb-chl veins.									
				Comment: Petrographic work (136.2m) suggests the rock could be a hydrothermal breccia. The parent rock was either rhyolitic lava or pyroclastic as possible relict pumice identified. One grain of sphalerite recognized in the siliceous "cherty" cement but the breccia is basically unmineralized apart from the hydrothermal pyrite.									
157.0	193.1	36.1	93	IGNIMBRITES	N/A	157.5	159.0	98	50	35	175	<1	
				Grey fine-med grained fairly uniform rock. Upper contact appears gradational with margin of breccia. The rock itself is made up of very fine crystals <0.5mm and minor dark fiammé in a moderately sericitic ashy matrix. Occasional fawn colour bands appear more siliceous, imparting crude foliation e.g. 70°/LCA @ 189.1m. Moderate amount of carbonate in rock as pervasive alteration (after felds) and thin veinlets and "sweat outs". Generally only weak cleavage developed but increases over basal 4m where rock more schistose, e.g. 45°/LCA @ 189.5m		159.0	160.5	100	50	60	110	<1	
						160.5	162.0	100	35	85	255	1	
						162.0	163.5	97	45	120	230	1	
						163.5	165.0	96	35	30	75		0.1%
						165.0	166.5	94	40	30	55		<0.1%
						166.5	168.0	93	65	15	50		<0.1%
						168.0	169.5	96	140	10	55		0.2%
						169.5	171.0	97	50	25	70		0.2%
						171.0	172.5	93	45	15	50		0.1%
				Veins of qtz-carb-chl up to 25cm thick are common, some are mineralized.		172.5	174.0	95	30	20	60		<0.1%
						174.0	175.5	96	90	20	60		0.1%
				189.5-193.1m broken core, last 15cm fault pug.		175.5	177.0	96	85	40	60		0.2%
				Mineralization: Generally weakly mineralized, mostly minor fine grained dissem py, some vein fracture py.		177.0	178.5	100	30	15	60		0.1%
						178.5	180.0	100	25	30	80		0.2%
				158.5-165.2m est. 2-3% py assoc. with qtz-carb-chl veins & breccia fill up to 0.5cm thick.		180.0	181.5	100	70	30	60		<0.1%
						181.5	183.0	100	55	65	85		0.1%
				168.5m tr dissem cpy.		183.0	184.5	100	50	45	105		0.3%
						184.5	186.0	100	45	30	60		<0.1%
						186.0	187.5	100	30	50	75		0.2%
						187.5	189.0	92	30	60	110	2	0.1%
						189.0	190.5	90	65	380	0.17%		

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GOLD FIELDS EXPLORATION PTY. LIMITED

ULV. PRESS

PROJECT: Red Hills

DRILL CORE LOG AND ASSAY DATA

HOLE NUMBER: RH 9

INTERVAL From	INTERVAL To	RECOVERY m	RECOVERY %	DESCRIPTION	Sample No.	From	To	Rec. %	ASSAY DATA Cu	Pb	Zn	Ag	S
					N/A	190.5	192.0	88	20	200	225	1	
						192.0	193.5	53	70	50	170	<1	
193.1	210.7	17.6	88	BLACK SHALES									
				Black shales and interbedded dark grey tuffaceous siltstones.									
				Upper contact faulted, lower contact sharp but obscured, by									
				broken core. Generally well bedded with fine laminations in									
				shale and beds of silty rock 1-7mm thick e.g. 80°/LCA @ 194.5m,	N/A								
				65°/LCA @201.6m. Possible cross bedding structures 199.2-		193.5	195.0	53	90	200	230	<1	
				201.6m. but facing ambiguous. Intraformational slump folding		195.0	196.5	69	110	225	175	1	
				204.1m & 205.6m. Both suggest more active depositonal environ-		196.5	198.0	75	100	105	180	<1	
				ment. Silty beds appear to increase in amount down hole and		198.0	199.5	89	75	180	310	1	
				commonly have dark flecks parallel to bedding. Well developed		199.5	201.0	96	110	210	545	1	
				slatey cleavage decreases down hole with increasing grain size.		201.0	202.5	97	95	245	405	2	
				Fracture-fill and gash veins of white carbonate are common,		202.5	204.0	87	85	260	740	1	
				often quite contorted.		204.0	205.5	88	50	175	305	1	
				Mineralization: Good syngenetic sulphides throughout mostly		205.5	207.0	89	45	210	850	1	
				dissem euhedral py, minor small blebs of sp, cpy often related		207.0	208.5	89	85	210	305	<1	
				to qtz-carb veins (i.e. remobilized). Overall 3-5% py, locally		208.5	210.0	100	100	240	780	1	
				over 10cm up to 0.5% sp>cpy e.g. 204.3m.									
210.7	215.5	4.8	100	MIXED TUFFACEOUS SEDIMENTS									
				Appears to be lower margin zone of sediments to black shales									
				above. Mixed dark grey tuffaceous siltstone light grey siliceous		210.0	211.5	100	55	125	690	1	
				fine grained shale, coarser crystal tuffs even possible pyro-		211.5	213.0	100	55	205	0.28%	1	
				clastic rocks containing relict glass shards. The finer grained		213.0	214.5	100	100	130	740	1	
				units often disrupted by apparent coarser influxes of clastic-		214.5	216.0	100	75	60	235	<1	
				pyroclastic material. These units 10cm to 2m thick.									
				Overall this sequence has only weak pervasive sericitic alteration,									
				some silicification and mod-weak cleavage decreasing down the									
				hole from the upper faulted contact.									
				Mineralization: Variable min, best in fine "cherty" unit where									
				up to 10% py as stringers & veinlets with minor blebs of sp									
				e.g. 212.8m 10 cm est. 30% py 5% sp. Rest of sequence est.									
				1-3% py, mostly veins with only minor sp in upper section.									

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GOLD FIELDS EXPLORATION PTY. LIMITED

ULV. PRESS

PROJECT: Red Hills

DRILL CORE LOG AND ASSAY DATA

HOLE NUMBER: RH 9

INTERVAL From	INTERVAL To	RECOVERY m	RECOVERY %	DESCRIPTION	ASSAY DATA in ppm unless otherwise shown: Sample No.	From	To	Rec. %	Cu	Pb	Zn	Ag	Au(FA)
215.5	310.7	95.2	98	IGNIMBRITES									
				Light grey fine-medium grained uniform rock. Gradational									
				contact with epiclastic sequence above. Generally structureless,									
				monotonous sequence of pyroclastics. Mostly fine relict									
				crystals <0.5mm, locally up to 2mm in size in grey weakly									
				sericitic matrix. Some alteration (?) colour banding defines									
				crude foliation e.g. 65°/LCA @ 251.5m, 70°/LCA @ 277.8m.									
				Scattered dark streaks few mm long probably represent completely									
				deformed pumice, vitric material, no unambiguous fiammé seen									
				however. Rock has appearance of fine grained close packed									
				sandstone in places but no bedding is evident. Basal 4m in									
				pale orange-buff coloured hard and more siliceous and maybe									
				more strongly welded section(?), similar narrow zones higher									
				up hole. Overall the rock is only weakly altered, sericite									
				some silicification and relatively common carbonate alteration.									
				Minor thin veinlets of qtz-carb±chl throughout, mostly barren									
				262.4-264.0m coarse veins of qtz-carb-chl-pink (potassic?) -									
				pale green (sericite?) up to 20cm thick, unmineralized.									
				265.5-266.4m broken core with qtz-carb-py-specular hem breccia									
				infill and veins.									
				281.0m 5cm breccia zone, angular clasts in qtz-carb cement									
				283.7-285.0 broken core, minor hem-py assoc. with chlorite.									
				Mineralization: Generally unmineralized apart from tr dissem	N/A	305.0	306.5	100	25	45	410	<1	
				py and very minor vein py-hem as above.		306.5	308.0	100	30	40	300	<1	
				Comment: Uniformity, relict vitric (deformed fiammé) material		308.0	309.5	97	10	25	85	<1	
				and lack of mineralization suggest rock is sequence of welded		309.5	311.0	97	195	900	1.0%	3	0.02
				ignimbrites (c.f. petrographic report see 253.9m)									
310.7	321.5	10.8	95	MIXED SEDIMENTARY SEQUENCE (HOST ROCK?)									
				Mixed sequence of grey-dark grey tuffaceous shales, siltstones									
				and sandstones with possible pyroclastic interbeds. Upper									
				contact sharp @ 43°/LCA but immediately up hole 5cm thick									
				unit of euhedral feld. crys and fragments packed in brown									
				Fe - Mn ox gritty matrix. No true black shales in the sequence									
				which appears to be poorly sorted with thin bands and irregular									

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GOLD FIELDS EXPLORATION PTY. LIMITED

DLV. PRESS

PROJECT: Red Hills

DRILL CORE LOG AND ASSAY DATA

HOLE NUMBER: RH 9

INTERVAL From	INTERVAL To	RECOVERY m	RECOVERY %	DESCRIPTION	Sample No.	From	To	Rec. %	ASSAY DATA Cu	Pb	Zn	Ag	Au
				incursions of coarse clastic-pyroclastic? material into generally									
				fine silty-shale sequence, giving fragmental appearance esp.									
				in lower sections. These finer units contain fine grained									
				relict crys 0.5mm and dark thin flecks (carbonaceous material?)									
				both aligned parallel to bedding. Bedding variably developed,									
				best seen as contacts between units e.g. 85°/LCA @ 312.5m.									
				Some small grains have concretionary appearance.									
				The rock is moderately schistose with cleavage sub parallel	N/A	311.0	312.5	90	530	0.27%	2.6%	9	0.10
				to bedding e.g. 75°/LCA @ 315.0m. Minor kink folds indicate		312.5	314.0	90	335	0.60%	1.49%	16	0.42
				later deformation.		314.0	315.5	97	310	0.20%	1.70%	9	0.12
				309.3m possible fault @ 40°/LCA with 10cm breccia zone cemented		315.5	317.0	97	280	0.19%	1.95%	7	0.15
				by qtz-carb.		317.0	318.5	97	220	0.59%	1.09%	14	0.14
				Mineralization: Sulphides occur throughout but are best		318.5	320.0	97	110	0.27%	0.38%	5	0.07
				developed in the coarser units mostly dissem and veinlets		320.0	321.5	97	65	0.10%	830	2	0.05
				but some semi massive bedded sulphides developed. Overall									
				est 2-3% sulphide py>sp>gn, tr cpy.									
				311.7-312.6m est 4-6% sulphide sp>py with 2 bands of semi									
				massive sulphide 1cm thick @ 312.4m & 312.55m									
				319.3m minor specular hem assoc with white carb pods.									
				Comment : Appears to be sedimentary sequence with syngenetic									
				base metal sulphides forming but being repeatedly									
				disturbed & disrupted by coarser influxes of pyroclastic									
				or juvenile epiclastic material. Some mineralization maybe									
				related to these events which in turn maybe related to the									
				mineralizing event intersected in RH5.									
321.5	336.3	14.8	100	MIXED PYROCLASTICS AND SILICEOUS SEDIMENT (HOST ROCK?)									
				Grey-brown medium-coarse grained lithic pyroclastic with blocks									
				and beds(?) of light grey fine grained siliceous rock. Upper									
				contact quite gradational, marked by increasing coarse pyro-									
				clastics. Lithic clasts are common mostly angular pale grey									
				to white fine grained siliceous fragments from few mm up									
				to 5cm in size, some have more diffuse margins. Dark fiammé									
				0.5-5mm in size form up to 30% of the rock in places, often									
				this relict vitric material not particularly deformed. Broken,									

555110

GOLD FIELDS EXPLORATION PTY. LIMITED

ULV. PRESS PROJECT: Red Hills

DRILL CORE LOG AND ASSAY DATA

HOLE NUMBER: RH 9 Page: 8.

INTERVAL From	INTERVAL To	RECOVERY m	RECOVERY %	DESCRIPTION	Sample No.	From	To	Rec. %	Cu	Pb	Zn	Ag	Au	S
									ASSAY DATA in ppm unless otherwise shown					
				sometimes rounded relict feld crys are also common in the sericit-										
				ic ashy matrix. The most striking feature of this sequence										
				is the fine grained light grey siliceous rock, slightly cherty										
				in appearance and very similar to host rock in RH 5. This										
				occurs as discrete blocks possibly up to 25cm in diameter,										
				also possible beds up to 80cm thick, although these may also										
				be blocks, and as matrix infill amongst the coarser pyroclastic										
				rocks. Although this fine grained rock is siliceous in part										
				it appears to be dominantly sericitic, possibly ash. Possible										
				bedding determined 80°/LCA @ 327.5m but this may have been										
				rotated.										
				Mineralization: The sequence is well mineralized throughout	N/A	321.5	323.0	98	85	695	750	2	0.05	
				but the coarse blebs of sphalerite that predominate occur		323.0	324.5	100	110	0.10%	0.20%	2	0.07	
				only within the coarse pyroclastic matrix. The grey "host		324.5	326.0	100	80	0.15%	0.28%	3	0.11	
				rock" is only mineralized along micro-fractures. Est. overall		326.0	327.5	100	100	0.34%	0.48%	4	0.20	
				3-5% sulphide sp>gn, py with minor cpy, locally up to 10%		327.5	329.0	100	45	0.16%	0.30%	2	0.05	
				over 10cm intervals e.g. 330.7m, 333.2m.		329.0	330.5	100	30	0.10%	0.30%	1	0.05	
				336.1-336.3m semi massive sulphide, crude layering, upper		330.5	332.0	100	55	320	0.48%	<1	0.08	
				contact irregular, disrupted, lower contact sharp apparently		332.0	333.5	100	55	315	0.64%	<1	0.17	
				conformable @ 75°/LCA. Host rock appears to be coarse pyro-		333.5	335.0	100	175	440	0.35%	1	0.04	
				clastics with some finer chloritic (ash?) rock.		335.0	336.5	100	740	2.12%	3.30%	14	0.12	2.6%
				Est 15-20% total sulphide with sp>py>gn>cpy.										
				Comment: If this was the equivalent host rock horizon to										
				RH 5 then there has been considerable disruption by coarse										
				pyroclastic (ignimbritic?) influxes. The base metal mineraliz-										
				ation appears to have formed during or soon after this event										
				and not during the quieter period of deposition. The presence										
				of a thin band of semi-massive sulphide at the base indicates										
				that perhaps given quiter conditions a significant thickness										
				of sulphide may have formed.										
336.3	362.4	26.1	100	PYROCLASTICS										
				Grey-green fine medium grained rock. Abrupt upper contact										
				with semi-massive sulphide but appears related to overlying										
				coarse pyroclastics. Further down hole grain size increases										

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GOLD FIELDS EXPLORATION PTY. LIMITED

DLV. PRESS

PROJECT: Red Hills

DRILL CORE LOG AND ASSAY DATA

HOLE NUMBER: RH 9

INTERVAL From	INTERVAL To	RECOVERY m	RECOVERY %	DESCRIPTION
				with increasing pink-red felsic lava clast component. Variable
				grainsize through sequence defines a foliation which maybe
				primary e.g. 63°/LCA @ 343.7m although these bands maybe
				related to different alteration styles viz dark green (chloritic)
				dark grey (sericitic-siliceous). Overall the rock is moderately
				to strongly altered, possible relict fiammé are ambiguous.
				From 353.2m these are more clearly developed. Moderate-
				strong cleavage developed e.g. 75°/LCA @ 343.7m. Minor coarse
				grained qtz-carb-chl veins up to 2cm thick are mineralized.
				Mineralization: The sequence is well mineralized throughout
				mostly as blebs of sphalerite flattened in the cleavage
				plane, also as dissem grains, along fractures and in veins.
				Generally the best min is in coarser units higher up sequence
				336.3-353.2m est. 2-3% sp locally up to 5-6% sp, up to 1%
				py only tr. gn cpy.
				353.2-362.4m est. 1-2% sulphide sp py, increasing cpy down
				hole.
				Comment: May represent foot wall to semi-massive sulphide
				above, however degree and style of alteration suggest
				that the system was not very strong despite the hydrothermal(?)
				base metal mineralization.
362.4	388.2	25.8	98	RED HILLS LAVA
				Dark green-pink/red fine grained brecciated rock. Gradational
				contact with upper pyroclastics. Mostly pink-red clasts,
				grains in dark green (chloritic) matrix. Clasts are sometimes
				sharp but mostly rounded with diffuse margins suggesting
				resorption during alteration. Typical Red Hills Lava dome
				margin style. Mod-strong pervasive chloritic and variable
				hematitic alteration. Some qtz-ser veins, fracture-fill with
				sulphides. 374.4m 10cm chlorite with py clots 2cm in size
				371.9m fault breccia 2cm wide @ 30°/LCA.
				Mineralization: Mostly mod-coarse grained dissem or clots
				of sulphides also fracture fill and veinlet both py and cpy.
				362.4-371.8m est 1-2% sulphide py=cpy.

ASSAY DATA in ppm unless otherwise shown

Sample No.	From	To	Rec. %	Cu	Pb	Zn	Ag	Au	S
N/A	336.5	338.0	100	200	0.70%	1.27%	5	<0.1	1.0%
	338.0	339.5	100	620	500	2.35%	2	<0.1	1.4%
	339.5	341.0	100	260	400	2.30%	2	0.1	1.3%
	341.0	342.5	100	130	220	1.71%	1	0.1	1.3%
	342.5	344.0	100	180	160	1.64%	1	<0.1	1.1%
	344.0	345.5	100	350	330	2.14%	2	<0.1	1.3%
	345.5	347.0	100	280	260	0.83%	2	0.1	1.1%
	347.0	348.5	100	240	110	0.84%	1	<0.1	0.4%
	348.5	350.0	100	350	140	0.69%	1	<0.1	1.0%
	350.0	351.5	100	210	170	500	1	<0.1	0.6%
	351.5	353.0	100	830	120	1.07%	2	<0.1	1.4%
	353.0	354.5	100	200	90	0.65%	1	0.1	0.7%
	354.5	356.0	100	620	250	0.88%	2	<0.1	2.0%
	356.0	357.5	100	460	150	2.04%	1	<0.1	1.5%
	357.5	359.0	100	320	200	0.63%	1	<0.1	1.4%
	359.0	360.5	100	320	290	1.23%	2	0.1	1.4%
	360.5	362.0	100	150	615	0.24%	3		
	362.0	363.5	100	0.10%	120	610	1		
	363.5	365.0	100	0.34%	35	240	1		
	365.0	366.5	98	0.14%	50	145	<1		
	366.5	368.0	97	0.12%	55	650	<1		
	368.0	369.5	97	330	55	355	<1		
	369.5	371.0	97	345	345	130	<1		
	371.0	372.5	100	0.12%	770	120	1		
	372.5	374.0	100	0.13%	40	180	<1		
	374.0	375.5	100	940	60	265	<1		
	375.5	377.0	100	0.20%	110	170	<1		
	377.0	378.5	100	0.10%	50	165	<1		
	378.5	380.0	100	0.15%	85	165	<1		
	380.0	381.5	100	0.18%	215	375	<1		
	381.5	383.0	100	0.15%	120	160	<1		
	383.0	384.5	100	910	225	290	<1		
	384.5	386.0	85	245	35	130	<1		

555112

GOLD FIELDS EXPLORATION PTY. LIMITED

ULV. PRESS

PROJECT: Red Hills

DRILL CORE LOG AND ASSAY DATA

HOLE NUMBER: RH 9

INTERVAL		RECOVERY		DESCRIPTION	ASSAY DATA			
From	To	m	%		Sample No.	From	To	Rec. %
				371.8-388.2m est 1% sulphide py=cpy.				
				END OF HOLE				

Sample Number : 0516 RH9 104.6m

Identification : Carbonated and weakly sericitized rhyolitic tuff, veined by carbonate, pyrite and quartz

Description :

The hand specimen is a core sample of light grey, fine-grained rock, speckled with aligned light green structures which resemble small vitric shards. Pyrite is visible within pale veins.

Cobaltinitrite staining revealed abundant fine K-feldspar and highlighted the existence of small, siliceous shard-like structures and of irregular veins of quartz, carbonate and pyrite.

In thin section the main framework of the sample is seen to consist of subhedral phenoclasts of twinned plagioclase, about 0.2 to 0.5mm in size, and a few aggregates of plagioclase, set in a cryptocrystalline matrix composed mainly of K-feldspar. Some of the plagioclase is flecked with sericite and carbonate and similar flecks occur in the matrix. There are a few recrystallized quartz phenoclasts. Possible former vitric shards, about 0.5mm long are now composed of sericite in some cases and quartz with carbonate in others.

An irregular network of deformed fissure and replacement style veins, up to several millimetres thick, cut the sample. Where crudely zoned the veins contain brownish carbonate followed by subhedral pyrite, then strained quartz.

An approximate mode of the section examined is :

20-25%	plagioclase
8-10%	quartz
50-60%	K-feldspar
4-6%	disseminated brownish carbonate
3-5%	sericite
4-6%	vein carbonate (brownish)
2-4%	vein quartz
0.4-0.6%	vein pyrite

Comments and Interpretation :

The sample is confidently interpreted as pyroclastic, rather than volcaniclastic, despite some uncertainty about whether shard-like textures visible in the sample do reflect former vitric shards. The subhedral form of the plagioclase phenoclasts and the unsorted, porphyritic nature of the rock are incompatible with a water-laid sediment.

The magma type was apparently rhyolitic.

Pyrite has been introduced in carbonate-quartz veins which are mainly fissure-style. The carbonate is apparently somewhat ferruginous and/or manganiferous.

Sample Number : 0517 RH9 136.2m

Identification : Weakly mineralized, silica-cemented (?) hydrothermal breccia of silicified and sericitized rhyolite

Description :

The hand specimen is a core sample which displays light greenish grey, lithic clasts, of variable size up to about 30mm, set in a medium light grey siliceous cement.

Cobaltinitrite staining revealed that the lithic clasts are very rich in fine K-feldspar and have siliceous vitroclastic or pumiceous structures.

In thin section the lithic clasts are seen to consist of sericitized probable phenocrysts of feldspar, about 1mm in size, set in allotriomorphic fine groundmass of quartz, K-feldspar and minor sericite and carbonate. Sutured aggregates of quartz form patches and short worm-like bodies of uncertain origin.

An approximate mode of the lithic clasts is :

8-12%	sericitized plagioclase phenocrysts
40-50%	K-feldspar
0.5-1%	groundmass sericite
40-45%	quartz
0.3-0.5%	carbonate (apparently calcite)

The cement between the lithic clasts is "cherty" quartz and abundant very finely crystalline, euhedral pyrite.

Overall the cherty quartz constitutes about 25-30% of the rock and pyrite constitutes about 0.5%. There is a single 2mm aggregate of yellow and brown sphalerite within coarser quartz in a "cherty" area.

Late fissure veinlets of quartz and calcite cut the sample.

Comments and Interpretation :

The nature of the precursor rock is obscure. Certainly it was an acid volcanic rock, probably it was lava or subvolcanic rock, and possibly it was pumiceous.

Disruption of the sample and perhaps much of its silicification and sericitization may be a product of hydrothermal brecciation. There is no sound evidence of tectonic brecciation, nor of flow brecciation.

Low temperature, formerly chalcedonic quartz cemented the breccia and is now represented by "cherty" quartz. Very fine pyrite, barely visible in hand specimen, is restricted to the siliceous cement and there is a single 2mm patch of yellow and brown sphalerite within a patch of coarser quartz cement.

Sample Number : 0518 RH9 253.9m

Identification : Rhyolitic volcaniclastic arenite with a schistose, sericitic matrix

Description :

The hand specimen is a core sample which consists of abundant light brownish grey, small clasts set in a light olive grey matrix.

The sample accepted a bright cobaltinitrite stain between somewhat sandy grains of plagioclase and quartz.

In thin section the sample is seen to display a sandy texture of moderately sorted, subangular to subrounded mineral clasts set in a schistose, sericitic matrix. The mineral clasts are about 0.2 to 0.5mm in size.

The most abundant clasts are potassic and recrystallized, now consisting of cryptocrystalline K-feldspar and sericite. The next most abundant are multiply twinned plagioclase, partly recrystallized and partly replaced by carbonate (which seems to be calcite). The remaining clasts are quartz, generally partly recrystallized.

There is minor secondary sphene and rare crystals of pyrite.

An approximate mode is :

40-50%	recrystallized K-feldspar
10-20%	plagioclase
8-10%	quartz
25-30%	sericite
0.3-0.5%	carbonate (apparently calcite)
0.1-0.2%	sphene
rare	pyrite

Comments and Interpretation :

It seems very likely that this sample represents a rhyolitic volcaniclastic arenite which has experienced deformation and sericitic alteration of its matrix and many mineral clasts.

555114

067

Sample Number : 0519 RH9 331.7m

Identification : Pervasively sericitized, acid pyroclastic rock, weakly mineralized with sphalerite and subordinate pyrite

Description :

The hand specimen is a core sample of generally medium light grey rock of pyroclastic appearance. There are prominent, dark grey, cuspate clasts up to 5mm in size and some light grey clasts of more equidimensional structure. Pyrite and sphalerite are inconspicuously present as patches and tiny veins.

A few small crystals of K-feldspar were revealed by cobaltinitrite staining and a vague stain was accepted by much of the rock.

In thin section interpretable structures and textures are quite poorly preserved. There are complex, wispy aggregates, up to 5mm in size composed of very fine sericite, which could represent former pumice. There are also vaguely recognisable lithic clasts, now composed of secondary quartz, calcite, chlorite and golden brown sphalerite. Larger (5 - 10mm), more arenaceous clasts consist of quartz grains in a schistose, sericitic matrix. There is little recognisable feldspar and much of the sample is a wispy, web-like assemblage of sericite and anhedral quartz.

Fine pyrite and aggregates of brown sphalerite are disseminated as small patches, generally less than 0.5mm in size and commonly associated with calcite and chlorite. A small amount of pyrite occurs as late fissure veins.

An approximate mode is :

45-50%	quartz
50-55%	sericite
1-2%	K-feldspar
1-2%	chlorite
1-3%	calcite
0.5-1%	sphalerite
0.3-0.5%	pyrite

Comments and Interpretation :

The sample is considered to be a weakly mineralized, pervasively sericitized acid pyroclastic rock.

Primary textures are not well-preserved, but it seems difficult to reconcile those seen with any form of water-laid sediment.

Some lithic fragments are quartz-rich, but not cherty.

Widely distributed patches of sphalerite in this sample are consistent with a host rock horizon.

Sample Number : 0520 RH9 340.6m

Identification : Finely recrystallized rock of rhyolitic composition and with abundant disseminated sphalerite

Description :

The hand specimen is a core sample of speckled light grey to light olive grey rock with disseminated sphalerite.

Cobaltinitrite staining revealed abundant K-feldspar and a generally sandy texture, overprinted by patches of replacement and inconspicuous veins.

In thin section the sample is seen to consist largely of a mosaic of quartz and untwinned feldspar (largely potassic), only about 0.05 to 0.1mm in grainsize. Interstitial, randomly orientated fine sericite is a minor constituent. There are a few half millimetre, recrystallized phenocrysts or clasts of plagioclase.

An important feature of the sample is transparent brown sphalerite disseminated abundantly as anhedral aggregates as large as 5mm, but commonly about 0.5mm.

Pyrite is present solely within a late, thin fissure vein and it is accompanied by quartz and calcite.

An approximate mode of the rock is :

50-60%	feldspar (much of it potassic)
30-35%	quartz
2-4%	sericite
4-6%	sphalerite
0.1%	pyrite
0.1%	calcite

Comments and Interpretation :

The composition of the rock is consistent with a rhyolitic parent but the sample has been thoroughly recrystallized and it is unknown whether the sample originated as a lava, tuff or volcaniclastic sediment.

In view of the degree of recrystallization, scarcity of sericite, lack of schistosity, and abundance of sphalerite it seems more likely that this sample represents a host rock horizon than a footwall schist.

555116

GOLD FIELDS EXPLORATION PTY. LIMITED

DRILL CORE RECORD

HOLE NO.	RH13
STATE	TASMANIA

DEV. PRESS

PROJECT	Red Hills
DESIGNED BY	FitzGerald/Purvis
LOGGED BY	F.G. FitzGerald
COMMENCED	2-11-82
COMPLETED	9-11-82

PURPOSE

To test mineralization along strike to south from intersection in RH5 and at similar R.L. to RH5.

LOG SUMMARY / GENERAL COMMENTS

7.5m (True thickness) equivalent RH5 host horizon intersected 207.1-216.1m., carrying some base-metal, syngenetic mineralization. Similar mineralization (predominantly sphalerite) continues through coarse underlying pyroclastics to lava. The massive sulphide in RH5 does not extend along strike to RH13. Two black shale units were intersected higher in the hole but are not mineralized. Red Hills lava intersected at 236.7m.

ASSAY SUMMARY

INTERVAL From	INTERVAL To	Cu	Pb	Zn	Ag	Au	S							COMMENTS
37.5m	47.0m	54	424	1212	2.4	<0.1	2.2%							Western sedimentary sequence.
95.0m	101.0m	60	450	327	2.7	<0.1	2.3%							Basal part eastern (main) shale sequence.
207.0m	216.0m	214	1223	1.07%	4.2	0.29*	2.6%							Host rock horizon.
216.0m	236.0m	299	854	1.44%	1.8	< 0.1*	1.1%							Underlying pyroclastic (ignimbritic) sequence.
*215.0m	218.0m	330	0.35%	3.08%	6.5	0.9	3.2%							* Best mineralized zone.

LOCATION

NORTHING	5364850
EASTING	382283
R.L.	775.3
GRID	AMG
LENGTH	244.0m

HOLE CONDITION

SIZE Hole Size	SIZE Depth
HQ	3m
NQ	101m
BQ	244m

SIGNIFICANT CORE LOSS INTERVALS From	To	% Lost
0.0	3.0	35
75.2	80.3	55
83.6	87.3	54
101.1	103.4	33

POOR GROUND CONDITION ZONES From	To	Condition

HOLE CONDITIONS AFTER COMPLETION

3m. NX casing inserted and left in top of hole. Electrode placed at 181.45m in hole and left, hole blocked at this depth

SURVEY DATA (Note: Bearing type must be same as Project Grid Type)

SURVEY Depth	SURVEY Bearing	SURVEY Dip	INTERVAL From	INTERVAL To	INTERVAL Distance	VERTICAL D. Sin. Dip	VERTICAL R.L.	HORIZONTAL D. Cos. Dip	HORIZONTAL Prog. Total	SURVEY Depth	SURVEY Bearing	SURVEY Dip	INTERVAL From	INTERVAL To	INTERVAL Distance	VERTICAL D. Sin. Dip	VERTICAL R.L.	HORIZONTAL D. Cos. Dip	HORIZONTAL Prog. Total
Collar	083°	-47°																	
33.2m	084°	-46°																	
69.2m	084.5°	-43°																	
99.2m	085°	-41°																	
125.7m	084°	-38.5°																	
165.2m	084°	-34.5°																	
207.2m	086°	-33.5°																	
243.2m	086°	-30°																	

070

555117

GOLD FIELDS EXPLORATION PTY. LIMITED

DRILL CORE LOG AND ASSAY DATA

PROJECT: Red Hills HOLE NUMBER: RH13 Page: 1.

INTERVAL From	INTERVAL To	RECOVERY m	RECOVERY %	DESCRIPTION	Sample No	From	To	Rec. %	Cu	Pb	Zn	Ag	Au(FA)	S
					ASSAY DATA in ppm unless otherwise shown									
0.0	38.9	38.9	92	TUFFACEOUS SEDIMENT										
				Fine to medium grained with minor coarser clastic layers e.g. 27.29m.										
				Light grey-green, poorly developed bedding, some primary banding (?) e.g. 70°/LCA @ 27.3m, 63°/LCA @ 38.7m.										
				Made up of relict feldspar, subangular, generally 1-3mm up to 5mm and very minor quartz crystals set in a fine, dark (ashy?) matrix. General decrease in grainsize down hole.										
				Moderate sericite/carbonate alteration throughout with weak silicification from 0-16m. Only weakly developed cleavage but increasing with depth.										
				0-38.9m zone of partial oxidation Fe/Mn oxides commonly developed on fractures and fill up to 0.5cm thick, some remnant py in last 1.5m associated with quartz-chlorite veins										
				28.6m 10 cm py lenses forming 20% of rock										
				38.9m 30 cm fine grained py developed along foliation forming 10% of rock	0551	37.5	39.0	96	20	90	640	1	<0.1	0.6%
				29.0-30.5m quartz-chlorite vein with much Fe/Mn oxides.										
				Suggest rock is reworked fine to medium grained tuffs formed from an ash fall tuff deposited in close proximity to sedimentary basin, there were occasional influxes of coarser pyroclastic material.										
38.9	45.2	6.3	84	SHALES AND FINE SILTSTONE										
				Sharp contacts with enclosing rock, upper obscured by broken core, lower uneven trend approx 70°/LCA, possible facing down hole.	0552	39.0	41.0	93	80	680	1980	3	<0.1	2.5%
					0553	41.0	43.0	74	60	830	2740	3	<0.1	1.3%
					0554	43.0	45.0	100	70	430	550	2	<0.1	2.8%
				Dark grey to black, the shales are carbonaceous, fine black flecks common in silty bands. Bedding generally poor, some evident e.g. 65°/LCA @ 44.7m. Generally finer grained down hole. Moderate slatey cleavage sub-parallel bedding.										
				40.3-40.7m broken core.										
				Basal 2m common quartz-carbonate veins and patches up to 5cm thick, often <1mm and distorted.										
				Fine grained syngenetic py common throughout along bedding										

555118

GOLD FIELDS EXPLORATION PTY. LIMITED

DEV. PRESS

PROJECT: Red Hills

DRILL CORE LOG AND ASSAY DATA

HOLE NUMBER: RH13

INTERVAL From	INTERVAL To	RECOVERY m	RECOVERY %	DESCRIPTION	Sample No.	From	To	Rec. %	Cu	Pb	Zn	Ag	Au(FA)	S
									ASSAY DATA in ppm unless otherwise shown					
				some recrys. clasts and veinlets to 2mm thick. Estimate 5% py overall, better from 43m on. This is upper shale unit which thickens to south in basin see RH9 and RH10.										
45.2	69.0	23.8	97	TUFFACEOUS SEDIMENT Medium to coarse grained volcaniclastic. Light grey In places sub-angular feldspars up to 4mm long elsewhere broken and sub-rounded crystals 1 to 2mm in finer-grained matrix. Rock has distinctive broken fabric with angular clasts of above material in cream coloured carbonate rich cement(?) this disruption may have been during consolidation. Apart from this very few sedimentary features preserved, no clear foliation seen. Moderate-weak pervasive sericite alteration, only weak cleavage 45.2-50.1m slight green/yellow colour in finer grained more sericite vitric(?) matrix with est. 5% py developed as fine grained veins, pods and small lenses. Top 80cm est. 10% py. Below 50.1m sulphide decrease markedly with minor py dissem. and veinlet. Trace sp around 60m.	0555	45.0	47.0	98	40	90	150	3	<0.1	4.0%
69.0	102.3	33.3	83	BLACK SHALES, MINOR TUFF SILTSTONES 69.0-69.7m Contact Zone. Dark shales and siltstones interspersed with coarse grained volcaniclastics, both lithologies occurring variously as irregular bands or blocks giving ambiguous age relations. May be a sedimentary breccia. Recrystallized py throughout often elongated along weak cleavage, est. 1% py in coarse clastics and 3-5% py in shales/silstones. Contact with main section of shales sharp but irregular @ approx. 45°/LCA. Bedding variably devt. e.g. 60°/LCA @ 70.7, 48°/LCA @ 82.8m and 65°/LCA at 91.0m. Some contorted bedding even slump folds 88.8m and 90.7m apparent cross-bedding but no facing evidence Shales predominate and are moderately graphitic, the minor pale silty beds are up to 5cm thick.										

555119

GOLD FIELDS EXPLORATION PTY. LIMITED

DLV. PRESS

PROJECT: Red Hills

DRILL CORE LOG AND ASSAY DATA

HOLE NUMBER: RH13

INTERVAL From	INTERVAL To	RECOVERY m	RECOVERY %	DESCRIPTION	ASSAY DATA in ppm unless otherwise shown: Sample No	From	To	Rec. %	Cu	Pb	Zn	Ag	Au(FA)	S
				Moderate slatey cleavage sub-parallel to bedding becoming less pronounced down hole.										
				75.4-92.6m Zones up to 2m wide of broken/rubbley rock, some with significant core loss.										
				Mineralization: Dissem. recrys. py throughout often medium grained, sometimes as small clots, usually concentrated along	0556	95.0	97.0	95	70	480	210	2	<0.1	1.7%
				bedding planes. Also fracture fill and veinlet py developed.	0557	97.0	99.0	91	60	510	400	3	<0.1	2.5%
				Py content quite variable from 1% to 6-7% over minor 20cm	0558	99.0	101.0	97	50	360	370	3	<0.1	2.8%
				intervals, est. overall 1-2% py.										
				72.5m trace pyrrhotite										
				88.8-90.8m trace sphalerite both brown and dark varieties as recrys. blebs.										
				97.6-102.3m py up to 5% with unusual worm-cast-like patches of dark recrys. material including sphalerite, quartz, carbonate, these are quite oblique to bedding.										
102.3	126.9	24.6	88	MIXED TUFFACEOUS SEDIMENT										
				Generally medium to coarse grained volcaniclastic.										
				102.3-104.5m zone of disruption. Coarse tuffaceous sandstone amongst tuff shale cut by 2 large quartz-carbonate veins both										
				50cm thick, one forming basal contact of main black shales.										
				Mostly alternating bands of light grey fine grained, slightly siliceous sediment and dark grey coarser epiclastics. These										
				bands are from few mm to 2 cm thick and may be primary										
				layering but are often disrupted and appear as "clasts" up										
				to 3cm thick within similar material.										
				Possible bedding 40°/LCA @ 116.4m, some slump bedding (?).										
				Coarser "units" predominantly feldspar grains but some quartz occurs.										
				Weak chloritic haloes around some "clasts" in upper part.										
				Generally weak sericitic alterating but considerable carbonate as irregular patches and after feldspars.										
				103.2m 20 cm fault pug, quartz rubble in clay matrix.										
				110.8m 20cm possible fault, very broken core.										
				120.0-120.35m breccia, subangular blocks tuff sandstone in khaki (sericitic) cement										

555120

GOLD FIELDS EXPLORATION PTY. LIMITED

DEV. PRESS

PROJECT: Red Hills

DRILL CORE LOG AND ASSAY DATA

HOLE NUMBER: RH13

INTERVAL From	INTERVAL To	RECOVERY m	RECOVERY %	DESCRIPTION	ASSAY DATA Sample No.	From	To	Rec. %
				Mineralization: 104.5-111.0m minor fine grained py blebs				
				111.0-116.1 up to 5% py concentrated along bands subparallel to foliation, some deformed along fractures or wrapping around the "clasts".				
				116.1-118.5 1-2% py as above, then decreases rapidly down hole as rock becomes more uniform.				
126.9	182.5	55.6	96	WELDED IGNIMBRITE				
				Grey-orange, fine grained uniform, hard blocky rock with little primary structure, no cleavage developed.				
				Upper contact indistinct, may represent unwelded part of flow unit. Rest of rock appears strongly welded with common dark flecks 1-2mm long (relict vitric material?). Occasional small clasts of pink rhyolitic lava 2-4mm in size.				
				Rock virtually unmineralized apart from trace py and sections below.				
				144.3-147.9m 2 zones of coarser pyroclastic material 60 cm and 30 cm thick with pink lava chips, much white carbonate clots and some sulphide, predominant euhedral py associated with quartz-carbonate-chlorite veins with minor magnetite.				
				163.6-168.8m minor carbonate gash veins 2% 10 mm thick with dark accicular crystals of magnetite.				
				178.5-178.7m narrow breccia, angular blocks of ignimbrite infilled with white carbonate, minor chlorite and 5% fine grained py.				
182.5	207.1	24.6	100	LESS WELDED IGNIMBRITE				
				Dark grey-fawn ignimbrite similar to above but containing noticeably more lithic clasts which often randomly orientated 4-6mm in size, perhaps less welded with only basal section containing interpreted fiammé.				
				182.5-183.2m Contact zone disruption between cooling flow units with fawn ignimbrite mixed with dark grey coarser pyroclastics, carbonate-sericite infill, slightly bleached, weak chloritic alteration.				
				183.2-186.8m Common cream carbonate-				

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GOLD FIELDS EXPLORATION PTY. LIMITED

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PROJECT: Red Hills

DRILL CORE LOG AND ASSAY DATA

HOLE NUMBER: RH13 Page: 5.

INTERVAL From	INTERVAL To	RECOVERY m	RECOVERY %	DESCRIPTION	Sample No.	From	To	Rec. %	ASSAY DATA in ppm unless otherwise shown Cu	Pb	Zn	Ag(AAS)	Ag(FA)	Au(FA)	Au(check)	S
				sweat out carrying some sulphide, last 80cm est. 5% sulphide												
				py =cpy>>gn =sp, rest of section <1% sulphide.												
				182.5-190.5m Weak chlorite alteration of finer vitric component												
				with up to 0.5% disseminated py associated with this. Below here												
				ignimbrite slightly siliceous and less mineralized.												
				192.0-195.6m minor thin irregular carbonate sweat out veins												
				with associated py, up to 1% py over 25cm sections, overall<1%py												
				195.6-203.0m hard uniform dark grey ignimbrite with scattered												
				py, some associated with sweat out veins, most <0.5%py.												
				203.0-206.2m light grey siliceous ignimbrite with common veins												
				of quartz-carbonate-chlorite up to 1cm thick, mostly 1-2mm thick,												
				some offset by up to 3cm, associated py in veins.												
				206.2-207.7m increase in py to 2% disseminated and vein.												
207.1	216.1	9.0	95	HOST ROCK HORIZON-SILICEOUS SEDIMENT												
				Light grey-blue grey fine grained slightly siliceous sediment,												
				cherty appearance but now moderate pervasive sericite alteration.												
				Upper contact sharp 1cm thick grey pug (fault?), no evidence of												
				disruption by overlying ignimbrite. Lower contact also sharp												
				and possibly faulted.												
				Moderate cleavage 75°-80°/LCA, core quite broken.												
				No clear primary layering but some sulphide defines possible												
				original foliation eg 75°/LCA @ 209.3m.												
				Rounded clasts of very fine grained cream coloured siliceous												
				rock 5-10mm in size containing semi-massive sulphide are												
				scattered widely.												
				This may have been the original host rock, subsequently disrupted												
				during sedimentation(?).												
				Mineralization: 207.1-213.0m fine grained py along foliation	2810	207.0	209.0	100	170	2400	0.58%	5	4.7	0.2		2.2%
				and in small fractures minor sp associated with py both dissem-	2811	209.0	211.0	94	350	1200	1.14%	3	2.7	0.2		3.1%
				inated and in clasts.												
				213.0-216.1m increase in sp as blebs, stringers and disseminated	2812	211.0	213.0	100	100	640	0.58%	4	3.7	0.2		2.1%
				est. 1-2% sp with last 60cm up to 5% sp. This mineralization	2813	213.0	215.0	97	120	640	1.01%	4	3.9	0.2		2.4%
				continues below. This is equivalent of host lithology in RH 5	2814	215.0	216.0	78	450	1250	3.01%	4	8.1	1.0	1.1	4.1%
				but base metal content markedly reduced.												

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GOLD FIELDS EXPLORATION PTY. LIMITED

DLV. PRESS

PROJECT: Red Hills

DRILL CORE LOG AND ASSAY DATA

HOLE NUMBER: RH13 Page: 6.

INTERVAL From	INTERVAL To	RECOVERY m	RECOVERY %	DESCRIPTION
216.1	236.7	20.6	100	PYROCLASTIC-TALUS BRECCIA
				Very coarse pyroclastic (ignimbrite?) with common lithic clasts predominantly pink-red rhyolitic lava, mostly sub angular up to 25cm in diameter, generally 2-5mm, lesser clasts of feldspar-phyric volcanics and buff coloured siltstone. Abundant dark fiammé up to 1.5cm long.
				No layering, sorting or cleavage developed.
				Increase in quantity and size of lava blocks down hole as rock appears like talus breccia on margin of rhyolite dome.
				Weak sericite alteration throughout, only minor chlorite.
				Mineralization:well mineralized throughout, mainly blebs of sulphide.
				216.1-226.0m est. 2-4% sp, 1-2% py, trace gn.
				226.0-231.8m est. 5-6% sp, 2-3% py, trace gn., trace cpy.
				231.8-243.3m est. 1-2% sp, minor py, trace cpy.
				234.3-236.7m marked decrease in sulphide with increase in dark fiammé(?).
236.7	244.0	7.3	100	RED HILLS RHYOLITIC LAVA
				Massive pink aphanitic to fine grained hard blocky rock.
				Contact quite sharp defined by edge of talus blocks.
				242.0-244m dark green-grey fine grained rock with diffuse red blotches 2-4mm in size.
				Mineralization: Py and cpy throughout mostly as fine blebs, some associated with minor quartz-carbonate vein. Locally up to 2% cpy over 10cm but overall <0.5% cpy with 1% py.
				END OF HOLE

ASSAY DATA in ppm unless otherwise shown

Sample No.	From	To	Rec.%	Cu	Pb	Zn	Ag(AAS)	Ag (FA)	Au (FA)	S
2815	216.0	218.0		270	4600	3.11%	6	5.0	0.8	2.7%
2816	218.0	220.0		270	1100	1.12%	3	1.8	<0.1	1.2%
2817	220.0	222.0		400	420	1.12%	2	1.5	<0.1	0.8%
2818	222.0	224.0		410	420	1.13%	2	1.1	<0.1	0.9%
2819	224.0	226.0		80	420	0.90%	<2	0.4	<0.1	0.5%
2820	226.0	228.0		220	380	0.98%	3	2.4	<0.1	0.6%
2821	228.0	230.0		210	280	0.86%	<2	0.7	<0.1	0.6%
2822	230.0	232.0		380	280	2.52%	4	1.7	nil	1.7%
2823	232.0	234.0		380	300	1.60%	2	1.7	nil	1.1%
2824	234.0	236.0		370	340	1.03%	6	1.6	nil	1.0%

076

555123

HOLE NO: RH14
STATE : TASMANIA

GOLD FIELDS EXPLORATION PTY. LIMITED

DRILL CORE RECORD

ULV. PRESS

PROJECT	Red Hills
DESIGNED BY	FitzGerald/Purvis
LOGGED BY	F.G. FitzGerald
COMMENCED	16-11-82
COMPLETED	19-11-82

PURPOSE

To test mineralization down dip to south from intersection in RH5 between intersections in RH8 and RH9.

LOG SUMMARY

0-101m EOH. Sequence of ignimbrites, mostly unmineralized.

GENERAL COMMENTS

Hole stopped short of target due to excess flattening.

ASSAY SUMMARY

INTERVAL From	INTERVAL To	COMMENTS
No core	Assayed	

LOCATION

NORTHING	5364877
EASTING	382124
R.L.	758.1
GRID	AMG
LENGTH	101.0m

HOLE CONDITION

SIZE Hole Size	SIZE Depth
HQ	3m
NQ	101m

SIGNIFICANT CORE LOSS INTERVALS From	To	% Lost
13.6	15.0	37

POOR GROUND CONDITION ZONES From	To	Condition

HOLE CONDITIONS AFTER COMPLETION

3m NX casing inserted and left in top of hole.

SURVEY DATA (Note: Bearing type must be same as Project Grid Type)

SURVEY Depth	Bearing	Dip	INTERVAL From	To	Distance	VERTICAL D.Sin.Dip	R.L.	HORIZONTAL D.Cos.Dip	Prog.Total
Collar	082.5°	-60°							
33.2m	084°	-56°							
63.2m	085°	-47°							
99.2m	085.5°	-39°							

SURVEY Depth	Bearing	Dip	INTERVAL From	To	Distance	VERTICAL D.Sin.Dip	R.L.	HORIZONTAL D.Cos.Dip	Prog.Total

555124

GOLD FIELDS EXPLORATION PTY. LIMITED

DRILL CORE LOG AND ASSAY DATA

PROJECT: Red Hills

HOLE NUMBER: RH14

INTERVAL From	INTERVAL To	RECOVERY m	RECOVERY %	DESCRIPTION
0.0	11.3	11.3	91	CRYSTAL TUFF (IGNIMBRITE?) Medium-coarse grained crystal rich pyroclastic, possible ignimbrite. Partial oxidation zone, where less weathered, green with minor orange (potassic altered) patches. Occasional subangular lithic clasts of cream coloured felsic lava (with relict feld. crys.) up to 3cm in size. Weathering and deformation have destroyed much of primary textures. Mod. cleavage devt. parallel to foliation defined by thin Fe + Mn ox. fracture fill e.g. 6.9m 32°/LCA. Some chlorite alteration. 7.6-7.8m strong carbonate alteration, elsewhere weak. Mineralization: trace disseminated py in less weathered zones.
11.3	28.2	16.9	97	MIXED PYROCLASTICS (IGNIMBRITES?) Predominantly fine grained fawn rock with streaky appearance due to pale orange and dark green bands from few mm to 1 cm thick. Minor zones 0.2-1.5m thick of coarser pyroclastics amongst the fine units feldspar crystals 2-6mm in sericitic groundmass. Contacts(?) between units appear sharp but this may reflect limit of oxidation which enhances the fabric. Probably part of rock unit above. Colour banding related to different alteration gives crude foliation e.g. 17.2m 45°/LCA. This may be primary but in general rock is fairly uniform and competent with little cleavage devt. Possible lithic clasts up to 1cm evident. Although no fiamme recognized it is likely that these rocks are series of ignimbrites. Alteration appears weak, some pervasive sericite, scattered cream carbonate patches and sweat out veins. Mineralization: Appears weakly mineralized: trace pyrite mainly fracture-fill or related to thin quartz veins. Very close spaced micro-fractures coated with Fe + Mn ox. sub parallel to crude foliation common in coarser units. 13.2-14.5m black metallic mineral blebs, non magnetic, unidentified.

ASSAY DATA Sample No.	From	To	Rec. %

078

555125

GOLD FIELDS EXPLORATION PTY. LIMITED

DLV. PRESS

PROJECT: Red Hills

DRILL CORE LOG AND ASSAY DATA

HOLE NUMBER: RH14

Page: 2.

INTERVAL From	INTERVAL To	RECOVERY m	RECOVERY %	DESCRIPTION	ASSAY DATA Sample No.	From	To	Rec. %
28.2	55.1	26.9	100	WELDED IGNIMBRITE Uniform grey to fawn fine grained rock with minor bands of coarser pyroclastics 0.5-1.5m thick. Similar to rocks above. Generally uniform, hard and structureless rock. However a crude foliation devt. by microfrac. zone with up to 30% elongated cream carb. and thin dark streaks e.g. 31.3m 50°/LCA. Coarser bands e.g. 44.4-45.6m and 53.9-55.1m contain relict feld. frags up to 5mm and blocks felsic lava often brecciated, subrounded and up to 10cm in size. Moderate pervasive sericite alteration of groundmass.Carb. alteration of felds, some lithic clasts and as irregular patches. Minor quartz-carb. veins up to 15cm thick,barren. Mineralization Only trace py in darker "streaks" and minor black metallic min. (see above). Comment: Although no clear fiammé recognized suggest that dark streaks are relict vitric material in series of welded ignimbrites.				
55.1	82.5	27.4	96	COARSE PYROCLASTICS (IGNIMBRITE?) Predominantly dark green-grey coarse grained pyroclastic with minor bands of finer fawn coloured rock. Appears similar to above rock, perhaps less welded ignimbrites? Upper contact is 1cm clay pug (fault?). Other structures @ 55.7m 1cm shear zone; 68m 15cm fault pug and 69m 10cm fault pug and broken core. As above, crude foliation due to dark (relict elongated pumice?) and pale (sericitic) bands e.g. 62.4m 57°/LCA. Prominent fragmental appearance with: dark subrounded, often elongated clasts up to 3cm (typically 0.5-1cm) scattered feld. crys. 1-4mm often broken and less common pink felsic lava chips with angular sharp margins and 2-5cm. Stronger pervasive sericite/chlorite alteration than units above; resultant devt. mod. cleavage sub parallel to foliation. Patches, irregular "sweat out" and veinlet carbonate common. Lower contact marked by complex vein 7.5cm thick containing quartz-carbonate-chlorite-minor py-trace cpy.				

555126

GOLD FIELDS EXPLORATION PTY. LIMITED

DLV. PRESS

PROJECT: Red Hills

DRILL CORE LOG AND ASSAY DATA

HOLE NUMBER: RH14 Page: 3.

INTERVAL From	INTERVAL To	RECOVERY m	RECOVERY %	DESCRIPTION
				Part of this vein appears separated and enclosed in sericitic matrix of ignimbrite.
				Mineralization: Again rock virtually unmineralized apart from minor py in carb. veins, trace py in some felsic lava clasts, minor py in chloritic haloes around some lava clasts e.g. 78.7m, 81.3m .
				78.7m pink lava clasts 2-5cm diam. over 10cm zone have veinlets py with minor gn.
				82.0-82.5 quartz-carb.-chlorite vein with minor py,trace cpy.
82.5	101.0	18.5	95	COARSE PYROCLASTICS (IGNIMBRITE?)
				Similar coarse grained pyroclastics as above. Orange-fawn becoming grey-green from 93m on, mixed sequence as below:
				82.5-88.5m appears to be brecciated predominantly felsic lava clasts in cream sericitic matrix, some quartz-carb. veins.
				88.5-92.2m finer grained unit,mod-strong sericitic alteration mod. cleavage @ 75°-80°/LCA. 88.8m 10cm rubble core
				92.2-101m prominent lithic clasts, subangular-subrounded both dark and pale fine grained-possible relict pumice.Rough alignment ofclasts gives crude foliation e.g. 97.5m 75°/LCA.
				Minor pink lava clasts and pink (potassic altered?) feld.crys. Mod. sericitic alt., some quartz-carb.-chlorite veins.
				Mineralization All units either unmineralized or only trace py along fractures.
				Comment: Perhaps units are series of unwelded ignimbrites related to more welded flows intersected higher in hole.
				END OF HOLE.

ASSAY DATA Sample No.	From	To	Rec. %

080

555127

HOLE NO: RH 14A
STATE : Tasmania

GOLD FIELDS EXPLORATION PTY. LIMITED
DRILL CORE RECORD

OLV. PRESS

PROJECT	Red Hills
DESIGNED BY	FitzGerald/Purvis
LOGGED BY	F.G. FitzGerald
COMMENCED	22-11-82
COMPLETED	15-12-82

PURPOSE

To test mineralization down dip to south from intersection in RH5 between intersections in RH8 and RH9.

LOG SUMMARY / GENERAL COMMENTS

Probable host horizon equivalent to RH5 intersected 360.0-372.7m, mixed epiclastics with syngenetic & re-mobilized base metals including apparent disrupted semi-massive sulphide clasts carrying some Au. Underlying ashy reworked(?) pyroclastics & fine chloritic pyroclastics similarly mineralized. Thin sequence of tuff. sandstones-shales at 225.2-228.3 maybe down dip remnant of main black shale horizon at surface & is unmineralized. True Red Hills lava not intersected, marginal zone from 446.7m.

ASSAY SUMMARY

INTERVAL From	INTERVAL To	Cu	Pb	Zn	Ag	Au	S							COMMENTS
360.6	372.7	286	0.40%	0.91%	43	1.0	0.98%							Host horizon equivalent-sedimentary sequence.
*365.5	369.7	413	0.47%	1.29%	31	2.2	1.2%							*Best Au mineralization within host sequence.
387.0	398.5	65	0.10%	0.23%	0.4	<0.1	0.2%							Ashy reworked pyroclastic(?) with carbonate clasts.
398.5	422.0	94	0.14%	0.60%	0.7	<0.1	0.5%							Fine grained chloritic pyroclastic mainly syngenetic
														min.

LOCATION

NORTHING	5364877
EASTING	382124
R.L.	758.1
GRID	AMG
LENGTH	480.0m.

HOLE CONDITION

SIZE Hole Size	SIZE Depth
HQ	44.5m
NQ	149.5m
BQ	480m

SIGNIFICANT CORE LOSS INTERVALS From	To	% Lost
243.2	255.2	21

POOR GROUND CONDITION ZONES From	To	Condition
260m	290m	Step-faced bit used to
		increase flattening of hole
		to bring onto target.

HOLE CONDITIONS AFTER COMPLETION

3m. NX casing inserted and left at top of hole. Electrode placed in hole at 214.4m where hole blocked, hole making water from this depth.

SURVEY DATA (Note: Bearing type must be same as Project Grid Type)

SURVEY Depth	SURVEY Bearing	SURVEY Dip	INTERVAL From	INTERVAL To	INTERVAL Distance	VERTICAL D. Sin. Dip	VERTICAL R.L.	HORIZONTAL D. Cos. Dip	HORIZONTAL Prog. Total
Collar	082.5°	-70°							
25.2	082.5°	-68°							
42.2	082.5°	-66.75°							
73.0	083.5°	-62.25°							
105.7	082.5°	-60.25°							
141.0	IN RODS	-58°							
168.2	085°	-55°							
198.2	085.5°	-53°							
234.2	086°	-51.5°							
264.0	085°	-48°							
279.2	084.5°	-44°							
300.2	085.5°	-39.25°							

SURVEY Depth	SURVEY Bearing	SURVEY Dip	INTERVAL From	INTERVAL To	INTERVAL Distance	VERTICAL D. Sin. Dip	VERTICAL R.L.	HORIZONTAL D. Cos. Dip	HORIZONTAL Prog. Total
327.2	087°	-37.25°							
356.5	089°	-35.5°							
386.5	089.5°	-33°							
416.5	091.5°	-31°							
444.0	092.5°	-28.75°							
476.0	094°	-27°							

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GOLD FIELDS EXPLORATION PTY. LIMITED

DLV. PRESS

PROJECT: Red Hills

DRILL CORE LOG AND ASSAY DATA

HOLE NUMBER: RH 14R

Page: 1.

INTERVAL From	INTERVAL To	RECOVERY m	RECOVERY %	DESCRIPTION
0.0	10.4	10.4	88	UNWELDED IGNIMBRITE(?) Medium-coarse grained green-grey pyroclastic. Scattered sub-hedral feldspar crystals mostly elongated parallel to foliation, minor lithic clasts of pink sub rounded felsic lava 3-8mm in size. Weak cleavage developed e.g. 30°/LCA @ 4.0m. 0-0.5m, 4.7-5.9m some shearing, broken core. Moderate sericite, minor carbonate, traces of chlorite alteration. Fresh rock within 50cm of top of hole, some Fe oxides on fractures and minor Mn oxides along close-spaced cleavage. No visible sulphide but some Fe oxides after sulphide blebs.
10.4	31.2	20.8	93	WELDED IGNIMBRITE Fine-medium grained pale green-brown, occassionally orange pyroclastic. Gradational contact with above unit marked by 40cm siliceous, pink, vitric, tuff. Some incipient colour banding but these are not compositional or textural layers but appear to be sericite or silica rich bands perhaps reflecting completely deformed pumice in ash matrix. Some cleavage developed mainly in more sericitic zones e.g. 25°/LCA @ 20.8m. Coarser zones have scattered feldspars up to 3mm in size, minor pink-orange lithic lava chips also occur. 13.0-20.6m abundant micro fractures with dark oxide coating with no sign of sulphide, sharp, irregular margins with unoxidized rock. 29.1-31.2 mostly quartz vein, minor cavities with trace Fe oxides. Minor disseminated Fe oxides in some parts, no sulphides visible.
31.2	77.6	46.4	95	WELDED IGNIMBRITE Uniform fine grained strongly welded ignimbrite. Mixed orange-khaki-light grey colour, hard, structureless. Subtle streaky appearance of darker bands gives crude foliation which may represent extremely welded pumice e.g. 38°/LCA @ 44.2m, 33°/LCA @ 65.4m.

ASSAY DATA

Sample No.	From	To	Rec. %

555129

GOLD FIELDS EXPLORATION PTY. LIMITED

DEV. PRESS

PROJECT: Red Hills

DRILL CORE LOG AND ASSAY DATA

HOLE NUMBER: RH 14R

INTERVAL		RECOVERY		DESCRIPTION	ASSAY DATA			
From	To	m	%		Sample No.	From	To	Rec. %
				Some zones have flecks of cream relict feldspars up to 2mm e.g. 40.5m or pink coloured feldspars e.g. 33.4m, sometimes giving speckled appearance e.g. 55.4m. Slight increase in carbonate sweat out and pervasive alteration giving blotchy apperance in places e.g. 54.0-66.8m. Only weak sericitic alteration in between "bands" of moderate silicifaction. 34.7-35.0 narrow zone with coarse grained disseminated and veinlet py associated with thin quartz veins. Elsewhere scattered quartz-carbonate veins up to 1.5cm thick but mostly barren. 45.0-57.7m widely spaced fractures with thin Fe oxide coating. Apart from trace py on scattered fractures rock is unmineralized 73.0-77.6m bleached pyroclastic, gradational with this unit and may represent basal section of large ash flow, moderate sericite and cleavage with slightly broken core here, possible shearing, minor disseminated and fracture-fill py.				
77.6	87.5	9.9	86	WEAKLY WELDED IGNIMBRITE Dark grey-green fine-medium grained pyroclastic with textural affinities to above units but more highly altered. Still predominantly sericite but bands and irregular patches of weak chlorite alteration. Carbonate sweat-out and veinlets only minor apart from top of section. Cleavage better developed e.g. 40°/LCA @ 82.1m. 84.5-87.5m structural zone: 2 zones 10cm thick of clay pug and rubble (faults) with broken core, some sheared and brecciated rock between zones. Generally unmineralized apart from trace disseminated py. Comment: Apppears to be weakly welded and hence more porous ignimbrite allowing some pervasive chloritic alteration.				
87.5	134.5	47.0	97	IGNIMBRITE (BLOCK AND ASH FLOW) Unsorted mostly angular lithic clasts in medium-coarse pyroclastic groundmass. Generally dark green-grey except where felsic lava clasts common and rock becomes pink-brown. Upper contact gradational with above unit even though probable				

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GOLD FIELDS EXPLORATION PTY. LIMITED

DLV. PRESS

PROJECT: Red Hills

DRILL CORE LOG AND ASSAY DATA

HOLE NUMBER: RH 14R

INTERVAL From	INTERVAL To	RECOVERY m	RECOVERY %	DESCRIPTION	ASSAY DATA Sample No.	From	To	Rec. %
				fault. Lithic clasts range from few mm to 30cm in size but mostly <10cm. Pink felsic lava chips and blocks predominate, usually with sharp, sometimes jagged margins. Less common are cream calcic-siliceous clasts, dark green mottled chloritic tuffaceous clasts, possible pale siliceous seds. and scattered chips of feldspar up to 2mm long. Common amongst these lithics are dark green usually highly deformed-flattened clasts which have more diffuse margins and maybe collapsed pumice. Orientation of this flattening gives crude foliation e.g. 35°/LCA @ 92.3m, 42°/LCA @ 129.7m. Moderate cleavage developed sub parallel to this direction. NB 102.0-103.8m foliation distorted with angles from 15°-60°/LCA. Suggest foliation is not primary layering because lithics are randomly oriented across this direction. Generally moderate chloritic alteration of groundmass. 120.4m 5cm possible fault-clay pug, upper 4m moderately sericitic Overall very minor quartz-carb. veining apart from 103.0-108.7 where minor K feld.-chlorite assoc. in veins up to 2.6m thick. Rock basically unmineralized apart from trace py assoc. with thin fractures or clots of py up to 1cm diam. in fault at 120.4m. All veins are barren. Comment: Rock appears to be good example of block and ash ignimbrite.				
134.5	181.2	46.7	98	IGNIMBRITE (PUMICE AND ASH FLOW) Mostly hard, structureless pale brown-orange rock with dark flecks. Upper contact rubble clay-Fe ox. zone which may be either a fault or ancient erosional surface. Rock is quite uniform apart from 135-141.6m where common lithic clasts 2-10mm of predom. orange lava and dark green fiamme occur. This section has affinities with unit above but is clearly part of the enclosing sequence. Apart from possible silicification little pervasive alteration. Qtz-carb-K feld ± chl. ± py veins are common, often cross-cutting and from few mm to 15cm thick. Mineralization: Generally unmineralized apart from minor fracture-				

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GOLD FIELDS EXPLORATION PTY. LIMITED

PROJECT: Red Hills

DRILL CORE LOG AND ASSAY DATA

HOLE NUMBER: RH 14R

INTERVAL From	INTERVAL To	RECOVERY m	RECOVERY %	DESCRIPTION	ASSAY DATA Sample No.	From	To	Rec. %
				veinlet style as follows:				
				141.1m minor py in quartz-carb. vein				
				167.8m vein-cavity fill 1cm thick minor py, sp and cpy.				
				167.8-180.0m dissem.-blebs py + quartz veinlets 1-2mm thick				
				trace sp.				
				Comment: Rock appears to be good example of welded pumice and				
				ash ignimbrite with minor brittle fracture-fill mineralization.				
181.2	223.2	42.0	97	COARSE PYROCLASTIC (IGNIMBRITE)				
				Light grey to buff to orange generally coarse grained rock with				
				abundant lithic clasts and variably devt. fiammé. Upper contact				
				with welded ignimbrite appears gradational. Lithics predom.				
				cream calcareous-siliceous clasts up to 5cm diam., with less				
				common small pink felsic lava(?) chips, grey fine-grained silic-				
				eous clasts and medium grained tuffaceous rock fragments.				
				Green-brown fiammé,often quite deformed, are common particularly				
				down hole where size and quantity of lithics decreases				
				185.7-186.9m banding due to different grain-size layers @ 65-70°/				
				LCA maybe primary. Elsewhere crude foliation defined by				
				orientation of fiammé or elongation of some clasts e.g. 40°/LCA				
				@ 189m and 48°/LCA @ 218.5m.				
				207.5-209.7m and 210.5-211.6m zones of uniform grey fine grained				
				probable ash material, fiammé still prominent.				
				215.3-216.2m broken core with common orange lava fragments.				
				Generally only weak sericite, minor chlorite and silicification				
				and weak cleavage devt. Thin zones of stronger chlorite may				
				represent more vitric material e.g. 182.1 and 189.4m.				
				Mineralization: Overall only weak mineralization with minor				
				dissem. and stringers of py and rare trace sp-gn-cpy as small				
				blebs around margins of fiammé e.g. 195.4m or rarely in qtz-carb				
				veins e.g. 202.6m where vein 1cm thick sp=gn>cpy=py				
				Comment: Appears to be variably welded and unwelded sections				
				through 1 or more ignimbrite flows or cooling units.				

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GOLD FIELDS EXPLORATION PTY. LIMITED

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PROJECT: Red Hills

DRILL CORE LOG AND ASSAY DATA

HOLE NUMBER: RH 14R Page: 5.

INTERVAL From	INTERVAL To	RECOVERY m	RECOVERY %	DESCRIPTION
223.2	228.3	5.1	81	MIXED VOLCANICLASTICS Mixed sequence of tuffaceous sandstones-shales, grey to dark grey. Upper contact indistinct, in fact coarser rock appears similar to ignimbrites above apart from absence of fiammé and orange-brown lava chips. Several thin tuffaceous shale lenses within the dominantly med-coarse grained rocks 20-40cm thick with bedding 45°/LCA @ 227.5m indicate subaqueous deposition. Some diffuse dark (chloritic?) bands similar to above rocks occur in coarser clastic units. Marked increase in vein and pervasive carbonate-sericite alteration up to 30% of rock. Only weak chlorite. Core is more broken and more strongly cleaved than overlying ignimbrites typically 40°/LCA @ 224.2m, 227.5m 3cm clay (fault?) pug @ 60°/LCA. Mineralization: Marked increase in py along fractures, streaked along cleavage and fine dissem. up to 0.5% py overall. Comment: Appears to be thin sequence of epiclastic rocks possibly the down dip equivalent of the main black shales intersected higher in adjacent holes. If so then the shales have virtually pinched out at depth here.
228.3	232.75	4.45	98	PORPHYRITIC BASALT Dark grey hard porphyry. Phenocrysts of relict feldspar up to 1cm as equant euhedra, possible vesicles now infilled with clay-ser. and with dark (chloritic?) reaction rims. Upper contact: sharp, irregular and chilled with 1mm bleached margin and concentration of phenocrysts along margin. Lower contact: quite disrupted, irregular with small fault off-sets incorporating blocks of underlying pyroclastics, some parts chilled. The central part of the basic rock is medium grained, still porphyritic, weakly magnetic and with common micro-fractures and pervasive carbonate. No mineralization evident. Comment: Nature of contact ambiguous, broadly sub parallel with primary foliation of enclosing units, possibly extrusive flow rather than intrusive sill.

ASSAY DATA Sample No.	From	To	Rec. %

086

555133

GOLD FIELDS EXPLORATION PTY. LIMITED

DLV. PRESS

PROJECT: Red Hills

DRILL CORE LOG AND ASSAY DATA

HOLE NUMBER: RH 14R

Page: 6

INTERVAL From	INTERVAL To	RECOVERY m	RECOVERY %	DESCRIPTION	ASSAY DATA Sample No.	From	To	Rec. %
232.75	267.3	34.55	91	POSSIBLE PYROCLASTIC?				
				Uniform grey medium grained rock with similarities to volcaniclastic sequence above. No bedding visible. Crude foliation due to alignment of dark diffuse "stringers" of chlorite which may represent completely deformed pumice? up to 4cm long. Paler carbonate rich "blotches" and increasing amounts of diffuse hard orange-brown zones down hole appear similar to ignimbrites higher up hole. Carbonate common throughout as discrete "sweat-out" veins and as pervasive alteration.				
				Broken core 249.5-255.2m, with possible fault @ 250.1m, and 267.0-267.3m.				
				Mineralization: Only weakly mineralized, minor to trace py as fracture fill, small dissem. euhedral crys or rare clusters of grains assoc. with carb. alteration or conc. in chloritic patches				
				233.4-240.0m thin veins carb-chl-hem?				
				245.0-248.0m up to 0.1% py. Rest of core <0.1% py.				
				Comment: Although rock has some features in keeping with epiclastics favour pyroclastic (ignimbritic) origin.				
267.3	360.6	93.3	99	IGNIMBRITE				
				Hard, uniform, structureless fine-medium grained grey rock. No obvious bedding or cleavage but subtle colour banding reflecting more sericitic or siliceous alteration. There is no textural contrast between bands which @ 323m is quite sharp but irregular in altitude. No unambiguous fiammé observed although scattered dark "speckles" 1-3mm long maybe related. Rare darker clasts 7-8mmm diam. subangular - subrounded and randomly oriented may have been originally vitric material. From 350m on core predominantly Khaki with pale crystals <2mm often euhedral relict feldspar. Overall alteration is weak (core rings when hit) possible increase in pervasive sericite down hole. Some qtz-carb± chl. ± ser.±py. veins occur mostly 2-4mm thick rarely up to 30cm e.g. 312.8m and 356.3m.				
				Last 3m marked increase in veins apparently remobilized from underlying units.				

555134

GOLD FIELDS EXPLORATION PTY. LIMITED

ULV. PRESS

PROJECT: Red Hills

DRILL CORE LOG AND ASSAY DATA

HOLE NUMBER: RH 14R

INTERVAL From	INTERVAL To	RECOVERY m	RECOVERY %	DESCRIPTION
				Mineralization: Unmineralized apart from minor veinlet py and 357.3-360.6m qtz-carb veinlets up to 1mm thick with py-sp est. 0.1% related to adjacent mineralized sediments.
360.6	372.7	12.1	97	MIXED SEDIMENTARY SEQUENCE (HOST ROCK HORIZON) Mixed sequence of tuffaceous sandstone, siltstone, grey siliceous shale and possible cherts and carbonates. Upper contact sharp without any sign of disruption by overlying(?) ignimbrite. Lower contact quite gradational. Considerable variation in grain size, textures and lithologies over intervals as thin as 1cm. Similar marked variations in mineralization and alteration. Some evidence of syn-sed. brecciation, slump folding. The dominant lithology is a pale green-grey medium-coarse grained tuffaceous sandstone which typically contains fine feldspar crystals in khaki sericitic groundmass. Interbedded and sometimes disrupted by these coarser clastics are fine grained grey siliceous (cherty?) shales which are often finely laminated, bedding e.g. 58°/LCA @ 361.0m, 72°/LCA @ 365.4m. The coarser clastics sometimes contain angular clasts of the grey cherty seds. both mineralized and unmineralized as well as minor semi-mass. sulphide clasts e.g. 362.8-365.5m. Generally the coarser units are moderately-strongly altered mainly sericite with minor chlorite, finer units appear less altered. From 365.4m an increasing amount cream carbonate clasts, spherulites, oolites up to 4mm diam. often with concentric banding, sometimes with nuclei of granular sp or gn. By 369.3m rock more uniform grey-brown with "oolites" up to 1cm in diam. often deformed and elongated along possible bedding defined by layered concentrations of these e.g. 70°/LCA @ 371.7m.
				Mineralization: The mixed sequence is mineralized throughout but the style and quantity is quite variable. The best mineralized sections are generally the coarser units which carry syngenetic fine dissem. and coarser blebs of py ≥ sp with minor gn as well as mineralized clasts up to 3cm in size and with up to 10% sulph-

ASSAY DATA in ppm unless otherwise shown

Sample No.	From	To	Rec. %	Cu	Pb	Zn	Ag(AAS)	Ag(FA)	Au(FA)	Au(check)	S
2825	360.6	362.0	91	120	0.17%	0.54%	15	16	<0.1		1.4%
2826	362.0	363.4	95	90	0.30%	0.63%	21	21	0.4		0.6%
2827	363.4	364.8	98	260	0.36%	0.60%	20	20	0.8		0.7%
2828	364.8	365.5	97	600	1.30%	2.45%	53	59	0.4		1.7%
2829	365.5	366.9	98	610	0.62%	1.58%	33	40	2.6	2.5	1.4%

555135

GOLD FIELDS EXPLORATION PTY. LIMITED

ULV. PRESS

PROJECT: Red Hills

DRILL CORE LOG AND ASSAY DATA

HOLE NUMBER: RH 14R

INTERVAL From	INTERVAL To	RECOVERY m	RECOVERY %	DESCRIPTION
				ide and vein fracture mineralization. Generally the finer "cherty" units are less mineralized with vein-fracture sp-py-minor gn more prominent than dissem. (syngenetic?) sulphides. Evidence for continuing mineralization from "oolitic" clasts with granular gn or sp nuclei enclosed in ashy sericitic matrix containing blebs of sulphide, also pressure shadow sulphides around some clasts.
				Comment: This sequence is interpreted as equivalent host horizon to massive sulphide in RH5. However environment appears to have been more active with frequent influxes of coarser epiclastic detritus, synsedimentary tectonic disturbances and brecciation of semi-massive sulphide apparently forming in the vicinity. Presence of possible oolites syn-mineralization has important genetic implication for host environment.
372.7	398.5	25.8	100	ASHY PYROCLASTIC? POSSIBLY REWORKED
				Uniform light grey fine grained rock with prominent cream-coloured carbonated (siderite) clasts. The rock is continuous with the above sedimentary sequence. However lack of clear bedding and overall uniformity do not favour pure clastic origin. Carbonate clasts mostly spherical up to 1cm diam. but usually 2-4mm are widely distributed forming up to 20% of rock.
				These possible "oolites" sometimes show crude sorting or are conc. in layers which may be a primary layering e.g. 63°/LCA @ 383.2m. Some clasts are elongated in this general direction. Some appear recrys. others have good concentric banding e.g. 272.7-276.0m Groundmass is fine grained sericitized ashy material which is generally uncleaved and competent.
				Very minor pink felsic lava and grey fine siliceous rock occurs as clasts 3-8mm in size.
				Mineralization: Increases down hole from very minor up to 10% sulphides over 20cm intervals in basal 3m. Mostly syngenetic blebs/grains with lesser amounts as nuclei of carb. clasts, and minor vein and fracture mineralization.
				372.7-380.0m minor veinlets predom. py.

ASSAY DATA in ppm unless otherwise shown

Sample No.	From	To	Rec. %	Cu	Pb	Zn	Ag(AAS)	Ag(FA)	Au(FA)	Au(check)	S
2830	366.9	368.3	94	380	0.50%	1.41%	28	33	1.3	1.3	1.1%
2831	368.3	369.7	98	250	0.30%	0.87%	17	19	2.8	2.6	1.0%
2832	369.7	371.1	100	210	0.22%	0.41%	22	23	0.2		0.8%
2833	371.1	372.7	100	210	0.32%	0.43%	180	165	0.1		0.5%
2834	372.7	379.0	97	90	70	250	4	2.8	< 0.1	< 0.1%	
2835	379.0	381.0	100	90	580	460	< 2	0.9	< 0.1	0.2%	
2836	381.0	383.0	100	80	440	620	< 2	0.3	< 0.1	< 0.1%	
2837	383.0	385.0	100	60	500	600	< 2	0.4	< 0.1	0.2%	
2838	385.0	387.0	100	60	700	750	< 2	0.2	< 0.1	< 0.1%	
2839	387.0	389.0	100	70	1000	1200	< 2	0.4	0.1	< 0.1%	

555136

GOLD FIELDS EXPLORATION PTY. LIMITED

DEV. PRESS

PROJECT: Red Hills

DRILL CORE LOG AND ASSAY DATA

HOLE NUMBER: RH 14R

INTERVAL From	INTERVAL To	RECOVERY m	RECOVERY %	DESCRIPTION
				380.0-395.0m up to 1% sulphide sp=gn=py and trace cpy.
				395.0-398.5m up to 5% sulphide sp>gn>py=cpy
				Comment: Exact origin of this unit unclear, petrographic work
				does not clarify. Suggest possible reworked ashy pyroclastic
				in shallow subaqueous environment with some synsed. min.
398.5	424.8	26.3	94	FINE GRAINED PYROCLASTIC?
				Varies from fine grained dark green rock with zones of paler
				buff coloured ash(?) down hole to more uniform green-grey rock
				Contact with upper unit quite gradational over 50cm until cream
				carbonate clasts are not present. In general rock appears
				similar to the ashy material forming the matrix of the above
				sequence but with increasing quantity of diffuse dark green
				(chloritic) patches, pink-orange (siliceous) zones and scattered
				small relict feldspar crys. and felsic lava(?) chips. No clear
				bedding but possible primary foliation or crude layering in places
				e.g. 75°/LCA @ 406.6m.
				414.9-431.2m zones of broken core 10-40cm wide-not apparent
				faults.
				Mineralization: Moderately mineralized throughout, some apparent
				syngenetic (?) particularly as fine dissem. and coarse blebs
				of sulphide which are often elongated sub parallel to foliation.
				Also common fracture fill and veins of qtz-carb-chl.-K feld.-
				sulphide from few mm to 1.5cm thick network in places. Best min.
				assoc. with stronger chl. alteration, some chloritic haloes
				around coarser min.
				398.5-400.0m est 3% gn 2% minor py.
				400.0-407.0m est 3% sp 1% gn <0.5% py, minor zones 25cm 6% sp 2%gn
				407.0-414.3m est 5% sp 1% gn 1% py
				414.3-419.6m est 3% sp 1% gn 0.5% py
				419.6-422.3m est 4%sp 1% gn 2% py
				422.5-424.8m est 1% sp 3% py minor gn
				422.3m PORPHYRITIC BASALT 23cm thick apparent intrusive, sharp
				contacts, lower contact 67°/LCA not very chilled. Rock green-brown
				weakly magnetic, with est 10% acicular crystals up to 8mm long.

ASSAY DATA in ppm unless otherwise shown

Sample No.	From	To	Rec. %	Cu	Pb	Zn	Ag(AAS)	Ag(FA)	Au(FA)	S
2840	389.0	391.0	96	100	1000	2300	< 2	0.4	< 0.1	0.2%
2841	391.0	393.0	95	70	1500	3500	< 2	0.9	< 0.1	0.4%
2842	393.0	395.0	91	100	1150	2400	< 2	0.3	< 0.1	0.1%
2843	395.0	397.0	95	30	940	2400	< 2	0.1	< 0.1	0.2%
2844	397.0	398.5	100	20	600	2100	< 2	0.1	< 0.1	< 0.1%
2845	398.5	400.0	90	70	0.70%	0.48%	< 2	0.5	< 0.1	1.8%
2846	400.0	402.0	92	60	0.24%	0.50%	< 2	0.6	< 0.1	0.3%
2847	402.0	404.0	90	170	0.36%	1.05%	< 2	2.1	< 0.1	0.6%
2848	404.0	406.0	92	100	0.19%	0.87%	< 2	1.9	< 0.1	0.7%
2849	406.0	408.0	100	150	340	0.62%	< 2	0.6	< 0.1	0.5%
2850	408.0	410.0	99	130	180	0.74%	< 2	0.1	< 0.1	0.4%
2851	410.0	412.0	98	60	160	0.55%	< 2	0.6	< 0.1	0.4%
2852	412.0	414.0	97	70	170	0.60%	< 2	0.5	< 0.1	0.5%
2853	414.0	416.0	97	120	370	0.48%	< 2	0.9	< 0.1	0.3%
2854	416.0	418.0	96	60	100	0.43%	< 2	0.3	< 0.1	0.3%
2855	418.0	420.0	92	50	200	0.42%	< 2	0.1	< 0.1	0.1%
2856	420.0	422.0	87	90	160	0.54%	< 2	0.4	< 0.1	0.4%
2857	422.0	424.0	91	40	130	0.15%	< 2	0.2	< 0.1	0.1%

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GOLD FIELDS EXPLORATION PTY. LIMITED

DEV. PRESS

PROJECT: Red Hills

DRILL CORE LOG AND ASSAY DATA

HOLE NUMBER: RH 14R Page: 10.

INTERVAL From	INTERVAL To	RECOVERY m	RECOVERY %	DESCRIPTION	ASSAY DATA in ppm unless otherwise shown: Sample No.	From	To	Rec. %	Cu	Pb	Zn	Ag(FA)	Au(FA)	S
				Mostly 1-4mm. 15% granular quartz(?) crys 1mm and 5% green-yellow opaque minerals set in aphanitic dark groundmass. Possibly intrusive equivalent of porphyry flow(?) intersected higher in hole. Comment: Basic intrusive within sequence of ambiguous rocks (above). Eveness of grainsize, uniform distribution of minor lithics and lack of clear bedding don't support volcaniclastic or airfall origin. However. gradational contact with overlying sediments(?) and probable syngenetic base metal min. are problems for pure ignimbritic origin although a related rock is favoured									
424.8	446.7	21.9	95	MEDIUM GRAINED PYROCLASTIC (IGNIMBRITE?) Medium grained dark green rock with prominent red feldspar crystals and red lava chips. Similar to basal section of above unit but now more clearly pyroclastic with probable fiammé as dark streaky or more diffuse patches. Relict feldspar often subhedral perhaps hematitic alteration. Felsic lava chips 4-8mm tend to be subrounded, contain fine feld(?) speckles and similar hematitic alteration . Overall rock is hard and uniform although minor zones appear finer grained e.g. 432m and some are more siliceous pink-orange. Generally mod-strong pervasive chlorite alteration. Minor qtz-K feld-chl-py veins.	2858	424.0	426.0	100	30	40	370	< 0.1	< 0.1	< 0.1%
				Mineralization: Rock is min. throughout but overall lower sulphide than above. Blebs and stringers of sulphide are most common, some lava clasts are mineralized, some clusters of finer min have chloritic haloes as do some lava clasts. Only minor fracture min, no stockwork devt. Best min. in chloritic zones.	2859	426.0	428.0	100	40	160	750	0.2	< 0.1	0.2%
					2860	428.0	430.0	90	30	140	680	< 0.1	< 0.1	< 0.1%
					2861	430.0	432.0	94	150	640	1250	1.3	< 0.1	0.4%
					2862	432.0	434.0	90	90	170	650	0.2	< 0.1	0.2%
					2863	434.0	436.0	98	100	90	0.50%	0.3	< 0.1	0.3%
				424.8-434.6m est 1% sulphide sp>py>gn 432-433 minor cpy	2864	436.0	438.0	99	120	120	0.60%	0.3	< 0.1	0.5%
				434.6-441.1m est 3% sp 0.5% gn 0.5% py	2865	438.0	440.0	97	60	70	0.52%	0.2	< 0.1	0.2%
				441.1-446.7m est. up to 5% py only minor sp and gn.	2866	440.0	442.0	98	70	200	0.32%	1.4	< 0.1	0.5%
446.7	480.0	33.3	97	VARIABLE PYROCLASTICS (MARGINAL TO RED HILLS LAVA) Medium to fine grained dark green with pink patches becoming grey pyroclastic sequence. Upper contact is 15cm broken core with 2cm fault pug. Within the sequence variable occurence										

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GOLD FIELDS EXPLORATION PTY. LIMITED

PROJECT: Red Hills

DRILL CORE LOG AND ASSAY DATA

HOLE NUMBER: RH 14R

INTERVAL From	INTERVAL To	RECOVERY m	RECOVERY %	DESCRIPTION
				of red feld. crys. up to 15% of rock, scattered rounded pink-red
				altered felsic lava chips and some clear fiammé up to 8mm long
				e.g. 463.1-468.2m. From 468.2m rock appears to be breccia (talus?
				possibly marginal to Red Hills Lava dome with fine "speckles"
				of cream feld. crys in blocks of pink-red lava 5-30cm in size.
				Overall the sequence is structureless with no clear foliation
				or cleavage with different colour zones being quite diffuse
				and related to alteration style rather than textural changes.
				Generally mod. chloritic alteration apparently decreasing down-
				hole, common "blotches" of pink-red(hematitic?) alteration and
				possible silicification. Minor qtz veins mostly barren.
				Mineralization: Scattered sulphide throughout but marked
				decrease in base metals, mostly dissem, blebs or clusters of
				fine py with minor cpy, less common fracture min.
				446.7-456m est <1% sulphide.
				456.0-466.6m est 1-2% py trace cpy.
				466.6-468.2m est 5% py minor cpy.
				468.2-480.0m est 2-3% py trace cpy zones up to 10% py over 5cm
				Comment: Hole may not have intersected true Red Hills Lava
				although appears to have ended in marginal pyroclastic breccia
				END OF HOLE

ASSAY DATA Sample No.	From	To	Rec. %

092

555139

REPORT CMS 83/1/1

Red Hills Prospect
RH 14 R

Eight drill core samples were received for petrological examination; thin-sections were prepared, and the offcuts were subjected to K-stain tests and carbonate stain tests, to assist with identification and interpretation. The rocks are individually described in the accompanying table, with additional comments below.

Comments

Most of the rocks are mildly to moderately sheared and altered, and these factors were responsible for the obliteration of primary textures and minerals; nevertheless, many features have been preserved, and reasonably accurate interpretations are possible.

All the rocks can be categorised as volcanic, and most, if not all, were pyroclastic; in some rocks, shard textures or lava fragments are recognisable. "Flamme" occur in 0559 and 0560, as well as in other rocks; the term is avoided because it describes a texture and any genetic connotations seem to have considerable latitude, causing confusion.

Mineralisation, or deposition of sulphides, seems to be related to the introduction of chlorite, or siderite, and largely predates any shearing or schistosity present, though there is weak evidence to the effect that some post-shearing mobilisation occurred. The mineralisation requires further study, using samples with more abundant sulphides.

The rocks are generally reminiscent of the Mt. Lyell host rocks, especially the presence of accessory magnetite; compositions lie in the rhyolite-dacite range.

H.W. Fander, M. Sc.

CENTRAL MINERALOGICAL SERVICES

Sample No.	Rock Type - Composition	Fabric	Minor Minerals	Comments
0559 (T.S. 44983) 133.1m	Quartz-Sericite Schist. Streaks, bands and irregular patches of matted parallel fine sericite, embedded fine quartz, dolomite lenses.	Good schistosity, relict perlitic or related textures and devitrification features.	Scattered leucoxene patches and pyrite grains. Quartz ?phenocrysts.	Relict textures suggest that rock was a lava; mineral assemblage indicates broadly rhyolitic composition.
0560 219.4m	Quartz-Sericite "Schist". Mostly fragments of silicified lava and welded tuff, with quartz, streaks of sericite, chlorite lenses, and carbonate patches.	Good relict textures in individual fragments. Rock as a whole is schistose.	Leucoxenised magnetite throughout. Pyrite grains in chlorite.	Thought to have been a rhyolitic tuff-lava or lithic tuff; carbonate and chlorite probably both predate mild shearing.
0561 255.8m	Sheared ?Tuff. Small poorly-defined fragments of altered lavas, quartz, fresh oligoclase, with interstitial sericite, small chlorite shreds and carbonate grains.	Definite preferred orientation, but not schistose. Relict lava textures in lithic grains.	Leucoxenised magnetite. Isolated euhedral zircon. Apatite.	Critical textural details obliterated, but very probably pyroclastic, with broadly dacitic composition.
0562 296.2m	Sericitised Volcanic. Small fragments of quartz, sericitised feldspar, altered glass, in a matrix of fine-grained schistose sericite and ultrafine quartz.	Semi-schistose, relict fragmental textures. A few ?shard textures in matrix.	Carbonate lenses. Leucoxene aggregates. Magnetite. Trace pyrite, ?chalcopyrite.	Could have been a tuff or tuff-lava, with rhyolitic/dacitic composition; sheared and sericitised.
0563 371.7m	Mineralised Sericite Schist. Mainly fine matted-parallel sericite (hydromuscovite) with siderite patches, fine interstitial quartz, and streaks of sulphides.	Strongly schistose; sericite envelops siderite. Siderite may be pseudomorphous.	Sulphides are pyrite, pyrrhotite, pale sphalerite with rims of fine galena.	Siderite may have replaced earlier porphyroblasts or relict phenocryst: Origin of rock unknown, could be igneous-related sediment.
0564 393.0m	Mineralised Quartz-Sericite Schist. Mostly fine sericite and quartz; spheroidal-lensoid bodies of lava pseudomorphed by siderite; streaks, patches of sulphides.	Fine schistosity, enveloping the scattered xenoliths. Fine-grained. ?Shard textures.	Sulphides are sphalerite, galena, chalcopyrite, pyrite.	Believed to have been a fine-grained pyroclastic rock (?ash) with sporadic embedded lava fragments later sideritised.
0565 417.0m	Mineralised, Sheared Vitric Tuff. Dominantly fine sericite, with embedded silicified/ devitrified shards; sanidine fragments; sulphide/chlorite patches.	Fine semi-schistose fabric, but textures well-preserved. Microfractures.	Sulphides are sphalerite (pale and dark), galena, pyrite, possibly others.	Good evidence of origin. Mineralisation probably predates shearing, but pale sphalerite occurs in younger veinlets.
0566 (T.S. 44990) 439.1m	Sheared, Chloritised ?Tuff. Fragmentary sanidine crystals embedded in microcrystalline quartz, chlorite, devitrified K-silicate glass; sulphides.	Relict ?flow-banding. "Phenocrysts" may be flow-brecciated in part.	Trace sulphides - sphalerite (dark), pyrite, ?galena. Leucoxene throughout.	Relict textures not well-preserved, and rockmay have been lava or tuff-lava. Chlorite and sulphides predate metamorphism.

555140

GOLD FIELDS EXPLORATION PTY. LIMITED

DRILL CORE RECORD

HOLE NO.:	RH15
STATE :	Tasmania

ULV. PRESS

PROJECT	Red Hills
DESIGNED BY	FitzGerald/Purvis
LOGGED BY	F.G. FitzGerald
COMMENCED	17-12-82
COMPLETED	23-1-83

PURPOSE

To test mineral potential in black shales south of intersection in RH11 and possible southern continuation of RH5 host horizon. Hole designed to drill beneath Pb in soil anomaly (Lyell 1976) and co-incident pole-dipole IP (CGC 1971) and Turam/gravity (RTAE 1957) anomalies.

LOG SUMMARY	Possible equivalent to RH5 host horizon intersected 190.9-200.4m carrying some base metal mineralization. As in RH5 best mineralizations associated with underlying ignimbrites. Disseminated base metals were intersected in black shale sequence higher up the hole.
GENERAL COMMENTS	True Red Hills lava not intersected, marginal zone from 254.4m.

ASSAY SUMMARY

INTERVAL From	INTERVAL To	Cu	Pb	Zn	Ag	Au	S	COMMENTS
85.0m	93.0m	<0.01%	0.34%	0.61%	4.0g/t	<0.1 g/t	2.43%	Black shale sequence.
116.0m	151.5m *	0.01%	0.26%	0.40%	4.4g/t	<0.1 g/t	2.23%	Black shales, minor tuff, siltstones, base main sequence
* inc 142.0m	145.9m	0.05%	0.21%	1.55%	7.4g/t	<0.1 g/t	1.30%	Best interval in above black shales.
168.0m	182.0m	0.02%	0.11%	0.50%	3.0g/t	<0.1 g/t	0.51%	Ignimbrites.
197.0m	209.0m	0.01%	0.16%	0.48%	11.3g/t	<0.1 g/t	0.85%	Basal part of host rocks(?) and underlying ignimbrites.

LOCATION

NORTHING	5363651
EASTING	382368
R.L.	675.1
GRID	AMG
LENGTH	320.0m

HOLE CONDITION

SIZE Hole Size	SIZE Depth
HQ	12m
NQ	71m
BQ	320m

SIGNIFICANT CORE LOSS INTERVALS From	To	% Lost
0.0	18.0	87
18.0	33.0	65
33.0	46.0	26
142.9	151.65	29
187.4	197.0	19

POOR GROUND CONDITION ZONES From	To	Condition
0.0	27.0	Unconsolidated glacial till to 18m underlying shales very broken NQ reemed to HQ from 12.0-27.0m

HOLE CONDITIONS AFTER COMPLETION

Electrode placed at 320m (E.O.H.)
50m agro-flex pipe placed in top of hole to keep open through glacial scree.
All casing pulled on completion of hole.

SURVEY DATA (Note: Bearing type must be same as Project Grid Type)

SURVEY Depth	Bearing	Dip	INTERVAL From	To	Distance	VERTICAL D. Sin. Dip	R.L.	HORIZONTAL D. Cos. Dip	Prog. Total
Collar	082.5°	-60°							
37.8m	078°	-59°							
75.2m	080°	-57.5°							
102.2m	077.5°	-56°							
126.2m	077°	-55°							
154.2m	080°	-53.75°							
171.2m	079.5°	-53°							
201.2m	081°	-51.5°							
231.2m	083°	-49°							
256.2m	081.5°	-47°							
286.2m	086.5°	-45°							
316.2m	084°	-43.75°							

SURVEY Depth	Bearing	Dip	INTERVAL From	To	Distance	VERTICAL D. Sin. Dip	R.L.	HORIZONTAL D. Cos. Dip	Prog. Total

555141

GOLD FIELDS EXPLORATION PTY. LIMITED

DEV. PRESS

PROJECT: Red Hills

DRILL CORE LOG AND ASSAY DATA

HOLE NUMBER: RH15 Page: 1.

INTERVAL From	INTERVAL To	RECOVERY m	RECOVERY %	DESCRIPTION
0.0	18.0	18.0	13	GLACIAL SCREE Predominantly Owen Conglomerate rubble, minor quartz vein and felsic volcanic material. Appears to be infilled scour or trough
18.0	26.0	8.0	34	MIXED TUFFACEOUS SEDIMENTS Mixed sequence of tuffaceous sandstones, siltstones and shales. Light grey, weathered pale. Argillaceous units quite fissile, coarser units more competent with bedding 50°/LCA. Minor Fe oxide stain and trace diss. py in darker shales.
26.0	34.5	8.5	41	BLACK SHALE Broken fissile black shales, minor thin silty units, bedding 46°/LCA. Post deposition deformation and shearing. Weak-mod. carbonate alteration, minor sericite. 31.5-33.0m possible fault only 6cm clay pug recovered. Minor Fe oxide. Up to 5% syngenetic py, mainly fine grained crystals parallel to bedding, some crystals smeared along cleavage, thin bands up to 2mm thick. No base metals visible.
34.5	35.5	1.0	65	PORPHYRITIC BASALT Khaki porphyritic possible thin intrusive sill. Upper contact sharp, slightly irregular but sub parallel to bedding in shales @ 45°/LCA. Lower contact obscured by broken core. Chilled margins grading to med.grained central zone, no evidence of thermal meta. of contacts. Rock mod. weathered made up of phenocrysts of relict feld. and dark mafic crystals (now with Fe oxide cores) up to 8mm in size set in fine crystalline groundmass (of feld?). Non magnetic possibly due to oxidation.Appears unmineralized.
35.5	107.4	71.9	91	BLACK SHALES AND MINOR TUFFACEOUS SILTSTONES Generally uniform sequence of black shales with very minor grey tuffaceous siltstone interbeds. Finely bedded throughout e.g. 57°/LCA @ 43.6m, 54° @ 51.7m, 50° @ 95.8m, 62° @ 115.2m. Evidence of small scale folds around 66-67m where bedding changes from 27° to 78°. Rock is mod. fissile with slatey cleavage

ASSAY DATA Sample No.	From	To	Rec. %

555142

GOLD FIELDS EXPLORATION PTY. LIMITED

DRILL CORE LOG AND ASSAY DATA

PROJECT: Red Hills HOLE NUMBER: RH15 Page: 2.

INTERVAL From	INTERVAL To	RECOVERY m	RECOVERY %	DESCRIPTION	Sample No.	From	To	Rec. %	Cu	Pb	Zn	Ag(AAS)	Au(FA)	S	Sn	WO_3
					ASSAY DATA in ppm unless otherwise shown											
				mostly sub parallel to bedding but up to 10° different.												
				Core moderately broken down to 45m.												
				56.4-58.2m possible tectonic deformation: lenses of tuffaceous												
				siltstone up to 1cm thick boundinaged with more ductile shale												
				wrapping around clasts.												
				71.0-72.1m similar structure? with light grey sericitic phyllite												
				enclosing clasts or disrupted lenses of fine grained cream	2895	55.0	57.0	91	80	910	490	2	<0.1	3.3%	<10	10
				coloured calcareous sediments.	2896	57.0	59.0	80	50	440	390	1	<0.1	1.1%		
				Very minor quartz-carbonate veins apart from @ 66.5m where 35cm	2897	59.0	61.0	95	80	340	230	1	<0.1	1.9%		
				thick veins with minor py-gn-black sp? and 78.0-78.5m where	2898	75.0	77.0	79	80	200	150	2	<0.1	2.5%		
				irregular veins with py-po-sp-gn coarse crystals.	2899	77.0	79.0	96	40	0.20%	0.10%	4	<0.1	0.4%		
				Mineralization: Variable syngenetic py throughout, mainly fine	2900	79.0	81.0	95	100	210	260	2	<0.1	1.4%	<10	10
				grained and conc. along bedding some bands up to 5mm thick py.	3101	81.0	83.0	94	80	200	240	1	<0.1	1.4%		
				Minor metamorphic retexturing into small lenses and cross cutting	3102	83.0	85.0	92	60	530	970	1	<0.1	1.4%		
				veins. Lower down hole po devt. with minor dissem. base metals	3103	85.0	87.0	94	70	0.40%	0.87%	5	<0.1	2.8%		
				conc. on fractures.	3104	87.0	89.0	96	50	0.20%	700	2	<0.1	2.1%		
				35.5-76.5m est. 2-4% py locally up to 10% py e.g. 55.2-55.6m	3105	89.0	91.0	92	60	0.27%	0.41%	3	<0.1	1.9%	<10	40
				76.5-107.4m est. 1-3% sulphides locally up to 5%, up to 85m	3106	91.0	93.0	95	90	0.49%	1.10%	6	<0.1	2.9%		
				py>po , 85-93m po>py with minor sp, from 93m py>po	3107	93.0	95.0	100	60	820	0.16%	2	<0.1	1.6%		
107.4	115.4	8.0	93	MIXED TUFFACEOUS SEDIMENTS												
				Mixed sequence of light grey tuffaceous sandstones, siltstones,												
				shales, some fine grained siliceous, slightly cherty beds.												
				Bedding well devt. e.g. 62° @ 115.2m, possible graded bedding												
				gives younging up hole (i.e. to west). Generally appear less												
				altered and less mineralized than overlying black shales. Some												
				fracture controlled sericite-chlorite. Overall ≤ 1% sulphide												
				with py>po no base metals.												
115.4	145.9	30.5	88	BLACK SHALES												
				Black shales as above with very minor tuffaceous siltstone.												
				Fairly uniform sequence, mod. graphitic often finely bedded e.g.												
				72° @ 123.1m, 53° @ 140.8m, 0-10° @ 145.1m indicating apparent												
				fold closure. Both fissile and more massive units. Numerous												
				zones of broken core 118.3-119.5m, 120.5-122.0m,												

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GOLD FIELDS EXPLORATION PTY. LIMITED

PROJECT: Red Hills

DRILL CORE LOG AND ASSAY DATA

HOLE NUMBER: RH15 Page: 3.

INTERVAL From	INTERVAL To	RECOVERY m	RECOVERY %	DESCRIPTION
				130.0-131.3m and 142.7-145.9m only last zone possible fault breccia. Also evidence of soft sediment deformation,slump folds and possible disruption of semi-consolidated seds. now clasts within matrix of similar material e.g. 136.2m and 140.5-145.9m. Mineralization Marked increase in mineralization est. 3-6% sulphide overall with zones up to 10%. Mainly syngenetic po>py often streaked along cleavage. Some base metals usually associated with thin irregular quartz-carbonate veins and fractures but also thin bedded sp minor gn. Apparent conc. of sulphide as matrix infill around synsed. breccia zones, particularly conc. around margins of clasts. 115.4-133.2m est. 3-5% po>py. 133.2-137.4m est. 5% sulphide po>py minor sp, minor veins sp-gn-cpy. 137.4-140.5m est. 5-7% sulphide bands of min. up to 1.5cm thick in coarser seds. esp. sp>gn minor cpy. est. ≤1% sp overall. 140.5-145.9m est. 5-7% sulphide with 1-2% sp over last metre mainly breccia infill and margins of clasts.
145.9	148.5	2.6	72	SHEARED PYROCLASTICS Medium grained grey to pale green moderately schistose crystal pyroclastic. Upper contact obscured by broken core, appears sharp some possible shearing, lower contact 10cm fault zone. Moderate sericitic and weak chloritic alteration. No evident primary foliation. Well devt. cleavage 30°/LCA. Mineralization: Mainly as blebs and stringers along cleavage plane est. 2-4% sulphide decreasing down hole with py>po and minor sp. Comment: Appears related to underlying pyroclastic sequence. Original fabric concealed by schistosity probably related to fault
148.5	151.5	3.0	85	BLACK SHALE Fairly massive black shale, bedding not well devt., core quite broken. Lower contact probable fault (much core loss). Mod. graphitic, common small irregular white carb. veins.

ASSAY DATA in ppm unless otherwise shown

Sample No	From	To	Rec. %	Cu	Pb	Zn	Ag(AAS)	Au(FA)	S	Sn	WO_3
3108	116.0	118.0	91	50	0.11%	0.14%	3	<0.1	2.7%		
3109	118.0	120.0	86	60	0.22%	0.30%	4	<0.1	1.9%		
3110	120.0	122.0	80	60	0.18%	0.19%	3	<0.1	2.5%	<10	30
3111	122.0	124.0	100	50	0.22%	580	3	<0.1	3.0%		
3112	124.0	126.0	93	60	0.25%	0.17%	4	<0.1	2.8%		
3113	126.0	128.0	98	70	0.34%	0.25%	5	<0.1	1.9%		
3114	128.0	130.0	94	80	0.23%	0.29%	4	<0.1	2.2%		
3115	130.0	132.0	93	110	0.26%	0.25%	4	<0.1	2.0%	10	10
3116	132.0	134.0	98	80	0.30%	0.35%	5	<0.1	2.9%		
3117	134.0	136.0	99	60	0.24%	0.12%	4	<0.1	2.1%		
3118	136.0	138.0	99	160	0.76%	0.47%	5	<0.1	2.7%		
3119	138.0	140.0	92	60	0.44%	0.17%	5	<0.1	1.9%		
3120	140.0	142.0	98	110	0.43%	0.36%	5	<0.1	2.1%	<10	30
3121	142.0	144.0	60	290	0.20%	1.38%	5	<0.1	1.4%		
3122	144.0	145.9	54	720	0.23%	1.73%	10	<0.1	1.2%		
3123	145.9	148.5	72	130	0.12%	0.36%	3	<0.1	3.2%		

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GOLD FIELDS EXPLORATION PTY. LIMITED

DRILL CORE LOG AND ASSAY DATA

PROJECT: Red Hills HOLE NUMBER: RH15 Page: 4.

INTERVAL From	INTERVAL To	RECOVERY m	RECOVERY %	DESCRIPTION	Sample No.	From	To	Rec. %	Cu	Pb	Zn	Ag(AAS)	Au(FA)	S	Sn	WO_3
					ASSAY DATA all in ppm unless otherwise shown.											
				Mineralization: Only weak mostly fine grained dissem. sulphide, some conc. along cleavage, py>po with minor sp.	3124	148.5	151.50	85	100	720	0.24%	3	<0.1	1.9%		
				Comment: Possibly a fault block off-set from main intersection higher up hole.												
151.5	190.9	39.4	96	IGNIMBRITES	3125	151.5	154.0	98	40	590	0.14%	2	<0.1	0.9%	<10	10
				Grades from medium grained to predominantly finegrained light	3126	154.0	156.0	95	100	560	890	2	<0.1	0.5%		
				grey to green with minor orange zones. Crude foliation defined	3127	156.0	158.0	94	40	590	0.10%	2	<0.1	0.2%		
				by darker diffuse streaks which may represent relict fiammé	3128	158.0	160.0	92	30	270	0.14%	1	<0.1	0.3%		
				or glass shards. Generally mod.-weak sericite and minor chlorite	3129	160.0	162.0	98	20	310	700	1	<0.1	0.2%		
				alteration. 180.0-181.4m grey amorphous siliceous zone conc. in	3130	162.0	164.0	92	20	0.12%	420	2	<0.1	0.1%	10	20
				vein stockwork. Elsewhere minor quartz-carb. veins, some of which	3131	164.0	166.0	93	50	0.17%	580	2	<0.1	0.3%		
				are mineralized.	3132	166.0	168.0	93	10	590	250	1	<0.1	<0.1%		
				188.2-190.9m much silicification and quartz veins 10-30cm thick	3133	168.0	170.0	95	170	690	0.35%	3	<0.1	0.4%		
				within orange hard rock, appearance of felsic lava, much brecc-	3134	170.0	172.0	96	170	0.31%	0.61%	3	<0.1	0.7%		
				iation, rubble and core loss, possible fault zone.	3135	172.0	174.0	95	180	0.10%	0.65%	4	<0.1	0.5%	<10	50
				Mineralization: Mostly dissem. and blebs of sulphide with lesser	3136	174.0	176.0	100	190	0.11%	0.73%	5	<0.1	0.5%		
				fracture fill and vein style. Predominantly sp>py with minor to	3137	176.0	178.0	100	70	340	0.38%	2	<0.1	0.6%		
				trace gn, cpy mainly in veinlets.	3138	178.0	180.0	100	100	610	0.33%	2	<0.1	0.6%		
				151.5-157.0m est. 2% py, 1% sp minor gn, cpy.	3139	180.0	182.0	99	130	600	0.47%	2	<0.1	0.3%		
				157.0-168.0m est. 1-2% sulphide sp>py trace gn.	3140	182.0	184.0	97	70	440	0.20%	2	<0.1	0.2%	<10	30
				168.0-182.5m est. 1-2% sp, minor py, gn, trace cpy, common sulph-	3141	184.0	186.0	100	60	0.18%	0.26%	8	<0.1	0.4%		
				ide in quartz-carb.-chl. veins and fractures with siderite?	3142	186.0	188.5	99	100	0.18%	0.13%	2	<0.1	0.4%		
				182.5-188.5m est. <1% sulphide minor py>sp trace gn, siderite	3143	188.5	190.9	92	<10	1.56%	230	3	<0.1	4.8%		
				188.5-190.9m abundant sulphide mainly vein and fracture est. 5% gn,												
				2% py + 5% granular mag, minor hem., some py euhedra 7mm in size.												
				Comment: Appears to be sequence of welded ignimbrites. Best												
				mineralization may be remobilized along fractures from underlying												
				faulted sedimentary sequence.												
190.9	200.4	9.5	86	FINE GRAINED SEDIMENTS OR VITRIC ASH, POSSIBLE HOST HORIZON?												
				Mixed dark green chloritic siltstones-shales with minor light												
				grey siliceous silty interbeds. Upper contact faulted, lower-												
				contact quite gradational into interpreted ignimbrites. Generally												
				massive structureless rock, no other primary layering but												
				possible primary foliation 70°/LCA @ 196.7m. Some incipient												

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GOLD FIELDS EXPLORATION PTY. LIMITED

DLV. PRESS

PROJECT: Red Hills

DRILL CORE LOG AND ASSAY DATA

HOLE NUMBER: RH15

INTERVAL From	INTERVAL To	RECOVERY m	RECOVERY %	DESCRIPTION	Sample No.	From	To	Rec. %	Cu	Pb	Zn	Ag(AAS)	Au(FA)	S	Sn	WO_3
									ASSAY DATA in ppm unless otherwise shown							
				brecciation with grey amorphous silica matrix. Only weak	3144	190.9	193.0	60	<10	0.13%	150	1	<0.1	0.5%		
				cleavage devt. Mod. chlorite becoming strong pervasive alteration	3145	193.0	195.0	89	<10	240	770	1	<0.1	0.1%	<10	20
				down hole.	3146	195.0	197.0	83	20	250	0.18%	1	<0.1	<0.1%		
				Mineralization: Predominantly veinlet and fracture controlled wit	3147	197.0	199.0	100	60	190	0.46%	9	<0.1	0.5%		
				only minor dissem. and bleb style, related to increasing chlorit-	3148	199.0	201.0	98	80	0.60%	0.40%	31	<0.1	1.5%		
				ic alteration. Overall mod-low sulphide.												
				190.9-198.0m est. 1-2% sulphide sp>py=gn trace hem. upper												
				contact.												
				198.0-200.4m est. 2-4% sulphide py>sp>gn, minor mag. over basal												
				30cm.												
				Comment: No clear evidence for subaqueous epiclastic origin of												
				rock, However, gradational contact with underlying ignimbrites												
				and quantity and style of mineralization may suggest rock formed												
				as pyroclastic ash deposit related to ignimbritic sequence.												
				May be stratigraphic equivalent of RH5 host horizon.												
200.4	254.4	54.0	99	IGNIMBRITES:												
				Fine to med. grained hard massive rock. Common dark flecks often												
				cuspate (relict glass shards) and fiammé-like. Appears												
				alternating fine to mod. coarse grained units 1 to 5m thick												
				usually with gradational contacts. Crude foliation due to												
				alignment of dark (relict vitric material?) streaks which are												
				sub parallel to the weak cleavage e.g. 75°/LCA @ 210.0m. Patches												
				of cream calcic alteration variably devt. e.g. 216.1-220.3m.												
				Increasing lithic clasts down hole of pink-red felsic lava												
				especially from 234m on. Clasts usually angular, some sub rounded												
				up to 5cm in size, mostly <2cm. At 239.3m block(?) of feld. porphyry												
				25 cm in diameter, common dark vitric shards and fiammé here.												
				Minor veins quartz-carb.-chlorite.												
				Mineralization: Best in upper part of sequence as both dissem.	3149	201.0	203.0	98	90	0.11%	0.56%	13	<0.1	0.6%		
				(often streaked along foliation) and fracture-fill. Min. decreas-	3150	203.0	205.0	95	100	680	0.28%	3	<0.1	0.8%	<10	40
				es rapidly down hole.	3151	205.0	207.0	100	110	960	0.42%	8	<0.1	0.4%		
				200.4-210.0m est. 2-5% sulphide sp>py trace gn.	3152	207.0	209.0	100	260	830	0.78%	4	<0.1	1.3%		
				210.0-220.8m est. <1% sulphide sp=py dissem.	3153	209.0	211.0	100	50	380	0.17%	1	<0.1	0.2%		
				220.8-228.0m est. 1-2% sulphide mainly py, minor sp, gn.												

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GOLD FIELDS EXPLORATION PTY. LIMITED

DLV. PRESS

PROJECT: Red Hills

DRILL CORE LOG AND ASSAY DATA

HOLE NUMBER: RH15

INTERVAL From	INTERVAL To	RECOVERY m	RECOVERY %	DESCRIPTION
				228.0-235.0m est 1-2% sulphide, locally 5% mainly coarse grained py but up to 0.5% sp dissem. throughout, trace gn, cpy. 234.5m est. 5% cpy over 10 cm as coarse blebs. 235.0-254.4m minor fine grained dissem. py.
254.4	320.0	65.6	99	COARSE PYROCLASTICS-RED HILLS LAVA TALUS Typically dark green-grey fragmental rock similar to ignimbritic sequence above but with abundant often large (up to 10cm +) blocks of pink lava clasts. Dark irregular clasts (relict pumice?) up to 2cm are common as are feld. crys. up to 3mm long. Zones of blotchy pink and green rock e.g. 304.5-307.8m, also more massive pink-red fine grained lava-like rock e.g. 254.4-257.4m. Crude foliation (?) due to colour banding e.g. 307.8-310.5m 75°/LCA. Some areas have felsic lava rubble appearance with ashy pyroclastic (?) matrix. Basal 9m dark green mod. crystalline with pink altered feld. crys., grains mag. and numerous thin hem. ± py veinlets. Overall rock is hard and blocky, no real foliation, only weak cleavage devt. in finer units. Mod-strong chloritic alteration esp. in finer rocks, some times as discrete patches and veins. Diffuse pink (hematitic) alteration also present-typical of Red Hills lava margin. Only minor qtz-carb-chl-K feld? veins, typically unmineralized. Mineralization: Generally low sulphide, mainly dissem py locally up to 2% over 20cm but overall <0.5%. Minor cpy mostly veinlet e.g. 275.4m. Mag variable mainly irregular fine fracture fill some dissem. grains up to 3mm assoc. with chlorite alteration. Scattered hematitic fractures. Incipient stockwork devt. in places. Comment: Appears to be a coarse pyroclastic with many ignimbritic features. However size and quantity of pink felsic lava clasts indicates proximity to Red Hills Lava margin. This is supported by mag-hem-chl stockwork and py-cpy min.
				END OF HOLE

ASSAY DATA in ppm unless otherwise shown.

Sample No.	From	To	Rec. %	Cu	Pb	Zn	Ag(AAS)	Au(FA)	S	Sn	WO_3
3154	227.0	229.0	99	130	210	320	1	<0.1	0.1%		
3155	229.0	231.0	100	300	160	340	1	<0.1	<0.1%	<10	30
3156	231.0	233.0	97	740	370	700	5	<0.1	0.2%		
3157	233.0	235.0	98	0.20%	250	220	2	<0.1	0.2%		

Sample Number : 0542 RH15 197.3m

Identification : Chlorite slate with deformed fissure veins of quartz, sphalerite and minor calcite

Description :

The hand specimen is a drill core sample of fresh, greenish black, chloritic rock with a crenulated foliation oriented at about 70° to the core axis and roughly parallelled by stringers of quartz and dark reddish brown sphalerite. Pale grey, crenulated veinlets cut the foliation at high angles.

No K-feldspar at all was revealed by a cobaltinitrite staining test.

In thin section the bulk of the sample is seen to consist of well foliated fine-grained chlorite and quartz, both finer than 0.01 to 0.02mm, and "dusty" streaks of untra-fine opaque grains.

Several boudinaged veins of strained quartz, sphalerite and very minor carbonate (apparently calcite) lie subparallel to the dominant foliation. The maximum thickness of the veins is about 1mm. Much finer, crenulated quartz veins (0.1mm thick) discordant with the foliation also carry sphalerite and strained quartz. A later, straighter, barren vein of unstrained quartz cuts all structures.

An approximate mode of the sample is :

92-97%	chlorite
3-5%	quartz
0.3-0.5%	opaques
1-3%	vein quartz
trace	vein calcite
0.4-0.6%	vein sphalerite

Comments and Interpretation :

The sample is a chlorite slate, thought to have formed by regional metamorphism of a clay-rich mudstone. One foliation direction dominates, but a second foliation is weakly expressed.

Veins of quartz, sphalerite and very minor calcite were introduced before or during deformation and have been strained, boudinaged and crenulated. The contact characteristics are dominantly those of fissure veins.

Sample Number : 0543 RH15 295.6m

Identification : Heavily sericitic, regionally metamorphosed rhyolitic or rhyodacitic tuff

Description :

The hand specimen is a drill core sample of fresh, speckled dark greenish grey rock with tuffaceous textures, including ovoid lithic clasts 2 to 10mm long oriented at about 75° to the core axis.

When the sample was etched and tested with cobaltinitrite stain, a few wispy, possibly pumiceous clasts were revealed and K-feldspar was detected as abundant phenoclasts or phenocrysts, about 1mm in size, and as abundant fine grains. A thin hematitic stringer was noticed.

In thin section the sample is seen to display abundant fine recrystallization and conversion to sericite and chlorite, but there are many remnant textures consistent with a former tuff. Lithic fragments, phenocrysts, phenoclasts and former pumice are recognisable. Residual phenoclasts include quartz, orthoclase and plagioclase, all partly recrystallized and the plagioclase commonly "webbed" with sericite. Most of the rock now consists of quartz, untwinned feldspar, sericite and chlorite. Variations in relative abundances define the lithic clasts and subtle hematitic pigmentation reveals some of the pumice. Much of the sericite is web-like, being oriented within two foliation directions.

Subhedral magnetite, 0.2mm in grainsize is disseminated through the rock in a fashion suggesting late formation. No pyrite was seen in thin section but a replacement zone of pyrite is visible in the off-cut near a hematitic stringer.

An approximate mode of the sample is :

30-40%	quartz
15-25%	orthoclase
2-5%	plagioclase
5-10%	chlorite
40-50%	sericite
0.5-0.8%	magnetite
trace	hematite
rare	pyrite

Comments and Interpretation :

The sample is confidently interpreted as having originated as a rhyolitic to rhyodacitic tuff, composed of phenoclasts, pumice and small lithic fragments. It has since been deformed and has experienced heavy sericitic alteration, but not to the extent that all feldspars are destroyed.

The disseminated magnetite, apparently crystallized as a late subhedral phase in the rock may be an alteration feature.

Sample Number : 0544 RH15 317.0m

Identification : Chloritic, regionally metamorphosed, rhyolitic or rhyodacitic, lithic tuff or agglomerate

Description :

The hand specimen is a drill core sample of fresh rock, coarsely mottled into regimes which are dark greyish green and pale red or greyish red. The reddish mottles vaguely resemble lithic clasts about 10 to 30mm in size with long axes oriented at 75° to the core axis.

A staining test revealed that the reddish mottles are rich in fine K-feldspar and the green, chloritic regimes are devoid of K-feldspar except as partial replacements of 1 to 2mm phenocrysts or phenoclasts.

In thin section the reddish regimes are seen to consist of sparse phenocrysts of quartz (0.5mm in size) and feldspar (1 to 2mm in size) set in a weakly foliated, metamorphically recrystallized groundmass of quartz, untwinned feldspar, chlorite and colourless carbonate with euhedral forms suggestive of dolomite. The red pigmentation is attributable to extremely fine hematite, present in low abundance. The feldspar phenocrysts include plagioclase and orthoclase and are partly recrystallized and weakly sericitized. One hematitic area has a wispy, pumiceous appearance.

The green regimes consist mainly of quartz, chlorite and sericite. The quartz has a grainsize of about 0.03mm, the chlorite occurs as aggregates of extremely fine grains and the sericite occurs as flakes oriented to produce two strongly preferred attitudes intersecting at about 70°. The result is a fine web-like appearance at low magnification.

Magnetite, chlorite, tourmaline and very fine brown biotite occur in aggregates about 0.5mm in size, replacing some former subhedral rhombic mineral, perhaps siderite or dolomite. There is one atypical, nodular aggregate in which magnetite has partly replaced siderite. Only minor magnetite occurs within the red regimes but it is associated with similar shapes and associated minerals to those seen in the green regimes.

A few partly recrystallized phenoclasts of quartz and feldspar occur in the green regimes. Boundaries between the red and green regimes are somewhat blurred.

An approximate mode of the sample is :

30-50%	quartz
30-35%	orthoclase
10-20%	plagioclase
10-15%	chlorite
2-3%	sericite
0.4-0.6%	magnetite
0.1-0.2%	hematite
0.1-0.2%	dolomite
<0.1%	siderite
0.1-0.2%	biotite
0.1-0.2%	tourmaline

Comments and Interpretation :

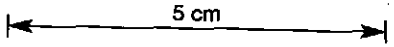
The sample is confidently interpreted as having originated as a coarse, acid lithic tuff, perhaps even agglomerate. The matrix between the rhyolitic or rhyodacitic lithic clasts was probably muddy.

Subsequent modification of textures and mineralogy has been dominated by changes compatible with greenschist facies metamorphism and involving at least two cycles of deformation. If there are hydrothermal effects of any note, they may relate to production of dolomite and siderite then conversion to magnetite.

APPENDIX C.

HENTY FAULT ZONE

Geochemical Results 1982-83.



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

PROJECT: TYNDALL EL 9/66 PROSPECT: HENTY FAULT ZONE SAMPLE STORAGE REQ'D: LABORATORY: CLASSIC, PERTH / TELL RENISON. COLLECTED BY: G.P. + 1983 REVIEW TEAM.

1:250,000 SHEET: TYPE OF SAMPLE: SAMPLE PREP. REQ'D: ANALYSIS REQ'D: 0176. DATE DISPATCHED: DATE RECEIVED:

SAMPLE NUMBER	LOCATION	DESCRIPTION	ANALYSES Cu	Pb	Zn	Ag	Au (FA)	S%
1106	Costean - Line 7120 N	Qtz. 1.5m chip sample over true width of massive sulphide.					1.55+	
0533	100m SW of HF27 - near L 39 N.	Qtz. Channel sample across pyritic fault zone (in shale?)	150	750	4200	3	<0.1	5.8
0534	L 63 N trench. 50m NE HF21.	Float. Dump sample. Qtz-porphyritic lava ± trace py.	140	220	20	1	<0.1	<0.1

+Mean of pair analyses on two sample splits.

APPENDIX D.

HENTY FAULT ZONE

Drill Logs: including assays:
Holes HFZ 3,4, 5 and 6 - relogged 1982-83
and holes HFZ 9, 10 and 11 - drilled 1982-83.

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GOLD FIELDS EXPLORATION PTY. LIMITED

DRILL CORE RECORD

HOLE NO.: HFZ 3
STATE : TASMANIA

DLV. PRESS

PROJECT	TYNDALL E.L. 9/66
DESIGNED BY	K. WELLS (1973)
LOGGED BY	P.W. ENGLISH'82
COMMENCED	7-12-73
COMPLETED	15-1-74

PURPOSE

To test coincident I.P. and geochemical anomalies on Line 43N at 250'E

LOG SUMMARY

Andesite lava and rhyolitic ash-flow tuffs in upper part of hole, passing to bedded tuff-shales and volcaniclastics. Possible 'Host Sequence' 365'-430', but only minor sulphides.

GENERAL COMMENTS

N.B.: ALL ASSAY INTERVALS ARE IN FEET.

ASSAY SUMMARY

INTERVAL From	INTERVAL To	Cu	Pb	Zn	FeS_2	Ba								COMMENTS
395'	405'	1150	100	100	3.75%	600								As thin stringers and beds of sulphides in cherty tuff.

LOCATION

NORTHING	5362917.8
EASTING	379797.5
R.L.	547.3 M
GRID	AMG
LENGTH	552'

168m

HOLE CONDITION

SIZE	
Hole Size	Depth
NQ	0-170'
BQ	170'-552'

SIGNIFICANT CORE LOSS INTERVALS		
From	To	% Lost
0	36'	85
235'	264'	45
291'	295'	60
339'	355'	40
382'	415'	40

POOR GROUND CONDITION ZONES		
From	To	Condition

HOLE CONDITIONS AFTER COMPLETION

40' NX casing left in hole.

SURVEY DATA (Note: Bearing type must be same as Project Grid Type)

SURVEY Depth	SURVEY Bearing	SURVEY Dip	INTERVAL From	INTERVAL To	INTERVAL Distance	VERTICAL D.Sin.Dip	VERTICAL R.L.	HORIZONTAL D.Cos.Dip	HORIZONTAL Prog.Total
0	102° AMG	-55°							
40'		-56°							
80'		-56°							
120'		-55.5°							
140'		-55°							
180'		-54.5°							
200'		-54°							
220'		-53.5°							
260'		-53°							
280'	106° A	-53°							
320'	106° A	-52°							
380'	105° A	-51.5°							

SURVEY Depth	SURVEY Bearing	SURVEY Dip	INTERVAL From	INTERVAL To	INTERVAL Distance	VERTICAL D.Sin.Dip	VERTICAL R.L.	HORIZONTAL D.Cos.Dip	HORIZONTAL Prog.Total
420'	105° A	-51.5°							
460'	103° A	-51°							
500'	103° A	-49°							
520'	102° A	-48.5°							
540'	101° A	-48°							

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GOLD FIELDS EXPLORATION PTY. LIMITED

ULV. PRESS

PROJECT: TYNDALL E.L. 9/66

DRILL CORE LOG AND ASSAY DATA

HOLE NUMBER: HFZ 3

INTERVAL From	INTERVAL To	RECOVERY m	RECOVERY %	DESCRIPTION	ASSAY DATA Sample No.	From	To	Rec. %
0'	38'			Unconsolidated sands and gravels				
38'	40'			ANDESITE LAVA - Dark green, fine grained weakly banded andesite lava- core is badly broken due to drilling technique; and not the ground.				
				Remarks: Minor limonite and manganese.				
40'	45'			ANDESITIC - RHYOLITIC ASHFLOW TUFF - LAVA - Pink-red, grey-green, mixed zone with rhyolitic fragments in a chloritic ground mass. Fragments are subrounded to angular and 2-20mm in diameter. Primary layering at 41' is 40°/LCA.				
45'	108'			ANDESITE LAVA WITH PORPHYRITIC ZONES - Dark green fine to coarse grained andesite lava with minor tuff. Some coarse porphyritic zones e.g. 65'-70' and 80'-90'. The lava areas are generally massive and magnetic , the tuff areas are non-magnetic well layered. Calcite is disseminated and veined in the lavas. Some sections are highly fractured and contain minor epidote. Primary layering at 51' is 30°/LCA.				
				Remarks: Traces of fine grained pyrite. Limonite staining on joint faces.				
108'	114'			ANDESITE WITH RHYOLITIC ASH FLOW TUFF - LAPILLI TUFF - Dark green chloritic and in part siliceous ground mass, with pink-green ash flow tuff- lapilli tuff fragments as zenoliths. Fragments are 2-30mm and show a strong primary layering. They are either rounded when small or angular and mostly flattened when large. Primary layering at 109' is 45°/LCA.				
				Remarks: Trace of fine grained disseminated pyrite. Joints are limonite stained.				
114'	163'			ANDESITE LAVA - Dark green, mainly fine grained massive andesite lava, weakly to strongly magnetic.. There are some feldspar porphyritic zones which have abundant calcite veins 2-10mm wide. Calcite is also abundant in the groundmass in places. Minor quartz veins				

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GOLD FIELDS EXPLORATION PTY. LIMITED

PROJECT: TYNDALL E.L. 9/66

DRILL CORE LOG AND ASSAY DATA

HOLE NUMBER: HFZ 3

INTERVAL From	INTERVAL To	RECOVERY m	RECOVERY %	DESCRIPTION
				Remarks: Trace of pyrite disseminated.
163'	178'			ANDESITE WITH RHYOLITIC ASH FLOW TUFF - LAPILLI TUFF - Similar to the zone between 108' to 114', except primary layering at 176' is 35°/LCA.
				Remarks: Trace of pyrite.
178'	195'			ANDESITE LAVA - Dark green fine grained massive andesitic lava, weakly magnetic, with porphyritic zones with 1-4mm feldspar phenocrysts. Moderate amount of calcite in groundmass and veinlets 2-10mm wide.
				Remarks: Trace of pyrite.
195'	199'			ANDESITE WITH RHYOLITIC ASH FLOW TUFF-LAPILLI TUFF - Similar to the zone between 108' and 114', except primary layering at 197' is 35°/LCA.
				Remarks: Trace of pyrite.
199'	205'			ANDESITE LAVA - Dark green, fine grained massive andesitic lava moderately to strongly magnetic. Minor calcite in ground mass and in 2-10mm wide veinlets.
				Remarks: Trace of pyrite.
205'	214'			ANDESITE WITH RHYOLITIC ASH FLOW TUFF-LAPILLI TUFF - Similar to the zone between 108' and 114', except the primary layering at 210' is 45°/LCA.
215'	219'			ANDESITE LAVA - Same as the lava between 199' and 205'.
				- MAJOR CHANGE -
219'	231'			CONTACT BETWEEN ANDESITIC LAVAS AND RHYOLITIC VITRIC TUFFS - Top section is essentially andesitic with pink rhyolitic lithic tuff and lapilli tuff fragments. Buff coloured thin bedded quartz sericitic vitric tuff enter the sequence and become more dominant at the base. Schistosity which is parallel to primary

ASSAY DATA Sample No	From	To	Rec. %

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GOLD FIELDS EXPLORATION PTY. LIMITED

DLV. PRESS

PROJECT: TYNDALL E.L. 9/66

DRILL CORE LOG AND ASSAY DATA

HOLE NUMBER: HFZ 3

INTERVAL From	INTERVAL To	RECOVERY m	RECOVERY %	DESCRIPTION	Sample No.	From	To	Rec. %	Cu	Pb	Zn	FeS_2	Ag	Au	Ba	Ca	Mn
									ASSAY DATA (ppm)								
				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 orig-													
				inal 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.													
264'	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		265'	270'		25	< 10	100		< 1				
				bedded sections. Some thin 2-20mm graphitic shale lenses. Weakly		270'	275'		10	< 10	100		< 1				
				schistose, parallel to primary bedding. Weak sericite and chlorite		275'	280'		20	< 10	100		< 1				
				alteration.		280'	285'		60	15	80		< 1				
				Remarks: Trace of pyrite.		285'	290'		50	25	130		< 1				
						290'	295'		30	10	75		< 1				
314'	365'			CARBONACEOUS - GRAPHITIC THIN BEDDED TUFFACEOUS SHALE - SILTSTONE		295'	300'		45	15	125		< 1				
				- Black-grey, carbonaceous with quartzose silty bands 1-5mm		300'	305'		45	25	85		< 1				
				thick. Bedding is very regular, with only minor evidence of		305'	310'		25	50	155		< 1				
				slumping. Strong shistosity has developed and in places the		310'	315'		60	35	110		< 1				
				carbonaceous matter becomes graphitic. The section between 350'-		315'	320'		60	15	65		< 1				
				365' is well bedded 50°/LCA and the carbonaceous beds become		320'	325'		55	15	65		< 1				
				wispy and the overall composition more quartzose. This section		325'	330'		50	15	80		< 1				
				also contains 1-8mm thick pyrite beds, giving a total pyrite		330'	335'		70	< 10	75		< 1				

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GOLD FIELDS EXPLORATION PTY. LIMITED

ULV. PRESS

PROJECT: TYNDALL E.L. 9/66

DRILL CORE LOG AND ASSAY DATA

HOLE NUMBER: HFZ 3

INTERVAL From	INTERVAL To	RECOVERY m	RECOVERY %	DESCRIPTION	Sample No.	From	To	Rec. %	Cu	Pb	Zn	FeS_2	Ag	Au (FA)	Ba	Ca	Mn	S%
				content in the section of 5-10%.		335'	340'		70	530	820		1					
				Remarks: Trace to 10% pyrite disseminated and in thin beds.		340'	345'		140	85	210		1					
						345'	350'		100	35	200		1					
365'	380'			SILICEOUS MASSIVE SILTY TUFF - Grey white, highly siliceous fine		350'	355'		150	55	185		1					
				grained silty tuff with little or no bedding. There are 1-2mm		355'	360'		225	25	150		2					
				pink specks, ?siderite, disseminated throughout. Few quartz		360'	365'		200	55	320		1					
				and carbonate veins 2-10mm wide.		365'	370'		60	50	360		1					
				Remarks: Trace of pyrite.		370'	375'		55	35	230		1					
						375'	380'		105	30	130		1					
380'	416'			PYRITIC CHERTY TUFFACEOUS SEDIMENT - Cream buff, highly siliceous		380'	385'		700	100	100	3.1%			300	4.2%	1100	
				thin bedded cherty tuff with thin stringers and beds of pyrite		385'	390'		700	< 100	100	2.3%			300	4.3%	1300	
				and minor chalcopyrite. Contains bright green mineral, which		390'	395'		700	< 100	100	1.6%			300	6.3%	1500	
				in this case is possibly a ?copper-iron silicate. Some sections		395'	400'		1000	100	< 100	4.1%			600	3.8%	1100	
				are highly schistose, with strong sericite, and minor carbonate		400'	405'		1300	100	100	3.4%			600	3.0%	1000	
				and chlorite alteration. Bedding at 402' is 55°/LCA.		405'	410'		400	< 100	< 100	1.9%			400	2.8%	900	
				Remarks: 2-7% pyrite throughout. 1-2% chalcopyrite in places.		410'	416'		500	100	< 100	2.4%			300	2.4%	800	
					3910	416'	423'3"		160	20	30		<2	< 0.1				0.2
416'	430'			CHERTY SEDIMENT - Pink-grey, highly siliceous zone, probably	3911	423'3"	430'6"		50	20	30		<2	< 0.1				0.2
				a cherty tuffaceous sediment, with no bedding, but is moderately	3912	430'6"	440'10"		40	20	80		<2	< 0.1				0.4
				to highly fractured. Has minor schistosity in places with moderate	3913	440'10"	450'		170	10	40		<2	< 0.1				0.2
				sericite alteration.														
				Remarks: Trace to 2% pyrite. Trace chalcopyrite.														
430'	450'			SILICEOUS "PINK" VOLCANICLASTIC SANDSTONE - GRADATIONAL CHANGE														
				TO VOLCANICLASTICS - Pink, highly siliceous and sericitic,														
				altered, sandy volcaniclastic. Original texture very difficult														
				to distinguish because of the overprinting of alteration. Minor														
				chlorite blebs and veins.														
450'	486'			CHLORITIC - SILICEOUS VOLCANICLASTIC COARSE SANDSTONE - CONGLOMER-														
				ATE BRECCIA - Dark green-grey moderately to highly chloritic,														
				weakly layered, coarse sandy-conglomerate texture. Clasts are														
				mostly sub rounded to angular and are mostly rhyolitic (grey														
				to pink) and constitute 60-80% of the total rock. The matrix														
				is siliceous with fine grained sericite and chlorite. This unit														

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GOLD FIELDS EXPLORATION PTY. LIMITED

DLV. PRESS

PROJECT: TYNDALL E.L. 9/66

DRILL CORE LOG AND ASSAY DATA

HOLE NUMBER: HFZ 3

INTERVAL From	INTERVAL To	RECOVERY m	RECOVERY %	DESCRIPTION	ASSAY DATA Sample No.	From	To	Rec. %
				does not have well developed primary layering.				
				Remarks: Trace of disseminated pyrite.				
486'	490'			CHLORITIC SERICITIC TUFFACEOUS SHALE Dark green-grey massive vitric shale - with moderately developed schistosity moderate to weak chlorite and sericite alteration.				
				Remarks: Trace of pyrite.				
490'	544'			CHLORITIC SILICEOUS VOLCANICLASTIC COARSE SANDSTONE - CONGLOMERATE BRECCIA - Same as for 450'-486'.				
544'	552'			SILICEOUS BANDED VITRIC RHYOLITIC TUFF - Pink-grey banded fine grained rhyolitic and highly siliceous tuff - brecciated in places some parts highly sericite altered, indicating a vitric component. Primary layering at 548' is 55°/LCA.				
				Remarks: Trace of pyrite.				
				E.O.H.				

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GOLD FIELDS EXPLORATION PTY. LIMITED

DRILL CORE RECORD

DEV. PRESS

HOLE NO.	HFZ 4
STATE	TASMANIA

PROJECT	TYNDALL E.L. 9/66
DESIGNED BY	K. WELLS 1974
LOGGED BY	P.W. ENGLISH '82
COMMENCED	24-1-74
COMPLETED	16-2-74

PURPOSE

To test the coincident I.P. and geochem. anomaly on the eastern sides of Lines 42-43N.

LOG SUMMARY

0-343' Mixed andesite lava and rhyolitic ash-flow tuff.
343'-633' Graphitic tuff-shales.
633'-644' Pyritic cherty sediments (Host sequence?)
644'-708' Volcaniclastics

GENERAL COMMENTS

Core misplaced since '74 when it was transferred to new boxes. Particularly bad 315'-340' & 630'-640'.

ASSAY SUMMARY

INTERVAL From	INTERVAL To	Cu	Pb	Zn	Ag									COMMENTS
525'	535'	35	280	890	< 1									Trace of pyrite in graphitic shale.

LOCATION

NORTHING	5362717.2
EASTING	379710.4
R.L.	546/5 M
GRID	A.M.G.
LENGTH	708'

2/6m

HOLE CONDITION

SIZE Hole Size	SIZE Depth
NQ	0-255'
BQ	255'-708'

SIGNIFICANT CORE LOSS INTERVALS From	To	% Lost
534'	544'	25

POOR GROUND CONDITION ZONES From	To	Condition
360'		Cave in.
626'	633'	Sericitic clay (Henty Fault?).

HOLE CONDITIONS AFTER COMPLETION

Hole collapsed at 360' prior to downhole survey.

SURVEY DATA (Note: Bearing type must be same as Project Grid Type)

SURVEY Depth	Bearing	Dip	INTERVAL From	To	Distance	VERTICAL D. Sin. Dip	R.L.	HORIZONTAL D. Cos. Dip	Prog. Total
0'	102° AMG	-60°							
40'		-60°							
80'		-60°							
120'		-60°							
160'		-60°							
200'		-59.5°							
240'		-59.5°							
280'	104° A	-59°							
320'	101° A	-58°							
340'	101° A	-57°							

SURVEY Depth	Bearing	Dip	INTERVAL From	To	Distance	VERTICAL D. Sin. Dip	R.L.	HORIZONTAL D. Cos. Dip	Prog. Total

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GOLD FIELDS EXPLORATION PTY. LIMITED

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PROJECT: TYNDALL E.L. 9/66

DRILL CORE LOG AND ASSAY DATA

HOLE NUMBER: HFZ 4

INTERVAL From	INTERVAL To	RECOVERY m	RECOVERY %	DESCRIPTION	ASSAY DATA Sample No	From	To	Rec. %
0'	18'			ANDESITIC - RHYOLITIC WELDED ASH FLOW TUFF - LAPILLI TUFF - Weathered, pink-green tuffaceous to lapilli tuff texture with subrounded rhyolitic fragments in a siliceous chloritic matrix. Remarks: Limonite stained.				
18'	84'			ANDESITE LAVA - Dark green, fine grained lava to feldspar porphyritic lava. The fine grained lava is slightly magnetic and massive, while the porphyritic zones are non magnetic and weakly to strongly banded. Minor calcite in veinlets 2-10mm wide and in the groundmass.				
84'	122'			ANDESITIC - RHYOLITIC ASH FLOW TUFF - AGGLOMERATE - Red-green, highly siliceous, tuff through to agglomerate texture with fragments 2-4mm rounded and 10-50mm angular, rhyolitic ash flow tuff - some with quartz and feldspar phenocrysts. The larger fragments tend to be elongated parallel with primary layering which at 119' is 35°/LCA. Few 2-10mm wide quartz veinlets Remarks: Trace of disseminated pyrite.				
122'	132'			ANDESITE LAVA - Dark green, fine grained andesite lava, weakly magnetic. Has 1-3mm wide veinlets of epidote and calcite. Epidote also occurs as blebs in the matrix, while calcite is more finely disseminated in the matrix. Remarks: Trace of fine grained pyrite.				
132'	180'			ANDESITIC- RHYOLITIC ASH FLOW TUFF - AGGLOMERATES - Pink, red-green, highly siliceous tuff to agglomerate texture, with fragments both rounded and angular consist of feldspar porphyritic ash flow tuff - lava. The larger fragments tend to be elongated parallel to primary layering which at 150' is 25°/LCA and at 175' is 30°/LCA. Some of the larger fragments are rounded and up to 30mm in diameter. Minor quartz veining throughout, with veinlets 2-20mm wide.				
180'	203'			ANDESITE LAVA - Dark green, fine grained andesite lava, weakly to moderately magnetic, fractured and veined with calcite,				

GOLD FIELDS EXPLORATION PTY. LIMITED

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PROJECT: TYNDALL E.L. 9/66

DRILL CORE LOG AND ASSAY DATA

HOLE NUMBER: HFZ 4

INTERVAL		RECOVERY		DESCRIPTION	ASSAY DATA			
From	To	m	%		Sample No.	From	To	Rec. %
				with minor chlorite and epidote associated with the veins. Calcite is throughout the matrix.				
203'	209'			ANDESITIC - RHYOLITIC ASH FLOW TUFF - LAPILLI TUFF - Green pink, siliceous lithic tuff to lapilli tuff texture, fragments of ash flow tuff and feldspar porphyritic lavas in a siliceous chloritic matrix. Primary layering at 206' is 25°/LCA. Very minor 1-3mm wide quartz and calcite veinlets throughout.				
209'	274'			ANDESITE LAVA - Dark green mainly fine grained andesitic lava, with several zones, e.g. at 250' and 263', of porphyritic lava with feldspar crystals which have eroded and altered crystal edges, giving a mottled texture. This lava has weak chlorite and epidote alteration, with abundant secondary calcite in the matrix and in 2-15mm wide veinlets. The calcite veining becomes stronger over the lower section. The finer grained zones are weakly to moderately magnetic, while the coarser porphyritic zones are non-magnetic. Remarks: Trace of fine grained pyrite disseminated throughout.				
274'	288'			ANDESITIC - RHYOLITIC ASH FLOW TUFF - LAPILLI TUFF - Same as the interval 203'-209' with primary layering at 279' of 25°/LCA. Remarks: Trace of pyrite, associated with quartz-chlorite veins.				
288'	329'			ANDESITE LAVA AND TUFF - Dark green, fine grained massive (lava) and bedded (tuff), weakly magnetic. Between 297' to 307' there are 8 30-60mm wide milky quartz-calcite-chlorite veins, with the calcite filling vugs or voids in the quartz veins. Primary layering at 292' in 50°/LCA and at 301' is 60°/LCA. The primary layering between 293'-295' is highly contorted suggesting sedimentary slumping.				
329'	343'			SILICEOUS WELDED RHYOLITIC TUFF - LAPILLI TUFF - Red-buff, tuff to lapilli tuff texture, highly siliceous, with rhyolitic fragments which are flattened and are in a siliceous matrix with minor chlorite. Primary layering at 339' is 40 /LCA.				

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GOLD FIELDS EXPLORATION PTY. LIMITED

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PROJECT: TYNDALL E.L. 9/66

DRILL CORE LOG AND ASSAY DATA

HOLE NUMBER: HFZ 4

INTERVAL From	INTERVAL To	RECOVERY m	RECOVERY %	DESCRIPTION	ASSAY DATA Sample No	From	To	Rec. %	Cu	Pb	Zn	Ag
				N.B. The core between 316.5' to 340' has been mixed up by ?dropping tray or when core was tranferred 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	105	<1

GOLD FIELDS EXPLORATION PTY. LIMITED

DRILL CORE LOG AND ASSAY DATA

PROJECT: TYNDALL E.L. 9/66 HOLE NUMBER: HFZ 4 Page: 4.

INTERVAL From	INTERVAL To	RECOVERY m	RECOVERY %	DESCRIPTION	ASSAY DATA Sample No.	From	To	Rec. %	Cu	Pb	Zn	Ag	Au(FA)	S%
				Remarks: Trace to 0.5% fine grained pyrite.										
541'	583'			LAMINATED CHLORITIC CARBONATE TUFFACEOUS SHALE - SILTSTONE - Light to dark green, shaley silt texture, thin bedded with beds 2-10mm thick, moderately schistose with weak chlorite alteration. Carbonate is throughout the matrix indicating a possible carbonate environment of deposition. Trace to 2% fine grained pyrite, mainly aligned in thin 1-2mm laminae. Some of the carbonate is remobilised into 2-5mm veinlets. Primary bedding at 547' is 45°/LCA and at 578' is 40°/LCA.										
583'	586'			SILICEOUS BRECCIATED TUFFACEOUS SEDIMENT - Grey white, fine grained, originally probably a tuffaceous cherty sediment which has been brecciated and now rehealed along the fractures with silica, sericite and chlorite.										
586'	602'			CHLORITIC TUFFACEOUS SANDSTONE - Light grey fine to medium grained tuffaceous sandstone which has rounded to subangular quartz clasts in a siliceous chloritic matrix. Minor quartz-calcite veinlets 1-5mm wide. Remarks: Trace of fine grained pyrite.										
602'	626'			RHYOLITIC WELDED VITRIC TUFF - Pink-red, moderately siliceous fine grained, mostly massive tuff, weakly schistose with weak to moderate sericite alteration. Weakly fractured filled with thin 1-2mm quartz veinlets. Remarks: Trace of disseminated pyrite.										
626'	633'			RHYOLITIC VITRIC TUFF SHEARED BY ?HENTY FAULT ZONE - Cream to white clayey-sericitic matrix with rounded to angular siliceous fragments 2-10mm in size. Remarks: Trace to 2% disseminated pyrite.	3335	627'6"	632'6"		250	70	50	< 2	< 0.1	2.7
633'	640'			PYRITIC CHERTY TUFF - Grey, siliceous tuff with 2-10% fine grained pyrite, which is particularly strong at the top of the zone. (N.B. The core is now mixed up and can only go on previous										

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GOLD FIELDS EXPLORATION PTY. LIMITED

ULV. PRESS

PROJECT: TYNDALL E.L. 9/66

DRILL CORE LOG AND ASSAY DATA

HOLE NUMBER: HFZ 4

INTERVAL From	INTERVAL To	RECOVERY m	RECOVERY %	DESCRIPTION	ASSAY DATA Sample No.	From	To	Rec. %
				logging).				
640'	642'			RHYOLITIC WELDED VITRIC TUFF - Same as for 602' - 626'.				
642'	644'			CHERTY SEDIMENT - Grey-green fine grained, cherty, mostly massive sediment with some tuffaceous component.				
				MAJOR CHANGE				
644'	651'			CHLORITIC VOLCANICLASTIC COARSE SANDSTONE - Dark green, highly chloritic,weakly layered, medium to coarse lithic sandstone. Clasts are mostly rounded and are set in a chloritic siliceous matrix. Clasts constitute 50-60% of total rock. Primary layering at 648' is 50°/LCA.				
651'	689'			WEAKLY CHLORITIC VOLCANICLASTIC SANDSTONE - CONGLOMERATE BRECCIA - Green grey pink, highly siliceous and weakly chloritic sandstone to conglomerate- breccia texture. Clasts of angular to rounded acid lavas and they make up 60-70% of the rock. Between 680' - 684' there is a ?large pink rhyolitic clast - previously logged as lava.				
680'	701'			SILICEOUS VOLCANICLASTIC CONGLOMERATE - BRECCIA - Buff, highly siliceous and weakly sericitic conglomerate - breccia. This unit may represent some break in deposition. Clasts are rounded to angular and they consist of acid lavas and white cherty sediments.				
701'	708'			VOLCANICLASTIC CONGLOMERATE - BRECCIA Pink green, moderately to weakly siliceous, conglomerate - breccia with clasts of quartz -feldspar porphyritic lavas, they are rounded to angular and make up 70-90% of the total rock. They are in a siliceous-weak chlorite matrix. Possible primary layering at 706' is 45°/LCA.				
				E.O.H.				

555164

HOLE NO.: HFZ 5
STATE : TASMANIA

GOLD FIELDS EXPLORATION PTY. LIMITED
DRILL CORE RECORD

DLV. PRESS

PROJECT	TYNDALL E.L. 9/66
DESIGNED BY	K. WELLS 1974
LOGGED BY	P.W. ENGLISH '82
COMMENCED	8-3-74
COMPLETED	7-4-74

PURPOSE

To test the mineralisation exposed by costeaning the I.P. anomaly at 1400E Line 49N.

LOG SUMMARY

0-348' Mixed andesite lava and rhyolitic ash-flow tuff.
348'-442' Vitric tuff and chert- the latter weakly mineralised.
442'-678' Volcaniclastics.

GENERAL COMMENTS

N.B. ASSAY INTERVALS ARE IN FEET.

ASSAY SUMMARY

INTERVAL From	INTERVAL To	Cu	Pb	Zn	FeS_2									COMMENTS
420'	429.5'	4270	1875	935	6.2%									Disseminated pyrite, chalcopyrite galena and sphalerite in cherty tuffaceous sediment.

LOCATION

NORTHING	536923.8
EASTING	380038.7
R.L.	580.9 M
GRID	AMG
LENGTH	678'

207m

HOLE CONDITION

SIZE Hole Size	SIZE Depth
NQ	0-250'
BQ	250'-678'
NQ reamed to 412'.	

SIGNIFICANT CORE LOSS INTERVALS From	To	% Lost
0	54'	60
303'	390'	48

POOR GROUND CONDITION ZONES From	To	Condition
0	65'	Clayey, weathered.
287'	404'	Fractured and sheared due to Henty Fault at 370' - 404'.

HOLE CONDITIONS AFTER COMPLETION

57' NX casing & 74' NQ casing, left in hole. Small water flow. Hole now blocked by cave in at 20'.

SURVEY DATA (Note: Bearing type must be same as Project Grid Type)

SURVEY Depth	Bearing	Dip	INTERVAL From	To	Distance	VERTICAL D. Sin. Dip	R.L.	HORIZONTAL D. Cos. Dip	Prog. Total
0'	102° AMG	-55°							
20'		-55.5°							
80'		-54°							
160'		-53°							
220'		-52.5°							
340'		-50°							
400'		-48°							
440'	102° A	-47.5°							
460'	101° A	46.5°							
480'	090° A	-45.5°							
500'	103° A	-44.5°							

SURVEY Depth	Bearing	Dip	INTERVAL From	To	Distance	VERTICAL D. Sin. Dip	R.L.	HORIZONTAL D. Cos. Dip	Prog. Total
520'	103° A	-43°							
540'	102° A	-40°							
560'	103° A	-37°							
580'	101° A	-35°							
600'	101° A	-33°							
620'	104° A	-31°							
640'	103° A	31°							
660'	103° A	-30°							
670'	103° A	29°							

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GOLD FIELDS EXPLORATION PTY. LIMITED

PROJECT: TYNDALL E.L. 9/66

DRILL CORE LOG AND ASSAY DATA

HOLE NUMBER: HFZ 5 Page:1.

INTERVAL From	INTERVAL To	RECOVERY m	RECOVERY %	DESCRIPTION
0'	31'			WEAKLY WELDED RHYOLITIC - DACITIC LAPILLI TUFF - Highly oxidised cream to light green moderately schistose,weakly welded lapilli tuff with fine feldspar phenocrysts. Fragments are rounded and elongated parallel with schistosity and the primary layering. Fragments are 5-20mm long. Moderate amount of quartz sericite alteration. At 22' primary layering is 30°/LCA. Remarks: Limonite and manganese staining on joints and fractures.
31'	60'			FINE GRAINED ANDESITE LAVA - Highly oxidised, brown to dark green fine grained andesite lava. Some evidence of primary layering, suggesting a lava texture, rather than intrusive. Remarks: Limonite and manganese staining on joints and fractures.
60'	144'			ANDESITIC - RHYOLITIC WELDED ASH FLOW TUFF - LAPILLI TUFF - Weakly oxidised, cream to pink and weakly schistose. Contains rhyolitic blocks fragments or rafts in a chloritic matrix which is now stretched and flattened and has a wispy appearance. The rhyolitic clasts of varying sizes have few feldspar phenocrysts and weak albite alteration. Some are vuggy which is possibly due to leaching of carbonate. Primary layering at 80' is 30°/LCA, at 103' is 35°/LCA, at 138' is 40°/LCA and at 143' is 50°/LCA. Remarks: Minor manganese staining on fracture surfaces.
144'	148'			PORPHYRITIC ANDESITE - Weakly weathered, dark green, medium grained porphyritic andesitic lava. White feldspar phenocrysts 1-3mm in fine grained matrix. Some evidence of primary layering which at 147' is 45°/LCA. Contact with surrounding units is very sharp. Remarks: Manganese staining on joint faces.
148'	161'			RHYOLITIC SILICEOUS WELDED ASH FLOW TUFF - Green to pink, completely welded ash flow, with little evidence of primary layering. Highly siliceous and has patches with abundant pink feldspar crystals 1-3mm. Few quartz veins 5-30mm wide. Last 0.3m is extremely brecciated and quartz veined.

ASSAY DATA Sample No.	From	To	Rec. %

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GOLD FIELDS EXPLORATION PTY. LIMITED

DLV. PRESS

PROJECT: TYNDALL E.L.9/66

DRILL CORE LOG AND ASSAY DATA

HOLE NUMBER HFZ 5

INTERVAL From	INTERVAL To	RECOVERY m	RECOVERY %	DESCRIPTION
161'	176.5'			FINE GRAINED ANDESITE LAVA - Weakly weathered, dark green, generally massive fine grained andesite lava, but does have a few zones with feldspar phenocrysts. At 167' there is some fine banding which may indicate a tuffaceous component. This banding is 50°/LCA. Throughout the section there are vuggy patches indicating leaching of carbonate. The vugs are lined with brown limonite and minor manganese.
				Remarks: Minor limonite and manganese.
176.5'	210'			ANDESITIC - RHYOLITIC ASH FLOW TUFF AND LAVA - Dark green to pinkish, banded mixed andestic and rhyolitic material. This zone probably represents an andesite lava containing fragments and blocks of rhyolitic material. The coarser welded rhyolitic ash flow fragments are elongated and flattened and are 50-70mm long and 5-10mm thick. Sharp contact at 178' is 35°/LCA. Layering in the rhyolite material at 180' is 35°/LCA and at 195' is 40°/LCA. Broken zone at 206'-209' consists of fragments of pink lava in an epidote silica matrix and has numerous thin 3-15mm quartz veinlets throughout.
210'	269'			ANDESITE LAVA - Dark green, generally fine grained and massive, with few zones of feldspar phenocrysts giving a slightly coarser texture. There are some minor zones e.g. at 245',251' and 255' with pink fine fragments of rhyolitic composition - probably tuffaceous. Throughout the section calcite occurs as disseminations and veinlets (2-20mm wide). The calcite is probably due to the alteration of plagioclase.
				Remarks: Minor pyrite and magnetite.
269'	290'			RHYOLITIC WELDED ASH FLOW TUFF AND LAVA - Dark green - pink dominantly ash flow tuff - but upper and lower contacts are mixed andesite - rhyolite. Central section is massive pink welded ash flow tuff - lava which is brecciated and veined by quartz. This may represent a large raft of this material caught up in the andesite flow. At the base of this section the schistosity is increasing indicating a minor increase in alteration.

ASSAY DATA Sample No.	From	To	Rec. %

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GOLD FIELDS EXPLORATION PTY. LIMITED

ULV. PRESS

PROJECT: TYNDALL E.L. 9/66

DRILL CORE LOG AND ASSAY DATA

HOLE NUMBER: HFZ 5

INTERVAL From	INTERVAL To	RECOVERY m	RECOVERY %	DESCRIPTION	ASSAY DATA Sample No.	From	To	Rec. %
				At 273' primary layering is 40°/LCA.				
290 '	303 '			ANDESITE TUFF - LAVA - Light green essentially fine grained andesite lava with sections of tuffaceous material. The core is very broken and the increase in schistosity continues into this unit. Minor chlorite is associated with schistosity and calcite is both disseminated and in 2-5mm veinlets throughout.				
303 '	336 '			RHYOLITIC ASH FLOW TUFF - Pink to red, essentially fine grained, with some elongated lava fragments. 5mm x 40mm and possibly some flattened pumice. Has weak-moderate schistosity with weak sericite alteration and possibly had a slight vitric component in original rock. Some brecciation and 2-10mm quartz veining throughout. Remarks: Trace of fine grained disseminated pyrite.				
336'	348'			ANDESITE LAVA - Dark green, fine to medium grained massive lava, highly broken core. Calcite is disseminated in the matrix and in 2-10mm veinlets. Base of this section is slightly schistose indicating a minor increase in alteration. Remarks: Trace of pyrite.				
				-CHANGE-				
348'	370'			RHYOLITIC FELSIC VITRIC TUFF - Pink to red felsic tuff, with subrounded to angular fragments 2-4mm. Moderate to strong schistosity with moderate sericite alteration of original vitric component. Core is broken along schistosity which is parallel to primary layering in tuff. Primary layering at 311' is 50°/LCA. Remarks: Trace of disseminated pyrite.				
370 '	404'			RHYOLTIC VITRIC TUFF - SHEARED BY HENTY FAULT ZONE - Pale cream-light green, serictic clay with rounded siliceous rock fragments. There is some relict thin banding at 382' which may indicate the original vitric tuffaceous nature of this zone				

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GOLD FIELDS EXPLORATION PTY. LIMITED

PROJECT: TYNDALL E.L. 9/66

DRILL CORE LOG AND ASSAY DATA

HOLE NUMBER: HFZ 5 Page: 4.

INTERVAL From	INTERVAL To	RECOVERY m	RECOVERY %	DESCRIPTION
				There are three 50mm wide milky quartz veins, at 386', 387' and 389' respectively. Adjacent to the quartz veins there is an apple green coloured clay mineral, possibly a mica. A trace of pyrite is disseminated throughout, there are also some fine grained dark sulphides which may be minor Pb & Zn.
				Remarks: Trace of disseminated pyrite.
404'	429.5'			PYRITIC CHERTY TUFFACEOUS SEDIMENT - Pale grey to white, fine grained cherty tuffaceous sediment which has been brecciated after deposition and rehealed with silica. This unit contains varying amounts of sulphide throughout. Between 422.5 and 425' there is 15% sulphide which is mainly pyrite with minor chalcopyrite, galena and sphalerite. Between 427' and 429' there is 5-10% pyrite and 2-4% chalcopyrite. In general this unit is massive, but between 427' and 429' there is possibly some primary bedding that is 45°/LCA.
				Remarks: Total sulphide varies between 2-30%. Sulphides: pyrite, chalcopyrite, galena and sphalerite.
429.5'	434'			LITHIC LAPILLI TUFF - AGGLOMERATE - Grey-green lapilli-tuff-agglomerate with angular to subrounded fragments which vary in size from 2mm x 5mm to 10mm x 40mm. Fragments are all rhyolitic to dacitic composition and mixed. Fragments constitute 50-70% while the matrix is minor and contains 1-3mm feldspars and sericite. Weak schistosity is developed parallel to its primary layering which at 430' is 45°/LCA.
				Remarks: 1-2% disseminated pyrite.
434'	442'			CHERTY TUFFACEOUS SEDIMENT - White - grey, fine grained cherty tuffaceous sediment which is generally massive but possibly some primary bedding at 436' which is 45°/LCA. Moderate to strong chlorite alteration, along and filling fracture zones. Few milky quartz veins 2-5mm wide. Trace to 0.5% disseminated pyrite in the coarser layered sections.

ASSAY DATA

Sample No.	From	To	Rec. %	Cu	Pb	Zn		FeS_2
	404'	410'	6'	100	<100	<100		0.9%
	410'	415'	5'	Tr	200	100		1.3%
	415'	420'	5'	1500	200	200		1.1%
	420'	425'	5'	2800	3200	1600		6.6%
	425'	429.5'	4.5'	5900	400	200		5.8%
	429.5'	435'	5.5'	500	<100	100		0.4%
	435'	440'	5'	100	Tr	<100		0.4%
	440'	445'	5'	100	Tr	100		0.6%
	445'	450'	5'	400	Tr	100		0.6%
	450'	455'	5'	300	<100	200		0.2%
	455'	460'	5'	100	Tr	100		0.4%
	460'	465'	5'	200	<100	100		0.2%
	465'	471'	6'	200	Tr	100		0.4%

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GOLD FIELDS EXPLORATION PTY. LIMITED

DLV. PRESS

PROJECT: TYNDALL E.L. 9/66

DRILL CORE LOG AND ASSAY DATA

HOLE NUMBER: HFZ 5

INTERVAL From	INTERVAL To	RECOVERY m	RECOVERY %	DESCRIPTION	ASSAY DATA Sample No.	From	To	Rec. %
				Remarks: Trace to 0.5% disseminated pyrite.				
				-CHANGE-				
442'	444'			CHLORITIC VOLCANICLASTIC SANDSTONE - GRIT - Grey green with coarse sand to granular texture, clasts are mainly rounded and make up 80% of total rock. Clasts consist of pink acid lavas and green andesitic lavas. Upper contact shows an erosional boundary. Slight schistosity with moderate chlorite alteration and only minor sericite. Primary layering at 443.5' is 55°/LCA. Remarks: Trace of pyrite disseminated throughout.				
444'	459'			CHLORITIC AND SILICEOUS FINE GRAINED TUFFACEOUS SEDIMENT - Generally grey- with minor white zones, generally massive fine grained tuffaceous sediment. It is autobrecciated and rehealed by silicification and has moderate to strong chlorite alteration filling fracture voids. Brecciation probably due to mass movement or slumping. Minor calcite in some of the fractures. Remarks: Trace to 1% disseminated pyrite.				
459'	471'			CHLORITIC VOLCANICLASTIC SANDSTONE - Grey green, fine to coarse sandy texture, with mainly rounded clasts few angular and they constitute 80% of total rock. Clasts consist of mainly andesite, with minor rhyolite and cherty component. Moderate chlorite alteration and few 1-3mm wide quartz veinlets. Primary layering at 468' is 40°/LCA. Remarks: Trace of disseminated pyrite.				
471'	481'			CHLORITIC VOLCANICLASTIC CONGLOMERATE - BRECCIA - Grey-green, clasts are mainly rounded with some angular, they are generally 10-30mm, while at 471' and 476' acid lava fragments are 300-400mm in diameter. Clasts are nearly all pink acid lavas some of which are porphyritic, with a minor andesitic clast component. Clasts make up 60-80% of total rock. Chlorite alteration is moderate in the fine grained matrix.				

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GOLD FIELDS EXPLORATION PTY. LIMITED

ULV. PRESS

PROJECT: TYNDALL E.L. 9/66

DRILL CORE LOG AND ASSAY DATA

HOLE NUMBER: HFZ 5

INTERVAL From	INTERVAL To	RECOVERY m	RECOVERY %	DESCRIPTION
				Remarks: Trace of pyrite in matrix.
481'	495'			CHLORITIC VOLCANICLASTIC SANDSTONE - GRIT - Grey-green, fine to coarse sand to granular texture very similar to the interval 459' - 471'. Has the same brecciated texture with moderate chlorite alteration. Few very thin quartz veinlets throughout, with one at 493.5' which is 20mm wide. Primary layering at 489' is 40°/LCA.
				Remarks: Trace of pyrite.
495'	517'			CHLORITIC VOLCANICLASTIC CONGLOMERATE - BRECCIA - Grey green, clasts are both rounded and angular and mainly range between 10-80mm, at 502' there is an pink acid lava clast 300mm in diameter. Clasts are mainly pink acid lavas, with some dark green dacitic-andesitic. Chlorite alteration is weak to moderate and there is minor quartz veining.
517'	634.5'			VOLCANICLASTIC CONGLOMERATE - Grey buff, layered volcanic conglomerate with clasts mainly consisting of red-pink acid lavas and ash flow tuffs, with minor andesite. The clasts are mainly rounded, with few subangular and elongated parallel with primary layering. Clasts range in size from 5 to 20mm with the majority 5-10mm. In the lower section of this interval there are several grey tuffaceous shale lenses which are 50-200mm thick. Throughout the total section there are minor fractures fill with chlorite. Primary layering over this interval is as follows: at 528' is 50°/LCA, at 561' is 50°/LCA, and at 621' is 50°/LCA.
				Remarks: Trace of pyrite.
634.5'	666'			TUFFACEOUS SHALE - Green-dark grey, generally massive shale with minor sections with thin bedding. Slight schistosity with weak sericite and chlorite alteration. Probably derived from a vitric volcanic. Primary bedding at 640' is 40°/LCA.

ASSAY DATA Sample No.	From	To	Rec. %

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GOLD FIELDS EXPLORATION PTY. LIMITED

DLV. PRESS

PROJECT: TYNDALL E.L. 9/66

DRILL CORE LOG AND ASSAY DATA

HOLE NUMBER: HFZ 5

INTERVAL From	INTERVAL To	RECOVERY m	RECOVERY %	DESCRIPTION
666'	678'			ORTHOCONGLOMERATE - Grey-white, siliceous orthoconglomerate with mainly rounded white quartz - ?chert clasts and minor buff-grey clasts of fine grained volcanics and tuffs. Clasts are mainly 20-30mm in diameter and are set in grey siliceous matrix which constitute ∠5% of total. There are several patches, e.g. at 674', of black siliceous carbonaceous?material. Note: The clasts in this unit are greatly different from those in the previous volcaniclastic unit.
				E.O.H.

ASSAY DATA Sample No.	From	To	Rec. %

555172

GOLD FIELDS EXPLORATION PTY. LIMITED
DRILL CORE RECORD

HOLE NO.: HFZ 6
STATE : TASMANIA

DLV. PRESS

PROJECT	TYNDALL E.L.9/66
DESIGNED BY	K. WELLS 1974
LOGGED BY	P.W. ENGLISH '82
COMMENCED	20-4-74
COMPLETED	15-4-74

PURPOSE

To test the I.P. Anomaly centred at 1500'E, Line 48N.

LOG SUMMARY

0 -283.5'	Mixed andesite lava and rhyolitic ash flow tuff.
283.5'-376'	Andesitic and rhyolitic tuff sheared by Henty Fault.
376'-378'	Massive Sulphide.
378'-467'	Cherty tuffs(host sequence)
467'-523'	Volcaniclastics.
0 -159'	Core now missing.

GENERAL COMMENTS

N.B ALL ASSAY INTERVALS ARE IN FEET.

ASSAY SUMMARY

INTERVAL From	INTERVAL To	Cu	Pb	Zn	S	g/t Ag	g/t Au							COMMENTS
376'	378'	1.11	4.0	7.0	15.7	85	2							Massive sulphide.
425'	435'	0.46	0.075	0.03	5.55	2.8	0.6							

LOCATION

NORTHING	5363801.2
EASTING	380030.5
R.L.	587.19
GRID	AMG
LENGTH	523'

159m

HOLE CONDITION

SIZE Hole Size	SIZE Depth
NQ	60'-465'
BQ	465'-523'
Rollerbit	0 -60'

SIGNIFICANT CORE LOSS INTERVALS

From	To	% Lost
94'	104'	30%
330'	349'	65%
365.5'	375'	80%

POOR GROUND CONDITION ZONES

From	To	Condition
295'	376'	Badly sheared and broken by Henty Fault Zone.

HOLE CONDITIONS AFTER COMPLETION

Hole collapsed at approx. 200'.

SURVEY DATA (Note: Bearing type must be same as Project Grid Type)

SURVEY Depth	SURVEY Bearing	SURVEY Dip	INTERVAL From	INTERVAL To	INTERVAL Distance	VERTICAL D.Sin.Dip	VERTICAL R.L.	HORIZONTAL D.Cos.Dip	HORIZONTAL Prog.Total
0	102° AMG	-60°							
20'		-60°							
40'		-60°							
90'		-60.5°							
140'		-60.5°							
190'		-60.5°							
240'		-60°							
290'		-59°							
340'		-59°							
390'		-58.5°							
440'		-57.5°							
490'	094° AMG	-55.5°							

SURVEY Depth	SURVEY Bearing	SURVEY Dip	INTERVAL From	INTERVAL To	INTERVAL Distance	VERTICAL D.Sin.Dip	VERTICAL R.L.	HORIZONTAL D.Cos.Dip	HORIZONTAL Prog.Total

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GOLD FIELDS EXPLORATION PTY. LIMITED

PROJECT: TYNDALL E.L. 9/66

DRILL CORE LOG AND ASSAY DATA

HOLE NUMBER: HFZ 6 Page: 1.

INTERVAL From	INTERVAL To	RECOVERY m	RECOVERY %	DESCRIPTION
0	159'			Core not available.
159'	170'			ANDESITE LAVA - TUFF - Highly weathered buff-brown, fine grained andesitic lava, some banding indicating layers of tuffaceous material. Many vugs and fractures which are lined with manganese and limonite. Primary layering at 161' is 35°/LCA.
170'	193'			ANDESITIC-RHYOLITIC WELDED ASH FLOW TUFF TO LAPILLI TUFF - Dark green - pink mixed zone of andesiticlava with fragments to rafts of rhyolitic welded ash flow tuff, these fragments are elongated parallel to primary layering and are generally 10-50mm. The central section is highly welded brecciated and veined with quartz and chlorite. Some fragments have a high calcite content. Primary layering at 191' is 40°/LCA.
193'	196.5'			ANDESITIC LAVA - Dark green, fine grained andesite lava with calcite blebs aligned with primary layering at 194' of 40°/LCA. Calcite is also in thin, 1-2mm veinlets. This lava is weakly magnetic.
196.5'	210'			RHYOLITIC WELDED ASH FLOW TUFF AND LAVA - Pink-red, fine grained siliceous lava with upper and lower transitional contacts between rhyolite and andesite. Some quartz veined areas, veinlets 2-10mm wide, minor chlorite. Primary layering in contact zones at 209' is 30°/LCA.
210'	216'			ANDESITE LAVA - Dark green, fine grained magnetic andesite lava with primary layering, possibly flow banding, e.g. at 215' which is 30°/LCA. This lava contains calcite in blebs (1-2mm), disseminated and in veinlets.
216'	222'			ANDESITIC- RHYOLITIC ASH FLOW TUFF TO LAVA - Similar to 196.5' - 210' with essentially an andesitic matrix and fragments of rhyolitic ash flow tuff - the latter being highly siliceous.

ASSAY DATA Sample No.	From	To	Rec. %

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GOLD FIELDS EXPLORATION PTY. LIMITED

DLV. PRESS

PROJECT: TYNDALL E.L. 9/66

DRILL CORE LOG AND ASSAY DATA

HOLE NUMBER: HFZ 6

INTERVAL From	INTERVAL To	RECOVERY m	RECOVERY %	DESCRIPTION	ASSAY DATA Sample No.	From	To	Rec. %
222'	227'			ANDESITE LAVA - Dark green, fine grained strongly magnetic lava with well developed primary layering or flow banding which at 225' is 35°/LCA. Calcite is disseminated in 1-3mm blebs and is in veinlets throughout.				
227'	272'			INTER MIXED ANDESITIC LAVA AND RHYOLITIC ASH FLOW TUFFS AND LAVAS - Grey green andesitic lavas with fragments of flattened rhyolitic ash flow tuffs, these fragments are 10-50mm long. The rhyolitic sections tend to be siliceous and highly veined with quartz-chlorite veins.e.g. between 266'-267' while the andesite contains disseminated blebs and veinlets of calcite. Primary layering at 260' is 35°/LCA.				
272 '	282'			ANDESITE LAVA - Dark green fine grain andesitic lava, only weakly magnetic. Has abundant 2-3mm blebs of calcite and 2-5mm wide veinlets of calcite.				
282'	283.5'			MIXED ANDESITE LAVA AND RHYOLITIC LAVAS - Same as for 227' - 272'.				
				MAJOR CHANGE IN ROCK TYPE AND ALTERATION				
283.5'	293 '			ANDESITIC THIN BEDDED VITRIC TUFF - Dark green - cream, fine grained thin bedded-beds 2-5mm thick, high schistose moderately altered sericitic andesitic vitric tuff. Bedding at 292' is 45°/LCA. Minor quartz veinlets 5-10mm thick.				
293'	295'			RHYOLITIC- DACITIC THIN BEDDED VITRIC TUFF - Pink, fine grained thinly bedded highly schistose vitric tuff. Has moderate sericite alteration. Remarks: Trace of pyrite.				
295 '	309 '			ANDESITIC THIN BEDDED VITRIC TUFF - Cream-green, fine grained, thin bedded vitric tuff with well developed schistosity, moderate to strong sericite alteration, some of the core (bedding) is broken by shearing associated with HFZ Remarks: Trace of fine grained disseminated pyrite.				

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GOLD FIELDS EXPLORATION PTY. LIMITED

DLV. PRESS

PROJECT: TYNDALL E.L. 9/66

DRILL CORE LOG AND ASSAY DATA

HOLE NUMBER: HFZ 6

INTERVAL From	INTERVAL To	RECOVERY m	RECOVERY %	DESCRIPTION	Sample No.	From	To	Rec. %	ASSAY DATA (ppm) Cu	Pb	Zn	S	Ag	Au
309'	374'			ANDESITIC THIN BEDDED VITRIC TUFF SHEARED BY HENTY FAULT ZONE - Dark green - cream, fine grained, thin bedded vitric tuff, bedding has been broken up by HENTY FAULT, but some structures may in fact reflect original soft sediment slumping. This unit is strongly schistose with moderate to strong sericite alteration. Zone between 339'-359' has numerous milky quartz veins which vary in thickness 20mm-150mm. The most intense shearing of the Henty Fault Zone occurs between 340'-376'. Remarks: Trace to 2% disseminated pyrite.										
374'	376'			RHYOLITIC VITRIC TUFF SHEARED BY HENTY FAULT ZONE - Pale cream, light green sericite clay with subrounded siliceous fragments (2-20mm diameter). There is little evidence left of original primary bedding. Remarks: Trace to 2% disseminated pyrite.										
376'	378'			BANDED Pb-Zn MASSIVE SULPHIDE IN A QUARTZ-CARBONATE GANGUE - Dark grey-black, thin bedded (beds 2-5mm thick and at 35°/LCA), fine grained massive sulphide (50-75%) in a gangue of quartz and calcite. Sulphides consist of pyrite (80%), chalcopyrite (3%), galena (7%), and sphalerite (10%). At 377.5' there are some thin wisps and fragments of red-hematitic chert which occur in the same position in the surface exposure in the costean on Line 49N (now 7120N). The bedding has been slightly contorted, probably due to sedimentary slumping of the original sulphide mass. Remarks: 50-70% massive sulphide - pyrite, spalerite, galena and chalcopyrite.		376'	378'	2'	1.11%	4.0%	7.0%	15.7%	85	2
						378'	385'	7'	340	830	1220	7000		< 0.1
						385'	390'	5'	100	110	200	7000		Nil
						390'	395'	5'	60	70	110	3000		Nil
						395'	400'	5'	90	20	100	2000		Nil
						400'	405'	5'	60	10	60	1%		Nil
						405'	408'	3'	40	10	10	1.9%		Nil
						408'	410'	2'	170	90	30	3%		< 0.1
						410'	415'	5'	50	60	70	1.9%		Nil
						415'	420'	5'	80	70	50	2.9%		Nil
						420'	425'	5'	70	120	70	4%		< 0.1
						425'	430'	5'	1290	190	80	4.7%		
						430'	435'	5'	7900	1320	530	6.4%		
378'	398'			RHYOLITIC VITRIC CRYSTAL TUFF - Pink-red, fine grained, highly siliceous vitric tuff with ?quartz phenocrysts (1-3mm) in a sericitic groundmass. Has strongly developed schistosity with strong sericite alteration. Primary layering ?bedding at 384' is 25°/LCA. Remarks: Trace to 1% disseminated & veinlet pyrite.										

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GOLD FIELDS EXPLORATION PTY. LIMITED

DLV. PRESS

PROJECT: TYNDALL E.L. 9/66

DRILL CORE LOG AND ASSAY DATA

HOLE NUMBER: HFZ 6

INTERVAL From	INTERVAL To	RECOVERY m	RECOVERY %	DESCRIPTION
398'	410'			RHYOLITIC SILICEOUS PYRITIC BEDDED VITRIC TUFF - Grey,white fine grained highly siliceous and weakly schistose tuff similar to 378-398' except that it is more siliceous and this unit contains 2-10% disseminated and weakly bedded pyrite. Primary layering ?bedding at 406' is 40°/LCA. Remarks: 2-10% disseminated and bedded pyrite.
410'	418'			RHYOLITIC WEAKLY BEDDED VITRIC TUFF - Pink grey, fine grained, highly schistose and broken zone with only minor silica. Poorly defined thin bedding. Remarks: Trace-2% pyrite.
418'	435'			PYRITIC CHERTY - TUFFACEOUS SEDIMENT - Grey fine grained cherty tuffaceous sediment, contains a few lithic fragments (5-10mm wide) but these are very minor. It is weakly bedded and weakly schistose which is parallel to bedding, at 424' is 30°/LCA. This chert contains 5-20% disseminated and bedded pyrite. Between 430' and 435' there is also 2% chalcopyrite. Remarks: 5-20% pyrite. 2% chalcopyrite.
435'	448.5'			LITHIC LAPILLI TUFF - AGGLOMERATE - Grey-green, with lithic fragments which are mainly angular and 3-20mm in diameter. They consist of buff-grey acid lavas (note: no pink lavas) in fine grained chloritic matrix. Weak schistosity, parallel to primary layering which at 443' is 40°/LCA. Remarks: Trace of disseminated pyrite.
448.5'	453'			CHERTY TUFFACEOUS SEDIMENT - Pink grey, generally massive cherty rock with no apparent textures. Remarks: Trace of disseminated pyrite.
453'	458'			FINE GRAINED VITRIC TUFFACEOUS SEDIMENT - Grey green, fine grained tuffaceous sediment, generally massive with only minor bedding visible, has a slight brecciated appearance, this brecciation has some chlorite filling matrix. This unit is weakly schistose and also has weak to moderate sericite alteration

ASSAY DATA

Sample No.	From	To	Rec. %

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GOLD FIELDS EXPLORATION PTY. LIMITED

DLV. PRESS

PROJECT: TYNDALL E.L. 9/66

DRILL CORE LOG AND ASSAY DATA

HOLE NUMBER: HFZ 6

INTERVAL From	INTERVAL To	RECOVERY m	RECOVERY %	DESCRIPTION
				Primary layering at 457' is 40°/LCA.
458'	467'			RHYOLITIC CHERTY TUFF - Pink-red, fine grained, generally massive and highly siliceous tuff. Has several 5-20mm wide milky quartz veins. Remarks: Trace of pyrite.
467'	511'			CHLORITIC VOLCANICLASTIC SANDSTONE/CONGLOMERATE BRECCIA - Grey green-pink red, colour dependant on amount of matrix or clasts. Consists of a chloritic sandy matrix with clasts of rhyolitic-dacite lavas with quartz phenocrysts and minor cherty quartz. Clasts are generally rounded, but some are angular, they are mostly 5-20mm in diameter, but some are 50-100mm. Some clasts are elongated and parallel with the primary layering. Clasts make up 50-70% of total rock. Some sections are sandy with abundant chlorite. Primary layering at 483' is 45°/LCA and at 505' is 40°/LCA.
511'	520'			CHLORITIC VOLCANICLASTIC SANDSTONE - Grey green, fine to coarse sand, generally massive with no primary layering. Has undergone autobrecciation which is filled with chlorite. Clasts are mainly acid lava, but of more than one type. Remarks: Trace of pyrite.
520'	523'			VOLCANICLASTIC CONGLOMERATE - BRECCIA - Grey green, weakly layered volcanic conglomerate - breccia with 80% subangular to rounded clasts which are 5-20mm in diameter and consist of variable acid volcanics - minor chloritic matrix, with some rounded quartz clasts. Primary layering at 522' is 45°/LCA.
				E.O.H.

ASSAY DATA Sample No	From	To	Rec. %

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GOLD FIELDS EXPLORATION PTY. LIMITED

DRILL CORE RECORD

HOLE NO.: HFZ 9
STATE : TASMANIA

DLV. PRESS

PROJECT	HENTY FAULT ZONE
DESIGNED BY	J.G.PURVIS/PW.ENGLISH
LOGGED BY	J.G. PURVIS
COMMENCED	20-9-82
COMPLETED	6-10-82

PURPOSE

To test for continuation of massive sulphide beneath hole HFZ 6.

LOG SUMMARY / GENERAL COMMENTS

0 - 245.60	Predominantly felsic ignimbrite with thick dykes? and sills? of basic volcanics.
245.60- 261.90	Henty Fault Zone - mylonised volcanics.
261.90- 262.90	MASSIVE SULPHIDE with intercalations of sulphidic tuffs.
262.90- 268,	Cherty tuffs (identical to host rock of the massive sulphide in the costean)

Hole terminated in host horizon due to squeezing in of Henty Fault Zone on rod string.

ASSAY SUMMARY

INTERVAL From	INTERVAL To	Cu	Pb	Zn	Ag	Au*	Sn							COMMENTS
261.9	262.9	1.12%	1.06%	2.15%	41	1.35	<10							Approx. 0.7m massive sulphide with intercalated 0.3m of sulphidic, sericitic graphitic tuffs.
						*Fire Assay								

LOCATION

NORTHING	363838.14
EASTING	379884.66
R.L.	616.92
GRID	AMG
LENGTH	268m

HOLE CONDITION

SIZE Hole Size	SIZE Depth
HQ	0-9
NQ	9-94
BQ	94-268
Later reamed NQ to 124m.	

SIGNIFICANT CORE LOSS INTERVALS

From	To	% Lost
0	38	31%
50.3	73.7	24%
238.7	254	44%

POOR GROUND CONDITION ZONES

From	To	Condition
0	32m	Soft clayey zones after oxidised volcanics.
230	251m	Shearing and shattering associated with Henty Fault Zone.
251	261.9	Clayey mylonite in HFZ- continually moved in on the hole

HOLE CONDITIONS AFTER COMPLETION

Electrode placed in hole to 203.5m - hole blocked at this depth by sludge (rod grease?).

SURVEY DATA (Note: Bearing type must be same as Project Grid Type)

SURVEY Depth	SURVEY Bearing	SURVEY Dip	INTERVAL From	INTERVAL To	INTERVAL Distance	VERTICAL D.Sin.Dip	VERTICAL R.L.	HORIZONTAL D.Cos.Dip	HORIZONTAL Prog.Total	SURVEY Depth	SURVEY Bearing	SURVEY Dip	INTERVAL From	INTERVAL To	INTERVAL Distance	VERTICAL D.Sin.Dip	VERTICAL R.L.	HORIZONTAL D.Cos.Dip	HORIZONTAL Prog.Total
123.2	102°	-52°																	
154.2	100°30'	-49°																	
184.2	099°	-46°30'																	
214.2	100°	-45°																	
244.2	100°	-40°																	
Collar	102°	-53°																	

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GOLD FIELDS EXPLORATION PTY. LIMITED

DLV. PRESS

PROJECT: HENTY FAULT ZONE

DRILL CORE LOG AND ASSAY DATA

HOLE NUMBER: HFZ 9

INTERVAL From	INTERVAL To	RECOVERY m	RECOVERY %	DESCRIPTION	ASSAY DATA Sample No	From	To	Rec. %
0	5.40	3.40	63	BROWN-RED CLAY AFTER BASIC VOLCANIC				
				Badly broken, soft. Sandy texture.				
5.40	12.50	5.50	77	FELSIC IGNIMBRITE				
				Green, pink and grey; banded and lensey volcanic with conspicuous feldspar phenocrysts 1-2mm.				
				Bands and lenses are flattened pumice 33°/LCA @ 11m.				
				Moderately sericitic and schistose.				
				Badly broken and leached with clayey shears. Numerous regular fractures 1-2mm, filled with limonite ± quartz.				
12.50	18.30	3.70	64	BASIC VOLCANIC				
				Highly oxidised to brown clay.				
				Massive, sandy textured.				
				Moderately magnetic.				
				Numerous fractures filled with Fe & Mn oxides, some clayey shears. Intercalations of the felsic ignimbrite 16.4-16.6m & 17.3-17.6m. Contact at 17.3m 65°/LCA, banding in ignimbrite is 43°/LCA.				
18.30	28.20	7.60	77	FELSIC IGNIMBRITE				
				Pale grey-green to light brown.				
				Strongly lineated, highly vitric volcanic with feldspars (av 3mm) in groundmass containing bands and lenses of flattened pumice up to 50mm.				
				Moderately sericitic and schistose.				
				Lineation (probably 1° banding) 50°/LCA @ 26.25m.				
				Leached and oxidised, broken and slightly clayey.				
				Limonite and manganese on joints.				
				Brown clayey BASIC VOLCANICS (dykes?) at 21.85-22.05m, 27.5-27.7m & 27.9-27.95m. All contacts//lineation in ignimbrite.				
28.20	32.00	1.60	42	BASIC VOLCANIC				
				Highly oxidised to brown clay. Broken, with Mn and Fe oxides on joints.				
				Weakly magnetic				

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GOLD FIELDS EXPLORATION PTY. LIMITED

ULV. PRESS

PROJECT: HENTY FAULT ZONE

DRILL CORE LOG AND ASSAY DATA

HOLE NUMBER: HFZ 9

INTERVAL From	INTERVAL To	RECOVERY m	RECOVERY %	DESCRIPTION	ASSAY DATA Sample No.	From	To	Rec. %
				Upper contact 50°/LCA. Shear at base 75°/LCA. Small inter-calations of fine grained schistose and sericitic, felsic ignimbrite.				
32.00	78.10	39.15	85	MASSIVE FELSIC LAVA (DACITE?)				
				Pinkish-fawn.				
				Prominent euhedral feldspar phenos 1-5mm, in felsic groundmass.				
				Some possible hornblende phenos esp. 50-60m.				
				Generally no lineation,but strong 59-72m (flow banding?): 43m				
				40°/LCA, 56m 40°/LCA. 66m 50°/LCA, 78m 48°/LCA.				
				Moderate alteration: mainly albitic, with very minor chlorite				
				in patches and veinlets.				
				Numerous fractures filled with limonite ± quartz ± chlorite				
				± Mn, at all angles.				
				Slightly oxidised throughout. Numerous clayey shears below				
				59m, epecially 60-62m & 64.2-64.95m. 1-2% disseminated specular				
				hematite - core weakly magnetic in places.				
				BASIC VOLCANIC dykes (green, fine grained-medium grained, weakly				
				magnetic, oxidised); 36-38.2, 53.5-54.6 (upper chilled unconform-				
				able contact 50°/LCA), 56.7-56.9, 57.95-58.8, 70.2-71m. most				
				40-50°/LCA & conformable.				
				Basal contact of unit 48°/LCA.				
78.1	86.85	7.75	91	VARIABLE FELSIC TUFFACEOUS PYROCLASTICS				
				Dark pinkish-green or cream.				
				Feldspars, glass, pumice and volcanic fragments in tuffaceous				
				matrix. Becoming finer grained and more clearly layered with				
				depth.				
				Sericitic and schistose. Chlorite patchy.Moderately silicified				
				at top.				
				Bedding at 79.45m 46°/LCA.				
				Moderately oxidised - limonite and Mn (±quartz) on joints.				
				1-2% hematite.				
				Basic volcanic dykes(?) 80.4-81.75 & 86.35-86.40. Contacts				
				sharp, semi-conformable, show chilling. Basal contact of unit				
				35°/LCA. conformable.				

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GOLD FIELDS EXPLORATION PTY. LIMITED

ULV. PRESS

PROJECT: HENTY FAULT ZONE

DRILL CORE LOG AND ASSAY DATA

HOLE NUMBER: HFZ 9

INTERVAL From	INTERVAL To	RECOVERY m	RECOVERY %	DESCRIPTION	ASSAY DATA Sample No.	From	To	Rec. %
86.85	105.55	17.25	92	BASIC VOLCANIC (SILL?)				
				Green, massive, hard.				
				Generally fine grained, composed of feldspar and ferromag minerals. Some medium grained more-felsic zones with porphyritic feldspars up to 2mm. Feldspars sometimes albitised.				
				Chloritised, epidotised. Minor serpentinous veins especially 100-103m. Rare quartz veins.				
				Weakly magnetic.				
				Decreasing oxidation to 100.5m - Fe & Mn oxides on joints.				
				Banded silicified & chloritised zone 104.7-104.9 35°/LCA.				
				Minor py. Rare cp.				
				Upper contact shows chilling. Basal contact 60°/LCA.				
105.55	118.00	12.2	98	WELDED FELSIC IGNIMBRITE				
				Pale red and dark green. Blotchy appearance. Abundant porphyritc feldspars 2-4mm in glassy groundmass. Flattened clasts of pumice up to 30mm indicate welding below 110m.				
				Chloritisation, sericitisation, albitisation, strongly carbonated.				
				Strong silification in places below 110m.				
				Numerous quartz-carbonate-chlorite veins.				
				1° lineation 106m 50°/LCA, 113.5m 50°/LCA. Very minor py. Rare cp. Minor hematite.				
				BASIC VOLCANIC dykes 106.55-106.8 (65°/LCA), 116.8-117.1 (55° LCA). Basal contact of unit conformable 35°/LCA.				
118.00	123,10	5.10	100	BASIC VOLCANIC (SILL?)				
				Green, fine-medium grained, even textured.				
				Composed of feldspars and ferromags. Compsitional banding 43°/LCA @ 122.9m.				
				Chloritised and highly carbonated. Trace epidote. Minor py & hematite. Trace cp.				
				Sharp basal contact 50°/LCA.				
123.10	152.45	29.35	100	WELDED FELSIC IGNIMBRITE				
				Grey-green and pale red.				

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GOLD FIELDS EXPLORATION PTY. LIMITED

PROJECT: HENTY FAULT ZONE

DRILL CORE LOG AND ASSAY DATA

HOLE NUMBER: HFZ 9

INTERVAL From	INTERVAL To	RECOVERY m	RECOVERY %	DESCRIPTION	ASSAY DATA Sample No	From	To	Rec. %
				Highly felsic, with abundant porphyritic feldspars (some albitised) 2-4mm, in vitric matrix.- now sericitised, carbonated, albitised & schistose. Flattened felsic pumice average 25mm, some larger than 70mm form bands around core. Some fiamme. Pumice now highly sericitic & chloritic, or albitised and silicified. Minor lithic volcanic clasts. Strong 1° lineation of pumice: 50°/LCA @ 124m, 50°/LCA @146m.Chloritic fault zone 30°/LCA @141.65m. Trace py. Rare cp in BASIC VOLCANIC dykes 134.7-136.8m (60°/LCA-irregular, broadly conformable contacts). Basal conformable contact of unit 43°/LCA.				
152.45	203.20	50.40	99	BASIC VOLCANIC (DYKE SWARM?) Green, fine-medium grained, variably textured. More felsic than before, especially 189-197.25m. Weak-moderate chloritisation, patchy epidotisation. Strongly carbonated. Patchy albitisation. Intercalated zones of light red and green, silicified and albitised felsic ignimbrite as before - appears basic volcanic is mixing with and assimilating latter. Ignimbrite zones vary from 0.45m to 1.55m wide. Contacts at variable angles to lineation in ignimbrite. Basic volcanic generally weak-moderate magnetic. Compositional banding @ 191m 45°/LCA. Fault at 159.95 60°/LCA. Very minor py throughout, locally 1% 177-187.3m. Rare trace cp. Below 189m occ quartz veins to 100mm with carb-chlorite-albite ± py, magnetite, cp. Minor hematite throughout, prominent hematite veins below 198.5m.				
203.20	220.10	16.70	99	WELDED FELSIC IGNIMBRITE Variable. Top contact irregular and sharp. Grey-green at top, red and green at depth. Some fiamme 20-30mm, other pumice fragments unflattened or only partly flattened. Some lithic felsic volcanic clasts up to 25mm. Abundant prophyritic feldspars 2-3mm.				

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GOLD FIELDS EXPLORATION PTY. LIMITED

DLV. PRESS

PROJECT: HENTY FAULT ZONE

DRILL CORE LOG AND ASSAY DATA

HOLE NUMBER: HFZ 9

INTERVAL From	INTERVAL To	RECOVERY m	RECOVERY %	DESCRIPTION	Sample No	From	To	Rec. %	Cu	Pb	Zn	Ag	Au	Sn	S%	Ag*
									ASSAY DATA (ppm) *= Fire Assay							
				Several clasts of the basic volcanic up to 50mm at 209m. Intense chloritisation, albitisation and carbonation. Patchy strong silification.												
				Schistosity (after 1°lineation?) medium-strong. 50°/LCA @ 205m, 53°/LCA @216m.												
				Some hematite below 207m.												
				Basal contact sharp 67°/LCA.												
220.10	245.60	23.35	92	MIXED ZONE OF BASIC VOLCANIC (DYKES?) AND FELSIC IGNIMBRITE												
				Basic volcanic as before-green, fine-medium grained chloritised, carbonated, albitised in places. Minor py, trace cp. Up to 2-3% hematite in veinlets. Ignimbrite very vitric, reddish, intensely albitised and chloritised with locally intense silification. Abundant porphyritic feldspars 2-4mm, pumice (many not flattened) up to 70mm av <10mm. Numerous lithic clasts of albitic volcanics, rare basic volcanic clasts. Minor py & hematite. Rock types are intimately mixed in places, but generally contacts sharp and parallel schistosity. Schistosity increasing with depth- affects basic volcanic also. Core broken below 230m, with strong fracturing and shearing below 239.5m. 1° layering in ignimbrite: 45°/LCA @229m, 50°/LCA @ 233.5m.												
245.60	261.90	11.10	68	HENTY FAULT ZONE												
				To 251m: Highly sheared sericitic volcanics - apparently the ignimbrite and basic volcanics as above. Green, soft and broken. Shearing 70°/LCA. 251-261.9m: Intensely mylonised clayey sericitic volcanics-possibly tuffs. Increasingly siliceous towards base. Rock soft and puggy. Much broken up barren quartz veining. Several zones 2-50mm of dark grey pug with disseminated py - possibly after graphitic or chloritic tuff. Locally 1-2% py. overall <1%. Shearing 80°/LCA @ 256m.	2867	251	253		100	40	80	< 2	< 0.1		0.8	< 0.1
					2868	253	255		50	40	90	< 2	< 0.1		0.1	< 0.1
					2869	255	257		90	40	100	< 2	< 0.1		0.2	< 0.1
					2870	257	259		40	30	60	< 2	< 0.1		0.4	< 0.1
					2871	259	260.5		80	40	40	< 2	< 0.1		0.5	< 0.1
					2872	260.5	261.9		60	50	60	< 2	< 0.1		0.4	0.1
261.9	262.9	0.75	75	MASSIVE SULPHIDE WITH INTERCALATED TUFFS	1112	261.9	262.9	75	1.12%	1.06%	2.15%	41	1.35	<10		
				261.9 -262: Sheared graphitic tuff with 5-10% disseminated py, and 2-3% cp in quartz.	2873	262.9	265.1		100	20	50	< 2	< 0.1		0.2	< 0.1
					2874	265.1	266.5		70	10	20	< 2	< 0.1		0.6	0.1
					2875	266.5	268.		60	10	40	< 2	< 0.1		0.3	< 0.1

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GOLD FIELDS EXPLORATION PTY. LIMITED

DEV. PRESS

PROJECT: HENTY FAULT ZONE

DRILL CORE LOG AND ASSAY DATA

HOLE NUMBER: HFZ 9 Page: 6.

INTERVAL From	INTERVAL To	RECOVERY m	RECOVERY %	DESCRIPTION	ASSAY DATA Sample No.	From	To	Rec. %
				262 - 262.9: Sheared and shattered massive fine grained py with minor cp,sp and gn, in quartz-carb matrix. Small intercalations (totalling 0.2m) of dark sericitic and siliceous tuffs with 5-10% disseminated py.				
262.9	263.3	0.40	100	SERICITIC SHEAR ZONE Creamy sericitic clay and volcanic rock fragments. Several %py in some rock fragments.				
263.3	265.10	1.80	100	CHERT Light creamy-grey, massive, extremely hard. Textureless. Minor disseminated py.				
265.10	268	2.90	100	CHERTY TUFFACEOUS SEDIMENT Creamy-grey. Fine grained, vitric. Moderately hard. A breccio-conglomerate in places due to soft-sediment(?) disruption of chert layers. 2% disseminated py. Bedding @ 266.5m 47°/LCA.				
				END OF HOLE				

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GOLD FIELDS EXPLORATION PTY. LIMITED

DRILL CORE RECORD

DLV. PRESS

HOLE NO.	HFZ 10
STATE	TASMANIA

PROJECT	HENTY FAULT ZONE
DESIGNED BY	JG PURVIS/PW ENGLISH
LOGGED BY	J.G. PURVIS
COMMENCED	9-10-82
COMPLETED	22-10-82

PURPOSE

To test southern continuation of massive sulphide intersected in HFZ 6.

LOG SUMMARY

0 - 201.30m: FELSIC IGNIMBRITE CUT BY BASIC DYKES.
201.3 - 208.9m: HENTY FAULT ZONE.
208.9 - 209.55m: MASSIVE SULPHIDE (Mainly py with lesser gn-sp-cp)
209.55 - 243.60m: CHERTY TUFFS WITH SULPHIDES.
243.60 - 250.20m: VOLCANICLASTIC BRECCIAS. (TYNDALL GROUP?)

GENERAL COMMENTS

Massive sulphide of same thickness as in HFZ 6.

ASSAY SUMMARY

INTERVAL From	INTERVAL To	Cu	Pb	Zn	Ag	Au *	Sn	Ba	S%					COMMENTS
208.90	209.55	3.75%	1.3%	5600	126	7.0	300	<100	37					Massive sulphide.
242.05	243.60	4500	500	1000	7	5.1	<100	300	4					5% py & 1-2% cp in chert.
						* Fire Assay								

LOCATION

NORTHING	363725.72
EASTING	379918.96
R.L.	594.97
GRID	A.M.G.
LENGTH	250.20m

HOLE CONDITION

SIZE Hole Size	SIZE Depth
HQ	0-9m
NQ	9-237m
BQ	237-250.2m

SIGNIFICANT CORE LOSS INTERVALS From	To	% Lost
7.50	68 m	49
incl:		
9	40 m	76
197.7	205.7m	33

POOR GROUND CONDITION ZONES From	To	Condition
0	68	Oxidised,clayey & broken.
155	201.30	Numerous shears & broken zones
201.30	208.90	Henty Fault Zone-intense mylonisation.
208.90	248.00	Some badly broken zones.

HOLE CONDITIONS AFTER COMPLETION

Electrode placed at 191m. Hole blocked at this depth.
3M NW casing left in top of hole.

SURVEY DATA (Note: Bearing type must be same as Project Grid Type)

SURVEY Depth	SURVEY Bearing	SURVEY Dip	INTERVAL From	INTERVAL To	INTERVAL Distance	VERTICAL D.Sin.Dip	VERTICAL R.L.	HORIZONTAL D.Cos.Dip	HORIZONTAL Prog.Total	SURVEY Depth	SURVEY Bearing	SURVEY Dip	INTERVAL From	INTERVAL To	INTERVAL Distance	VERTICAL D.Sin.Dip	VERTICAL R.L.	HORIZONTAL D.Cos.Dip	HORIZONTAL Prog.Total
COLLAR	102°AMG	-57°																	
55.2m	099°	-57°																	
85.2m	098°30'	-57°																	
115.2m	097°	-56°																	
145.2m	096°	-54°																	
174.2m	095°30'	-53°																	
204.2m	095°	-51°																	
234.2m	094°	-49°																	

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GOLD FIELDS EXPLORATION PTY. LIMITED

ULV. PRESS

PROJECT: HENTY FAULT ZONE

DRILL CORE LOG AND ASSAY DATA

HOLE NUMBER: HFZ 10

INTERVAL		RECOVERY		DESCRIPTION	ASSAY DATA			
From	To	m	%		Sample No.	From	To	Rec. %
0	3.90	3.55	91	BROWN CLAYEY ROCK AFTER BASIC VOLCANIC.				
				Sandy textured. Mod magnetic. Numerous joints with Fe & Mn				
				oxides ± quartz, up to 5mm.				
3.90	11.00	5.60	79	WELDED FELSIC IGNIMBRITE				
				Creamy-grey.				
				Highly felsic vitric rock with glassy bands and fiamme 5-				
				15mm. Porphyritic feldspars up to 7mm, average 1-2mm. Some				
				possible lithic clasts towards base.				
				Mod-strong sericitic and schistose (47°/LCA @ 8.4m). Patchy				
				strong silicification 9.5-11m.				
				Highly oxidised and leached. Badly broken. Abundant Fe &				
				Mn oxides esp. on joints.				
				Minor hematite throughout.				
11.00	18.20	3.45	48	RED AND BROWN CLAYEY ROCK AFTER BASIC VOLCANIC				
				Soft, clayey and broken. Minor Fe & Mn oxides on joints.				
18.20	25.00	2.95	43	WELDED FELSIC IGNIMBRITE				
				Creamy-grey.				
				As before - vitric felsic volcanic with flattened pumice				
				5-10mm and some larger glassy bands. Porphyritic feldspars				
				av. 2-3mm.				
				Highly schistose and sericitic (schistosity 35°/LCA @ 20m).				
				Oxidised and badly broken. Fe & Mn oxides on joints.				
				Trace hematite.				
				50mm Basic Volcanic dyke at 19.3m.				
25.00	42.50	3.20	18	CLAYEY OXIDISED ROCK AFTER BASIC VOLCANIC				
				Yellow-brown. Minor Fe & Mn oxides on joints.				
				Rock almost unidentifiable.				
				Small zone of oxidised ignimbritic rock 40-40.25m.				
42.50	58.70	12.80	79	WELDED FELSIC IGNIMBRITE				
				Pale pink and green.				

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GOLD FIELDS EXPLORATION PTY. LIMITED

DRILL CORE LOG AND ASSAY DATA

PROJECT: HENTY FAULT ZONE HOLE NUMBER: HFZ 10 Page: 2.

INTERVAL From	INTERVAL To	RECOVERY m	RECOVERY %	DESCRIPTION	ASSAY DATA Sample No.	From	To	Rec. %
				As before-becoming more massive and pumiceous below 46m.				
				Porphyritic feldspars 2-3mm. Rare qtz. phenos 1mm.				
				Numerous fiamme, and bands of glass 10-15mm wide right around				
				core - possibly after large flattened pumice clasts. Some				
				angular lithic? clasts of felsic volcanics and pumice, up				
				to 15mm.				
				1° lineation of clasts: 40°/LCA @ 44.5m, 35°/LCA @ 48m.				
				Mod-strongly sericitic and schistose-decreasing with depth.				
				Weak albitisation.				
				Leached, with minor Mn & Fe oxides ± qtz. on joints. Mod				
				broken up.				
				Trace hematite.				
				Sharp,broken up basal contact.				
58.70	96.85	35.05	92	BASIC VOLCANICS-DYKE SWARM?				
				Green, fine-med grained, massive.				
				Composed of feldspar and ferromags (amphiboles & pyroxenes).				
				Minor zones containing incipiently albitised porphyritic				
				feldspars 2-3mm.				
				Chloritised, epidotised, carbonated. Weak-moderately magnetic.				
				Oxidised-brown, clayey and broken, - to 67m, thereafter				
				oxidation only on joints and rare below 90m. Core badly				
				broken, less so below 79m, with Fe & Mn oxides on joints.				
				Vuggy due to leaching of carbonate patches & veinlets. Some				
				serpentinous material in veinlets.				
				Minor dissem py. Below 78m several qtz-carb-chlor veins <5mm				
				with trace py-cp-gn.				
				Basal contact sharp 45°/LCA.				
				Thin intermixed zones of albitised felsic ignimbrite 0.1-				
				0.3m, with complex zones of intermixing with basic volcanics				
				75.3-77.7m & 94.95-95.75m.(latter has contacts @45°/LCA				
				with basic volcanic).				

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GOLD FIELDS EXPLORATION PTY. LIMITED

ULV. PRESS

PROJECT: HENTY FAULT ZONE

DRILL CORE LOG AND ASSAY DATA

HOLE NUMBER: HFZ 10

INTERVAL From	INTERVAL To	RECOVERY m	RECOVERY %	DESCRIPTION	ASSAY DATA Sample No.	From	To	Rec. %
96.85	101.70	4.85	100	WELDED FELSIC IGNIMBRITE				
				Pink.				
				Porphyritic feldspars up to 3mm in albitised and sericitised				
				vitric groundmass. Feldspars strongly carbonated.				
				Numerous flattened choritic and felsic pumice clasts up to				
				70mm.				
				Strongly schistose 50°/LCA @ 98m				
				Patchy silicification associated with strongest albitisation.				
				Minor py.				
				Basal contact transitional.				
101.70	111.70	10	100	BASIC VOLCANIC				
				Green, as before.				
				Fine-medium grained, generally even-textured.				
				Strongly chloritic and carbonated. Mod-strong epidotisation.				
				Rare incipient albitisation in places.				
				Unbroken-few fractures.				
				Moderately magnetic due to several % dissem hematite > magnetite.				
				Minor py. Locally 1%. Trace cp.				
				Basal contact (possibly chilled) 40°/LCA.				
111.70	201.30	86.90	97	WELDED FELSIC IGNIMBRITE WITH BASIC VOLCANIC DYKES				
				Pink and greyish-green.				
				Pumiceous, more siliceous than before. Small 1mm qtz phenos				
				in places. Porphyritic feldspars up to 3mm abundant.				
				Much flattened chloritic pumice up to 60mmx5mm, sometimes				
				larger-forming bands round core. Numerous angular lithic				
				clasts of albitised felsic volcanics up to 40mm, av 10mm.				
				Strongly altered and schistose-extremely carbonated, strongly				
				sericitised, albitised, chloritisedPatchy silicification associated				
				with albitisation and quartz-carb-chlorite veining.				
				1° lineation of clasts:53°/LCA @ 116.2m, 42°/LCA @ 138.3m.				
				Schistosity: 55°/LCA @ 150m, 47°/LCA @ 169.5m, 38°/LCA @ 186m.				
				Shears: 112-114m (// lineation), 158.55m (75°/LCA), 168.5m				
				(65°/LCA), 171.4m (48°/LCA), 184.4m (42°/LCA), 193.60 (25°/LCA).				

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GOLD FIELDS EXPLORATION PTY. LIMITED

ULV. PRESS

PROJECT: HENTY FAULT ZONE

DRILL CORE LOG AND ASSAY DATA

HOLE NUMBER: HFZ 10

INTERVAL From	INTERVAL To	RECOVERY m	RECOVERY %	DESCRIPTION	Sample No	From	To	Rec. %	Cu	Pb	Zn	Ag	Au *	Ag*	S%	Sn	Ba
									ASSAY DATA (ppm) * = Fire Assays								
				Core increasingly broken below 196.4m.													
				Very minor py (locally 1% in Basic Volcanics). Minor hematite.													
				BASIC VOLCANIC dykes throughout. 0.3m-2.8m wide, average approx.													
				1.5m. Contacts sharp, generally sub parallel to 1°lineation													
				in ignimbrite. Some show chilling.													
201.30	208.90	5.50	72	HENTY FAULT ZONE													
				201.3-205.7m: Highly shattered BASIC VOLCANIC with minor													
				zones of shattered IGNIMBRITE. Some sericitic shears. Very													
				strong schistosity.													
				Few rock fragments larger than 25mm. Most shears 65°/LCA.													
				Rare py. 205.7-208.90: Creamy highly mylonised sericitic volcan-													
				ics. Fragments of qtz-carb veins. Some bands 5-40mm, of													
				black graphitic tuff @ 207.75, 208 and 208.75m. 1% py below													
				207.50m.													
				Basal contact sharp 53°/LCA.	2876	205.7	207.3	100	50	20	30	<2	<0.1	<0.1	0.2		
					2877	207.3	208.9	100	140	60	90	<2	<0.1	0.2	0.5		
208.90	209.55	0.65	100	MASSIVE SULPHIDE	1113	208.90	209.55	100	3.75%	1.3%	5600	126	7.0	120	37	300	<100
				Sl. fractured-generally massive, hard and heavy.													
				80% sulphides (mainly py with lesser gn-sp-cp) in qtz-carb gangue.													
				Wispy banding after bedding 40-63°/LCA av 60°/LCA. Some bands													
				are of gn-sp or cp.													
				Basal contact sharp 75°/LCA.													
209.55	213.00	3.25	94	CHERT													
				Very hard, massive, white or pink. Badly broken up.	1114	209.55	211.00	100	300	<100	100	3	<0.1	1.5	0.7	<100	200
				Bedding 55°/LCA @ 210m.	1115	211.00	213.00	90	200	100	100	7	0.2	4.7	2.5	<100	<100
				Contains 2-3% disseminated py-cp-gn-sp.	2878	213.0	215.0	100	30	30	10	<2	<0.1	<0.1	0.8		
				Intercalations (up to 0.25m, av 0.1m) of sericitic sulphidic	2879	215.0	217.0	100	40	10	30	<2	<0.1	<0.1	0.2		
				tuffs with clasts of chert.	2880	217.0	219.0	100	70	100	260	<2	<0.1	<0.1	0.5		
				Tuffs contain bedded semi-massive sulphides (20-50% py with	2881	219.0	221.0	100	40	180	300	<2	<0.1	<0.1	0.7		
				lesser sp-gn-cp).	2882	221.0	223.0	100	40	190	280	<2	<0.1	<0.1	1.0		
				Overall 5-7% sulphides.	2883	223.0	225.0	100	30	100	170	<2	<0.1	<0.1	2.0		
					2884	225.0	227.0	100	40	200	380	<2	<0.1	0.2	2.1		
213.00	243.60	29.85	98	CHERTS, CHERTY TUFFACEOUS SEDIMENTS AND BRECCIAS	2885	227.0	229.0	100	40	150	290	<2	<0.1	0.2	2.4		
					2886	229 0	231.0	100	20	140	280	<2	<0.1	<0.1	2.3		

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GOLD FIELDS EXPLORATION PTY. LIMITED

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PROJECT: HENTY FAULT ZONE

DRILL CORE LOG AND ASSAY DATA

HOLE NUMBER: HFZ 10 Page: 5.

INTERVAL From	INTERVAL To	RECOVERY m	RECOVERY %	DESCRIPTION	Sample No.	From	To	Rec. %	Cu	Pb	Zn	Ag	Au *	Ag *	S %	Sn	Ba
									ASSAY DATA (ppm) * = Fire Assays								
				Pale pinkish-grey and pale grey. Extremely hard in places.	1116	238.00	240.60	92	600	100	200	5	0.2	3.1	3.1	100	<100
				Bedded sequence of: chert (beds up to 4.7m); cherty vitric tuffs	1117	240.60	242.05	93	200	300	400	11	0.5	8.1	10	<100	500
				(sericitised, schistose, mod carbonated, weakly albitic) some-	1118	242.05	243.60	94	4500	500	1000	7	5.1	5.6	4	<100	300
				times with qtz phenocrysts up to 2mm; and breccias formed from													
				the above rock types by soft sediment disruption and/or hyrothermal													
				explosion. Clasts angular to subangular, irregular, up to													
				100mm, av 10-30mm. Partly deformed by schistosity.													
				Bedding: 60°/LCA @ 214m, 47°/LCA @ 233.3m, 45°/LCA @ 241.5m.													
				Sulphides disseminated throughout, -py with minor sp-gn-cp.													
				Increasing steadily from 2-3% at 213m to 5-7% at 238m. 238-	2887	231.0	233.0	100	30	60	80	<2	<0.1	0.2	2.4		
				239.8m: 10-15% py, minor cp-sp-gn.	2888	233.0	235.0	95	60	60	40	<2	<0.1	0.2	2.9		
				239.8-240.6m: 5% py, 1% cp. Minor sp-gn.	2889	235.0	236.5	95	20	40	40	<2	<0.1	0.2	2.9		
				240.6-242.05m: 20% fine dissem py not including two bedded	2890	236.5	238.0	95	60	30	40	<2	<0.1	0.1	2.4		
				zones of SEMI-MASSIVE (40-50%) PY with minor sp-gn-cp @ 241.6 -													
				241.75m. and 241.85-242.05.													
				242.05-243.60m: 5% py + 1-2% cp > sp-gn (incl 3-5% cp > sp-													
				gn in quartz 243.3-243.60)													
243.60	250.20	6.30	95	VOLCANICLASTIC BRECCIAS (TYNDALL GROUP?)													
				Upper contact a strong shear @ 80°/LCA.													
				Green and red. Weak-mod chloritised.													
				Angular to sub-angular clasts up to 150mm, av 5-25mm, of red													
				albitised and silicified qtz-porphyry, lavas, cherts and tuffs													
				in sericitic and cherty matrix containing qtz phenocrysts.													
				Bedding: 60°/LCA @ 249.5m. Generally poorly developed.													
				Badly broken up to 248m.													
				Very minor py.													
				END OF HOLE													

GOLD FIELDS EXPLORATION PTY. LIMITED

DRILL CORE RECORD

555191

HOLE NO.: HFZ 11
STATE : TASMANIA

DLV. PRESS

PROJECT	HENTY FAULT ZONE
DESIGNED BY	PW ENGLISH/JG PURVIS
LOGGED BY	J.G. PURVIS
COMMENCED	24-10-82
COMPLETED	26-10-82

PURPOSE

To test Northern continuation of massive sulphide in the costean.

LOG SUMMARY

0 - 48.45m: FELSIC IGNIMBRITE.
48.45 - 68.25m: HENTY FAULT ZONE.
68.25 - 75.50m: CHERT WITH MINOR PYRITE.
75.50 - 88.20m: VOLCANICLASTIC BRECCIA AND CHERT ('TYNDALL GROUP'?)

GENERAL COMMENTS

HOST HORIZON TO THE MASSIVE SULPHIDE PRESENT IN HOLE BUT NO SIGNIFICANT MINERALISATION.

ASSAY SUMMARY

INTERVAL From	INTERVAL To	Cu	Pb	Zn	Ag	Au	S%							COMMENTS
62.5	64.5	50	230	250	<2	<0.1	0.3							Best interval.

LOCATION

NORTHING	363990.25
EASTING	380108.02
R.L.	585.61
GRID	A.M.G.
LENGTH	88.20m

HOLE CONDITION

SIZE Hole Size	SIZE Depth
HQ	0-3m
NQ	3-77m
BQ	77-88.2m

SIGNIFICANT CORE LOSS INTERVALS From	To	% Lost
0	11m	22
52.55	59m	20
68.30	77m	25

POOR GROUND CONDITION ZONES From	To	Condition
0	6m	Badly fractured.
38.05	75.50	Broken and sheared due to influence of Henty Fault. Especially bad from 48.45-68.25m.

HOLE CONDITIONS AFTER COMPLETION

3M HQ ROD LEFT IN TOP OF HOLE.
ELECTRODE PLACED IN HOLE TO 71M
- HOLE BLOCKED AT THIS DEPTH.

SURVEY DATA (Note: Bearing type must be same as Project Grid Type)

SURVEY Depth	SURVEY Bearing	SURVEY Dip	INTERVAL From	INTERVAL To	INTERVAL Distance	VERTICAL D.Sin.Dip	VERTICAL R.L.	HORIZONTAL D.Cos.Dip	HORIZONTAL Prog.Total
Collar	102°AMG	-63°							
23.2m	098°	-60°							
53.2m	097°	-58°30'							
84m	098°30'	-57°							

SURVEY Depth	SURVEY Bearing	SURVEY Dip	INTERVAL From	INTERVAL To	INTERVAL Distance	VERTICAL D.Sin.Dip	VERTICAL R.L.	HORIZONTAL D.Cos.Dip	HORIZONTAL Prog.Total

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GOLD FIELDS EXPLORATION PTY. LIMITED

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PROJECT: HENTY FAULT ZONE

DRILL CORE LOG AND ASSAY DATA

HOLE NUMBER: H.F.Z.11 Page: 1.

INTERVAL From	INTERVAL To	RECOVERY m	RECOVERY %	DESCRIPTION	Sample No.	From	To	Rec. %	Cu	Pb	Zn	Ag	Au*	Ag*	S%
					ASSAY DATA (ppm) * = Fire Assay.										
0	48.45	45.45	94	FELSIC IGNIMBRITE											
				Pink and greyish-green.											
				Flattened clasts of felsic pumice, some lithic volcanics											
				also. Abundant porphyritic feldspars to 3mm. Minor small											
				quartz phenocrysts.											
				Albitised (intense in places), silicified (intense in places)											
				sericitised, carbonated, chloritised. Rock texture largely											
				obliterated by alteration. Schistose in places. 1° layering											
				35°/LCA @ 12.5m, 48°/LCA @16m, 48°/LCA @ 48.45m.											
				Quartz veins (some dog-tooth) ± alb± carb. Barren.											
				Oxidation on joints down to 11m. Broken to 6m, and again											
				below 38.05. Sericitic shears: 38.05 45°/LCA, 39.25 45°/LCA,											
				46.5m 55°/LCA.											
				Minor py, except 21.9-22.1 10%py. Rare trace gn-sp in											
				carb veinlets below 30m.											
				BASIC DYKES: 27.7 - 27.95 (1-2%py), 34.6 - 34.9m.											
48.45	68.25	18.40	93	HENTY FAULT ZONE											
				48.45-60.70: Highly fractured and shattered, strongly schistose											
				and sheared, deformed volcanic - IGNIMBRITE?											
				Mylonised in places. Deformation increasing with depth.											
				Rock banded, pale pink to creamy green in colour due to											
				leaching. Sericitic.	2891	60.7	62.1	100	20	130	170	<2	<0.1	0.1	<0.1
				Abundant shattered quartz-carb veins.	1124	62.1	62.5	100	50	250	160	2	NIL		1.8
				Minor py. Rare trace gn-cp.	2892	62.5	64.5	100	50	230	250	<2	<0.1	0.2	0.3
				Shearing: 55°/LCA @50.5m, 50°/LCA @ 58.7m	2893	64.5	66.5	100	20	70	140	<2	<0.1	<0.1	0.3
				60.70-68.25: Fault breccia in intensely sheared and milled,	2894	66.5	68.25	95	80	140	100	<2	<0.1	0.2	0.3
				sericitic, clayey TUFFS.	1125	68.25	70.5	80	40	40	30	1	NIL		1.0
				Some black carbonaceous tuffs, some bands up to 100mm of	1126	70.5	73.0	80	40	30	30	1	NIL		1.5
				greyish-white chert, now completely broken up.	1127	73.0	75.5	60	50	40	60	1	NIL		1.5
				Shearing 55°/LCA @ 62m.											
				1% dissem py except; 62.1-62.5: 5-10% py trace gn-cp,											
				and 68.1-68.25 2-3% py.											
68.25	75.50	5.25	72	CHERT											
				Pale grey. Hard, massive. Badly shattered.											

GOLD FIELDS EXPLORATION PTY. LIMITED

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DEV. PRESS

PROJECT: HENTY FAULT ZONE

DRILL CORE LOG AND ASSAY DATA

HOLE NUMBER: HFZ 11

INTERVAL From	INTERVAL To	RECOVERY m	RECOVERY %	DESCRIPTION
				Minor intercalations of sheared sericitic tuff.
				In places chert vaguely brecciated- probable soft-sediment feature.
				Bedding 25°/LCA at 73.5m.
				3-5% dissem py.
75.50	88.20	11.75	93	INTERBEDDED VOLCANICLASTIC BRECCIA AND CHERT
				Interbedded massive creamy-white CHERT containing quartz pheno-
				crysts, and: green or pink VOLCANICLASTIC BRECCIA with
				angular to sub-rounded clasts (<5-30mm) of lithic volcanics-
				chert, tuffs, albitic quartz-phyric lavas(?), and quartz,
				in chloritic partly cherty, ashy matrix.
				Alteration is weak-chloritisation, sericitisation, albitisation.
				Bedding: 30°/LCA @ 77.5m, 32°/LCA @87.5m.
				Rock is unbroken.
				Locally 1% py. Trace cp.
				END OF HOLE

ASSAY DATA Sample No.	From	To	Rec. %

APPENDIX E.

HENTY FAULT ZONE

Proposal for five diamond drill holes at the Henty Fault Zone, Mt. Tyndall E.L. 9/66 - P.W. English (including petrological report by Central Mineralogical Services).

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P. W. ENGLISH AND ASSOCIATES PTY. LTD.
Contract Geologists

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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

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 volcaniclastic 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 stratagraphic 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 volcaniclastic sequence. One hole, HFZ5 also intersected an orthoconglomerate which is probably younger than the volcaniclastics.

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 brecciat-ed 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 (volcani-clastic) matrix of quartz, dolomite and barite	Mod. sericite, qtz. and albite.
1212	HFZ5	420	Dolomitic chert. NB. Dissem-inated 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 volcaniclastic sediments.

In February 1974 costeaning of an I.P. anomaly exposed a massive sulphide lens with a true width of ~~1.2~~ 1.5m, 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 HFZ6 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, SiO_2 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 costeaning 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). HFZ5 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% FeS_2. 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 volcaniclastic 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 been 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 85ppm. 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 possiblilty 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. (SEE APPX D ?)

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

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(APPENDIX 2)

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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

for

H.W. Fander, M. Sc.

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 82/8/21

Petrological Descriptions

1201
HFZ 3 125'

(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 isograde with the ?deuteric alteration assemblage.

1202
HFZ 4 84'

(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) trachy-andesite. 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 pretectonic 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
HFZ 3 110'

(T.S. 43179) K-stain positive.
This rock can be categorised as a glomeroporphyritic felsic pitchstone of sodi-potassice 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
HFZ 4 115'

(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 pretectonic pyrite, and rare late (post-tectonic) crosscutting films of calcite.

1205
HFZ 5 144'

(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 weaklylithic 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. Accessoryleucoxenic semi-opaques and sparse apatite are present. There is no detectable pyrite.

1206
HFZ6 384'

(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 pretectonic 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
HFZ6 407'

(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
HFZ6 425'

(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 clastsare 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
HFZ 6 451'

(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 is 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
HFZ 6 456'

(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 whichalso crenulates minor veinlets of cloudy dolomite-ankerite. Traces of extremely fine-grained pyrite are partly concentrated in the chloritic microfractures.

1211
HFZ 6 436'

(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
HFZ5 420'

(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
HFZ5 436'

(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-sizec clastic quartz is thinly disseminated throughout. The sandy interbeds have a devitrified/sericitic ashy matrix and include thinly disseminated leucoxenice 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

HFZ5 444'

(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 microcrystalline 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.

Incomparison 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.

APPENDIX F.

HUXLEY

Geochemical Results 1982-83.

5 cm

GOLD FIELDS EXPLORATION PTY. LTD.

SAMPLE RECORD AND ANALYTICAL DATA SHEET

COLLECTED BY: P.K

PROJECT: TYNDALL EL 9/66 PROSPECT: HUXLEY

SAMPLE STORAGE REQ'D: LABORATORY: AMDEL

DATE DISPATCHED:

1:250,000 SHEET: TYPE OF SAMPLE: ROCK

SAMPLE PREP. REQ'D: ANALYSIS REQ'D: 1

DATE RECEIVED:

SAMPLE NUMBER	LOCATION	DESCRIPTION	ANALYSES								
			Cu	Pb	Zn	Ag	Mn				
0127	Creek South of Whip Spur	o/c andesitic crystal lithic tuff (chloritized)	50	50	160	2	460				
0128	50m South of Whip Spur	o/c Sericitized vitric crystal tuff c Mn stained carbonates	30	70	720	1	490				
0129	" " " " "	o/c " " " " " " disp py	60	150	290	2	190				
0130	" " " " "	o/c " siliceous " " lithic tuff dis py	70	800	1080	9	100				
0131	150m " " " "	o/c Mn stained vitric crystal tuff, sericitized, siliceous, dis py	40	250	110	2	10				
0132	" " " " "	o/c Mn stained vitric crystal lithic tuff c gossan	130	250	950	2	4.54%				
0133	2m East of 0132	o/c Vitric crystal (lithic) tuff c py & carbonate cavities	180	60	1070	1	1.26%				
0134	5m South of creek, South of Whip Spur	o/c gossanous vitric crystal lithic tuff, Mn stained	150	510	2950	1	5.7%				
0135	Top of Whip Spur	o/c Mn rich gossan	320	3.9%	4520	27	21.3%				
0136	5-10m East of 0135	o/c Mn rich gossan	950	4.2%	5940	31	16.0%				
0137	50m SE of Top of Whip Spur	o/c Mn stained & gossanous sericitized vitric crystal tuff	200	6000	1310	7	8.9%				

5 cm

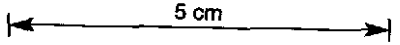
GOLD FIELDS EXPLORATION PTY. LTD. **SAMPLE RECORD AND ANALYTICAL DATA SHEET**

PROJECT: TYNDALL EL 9/66 PROSPECT: HOARLEY COLLECTED BY: R. POLTOCK

1:250.000 SHEET: TYPE OF SAMPLE: ROCK SAMPLE STORAGE REQ'D: LABORATORY: RENISON DATE DISPATCHED:

SAMPLE PREP. REQ'D: -80# ANALYSIS REQ'D: A.A.S DATE RECEIVED: 17/9/82.

SAMPLE NUMBER	LOCATION		DESCRIPTION	ANALYSES Cu	Pb	Zn	Ag
0408	Line 15·5 N	350 W	Rock chip - leached.	<10	<10	<10	<1
0409	" "	325 W	" " "	10	60	40	<1
0410	" "	300 W	" " "	10	10	40	<1
0412	" "	250 W	" " "	<10	60	<10	<1
0413	" "	225 W	" " "	<10	40	<10	<1
0414	" "	200 W	" " "	70	10	20	<1
0418	" "	075 E	" "	40	40	110	<1
0419	" "	200 E	" "	30	110	140	<1
0420	Base Line	1475m S	" "	20	140	150	<1
0421	" "	1450 S	" "	110	400	470	1



GOLD FIELDS EXPLORATION PTY. LTD.

SAMPLE RECORD AND ANALYTICAL DATA SHEET

COLLECTED BY: R. POLTOCK

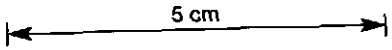
PROJECT: TYNDALL EL 9/66 PROSPECT: HUXLEY

1:250,000 SHEET: TYPE OF SAMPLE: SOIL

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

SAMPLE PREP. REQ'D: -80# ANALYSIS REQ'D: AAS DATE RECEIVED: 17/9/82

SAMPLE NUMBER	LOCATION		DESCRIPTION	ANALYSES								
				Cu	Pb	Zn	Ag					
0415	Line 15-5N	, 175W	yel-brn clay 50-90cm	40	30	30	1					
0416	" "	, 150W	yel-brn cream weathered bedrock	70	30	20	<1					
0417	" "	, 50E	yel-brn-grn " " 70-90cm	70	250	100	1					



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

PROJECT: TYNDALL EL 9/66 PROSPECT: HUXLEY SAMPLE STORAGE REQ'D: LABORATORY: RENISON DATE DISPATCHED:

1:250,000 SHEET: TYPE OF SAMPLE: Soil SAMPLE PREP. REQ'D: -80# ANALYSIS REQ'D: A.A.S. DATE RECEIVED: 17/9/82

SAMPLE NUMBER	LOCATION		DESCRIPTION		ANALYSES Cu	Pb	Zn	Ag
0220	Line 4S	125 W	cream brown weathered bedrock	0 - 10cm	10	10	<10	<1
0221	" "	100 W	cream yellow " "	30 - 60 cms	<10	20	20	<1
0222	" "	075 W	cream weathered bedrock	40 - 100 cms	<10	<10	<10	<1
0223	" "	050 W	cream brown " "	20 - 60 cms	<10	<10	20	<1
0224	" "	025 W	weathered bedrock	0 - 50 cms	40	30	90	<1
0233	Line 6S	175 E	yellow brn weathered bedrock	50 - 60 cms	10	20	10	1
0234	" "	150 E	" " " "	40 - 70 cms	<10	10	10	<1
0235	" "	125 E	cream brown " "	40 - 90 cms	10	10	20	<1
0237	" "	075 E	brown " "	40 - 90 cms	<10	10	10	<1
0238	" "	050 E	cream pink orange weathered bedrock	15 - 35 cms	10	10	30	<1
0239	" "	025 E	cream - khaki " "	50 - 100 cms	20	150	40	<1
0240	" "	000	yel - khaki brn " "	10 - 40 cms	20	60	30	<1
0241	" "	1a. N of 025 W	pale green - orange " "	25 - 60 cms	10	120	60	1
0242	" "	050 W	cream - pale green " "	25 - 70 cms	20	100	30	<1
0243	" "	075 W	cream brn " "	10 - 35 cms	20	70	20	<1
0244	" "	100 W	green " "	30 - 80 cms	10	80	30	<1
0245	" "	775 W	weathered bedrock	50 - 70 cms	10	20	40	<1
0252	" "	800 W	yell, brown clay	45 - 100 cms	20	50	40	1
0253	Line 8S	1000 W	yellow - orange brn clay	80 - 90 cms	20	230	50	1
0254	" "	975 W	yel. grey brn clay	90 - 105 cms	40	160	100	1
0255	" "	950 W	yell brn - grey brn clay	80 - 90 cms	30	50	80	1

5552222

5 cm

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

PROJECT: TYNDALL EL 9/66 PROSPECT: HUXLEY SAMPLE STORAGE REQ'D: LABORATORY: Mt Lyell/RENISON DATE DISPATCHED:

1:250.000 SHEET: TYPE OF SAMPLE: SOIL SAMPLE PREP. REQ'D: -80 # ANALYSIS REQ'D: A.A.S. DATE RECEIVED: 17/9/82

SAMPLE NUMBER	LOCATION	DESCRIPTION	ANALYSES Cu	Pb	Zn	Mn	Co	Fe%	Ag		
0014	? at peg of old grid. of 1500ppm Pb anomaly	A horizon - choc brn humus.	170	50	50	40	<10	0.2			
0023	as for 0014	B horizon - crm clay + frag crm clod rok + rdd ptz.	<10	<10	10	60	<10	0.1			
0201	Line 4S, 600 W	brown - orange clay at 70-80 cms	20	30	10				<1		
0202	" " , 575 W	" " " at 25 cms	70	10	10				<1		
0203	" " , 550 W	weathered bedrock 45 - 60 cms	10	<10	<10				<1		
0204	" " , 525 W	" " 20 - 40 cms	20	20	20				<1		
0205	" " , 500 W	" " 15 - 20 cms	20	10	10				<1		
0206	" " , 475 W	" " + yellow brn soil 25 - 40 cms	20	20	<10				<1		
0207	" " , 450 W	" " " " " 20 - 30 cms	20	10	10				<1		
0208	" " , 425 W	weathered pale brn - chloritic 20 - 60 cms	20	20	20				1		
0209	" " , 400 W	dark brn - pale cream brn weathered bedrock 20-50 cms	10	20	10				<1		
0210	" " , 375 W	cream - pale brn weathered bedrock 50 - 55 cms	30	30	<10				1		
0211	" " , 350 W	pale crm - dark orange brn weathered bedrock 20-50 cms	30	20	10				<1		
0212	" " , 325 W	crm weathered bedrock 10 - 20 cms	30	30	<10				1		
0213	Line 8m North of 4S, 300 W	pale grey green weathered bedrock 40 - 70 cms	<10	10	20				<1		
0214	" " , 275 W	" " weathered bedrock 10 - 15 cms	20	20	<10				<1		
0215	" " , 250 W	" " 0 - 5 cms	30	10	<10				<1		
0216	" " , 225 W	cream brn " " 0 - 10 cms	10	10	<10				<1		
0217	" " , 200 W	pale green " " 40 - 60 cms	<10	20	70				<1		
0218	" " , 175 W	cream brn " " 25 - 30 cms	10	10	10				<1		
0219	" " , 150 W	cream brn " " 40 - 70 cms	20	10	10				<1		

5 cm

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

PROJECT: TYNDALL EL 4/66 PROSPECT: HUXLEY SAMPLE STORAGE REQ'D: LABORATORY: RENISON DATE DISPATCHED:

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

SAMPLE NUMBER	LOCATION		DESCRIPTION	ANALYSES								
				Cu	Pb	Zn	Ag					
0225	Line 4S	80 W	Rock Chip	50	40	40	<1					
0226	Line 4S	87E	" "	20	10	20	<1					
0227	5m South Line 4S	125E	" "	<10	<10	<10	<1					
0228	" "	150E	" "	10	20	20	<1					
0229	" "	175E	" "	10	30	10	<1					
0230	" "	275E	" "	<10	<10	10	<1					
0231	" "	300E	" "	40	10	<10	<1					
0232	" "	325E	" "	90	410	70	210					
0233	10m S Line 6S	100E	" "	10	30	10	<1					
0245	" "	7m W 300 W	" "	210	70	410	<1					
0246	" "	11m W 650 W	" "	20	10	20	<1					
0247	" "	675 W	" "	10	10	20	<1					
0248	" "	700 W	" " / leached chlorite	20	20	20	<1					
0249	" "	725 W	" "	10	10	20	<1					
0250	" "	750 W	" "	30	30	240	1					
0257	Line 8S	900 W	" "	30	30	30	<1					
0259	" "	825 W	" " (off Road)	<10	10	20	<1					
0260	" "	800 W	" "	10	20	30	<1					
0261	" "	125 W	" "	10	80	50	<1					
0262	" "	100m W 100 W	" " (in creek)	20	170	100	1					
0263	Baseline 775m S		" "	20	50	50	<1					

5 cm

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

PROJECT: TYNDALL EL 4/66 PROSPECT: HUXLEY SAMPLE STORAGE REQ'D: LABORATORY: AENISON COLLECTED BY: R. POLTOCK.

1:250.000 SHEET: TYPE OF SAMPLE: SOIL SAMPLE PREP. REQ'D: ANALYSIS REQ'D: A.A.S DATE DISPATCHED: DATE RECEIVED: 17/9/82

SAMPLE NUMBER	LOCATION		DESCRIPTION		ANALYSES Cu	Pb	Zn	Ag
0256	Line 08 S	975 W	B/C orange brn clay	80-95cm	20	40	210	1
0258	" "	875 W	B/C " " "	80-95cm	20	150	180	1
0264	Base line	100m S	leached weathered bedrock	0-10 cms	20	20	20	<1
0265	Line 07 S	25 W	cream, leached weathered bedrock	20-40 cms	50	90	30	1
0266	" "	50 W	weathered bedrock	35-40 cms	20	50	10	<1
0267	" "	75 W	leached " "	20-40 cms	30	370	60	1
0269	" "	125 W	" "	0-10 cms	50	150	410	<1
0272	" "	200 W	" " (possible subcrust scree)	0-50 cms	20	40	30	<1
0284	Base line	225 E	yellow-orange brown weathered bedrock	50-60cms	20	20	60	1
0285	" "	150 S	grey brown (chloritic) " "	30-60 cms	20	20	80	1
0286	" "	125 S	green clay - orange brn " "	45-75 cms	120	50	220	1
0288	Line 10 S	50 E	leached bedrock	35-45 cms	10	20	10	<1
0290	" "	25 E	" "		10	30	20	<1
0291	" "	00	cream - yel brn weathered bedrock	5-50 cms	10	30	20	<1
0295	" "	25 W	cream brn - orange brn " "	30-60 cms	50	70	80	<1
0296	" "	50 W	" " " " " "	40-60 cms	80	150	60	<1
0297	" "	75 W	red orange - yel brn clay	25-50 cms	30	610	30	<1
0298	" "	100 W	yel brn - cream weathered bedrock	25-35cms	30	40	20	<1
0299	" "	125 W	cream weathered bedrock	30-35cms	<10	10	<10	<1
0302	" "	200 W	cream-yel brn " "	30-50cms	50	130	10	<1
0303	Line 12 S	800 W	grey-khaki clay	40-50cms	40	40	90	1

5 cm

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

PROJECT TYNDALL Elg/16 PROSPECT: HUXLEY SAMPLE STORAGE REQ'D: LABORATORY: RENISON DATE DISPATCHED:

1:250.000 SHEET: TYPE OF SAMPLE: Soil SAMPLE PREP. REQ'D: -80 # ANALYSIS REQ'D: A.A.S DATE RECEIVED: 17/9/82

SAMPLE NUMBER	LOCATION	DESCRIPTION	ANALYSES Cu	Pb	Zn	Ag					
0309	Line 12S, 450W	cream-yel/orange brn weathered bedrock 70-90cm	30	190	30	<1					
0310	" " , 425W	" brn weathered bedrock 40-90cm	<10	30	<10	<1					
0311	" " , 400W	cream " " 10-30cm	10	240	<10	<1					
0312	" " , 375W	brn-cream " " 20-45 cms	10	20	10	<1					
0315	" " , 325W	cream " " 55-80 cms	20	520	10	<1					
0347	Line 14S, 25W	orange brn clay	30	90	10	<1					
0348	" " , 50W	cream yell clay	30	90	20	1					
0351	" " , 125W	cream-orange yell weathered bedrock 10-60cm	90	40	40	1					
0352	" " , 150W	grey green " " 40-70cms	40	30	40	1					
0353	" " , 175W	yel-cream " " 70-80 cms	20	20	10	<1					
0360	" " , 400W	grey green " " 90-100 cms	230	140	260	1					
0364	" " , 500W	cream-plo brn " " 50-70 cms	10	10	10	<1					
0367	" " , 675W	brn-grn weathered " 60-70 cms	90	40	190	1					
0368	" " , 700W	yel-green " " 70-90 cms	<10	10	30	<1					
0370	" " , 750W	" " 40-50 cms	10	10	60	<1					
0371	" " , 775W	" " 10-20 cms	10	<10	10	<1					
0377	line 15S, 800W	yell/brn " " 20-60 cms	<10	10	30	1					
0378	Line 15S, 825W	pale yellow/orange " " + clay 60-85 cms	<10	20	20	<1					
0379	" " , 850W	pale brn " " 20-30 cms	10	30	40	<1					
0380	" " , 875W	yellow clay 30-100 cms	10	10	30	<1					
0381	" " , 900W	khaki orange clay 70-90 cms	20	40	20	<1					

5 cm

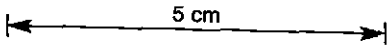
GOLD FIELDS EXPLORATION PTY. LTD. **SAMPLE RECORD AND ANALYTICAL DATA SHEET** COLLECTED BY: R. POLTON

PROJECT: TYNDALL EL 9/66 PROSPECT: HUXLEY SAMPLE STORAGE REQ'D: LABORATORY: RENISON DATE DISPATCHED:

1:250,000 SHEET: TYPE OF SAMPLE: SOIL SAMPLE PREP. REQ'D: -80 II ANALYSIS REQ'D: A.A.S. DATE RECEIVED: 17/9/82.

SAMPLE NUMBER	LOCATION		DESCRIPTION		ANALYSES Cu	Pb	Zn	Ag
0382	Line 15·5N	975 W	yel - orange clay	90 -110cms	300	90	90	3
0383	" "	950 W	yel - brn clay	90 -100cms	20	30	40	1
0384	" "	975W	" " "	40 -70cms	40	40	60	1
0386	" "	1025W	orange brn clay	40 -60cms	40	30	50	1
0387	" "	1050 W	grey brn - green clay	90 -100 cms	10	20	50	1
0388	" "	1075W	orange brn - green clay	40 - 50 cms	60	30	170	1
0389	" "	1100 W	yel brn clay	90 -100 cms	20	20	50	1
0390	" "	1125W	yel brn weathered bedrock	90 -100 cms	20	20	80	1
0391	" "	1150W	pink / orange " "	90 -100 cms	20	20	40	1
0392	" "	1175 W	cream - yel brn " "	90 100 cms	20	10	20	1
0393	" "	1200 W	white clay	90 -100 cms	10	<10	10	<1
0394	" "	775W	yel - cream clay	40 -90 cms	10	10	30	1
0395	" "	750 W	yel - grey brn weathered bedrock	50 - 60 cms	10	<10	20	<1
0396	" "	725 W	yel - " " " "	60 - 80 cms	20	20	30	<1
0397	" "	700 W	orange - grey green weathered bedrock	70 80cm	10	20	100	1
0400	" "	675W	grey - cream " "	40 - 50 cms	20	20	90	1
0402	" "	550 W	weathered bedrock	50 - 60 cms	20	20	20	<1
0403	" "	525W	grey green " "	90 -100 cms	190	180	150	1
0404	" "	500W	" "	20 - 40 cms	20	40	270	<1
0407	" "	375W	cream " "	40 - 60 cms	10	30	10	<1
0411	" "	275 W	cream brown " "	40 - 80 cms	30	10	20	<1

55529-1



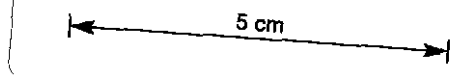
GOLD FIELDS EXPLORATION PTY. LTD. **SAMPLE RECORD AND ANALYTICAL DATA SHEET** COLLECTED BY: R. Pontock.

PROJECT: TYNDALL EL 9/66 PROSPECT: HUXLEY SAMPLE STORAGE REQ'D: LABORATORY: RENISON DATE DISPATCHED:

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

SAMPLE NUMBER	LOCATION		DESCRIPTION	ANALYSES								
				Cu	Pb	Zn	Ag					
0268	Line 7 S	, 100 W	Rock chip	10	370	50	<1					
0270	" "	, 150 W	" "	10	70	20	<1					
0271	" "	175 W	" "	10	130	20	<1					
0273	Base line	, 675m S	" " N. flank of small crk.	20	150	80	1					
0274	" "	, 650m S	" " - leached.	30	470	40	<1					
0275	" "	, 625m S	" " - leached.	10	30	10	<1					
0276	" "	, 575m S	" " - partly leached	10	30	20	<1					
0277	" "	, 550m S	" " - leached	20	60	20	<1					
0278	" "	, 525m S	" " - leached	10	30	<10	<1					
0279	" "	, 475m S	" " - leached	10	10	20	<1					
0280	" "	, 450m S	" "	10	30	30	<1					
0281	" "	, 325m S	" " weathered rhyolite	20	20	70	<1					
0282	" "	, 300m S	" " - leached	20	20	60	<1					
0283	" "	, 250m S	" "	10	20	30	<1					
0287	" "	100m S	" " q/z veined.	20	30	60	<1					
0288	Line 8 S	25m W 25 E	" " - leached	10	20	10	<1					
0292	Base line	, 830m S	" " "	20	20	10	<1					
0293	"	, 1020 S	" " "	20	20	<10	<1					
0294	"	, 1050 S	" " "	10	60	<10	<1					
0300	Line 10 S	, 150 W	" " "	<10	10	<10	<1					
0301	" "	, 175 W	" "	10	60	50	<1					

55228



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

PROJECT: TYNDALL Elg/bb PROSPECT: HUXLEY SAMPLE STORAGE REQ'D: LABORATORY: RENISON DATE DISPATCHED:

1:250.000 SHEET: TYPE OF SAMPLE: ROCK SAMPLE PREP. REQ'D: ANALYSIS REQ'D: A.A.S DATE RECEIVED: 17/9/82

SAMPLE NUMBER	LOCATION		DESCRIPTION	ANALYSES								
				Cu	Pb	Zn	Ag					
0303	line 10 S	225 W	Rock chip - chloritic	20	90	190	<1					
0304	" "	700 W	" " - cream brn - leached	10	20	10	<1					
0305	Line 12 S	725 W	" "	<10	<10	<10	<1					
0306	" "	750 W	" "	10	30	50	<1					
0307	" "	775 W	" "	10	30	60	<1					
0313	" "	25m N 225 W	" "	<10	50	<10	<1					
0314	" "	250 W	" "	20	60	200	1					
0316	" "	200 W	" " cream	20	40	10	<1					
0317	" "	75 E	" " pale green	<10	90	<10	<1					
0318	" "	100 E	" "	<10	10	<10	<1					
0319	" "	125 E	" " c gtz veining	10	40	20	<1					
0320	" "	15m N 150 E	" "	30	20	10	<1					
0321	" "	175 E	" "	100	60	30	<1					
0322	" "	200 E	" "	<10	20	<10	<1					
0323	Base line	1275 - S	" "	20	20	30	<1					
0324	Line 13 S	00	" "	<10	10	<10	<1					
0325	Base line	1325 m S	" "	<10	30	110	<1					
0326	" "	1350 m S	" "	20	80	30	<1					
0327	" "	1375 m S	" "	20	20	40	<1					
0328	Line 13S	25 m E	" " leached	<10	20	<10	<1					
0329	" "	50 m E	" "	20	90	130	1					

62955

5 cm

GOLD FIELDS EXPLORATION PTY. LTD.

SAMPLE RECORD AND ANALYTICAL DATA SHEET

PROJECT TYNDALL EL 9/66 PROSPECT: HUXLEY
1:250,000 SHEET: TYPE OF SAMPLE: ROCK
SAMPLE STORAGE REQ'D: LABORATORY: RENISON
SAMPLE PREP. REQ'D: ANALYSIS REQ'D: A.A.S.
COLLECTED BY: R. POLTON
DATE DISPATCHED:
DATE RECEIVED: 17/9/82

SAMPLE NUMBER	LOCATION		DESCRIPTION	ANALYSES Cu	Pb	Zn	Ag					
0356	Line 45	250 W	Rock chip.	90	20	40	<1					
0357	" "	275 W	" "	<10	10	<10	<1					
0358	" "	350 W	" " - leached.	<10	10	10	<1					
0359	" "	375 W	" " - "	<10	20	20	<1					
0361	" "	425 W	" "	<10	10	20	<1					
0362	" "	450 W	" " leached	10	40	10	<1					
0363	" "	475 W	" " "	10	20	10	<1					
0365	" "	525 W	" " grey grn	<10	<10	<10	<1					
0366	" "	650 W	" "	10	10	10	<1					
0369	" "	725 W	" "	20	20	60	<1					
0372	" "	800 W	" " leached	10	10	10	<1					
0373	" "	825 W	" " " cream	10	<10	<10	<1					
0374	" "	850 W	" " " "	10	<10	<10	<1					
0375	" "	875 W	" " "	<10	<10	<10	<1					
0376	" "	900 W	" " "	10	<10	<10	<1					
0385	Line 155S	1000 W	" "	10	20	80	1					
0398	" "	675 W	" " ¼ hm veinlets	10	10	70	<1					
0399	" "	650 W	" "	30	30	110	<1					
0401	" "	600 W	" "	10	10	90	<1					
0405	" "	475 W	" "	30	70	180	1					
0406	" "	425 W	" "	70	80	190	1					

55230

5 cm

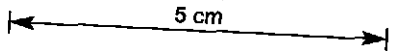
GOLD FIELDS EXPLORATION PTY. LTD. **SAMPLE RECORD AND ANALYTICAL DATA SHEET**

PROJECT: TYNDALL EL 9/66 PROSPECT: HUXLEY COLLECTED BY: R. POLTOCK

1:250.000 SHEET: TYPE OF SAMPLE: ROCK SAMPLE STORAGE REQ'D: LABORATORY: RENISON DATE DISPATCHED:

SAMPLE PREP. REQ'D: ANALYSIS REQ'D: A.A.S DATE RECEIVED: 17/9/82.

SAMPLE NUMBER	LOCATION	DESCRIPTION	ANALYSES Cu	Pb	Zn	Ag
0330	Line 13.5, 75 E	Rock chip - leached	<10	10	<10	<1
0331	" " , 100 E	" " "	<10	<10	10	<1
0332	" " , 125 E	" " "	10	20	60	<1
0333	" " , 175 E	" " "	20	80	20	<1
0334	" " , 200 E	" " "	100	330	80	<1
0335	" " , 225 E	" " "	10	60	100	<1
0336	" " , 250 E	" " "	20	20	50	<1
0337	" " , 25 W	" " "	<10	30	40	<1
0338	" " , 50 W	" "	10	20	50	<1
0339	" " , 75 W	" "	10	20	30	<1
0340	" " , 100 W	" " - leached	10	20	20	<1
0341	" " , 125 W	" "	10	40	110	<1
0342	Line 14 S 00	" "	30	40	20	<1
0343	" " 25 E	" "	10	200	20	1
0344	" " , 50 E	" "	70	180	80	<1
0345	" " , 100 E	" " - leached	20	40	90	1
0346	" " , 125 E	" " "	20	120	160	1
0349	" " , 75 W	" "	120	40	30	<1
0350	" " , 100 W	" " & minor py	140	220	40	1
0354	" " , 200 W	" " leached	<10	20	30	<1
0355	" " , 225 W	" "	10	20	40	<1



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

PROJECT: TYNDALL EL 9/66 PROSPECT: HUXLEY SAMPLE STORAGE REQ'D: LABORATORY: MT ISA DATE DISPATCHED:

1:250,000 SHEET: TYPE OF SAMPLE: ROCK SAMPLE PREP. REQ'D: ANALYSIS REQ'D: A.A.S DATE RECEIVED: 26/7/82

SAMPLE NUMBER	LOCATION	DESCRIPTION	ANALYSES							
			Cu	Pb	Zn	Ag	S%	Mn	Ba tot	
0085	Eastern slope Mt. Huxley	f/vitric crystal tuff limonite staining	20	40	40	<2	<0.1	40	100	
0086	500m South of Huxley track	f/albitized reworked tuff & lava fragments	30	20	10	<2	<0.1	20	<100	
0087	200m South West " "	f/cleaved sericitised vitric crystal tuff, diss py 1-3%	30	20	90	<2	0.3	20	<100	
0088	North slope of Huxley	f/siliceous brecciated rhyolite lava	10	<10	40	<2	<0.1	10	<100	
0089	20m North of 0088	f/cleaved sericitised rhyolite lava	10	<10	40	<2	<0.1	10	<100	
0090	20m North of 0089	f/weathered vitric crystal tuff, pt sericitised pt talc hyal	20	abn	130	<2	<0.1	40	<100	
0091	Ridge West of Dynham Ridge	f/andesitic crystal lithic tuff	50	20	120	<2	NOT ASSAYED	110	NOT ASSAYED	
0092	100m South of 0091	f/ " agglomerate, chloritised	50	30	80	<2	"	80	"	
0093	130m at 025° mag from 7S,15W	f/sericitised vitric crystal tuff & peels gn & yph	110	150	230	<2	"	570	"	
0094	50m West of Huxley Track	f/siliceous quartz phyric crystal tuff & brecciated chert	90	40	60	<2	"	590	"	
0095	150m " " "	f/cleaved siliceous vitric crystal tuff & lim st.	40	50	110	<2	"	280	"	
0096	60-40m, at 025° mag from 7S,15W	f/ sericitised vitric crystal tuff & areas of lim st.	30	110	330	<2	"	280	"	
0097	30-20m " " " "	f/ " " " " " "	70	320	480	<2	"	450	"	
0098	20-0m " " " "	f/ " " " " " "	20	370	110	<2	"	870	"	
0099	0-20m at 025° mag " "	f/ " " " " " "	20	60	40	<2	"	20	"	
0100	20-40 " " " "	f/ " " " " " "	70	70	600	<2	"	240	"	
0101	40-60 " " " "	f/ " " " " " "	30	130	80	<2	"	110	"	
0102	60-80 " " " "	f/ " " " " " "	40	240	650	<2	"	80	"	
0103	50m North of 04S, 050W	f/ siliceous vitric tuff & subrounded sil. fragments	20	20	40	<2	"	20	"	
0104	50m South of 04S, 300E	f/ very weathered sericitised vitric crystal tuff	20	60	40	<2	"	<10	"	
0105	10m North of 04S, 325E	f/ cleaved vitric crystal tuff, lim stained.	80	170	20	<2	"	30	"	

5552332

5 cm

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

PROJECT: TYNDALL EL 9/64 PROSPECT: HUXLEY SAMPLE STORAGE REQ'D: LABORATORY: MT LYELL/RENISON DATE DISPATCHED:

1:250,000 SHEET: TYPE OF SAMPLE: ROCK SAMPLE PREP. REQ'D: ANALYSIS REQ'D: A.A-S DATE RECEIVED: 26/7/82

SAMPLE NUMBER	LOCATION	DESCRIPTION	ANALYSES ppm Cu	Pb	Zn	Ag	Mn				
0106	in crk 50m North of 04S, 350E	o/c ironstone c̄ altered volcanic close to fault	250	1.1%	1700	22	4.1%				
0107	20m North of 0106	o/c crystal tuff c̄ hematite, limonite, Mn staining	280	2900	340	4	480				
0108	Island Ridge	o/c vitric crystal lithic ash flow tuff, chloritised	50	220	140	<2	1600				
0109	Island Ridge	o/c sericitized, part chloritised vitric crystal tuff	30	50	70	<2	150				
0110	Island Ridge	o/c [illegible] vitric crystal [illegible]	30	100	120	<2	560				
0111	Same o/c as 0042	o/c chloritised crystal lithic tuff c̄ lim & Mn stain	430	150	350	<2	2000				
0112	20m South of 0111	o/c " " " " "	30	350	660	2	2800				
0113	13 S, 120 W	o/c part sericitized vitric crystal lithic tuff	40	30	90	<2	1700				
0114	50m east of 0043	o/c sericitized vitric crystal tuff	20	20	30	<2	130				
0115	13 S, 120 E	o/c sericitized vitric crystal tuff, part chl'd	30	30	60	<2	220				
0116	50m ~~west~~ North of 13S, 50E	o/c v. chloritised vitric lithic crystal tuff c̄ shale	70	1000	960	2	3100				
0117	" " " "	o/c " " " " " "	110	220	360	2	820				
0118	10m north of 13S, 050E	o/c chloritised, sericitized vitric crystal tuff dispy	170	90	140	3	180				
0119	Huxley Track	o/c sericitized vitric crystal tuff c̄ lim st.	20	50	50	<1	140				
0120	" "	o/c dacitic crystal vitric tuff, chloritised, sericitized	80	30	30	1	2850				
0121	40m East of Huxley Track	o/c sericitized vitric crystal tuff, lim st	30	50	10	<1	20				
0122	5m West of 0021	o/c siliceous " " " " " "	20	220	10	<1	30				
0123	3m West of 0022	o/c sericitized " " " part chl'd	50	30	80	<1	180				
0124	50m East of 0021	o/c siliceous " " " c̄ lim. pods	20	30	20	<1	50				
0125	Miners Slate Ridge 250m S of Huxley Track	o/c black to grey shale	20	30	20	<1	20				
0126	Jctn " " " & Huxley Track	o/c " " " "	30	10	50	<1					

5 cm

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

PROJECT: TYNDALL EL 9/66 PROSPECT: HUXLEY SAMPLE STORAGE REQ'D: LABORATORY: MT LYELL DATE DISPATCHED:

1:250,000 SHEET: TYPE OF SAMPLE: ROCK SAMPLE PREP. REQ'D: ANALYSIS REQ'D: AAS DATE RECEIVED: 26/1/82

SAMPLE NUMBER	LOCATION	DESCRIPTION	ANALYSES Cu	Pb	Zn	Ag	S%	Mn	Ba (sol)		
0056	20m NE of 0054	o/c rhyolite lava	30	30	20	<2	0.1	150	<100		
0057	North slope of Whip Spur	o/c sericitised vitric crystal tuff lim stain	20	<10	10	<2	0.1	50	<100		
0058	10m South of 0057	o/c cleaved ser'd crystal tuff? lava? lim stain	20	<10	20	<2	<0.1	80	<100		
0059	100m West of Huxley Track	o/c tuffaceous shale, limonite pods	30	20	40	<2	0.1	<10	<100		
0060	" " " "	o/c weathered rhyolite lava, part ser'd	30	10	<10	<2	<0.1	<10	<100		
0062	100m West of Huxley track in crk	o/c chloritised vitric crystal tuff lim. pods	50	30	210	<2	<0.1	300	<100		
0063	" " " " " " "	o/c " " " " pods & dis py 2-5%	20	10	250	<2	0.1	510	<100		
0064	adjacent to 0063	o/c massive rhyolite c̄ spotty chlorite & coarse grained py 1-2%	20	10	290	<2	<0.1	270	<100		
0065	100m West of Huxley track	o/c part chloritised rhyolite lava c̄ pods py 1%	30	20	130	<2	<0.1	200	<100		
0067	Huxley track deviation	o/c sericitised felsic lava	10	10	10	<2	<0.1	<10	<100		
0068	Whip Spur 200m E of 0067	o/c siliceous felsic lava with Mn staining	30	20	50	<2	<0.1	1200	<100		
0069	Whip Spur	o/c cleaved sericitised felsic lava	10	<10	<10	<2	0.1	20	<100		
0070	Whip Spur	o/c chloritised crystal tuff? lim st c̄ shale	110	30	170	<2	<0.1	380	<100		
0071	5m East of 0070	o/c chloritised brecciated chert c̄ tuffaceous shale	130	60	120	<2	0.5	310	200		
0072	Whip Spur 5m West of Owen Cong.	o/c siliceous autobrecciated rhyolite? or lithic tuff	20	100	770	<2	<0.1	4000	<100		
0073	" " 20m " "	o/c cleaved sericitised vitric crystal tuff c̄ chert bands	30	60	220	<2	<0.1	940	<100		
0074	" " 5m " "	o/c sericitised part chloritised vitric crystal tuff	20	40	260	<2	<0.1	4400	<100		
0075	200m East of Huxley Track	o/c " vitric crystal tuff? (weathered) dis py 5%	50	20	10	<2	1.0	50	<100		
0076	" " " " "	o/c " , chloritic vitric lithic crystal tuff → grit + gray sulphide?	30	400	170	<2	<0.1	700	<100		
0079	in creek 700m East of Huxley Track	o/c cleaved ser'd reworked tuff → grit	20	50	40	<2	<0.1	90	<100		
0083	" " 600m " " " "	o/c vitric crystal tuff (ash flow?)	30	40	40	<2	<0.1	720	<100		

555234

5 cm

GOLD FIELDS EXPLORATION PTY. LTD.

SAMPLE RECORD AND ANALYTICAL DATA SHEET

COLLECTED BY: PK

PROJECT: TYNDALL EL 9/66 PROSPECT: HUXLEY

SAMPLE STORAGE REQ'D:

LABORATORY: MT. ISA

DATE DISPATCHED:

1:250,000 SHEET:

TYPE OF SAMPLE: Rock

SAMPLE PREP. REQ'D:

ANALYSIS REQ'D: A A-B

DATE RECEIVED: 26/7/82

SAMPLE NUMBER	LOCATION	DESCRIPTION	ANALYSES								
			Cu	Pb	Zn	Ag	S%	Mn	Ba sol		
0033	10m South of 0030	c/c vitric crystal tuff ĉ pods py & sph	310	340	10,000	6	2·8	50	<100		
0034	50m East of 0030	c/c cleaved vitric crystal tuff, ser'd hm pods, lim st.	160	530	2,200	<2	<0·1	120	<100		
0037	300m East of Huxley Track	c/c cleaved vitric crystal tuff, ser'd, lim. st. pods	40	300	280	<2	0·2	2300	<100		
0038	10m N of 0037	c/c " " " " " , pods hm.	50	30	140	<2	<0·1	560	<100		
0039	400m East of Huxley Track	c/c ser'd, part chloritised crystal tuff, lim. pods	40	50	140	<2	<0·1	130	<100		
0040	10m East of 0039	c/c leached chloritised vitric crystal tuff, pods lim	40	10	90	<2	0·3	70	<100		
0041	500m East of Huxley Track	c/c hematitic crystal tuff, part chl'd, pods limonite.	240	50	300	<2	<0·1	270	<100		
0042	50m West of Owen long. contact	c/c weathered chloritised tuffaceous shale, dis. py 20%	430	950	920	<2	<0·1	1700	<100		
0043	100m west of " " "	c/c siliceous vitric crystal tuff ĉ lim. staining	120	270	160	<2	<0·1	160	<100		
0044	400m East of Huxley Track	c/c chloritised crystal tuff? ĉ pods py + grey sphalerite	660	1000	1650	3	0·7	340	100		
0045	5m South of 0044	c/c " " " ĉ pods coarse grained py	300	920	850	4	3·2	370	<100		
0046	Huxley Track	c/c clad, chloritised vitric crystal tuff, lim stain	50	80	250	2	<0·1	400	<100		
0047	" "	c/c weathered vitric crystal tuff ĉ lim cavities	60	40	80	<2	0·3	110	<100		
0048	" "	c/c vitric crystal ash flow tuff, ĉ lim stain	30	20	40	<2	<0·1	10	<100		
0049	" " (Whip Spur)	c/c Random blebs over 10m chl'd chlorite ĉ lim pods	30	10	40	<2	<0·1	20	<100		
0050	" " " "	c/c " " " 20m " " " " "	20	40	50	<2	<0·1	20	<100		
0051	" " " "	c/c " " " 30m " " " " "	20	30	40	<2	0·3	20	<100		
0052	" " " "	c/c " " " 15m ser'd crystal vitric tuff	20	20	10	<2	<0·1	<10	<100		
0053	" " " "	c/c " " " 30m chl'd vitric crystal tuff	40	20	50	<2	<0·1	30	<100		
0054	Prospect pit North of Whip Spur	c/c weathered, ser'd crystal tuff lim st.	30	60	80	<2	0·1	150	<100		
0055	" " " "	c/c " " " " " "	30	40	30	<2	0·1	3	<100		

55523

5 cm

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

PROJECT: TYNDALL EX/9/66 PROSPECT: HUXLEY SAMPLE STORAGE REQ'D: LABORATORY: MT LYELL DATE DISPATCHED:

1:250,000 SHEET: TYPE OF SAMPLE: ROCK SAMPLE PREP. REQ'D: ANALYSIS REQ'D: AAS DATE RECEIVED: 26/7/82

SAMPLE NUMBER	LOCATION	DESCRIPTION	ANALYSES (ppm) Cu	Pb	Zn	Ag	S %	Mn	Ba (sol)
0001	Mountain Maid workings	o/c Chips over 8m Strongly shistose cherty tuff c̄ 5-10% py	110	50	40	<2	3.9	20	<100
02	80m W of Huxley track	o/c Cleaved, ser'd, slightly cherty tuff c̄ 5-10% py	50	50	10	<2	2.6	30	<100
03	Plotted position of Dighem anomaly	o/c Dacitic lava, chloritic part sil'd. lim stained	50	<10	20	<2	<0.1	40	<100
04	100m West of above	o/c " " , part sil'd, part hematitic c̄ 15×5mm py blebs	30	<10	30	<2	0.4	30	<100
0007	At creek 500m SW of 0003	o/c chloritic, altered gritty tuff c̄ 5% fg py	40	10	210	<2	<0.1	510	<100
0008	20m east of 0007	o/c mod altered, chl'd, fine fragmented c̄ lim	80	20	350	<2	<0.1	670	<100
0012	300m east of Huxley Track	o/c cleaved vitric tuff dis py. 2-3%	50	10	10	<2	0.3	20	<100
0015	150m W from Huxley Track	o/c mod cleaved crystal tuff Mn. stain & lim stain	20	10	20	<2	<0.1	300	<100
0016	130m " " " "	o/c fine grained crystal tuff → vitric tuff lim. stain	40	30	20	<2	0.1	20	<100
0017	100m " " " "	o/c " " " " " " " "	30	40	50	<2	0.2	26,000	<100
0018	10m North of 0002	o/c " " " " " " dis py (5-10%)	80	150	30	6	7.6	370	<100
0019	vicinity 0018	o/c siliceous " " " " dis py (2-3%)	30	20	30	<2	1.0	170	<100
0020	" "	o/c " " " " " dis py (3-5%)	40	<10	20	<2	1.3	210	<100
0021	Huxley Track	o/c siliceous vitric crystal tuff lim stain	30	110	50	<2	<0.1	60	<100
0022	" "	o/c alt. vitric crystal tuff, pods coarse grained py 2%	160	40	160	<2	<0.1	250	<100
0025	" "	o/c cleaved vitric tuff sericitic Mn & lim stain	40	60	260	<2	<0.1	8500	<100
0026	" "	o/c weathered part siliceous reworked tuff?	90	80	150	<2	<0.1	130	<100
0027	" "	o/c vitric crystal tuff lim stain	80	70	90	<2	<0.1	230	<100
0028	300m East of Whip Spur deviation	o/c chloritised vitric crystal tuff, ser'd, Mn & lim stain	70	10	170	<2	<0.1	1700	<100
0029	400m " " " " "	o/c siliceous vitric crystal tuff? ser'd, dis py (1-2%)	220	600	1000	2	0.3	1600	<100
0030	" " " " " "	o/c ser'd vitric crystal tuff c̄ pods fine grain py & sph?	100	550	1300	2	0.3	30	<100

555236

5 cm

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

PROJECT: TYNDALL EL 9/66 PROSPECT: HUXLEY SAMPLE STORAGE REQ'D: LABORATORY: Mt Lyell DATE DISPATCHED: [illegible]

1:250.000 SHEET: TYPE OF SAMPLE: STREAM SEDIMENT SAMPLE PREP. REQ'D: -80TT ANALYSIS REQ'D: AAS DATE RECEIVED: [illegible]

SAMPLE NUMBER	LOCATION	DESCRIPTION	ANALYSES Cu	Pb	Zn	Mn	Fe %	Co	Au (AAS)
0005	Major stream SW Dighem anom.		50	70	50	1400	2.0	<10	<0.01
0006	200m S of 0005		90	60	40	110	1.4	<10	<0.01
0009	150m S of 0006		40	30	20	230	1.2	<10	<0.01
0010	10m W of 0009	Trib creek to 0009	30	20	10	10	0.3	<10	
0011	200m S of 0009		20	30	30	60	1.2	<10	<0.01
0013	East of Huxley Saddle S of 36 anom (East flow)	40% qtz, 60% clod fg xt? (acid volc) ½m wide (good flow)	30	100	20	140	1.4	<10	<0.01
0024	" " " " S flowing	30% qtz, 70% crn fg volc. 30 cms wide med flow	60	60	10	60	0.2	<10	0.20
0031	400m E of Huxley deviation	mostly Owen Long. good flow 1m wide	20	260	20	2000	1.4	<10	<0.01
0032	lesser trib + 80m above jn to 0031 strm	60% Owen Long 40% tuffaceous acid v (1m wide)	60	60	10	60	0.2	<10	<0.01
0035	150m W on same stream as 0031	50% Owen Long 50% leached acid volc	20	90	30	510	0.7	<10	
0061	repeat of 21180 West of Huxley Track	30% qtz, 10% Owen Long. 60% clod → mas acid volc (30cm wide good flow)	40	40	<10	<10	0.3	<10	
0066	repeat of 21181 100m W of Huxley Track	40% acid volc 40% Owen Long 20% qtz good flow (1-2m wide)	50	70	20	30	0.8	<10	<0.01
0077	300m E of Huxley Track (End)	40% of Owen Long. 60% acid volc	20	50	10	40	0.2	<10	0.36
0078	South of 0077 (major crk)	50% Owen Long 10-20% qtz 30-40% acid volc. + Festuned frag	10	50	30	890	0.7	<10	<0.01
0080	150m SE of 0077	60% acid volc 40% Owen Long	40	30	20	20	0.3	<10	<0.01
0081	100m upp stream of 0080	60% Owen Long 40% acid volc.	20	20	10	<10	0.1	<10	
0082	600m SW of end of Huxley Track	60% Owen Long 40% fg acid volc	10	10	10	110	0.1	<10	<0.01
0084	900m S of end of Huxley Track	60% acid volc. 30% Owen Long. 10% qtz	50	60	20	60	0.6	<10	0.34
00									

APPENDIX G.

HUXLEY

Petrological Report - A.S. Joyce, Geobase Pty. Ltd.

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GEOBASE Pty. Ltd.

PETROLOGICAL and GEOCHEMICAL CONSULTANTS

555239

200 Chapel Hill Road
Chapel Hill, Q. 4069

Telephone: (07) 375 5258
a/h 378 6467

PETROLOGICAL REPORT ON SEVEN SAMPLES

prepared for

GOLD FIELDS EXPLORATION PTY. LIMITED

Samples: 0028
0030
0034
0038
0042
0043
0045

Refer: P.Komyshan

Stan Joyce

A.S. Joyce BSc(Hons),PhD.

30th September, 1982.

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555240

SUMMARY COMMENTS

1. All of the samples are altered and six of them carried sulphide mineralization.

2. Three different types of rock are represented.

3. The first type, consisting of 0028, 0030, 0034 and 0038, is schist characterised by abundant sericite and fine quartz.

   In relation to Rosebery style mineralization 0028 probably represents footwall schist but the other three samples carry more sulphide, including sphalerite in 0030 and 0034, suggesting that they may be lateral equivalents of a massive sulphide horizon or footwall schist close to a massive sulphide horizon.

4. The second type, represented by 0043, is a mineralized, sericitized acid pyroclastc rock with abundant secondary K-feldspar and quartz.

   It may represent tuffaceous host rock to massive sulphide or footwall rock very close to the massive sulphide horizon.

5. The third type, represented by 0042 and 0045, is disrupted slate and chert and may represent horizons just above or laterally equivalent to a massive sulphide horizon. Both samples carry little sericite.

   Sample 0042 is chloritic and probably carried ferruginous carbonate, whereas 0045 carries biotite and pyrite and was perhaps closer to a site of massive sulphide deposition.

Sample Number: 0028

Identification: Weakly mineralized, sericite schist

Description:

The hand specimen is a small, weathered sample of foliated fine-grained, grey rock.

A cobaltinitrite staining test revealed only potassic sericite, not K-feldspar.

In thin section the sample is seen to be a crudely foliated, inhomogeneous aggregate composed mainly of very fine sericite, chlorite and cherty quartz, all with limonitic staining and veining attributable to weathering. There are a few aggregates of coarse quartz which appear to represent recrystallized detrital grains about 0.5mm in size.

Some porous aggregates of reddish goethite are vaguely suggestive of oxidized former sulphide.

An approximate mode of the rock is:

50-60% sericite
4-6% chlorite
40-50% cherty quartz
0.4-0.8% recrystallized detrital quartz
0.4-0.8% limonite
0.2-0.4% goethite and pores after possible sulphide

Comments and Interpretation:

The sample is thought to have originated as a fine-grained, siliceous sediment, carrying a few quartz sand grains. It has since been crudely deformed and intensely sericitized.

The sample may represent footwall schist and prior to weathering it may have carried a few small, disseminated aggregates of pyrite.

555242

Sample Number: 0030

Identification: Sericite schist, mineralized with pyrite and sphalerite

Description:

The hand specimen is a small, weathered sample of crudely foliated, light grey rock with many porous patches about 1 to 2mm in size.

A cobaltinitrite staining test revealed no K-feldspar.

In thin section the sample is seen to consist mainly of very fine sericite and quartz. Some of the quartz occurs as ill-defined patches, 1 to 2mm in size, composed of very fine, cherty quartz. Other quartz is coarser, about 0.1mm grainsize, and intergrown with sericite. Much sericite occurs as massive streaks and patches.

Disseminated throughout the rock there are aggregates of oxidized and partly oxidized fine sulphide and open pores interpretable as representing additional former sulphide. Remnants of fresh pyrite and sphalerite are recognisable in obliquely reflected light. The sphalerite is translucent.

An approximate mode of the rock is:

45-55%	sericite
10-20%	cherty quartz
30-40%	fine quartz
2-4%	open pores and variously oxidized pyrite and sphalerite

Comments and Interpretation:

The sample is considered to have originated as a laminated sediment which probably contained chert and siltstone prior to deformation and intense sericitization.

The time at which the sulphides were included in the rock can not be deduced with confidence but there is certainly no evidence of introduction by veining.

It seems possible that this sample represents either a host rock horizon laterally equivalent to massive sulphide or a footwall horizon close to the critical mineralized horizon.

555243

Sample Number: 0034

Identification: Sericite schist with sphalerite mineralization.

Description:

The hand specimen is a very small, weathered sample consisting of crudely foliated, grey, fine-grained rock with limonitic pores.

A cobaltinitrite staining test revealed no K-feldspar.

In thin section the sample is seen to consist of mainly fine sericite and quartz grains which are finer than about 0.05mm.

Texturally there are streaks, patches and poorly defined, large clasts composed variously of sericite with disseminated quartz and quartz with interstitial sericite. There are a few clasts of cherty quartz.

Deep brown and reddish goethite occurs in equidimensional to ovoid, variously porous aggregates, 1 to 2mm in size, which appear likely to be pseudomorphous after sulphide. Residual traces of sphalerite are identifiable in two aggregates. No pyrite textures are recognisable. General limonitic staining is widespread.

There are several zircon grains present.

An approximate mode of the rock is:

50-60%	sericite
40-50%	quartz
2-5%	goethite and pores after sphalerite and possibly other sulphides
tr	zircon

Comments and Interpretation:

This sample is quite similar to Sample 0030. It probably originated as interbedded silt and chert and was subsequently deformed, intensely sericitized and finally weathered.

The time at which the sphalerite aggregates were formed is not readily apparent, but there is no sign of veining.

The sample is likely to represent host rock laterally equivalent to massive sulphide or perhaps a footwall horizon close to the critical horizon.

555244

Sample Number: 0038

Identification: Mineralized sericite schist

Description:

The hand specimen is a weathered sample of foliated, light grey, fine-grained rock with disseminated 2 to 5mm aggregates of dark limonite.

A cobaltinitrite staining test failed to reveal any K-feldspar.

In thin section the sample is seen to be a fairly homogeneous fine-grained schist composed of sericite and quartz grains which are of somewhat detrital appearance, about 0.05mm in size. The minerals are unevenly iron-stained.

Disseminated unevenly through the sample there are 0.3 to 5mm aggregates of dense, translucent brown limonite, sometimes associated with open pores. Some of the limonite has shapes consistent with aggregates of former tiny pyrite crystals, about 0.01 to 0.02mm in grainsize. There is no residual fresh sulphide.

An approximate mode of the rock is:

80-90%	sericite
10-15%	quartz
2-3%	limonite and pores after pyrite and possibly other sulphides

Comments and Interpretation:

The sample is a mineralized sericite schist, thought to have originated as a finely silty sediment, prior to deformation and sericitization.

The time at which the nodular aggregates of inferred pyrite and possibly other sulphides were formed is unclear, but there is no evidence of veining.

It is likely that the sample corresponds with a lateral equivalent of a massive sulphide horizon or at least with a footwall horizon close to the critical host horizon.

198

555245

Sample Number: 0042

Identification: Deformed slate and chert with oxidized, disseminated ferruginous carbonate.

Description:

The hand specimen is a small, weathered sample of foliated, grey, porous rock with stringy chloritic clasts as long as at least 25mm.

A cobaltinitrite staining test produced only a diffuse, streaky reaction, consistent with the presence of sericite.

In thin section the sample is seen to consist of large, aligned pelitic clasts composed of bright green chlorite and set in a cherty, siliceous matrix which carries minor chlorite and conspicuous translucent red goethite as disseminations and aggregates composed of small rhombic pseudomorphs. The shape of the pseudomorphs is very suggestive of former ferruginous carbonate. Additional goethite occurs as late colloform fissure veins, probably products of weathering. Inconspicuous replacement veinlets of quartz predate the goethite veins.

Coarse sericite occurs locally in both the chloritic clasts and the cherty matrix and it is generally intergrown with quartz and in some cases with goethite rhombs and rutile.

An approximate mode of the rock is:

40-50%	chloritic slaty clasts
40-50%	cherty quartz with minor chlorite
0.5-1%	vein quartz
5-8%	goethite after probable ferruginous carbonate
0.5-1%	sericite
tr	rutile

Comments and Interpretation:

The original rock may have been a laminated sediment composed of alternating shale and chert and carrying disseminated siderite or some other ferruginous carbonate. It has since been sheared, finely recrystallized, very sparsely sericitized and finally weathered.

It is quite possible that this sample represents deformed, impure slate immediately above or laterally equivalent to a massive sulphide host horizon comparable to that at Rosebery. The goethite rhombs may represent former carbonates comparable to the manganese carbonates at Rosebery.

199

555246

Sample Number: 0043

Identification: Mineralized, sericitized, acid pyroclastic with abundant secondary K-feldspar and quartz.

Description:

The hand specimen is a small, weathered sample of grey, altered pyroclastic rock with ill-defined clasts generally smaller than 5mm.

When etched and tested with cobaltinitrite stain the sample revealed abundant fine K-feldspar disseminated throughout the sample and also forming secondary rims within small, siliceous clasts.

In thin section the sample reveals a heavily recrystallized texture, characterized by crudely foliated, very fine sericite forming a web-like pattern interstitial to recrystallized quartzofeldspathic clasts and to a general sutured mosaic of untwinned feldspar, about 0.2mm in grainsize, which seems to be largely or exclusively orthoclase. Much of the sericite is iron-stained.

Quartz is largely restricted to recrystallized clasts, 0.5 to 5mm in size, where it is intergrown with an outer rim of K-feldspar and, in many cases, with limonite and goethite after former sulphide, at least some of which was subhedral pyrite.

Very fine chlorite is a minor mineral within the sericitic regimes and within the recrystallized clasts. Leucoxenized rutile is a trace constituent.

There are a few inconspicous, very fine, replacement veinlets of quartz.

An approximate mode of the rock is:

30-35%	quartz
25-30%	K-feldspar
30-40%	sericite
1-2%	iron oxides after former sulphide
4-6%	chlorite
tr	rutile

Comments and Interpretation:

The sample is thought to have originated as an acid pyroclastic rock, probably characterised by small lithic or pumice fragments. It has since been slightly deformed, extensively sericitized, weakly chloritized and former clasts have been replaced by secondary quartz, K-feldspar and sulphides.

This sample may represent altered and mineralized footwall rock or tuffaceous host rock. The presence of secondary K-feldspar is a feature which Eastoe suggested in 1981 could be an indication of close proximity to massive sulphide.

200

555247

Sample Number: 0045

Identification: Deformed, pyritic slate and chert.

Description:

The hand specimen is a small, weathered sample of crudely foliated rock which carries green slaty clasts, up to 5mm in size, and smaller, grey, siliceous clasts. There are several porous, ferruginous lenses and one lens at least 20mm long which carries recognisable pyrite.

A cobaltinitrite staining test revealed only potassic sericite.

In thin section the green slaty clasts are seen to consist mainly of aligned, fine green biotite, very similar in colour and texture to the green chlorite in Sample 0042. Parts of some clasts do consist of green chlorite. All the slaty clasts contain streaks of limonitic staining, some contain disseminated rutile and quartz and some have streaks and patches of sericite.

There are a few detrital phenoclasts of quartz within the non-slaty matrix of the sample , most of which consists of ill-defined, 1 to 3mm clasts of anhedral quartz, 0.05mm in grainsize, clouded by and outlined by fine biotite, sericite and limonite.

Partly oxidized pyrite, goethite after pyrite, and some pores form crude lenses 0.5 to 20mm in size. Limonitic staining and reddish goethite veining is common near the pyrite.

An approximate mode of the sample is:

30-35%	slaty clasts composed mainly of green biotite
50-55%	siliceous clasts
0.1-0.3%	detrital quartz
8-10%	interstitial biotite
1-2%	sericite
4-5%	pyrite, goethite and related pores

Comments and Interpretation:

The sample is thought to represent a deformed and ecrystallized sediment which originally consisted of lenses or layers of shale, chert and pyrite with a few detrital clasts of quartz.

It is likely that this sample represents a slaty horizon just above or laterally equivalent to an horizon hosting massive sulphides of Rosebery style

The sample has some similarity to Sample 0042 but may lie closer to massive sulphide because it actually carries pyrite, its inferred chert is more coarsely recrystallized and it carries biotite instead of chlorite.

555248

Pocket at back -

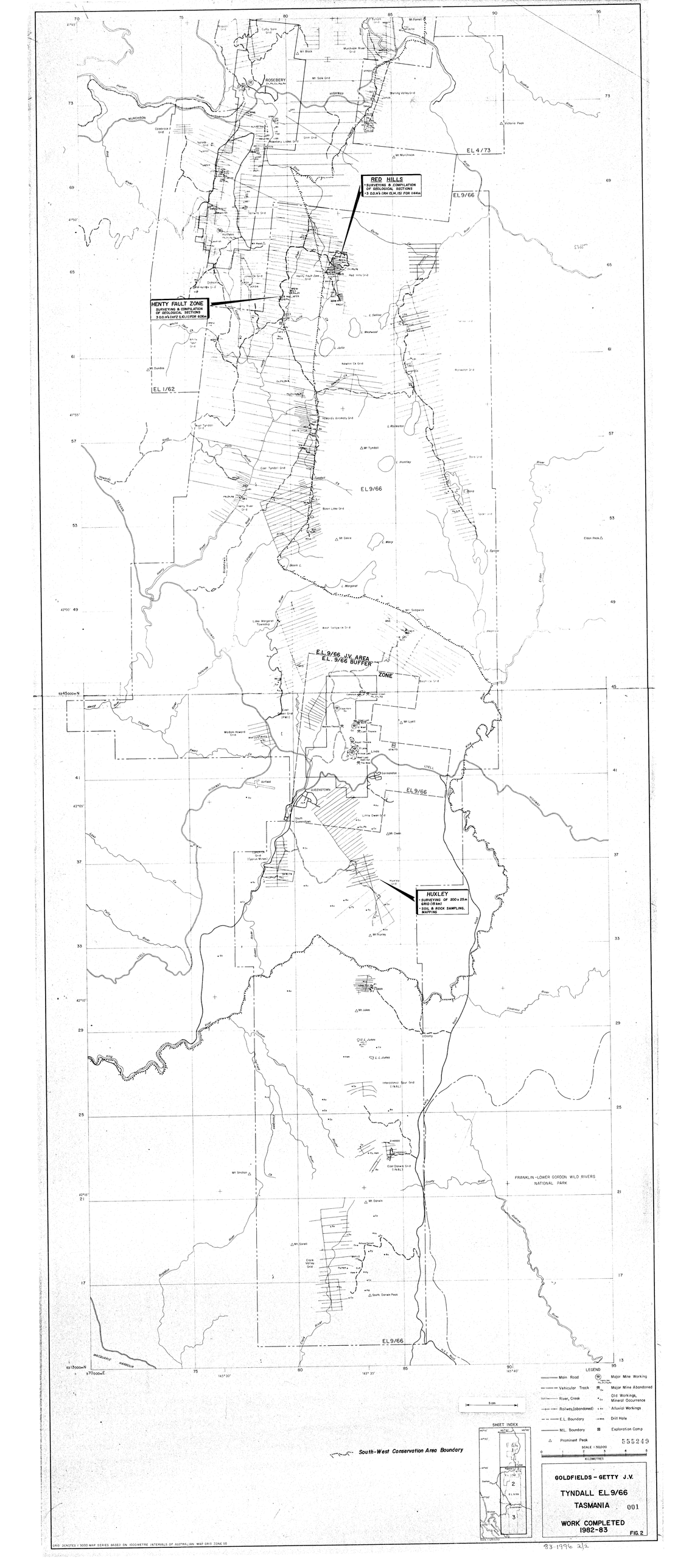
OPEN FILE

FIGURES

Fig. No.	Area	Title	Scale
1.	E.L. 9/66	Locality Map	1:250,000
2.	E.L. 9/66	Work Completed 1982-83	1:50,000
3.	RED HILLS	Geology-interpretation	1,50,000
✓4.	RED HILLS	Geophysics Compilation-anomalies	1:50,000
5.	RED HILLS	Longitudinal (showing proposed drilling)	1:2,000
6.	RED HILLS	Section 1050N (RH15)	1:1,000
7.	RED HILLS	Section 1250N (RH11)	1:1,000
8.	RED HILLS	Section 1300N (RH11)	1:1,000
9.	RED HILLS	Section 1950N (RH10)	1:1,000
10.	RED HILLS	Section 2150N (RH9)	1:1,000
11.	RED HILLS	Section 2200N (RH9)	1:1,000
12.	RED HILLS	Section 2250N (RH13)	1:1,000
13.	RED HILLS	Section 2300N (RH14R)	1:1,000
14.	RED HILLS	Section 2400N (RH8)	1:1,000
15.	RED HILLS	Section 2450N (RH8)	1:1,000
16.	RED HILLS	Section 2500N (RH5,8)	1:1,000
17.	RED HILLS	Section 2550N (RH5,6R)	1:1,000
18.	RED HILLS	Section 2600N (RH6R)	1:1,000
19.	RED HILLS	Section 2700N (RH7)	1:1,000
20.	RED HILLS	Section 2750N (RH7)	1:1,000
21.	RED HILLS	Section 2950N (RH12)	1:1,000
22.	HENTY FAULT ZONE	Diamond drilling plan (locality)	1:2,000
23.	HENTY FAULT ZONE	Longitudinal section 7075N	1:1,000
24.	HENTY FAULT ZONE	Section 7200N (HFZ11)	1:1,000
25.	HENTY FAULT ZONE	Section 7120N (HFZ5)	1:1,000
26.	HENTY FAULT ZONE	Section 7000N (HFZ6,9)	1:1,000
27.	HENTY FAULT ZONE	Section 6900N (HFZ10)	1:1,000
28.	HENTY FAULT ZONE	Section 43N (HFZ3)	1:1,000
29.	HENTY FAULT ZONE	Section 42N (HFZ4)	1:1,000
30.	HUXLEY	Interpretative Geology	1:5,000
31.	HUXLEY	Cu geochemistry	1:5,000
32.	HUXLEY	Pb geochemistry	1:5,000
33.	HUXLEY	Zn geochemistry	1:5,000
34.	HUXLEY	Ag/Au geochemistry	1:5,000
35.	HUXLEY	Stream Sediment geochemistry	1:10,000 1:5,000

Index card is on the Back cover of this volume

DKSG


RED HILLS
• SURVEYING & COMPILATION OF GEOLOGICAL SECTIONS
• 3 D.D.H's (RH 13,14,15) FOR 1144m
HENTY FAULT ZONE
SURVEYING & COMPILATION OF GEOLOGICAL SECTIONS
3 D.D.H's (HFZ 8,10,11) FOR 606m
HUXLEY
• SURVEYING OF 200 x 25m GRID (15 km)
• SOIL & ROCK SAMPLING, MAPPING
E.L. 9/66 J.V. AREA
E.L. 9/66 BUFFER ZONE
EL 4/73
EL 9/66
EL 1/62
ROSEBERY
QUEENSTOWN
FRANKLIN-LOWER GORDON WILD RIVERS NATIONAL PARK
South-West Conservation Area Boundary
LEGEND
Main Road
Vehicular Track
River, Creek
Railway,(abandoned)
E.L. Boundary
M.L. Boundary
Prominent Peak
Major Mine Working
Major Mine Abandoned
Old Workings, Mineral Occurrence
Alluvial Workings
Drill Hole
Exploration Camp
SCALE 1:50,000
KILOMETRES
SHEET INDEX
555249
GOLDFIELDS - GETTY J.V.
TYNDALL EL.9/66
TASMANIA
001
WORK COMPLETED
1982-83
FIG. 2
GRID DENOTES 1:5000 MAP SERIES BASED ON 1000 METRE INTERVALS OF AUSTRALIAN MAP GRID ZONE 55

83-1996 2/2

381 000mE.
382 000mE.
383 000mE.
5 367 000mN.
5 366 000mN.
5 365 000mN.
5 364 000mN.
5 363 000mN.
124 N.
16 N.
8 N.
4 N.
00
2950 N
4 S.
8 S.
12 S.
16 S.
20 S.
24 S.
28 S.
32 S.
36 S.
40 S.
44 S.
48 S.
52 S.
56 S.
60 S.
64 S.
68 S.
70 S.
74 S.
78 S.
86 S.
92 S.
98 S.
IN
3E
2N
2E
1E
1W
2W
RHP 94
R.H. 4
R.H.12
R.H.2
R.H.1
R.H.7
GRID DATUM
R.H.6R
R.H.5
R.H.8
R.H.3
R.H.14 & 14R
R.H.13
R.H.P. 95
R.H.9
R.H.10
R.H.11
R.H.15
G.N.1 (approx.)
G.N.2 (approx.)
2750 N
2700 N
2650 N
2600 N
2550 N
2500 N
2450 N
2400 N
2350 N
2300 N
2250 N
2200 N
2150 N
2100 N
2050 N
2000 N
1950 N
1900 N
1850 N
1800 N
1750 N
1700 N
1650 N
1600 N
1550 N
1500 N
1450 N
1400 N
1350 N
1300 N
1250 N
1200 N
1150 N
1100 N
1050 N
INTERSECTION
DRILL
SURFACE TRACE
LEAD SOIL ANOMALIES
THE GOOSENECK
Mt. Lyell imperial grid (1969-71)
G.O.D. - Mt. Lyell Grid 1982-83
RTE. - E.Z. Grid (localized Location Approximate 1957 - 59
Mt. Lyell Imperial Grid 1976 - 77 (extended)
LAKE WESTWOOD
5 cm
555250

LEGEND

QUATERNARY

Glacial Morain, Conglomerate Scree and Alluvium

UPPER CAMBRIAN - LOWER ORDOVICIAN

Owen Conglomerate

CAMBRIAN (MT. READ VOLCANICS)

TYNDALL GROUP

Volcaniclastic Sediments, Tuffs and Agglomerates

? Quartz - phyric Lavas

CENTRAL SEQUENCE

Black Shales with minor Tuffaceous Interbeds, variable graphite and/or pyrite/pyrrhotite content syngenetic base metal sulphides in basal sequence, especially to south.

Host Rock Horizon - host to massive sulphide RH5 fine grained volcaniclastic sediments (pelitic ash ?) often siliceous ("cherty"), base metal sulphide mineralization variable

Pyroclastics - mineralized (from drill intersections) rhyolitic ignimbrites, variably welded, lithic, agglomeratic ashy or undifferentiated disseminated sphalerite and minor galena mineralization

Pyroclastics - mostly unmineralized rhyolitic ignimbrites, variably welded, lithic, agglomeratic, ashy or undifferentiated.

Red Hills Lava rhyolitic often brecciated, with pyroclastic talus margin massive pink-green chlorite-hematite-K-feldspar altered, pyrite - chalco pyrite - magnetite mineralization (weak stockwork)

Diamond Drill Hole

prefix
RHP - E.Z. 1957-59
GN - Rio Tinto 1958-59
RH - Mt. Lyell 1971-83

Fault

N.B. Geology after Bradfield (1969), Poltock (1970-71) Stevens-Hoare (1976), Brophy (1977), Walter (1978), Eastoe (1982)

1962-83 GRID SURVEY INFORMATION

Grid datum, 2700N, 00E : AMG 5365285·45N, 382145·08E RL828·67m

Base line : bearing 171° 30' AMG

Grid lines : 50m apart (slope corrected), turned by theodolite, pegged at 25m (slope distance)

GOLD FIELDS EXPLORATION PTY. LIMITED

E.L.9/66
RED HILLS

GEOLOGY : INTERPRETATION

002

DRAWN BY : F.G.F.
DRAFTSMAN : T.G.D.S.
DATE : April '83
REVISIONS :
83 - 1776
FILE NO.

SCALE 1:5000 100 50 0 50 100 150 200 METRES

FIG. 3

83-1891-2b

381 000mE.
382 000mE.
383 000mE.
5 367 000mN.
5 366 000mN.
5 365 000mN.
5 364 000mN.
5 363 000mN.

Axis of weak I.P chargeability < 20 m sec.

DISCONTINUITY
ELECTRICAL

IN
3E
2N
2E
1E
1W
2W

RHP 94
R.H. 4
R.H.12
R.H.2
R.H.1
R.H. 7
R.H.6R
R.H.5
R.H.8
R.H.3
R.H.14 & 14R
R.H.13
R.H.P. 95
R.H.9
R.H.10
G.N.1 (approx.)
R.H.11
R.H.15
G.N.2 (approx.)

2950 N
2750 N
2700 N
2650 N
2600 N
2550 N
2500 N
2450 N
2400 N
2350 N
2300 N
2250 N
2200 N
2150 N
1950 N
1300 N
1250 N
1200 N
1150 N
1100 N
1050 N

4 S.
8 S.
12 S.
16 S.
20 S.
24 S.
28 S.
32 S.
36 S.
40 S.
44 S.
48 S.
52 S.
56 S.
58 S.
62 S.
64 S.
66 S.
70 S.
72 S.
74 S.
78 S.
80 S.
86 S.
92 S.
98 S.

4 N.
8 N.
12 N.
16 N.

?

Mt Lyell Imperial grid (1969-71)

R.T.E. - E.Z. Grid Idealized Location. Approximate 1957 - 59

G.O.D. - Mt. Lyell Grid 1962-63

Mt. Lyell Imperial Grid 1976-77 (extended)

H.E.C. TRANSMISSION LINE

LAKE WESTWOOD

5 cm

555251

LEGEND

- GRAVITY (residual bouger) ≥ 0·2 mgal (RTAE 1958-59)
- E.M. (Turam) ≥ 6° phase difference (RTAE 1957- 59)
- I.P. (pole-dipole) RESISTIVITY ≤ 500 ohm m. (CGG 1970-71)
- I.P. (pole-dipole) CHARGEABILITY ≥ 40m. sec. (CGG 1970-71)
- I.P. (gradient array) RESISTIVITY approx. < 1000 ohm m (Scintrex 1977)
- I.P. (gradient array) CHARGEABILITY ≥ 40m. sec. (Scintrex 1977)
- MAGNETICS (vertical field) ≥800γ (Mt. Lyell 1969-71) (RTAE 1958-59)

GOLD FIELDS EXPLORATION PTY. LIMITED

E.L.9/66
RED HILLS

GEOPHYSICS COMPILATION

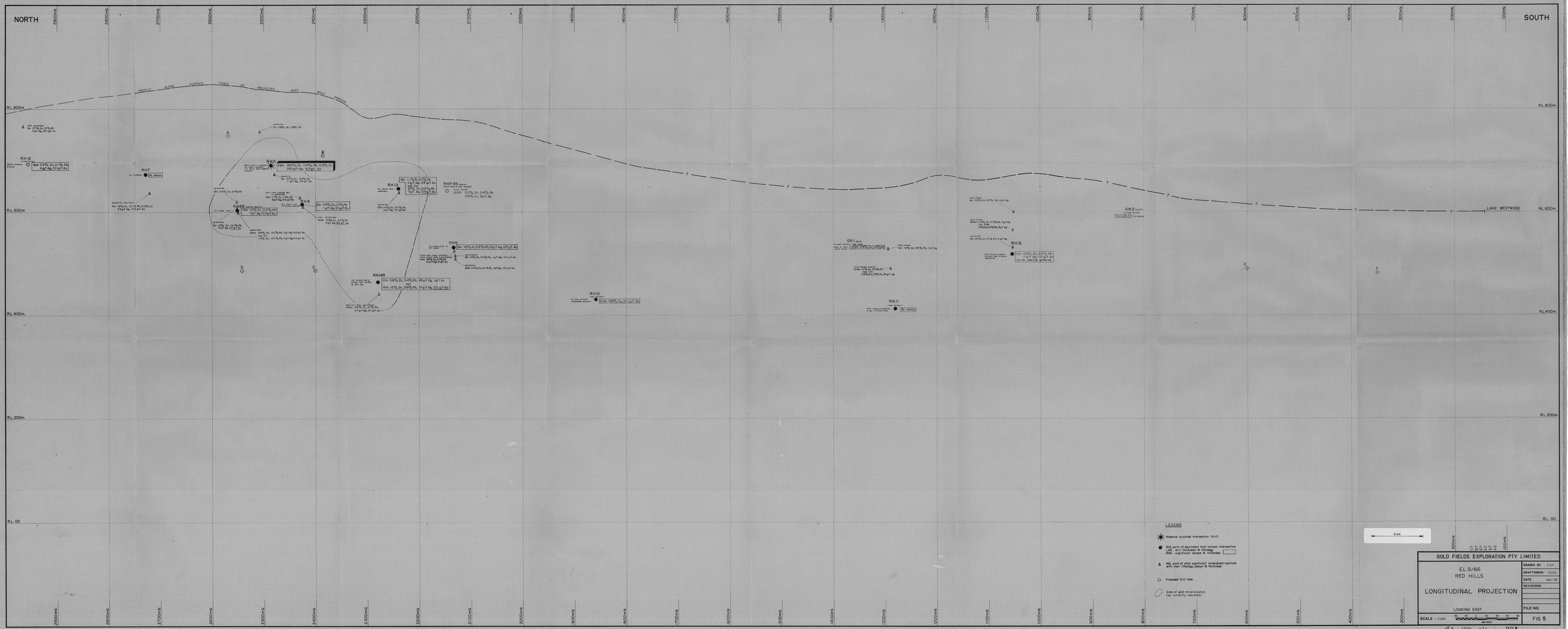
ANOMALIES 003

DRAWN BY : F.G.F.
DRAFTSMAN: T.G.D.S.
DATE : April '83
REVISIONS :
FILE NO.

SCALE 1:5000 — 100 50 0 50 100 150 200 METRES

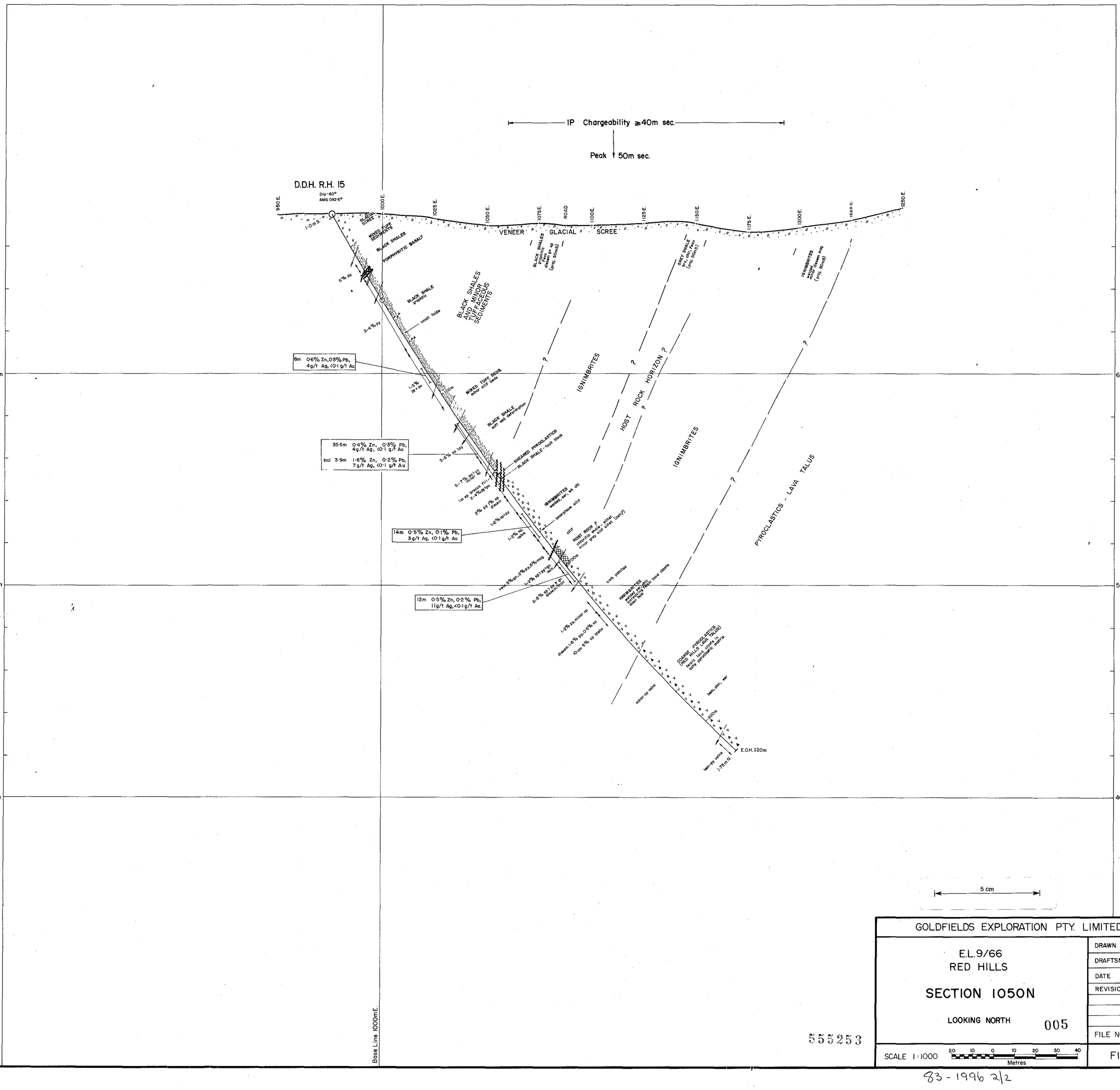
FIG. 4

83-1996-2/2



33-1996 212 : 004

DRILLING PROFILE LINE 1050N.

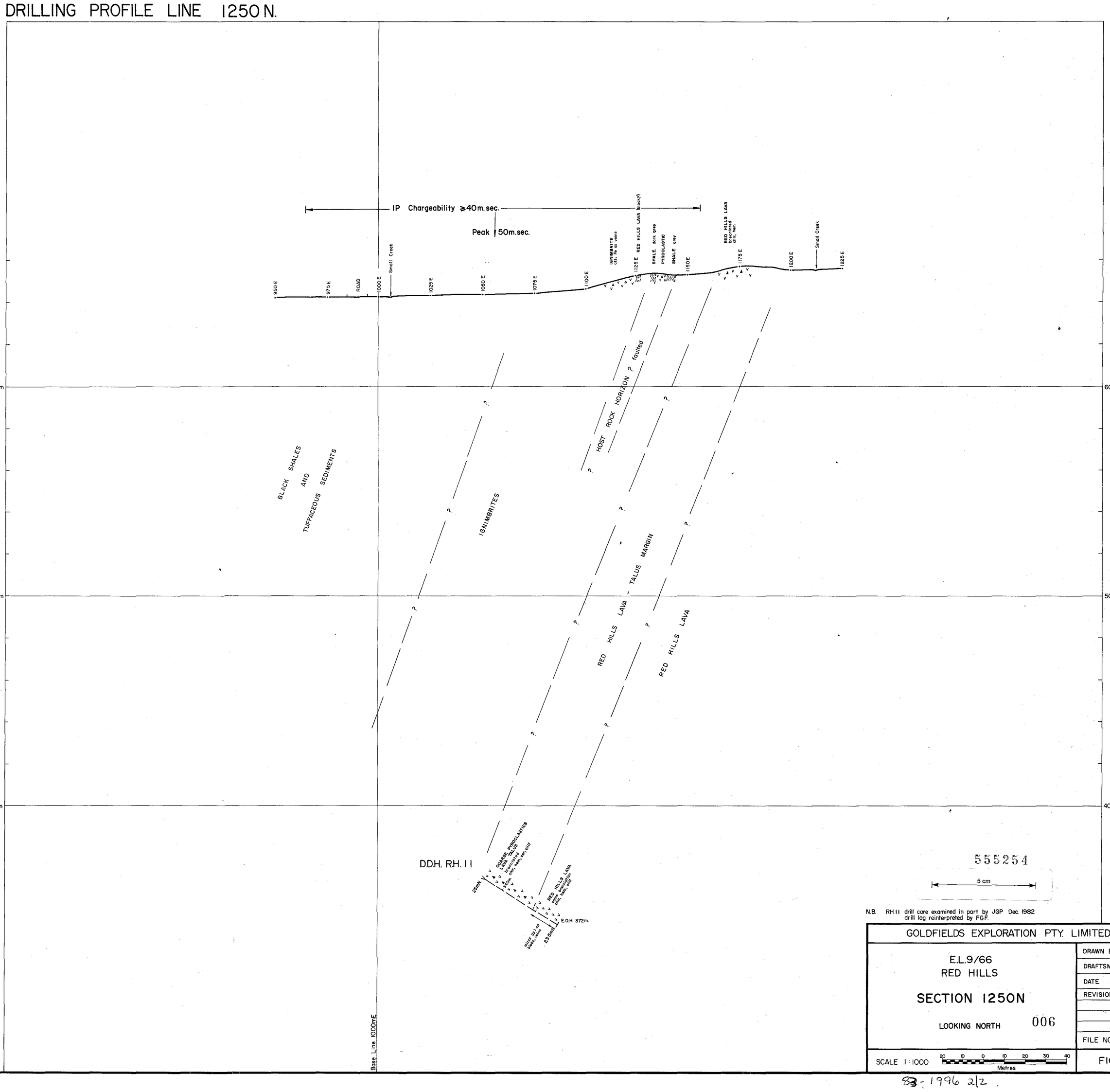


555253

GOLDFIELDS EXPLORATION PTY. LIMITED	
E.L.9/66 RED HILLS SECTION 1050N LOOKING NORTH 005	DRAWN BY : F.G.F DRAFTSMAN: T.G. DATE : Apri REVISIONS : FILE NO. AI-247
SCALE 1:1000 (20 10 0 10 20 30 40 Metres)	FIG. 6

83-1996 2/2

DRILLING PROFILE LINE 1250 N.



555254

5 cm

N.B. RH11 drill core examined in part by JGP Dec. 1982
drill log reinterpreted by FGF.

GOLDFIELDS EXPLORATION PTY. LIMITED

E.L.9/66
RED HILLS

SECTION 1250N

LOOKING NORTH 006

DRAWN BY : F.G.F.
DRAFTSMAN : T.G.D.S.
DATE : Apr. '83
REVISIONS :

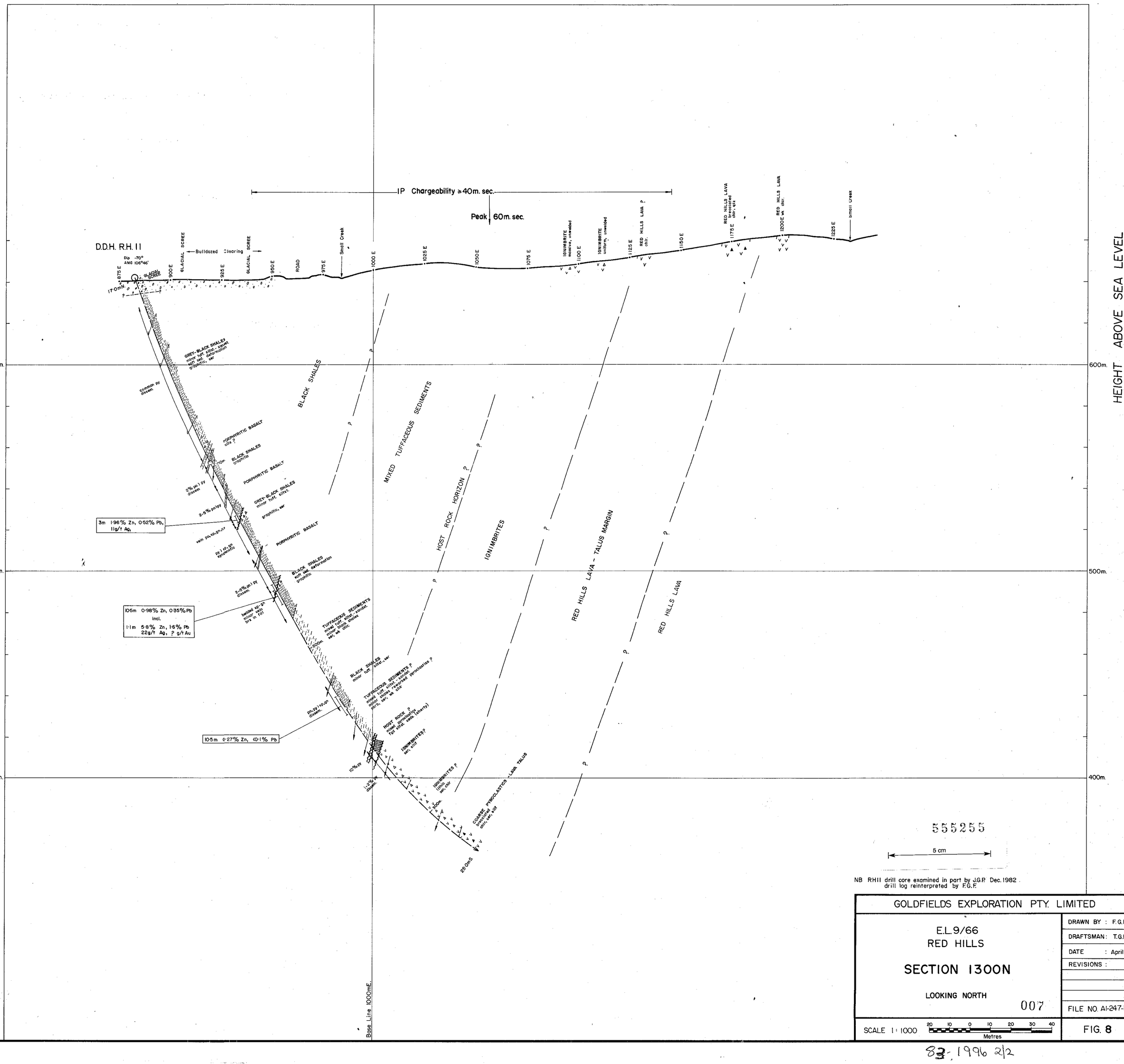
FILE NO. A1-247-15

SCALE 1:1000 20 10 0 10 20 30 40 Metres

FIG. 7

83-1996 2/2

DRILLING PROFILE LINE 1300 N.



555255

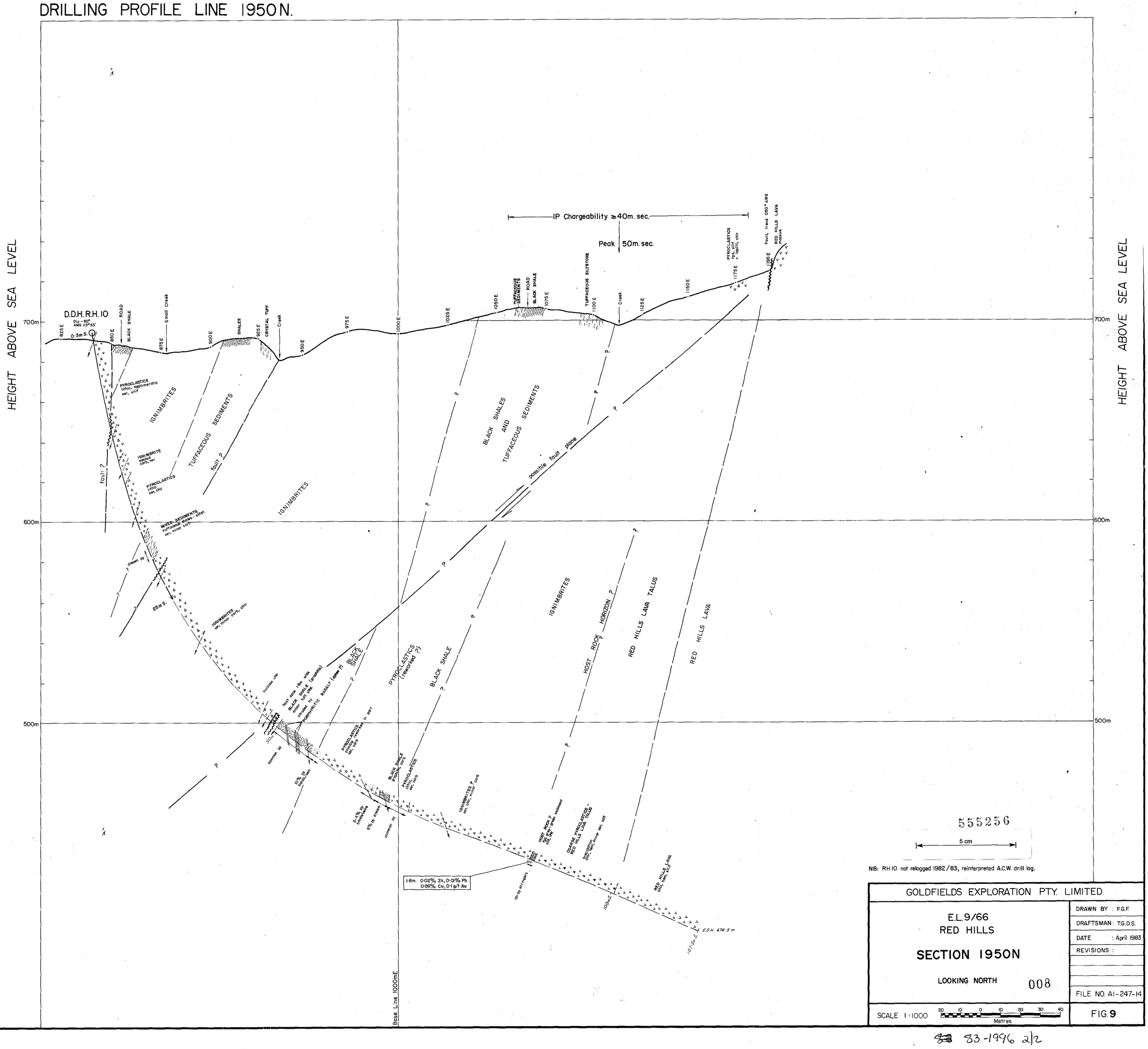
5 cm

NB RHII drill core examined in part by J.G.P. Dec. 1982.
drill log reinterpreted by F.G.F.

GOLDFIELDS EXPLORATION PTY. LIMITED	
E.L. 9/66 RED HILLS **SECTION 1300N** LOOKING NORTH 007	DRAWN BY : F.G.F. DRAFTSMAN: T.G.D.S. DATE : April '83 REVISIONS : FILE NO. AI-247-16
SCALE 1:1000 20 10 0 10 20 30 40 Metres	FIG. 8

83-1996 2/2

DRILLING PROFILE LINE 1950 N.



555256

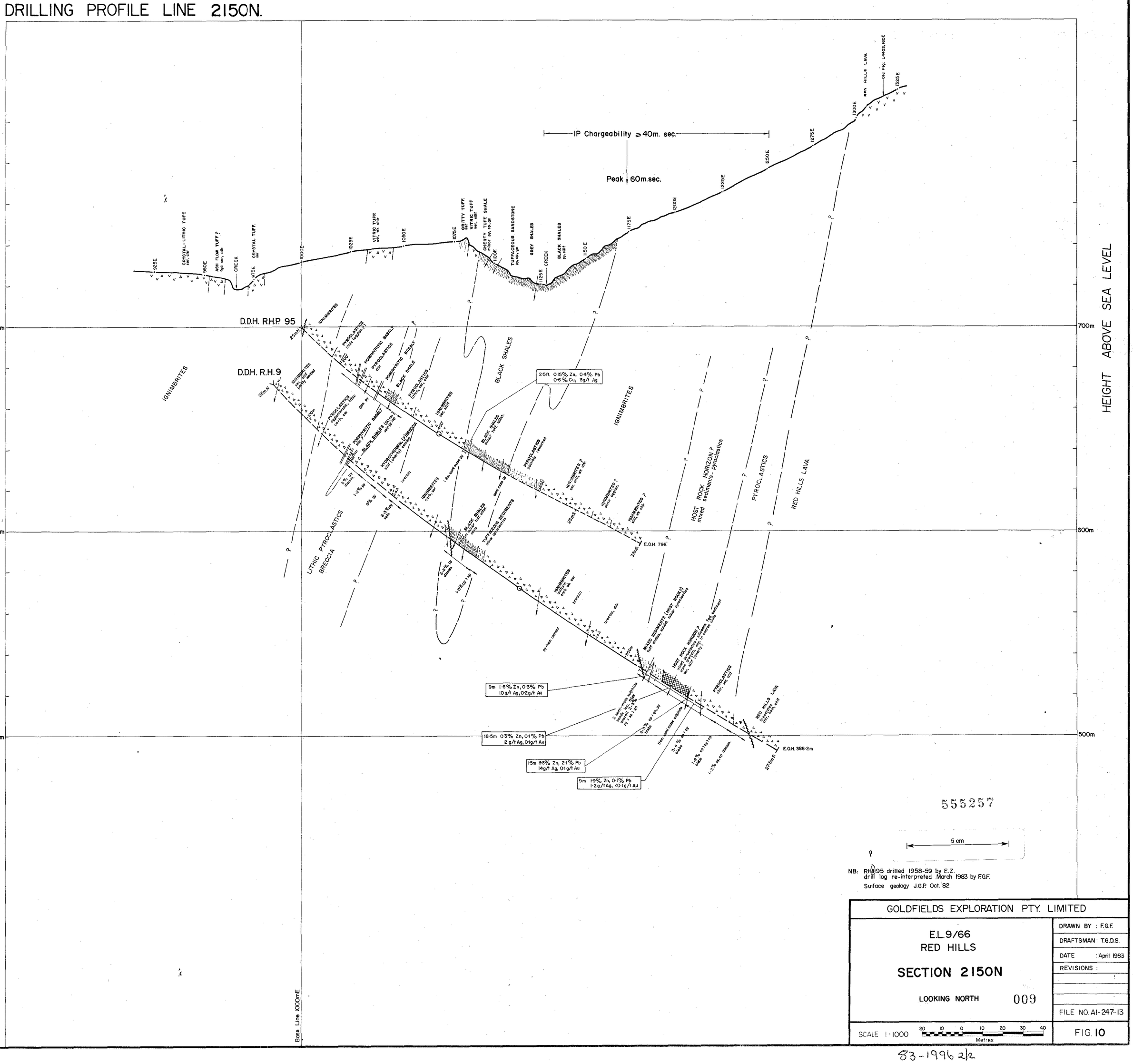
5 cm

NB: RH 10 not relogged 1982/83, reinterpreted A.C.W. drill log.

GOLDFIELDS EXPLORATION PTY. LIMITED	
E.L. 9/66 RED HILLS **SECTION 1950N** LOOKING NORTH 008	DRAWN BY : F.G.F. DRAFTSMAN: T.G.D.S. DATE : April 1983 REVISIONS : FILE NO. A1-247-14
SCALE 1:1000 (20 10 0 10 20 30 40 Metres)	FIG. 9

83-1996 2/2

DRILLING PROFILE LINE 2150N.



555257

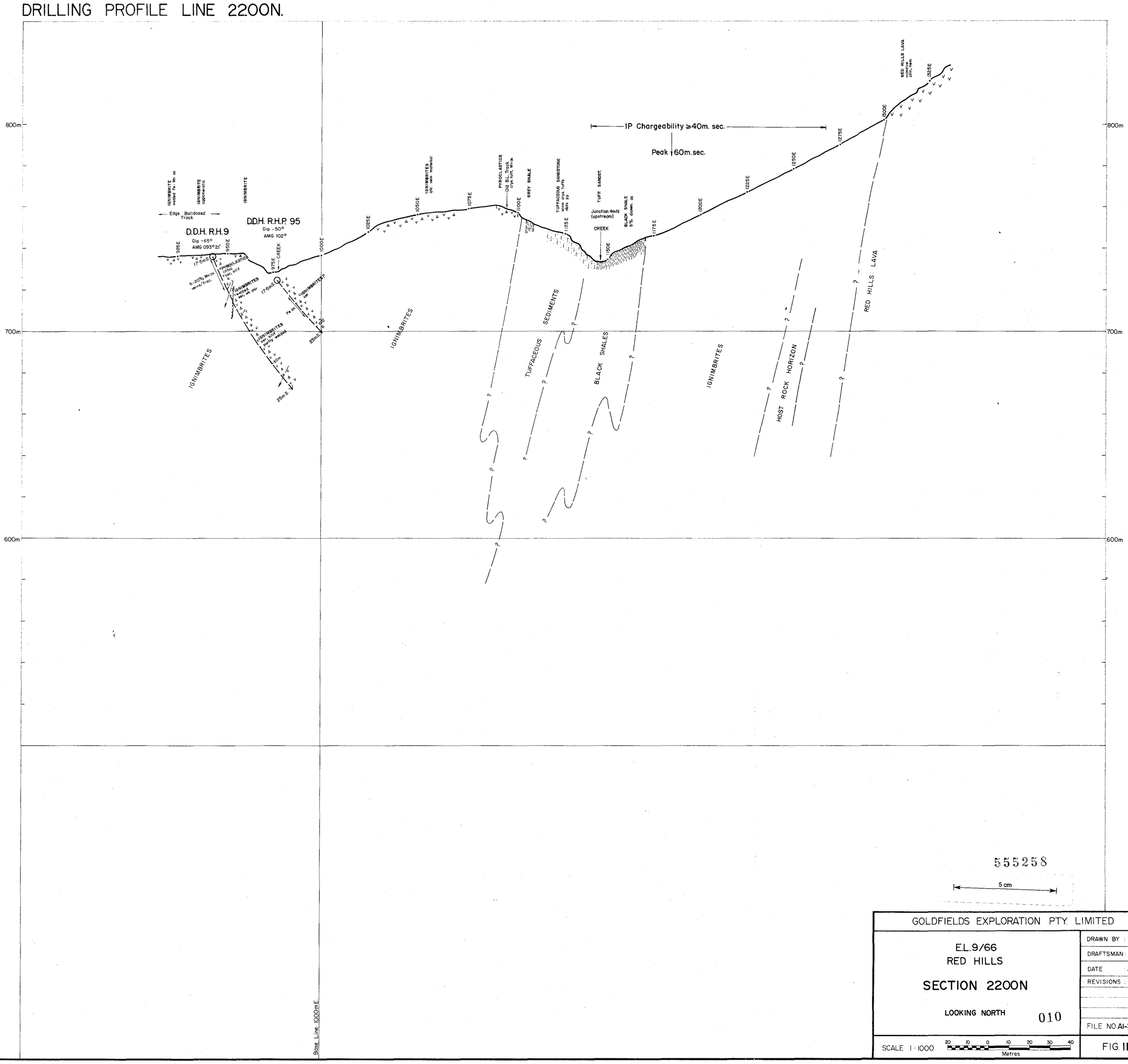
5 cm

NB: RH9195 drilled 1958-59 by E.Z.
drill log re-interpreted March 1983 by F.G.F.
Suiface geology J.G.P. Oct. '82

GOLDFIELDS EXPLORATION PTY. LIMITED	
E.L.9/66 RED HILLS **SECTION 2150N** LOOKING NORTH 009	DRAWN BY : F.G.F. DRAFTSMAN: T.G.D.S. DATE : April 1983 REVISIONS : FILE NO. AI-247-13
SCALE 1:1000 20 10 0 10 20 30 40 Metres	FIG. 10

83-1996 2/2

DRILLING PROFILE LINE 2200N.



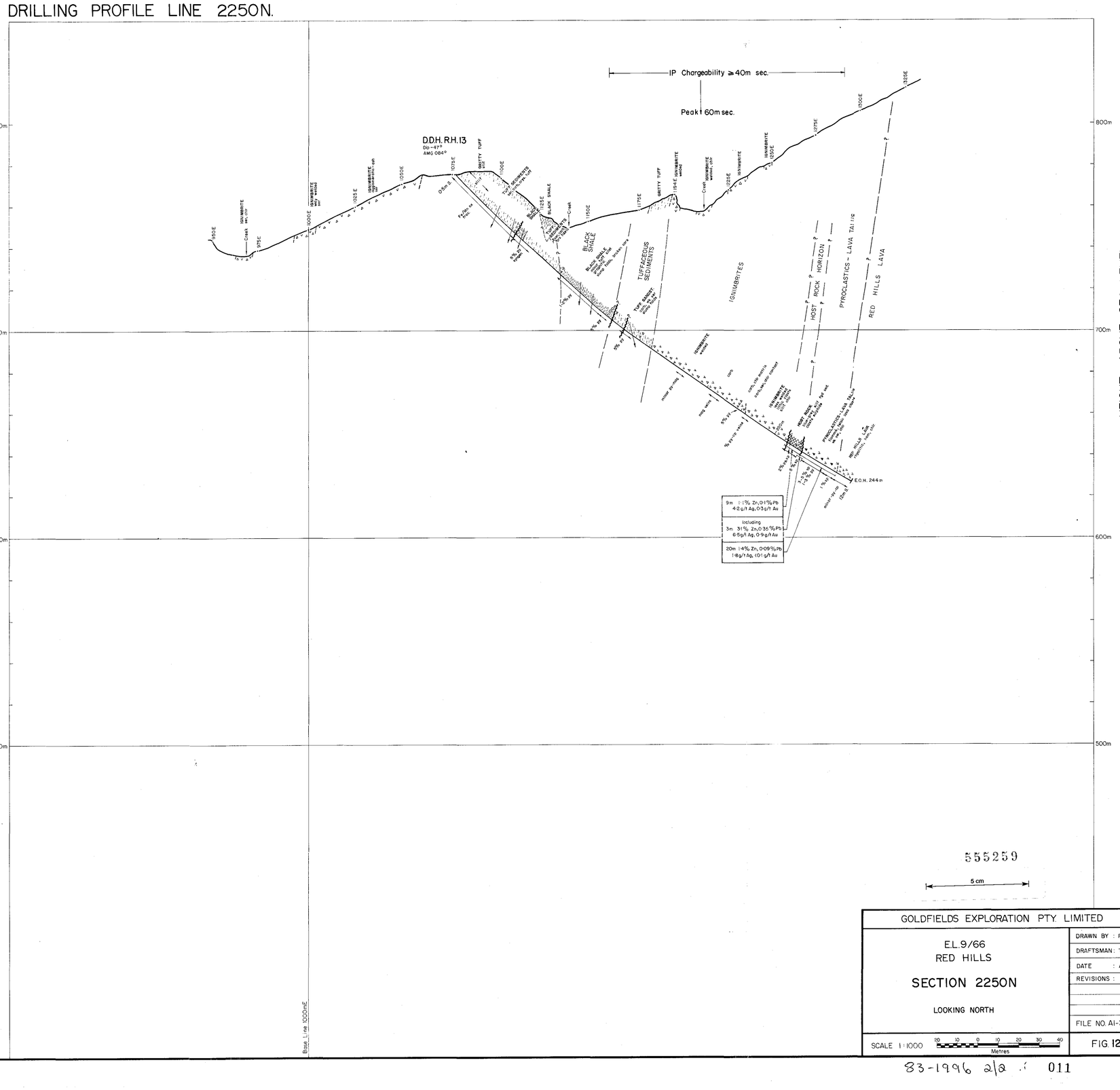
555258

5 cm

GOLDFIELDS EXPLORATION PTY. LIMITED	
E.L.9/66 RED HILLS SECTION 2200N LOOKING NORTH 010	DRAWN BY : F.G.F. DRAFTSMAN : T.G.D.S. DATE : April 1983 REVISIONS : FILE NO. AI-247-12
SCALE 1:1000 (20 10 0 10 20 30 40 Metres)	FIG. 11

83-1996 2/2

DRILLING PROFILE LINE 2250N.



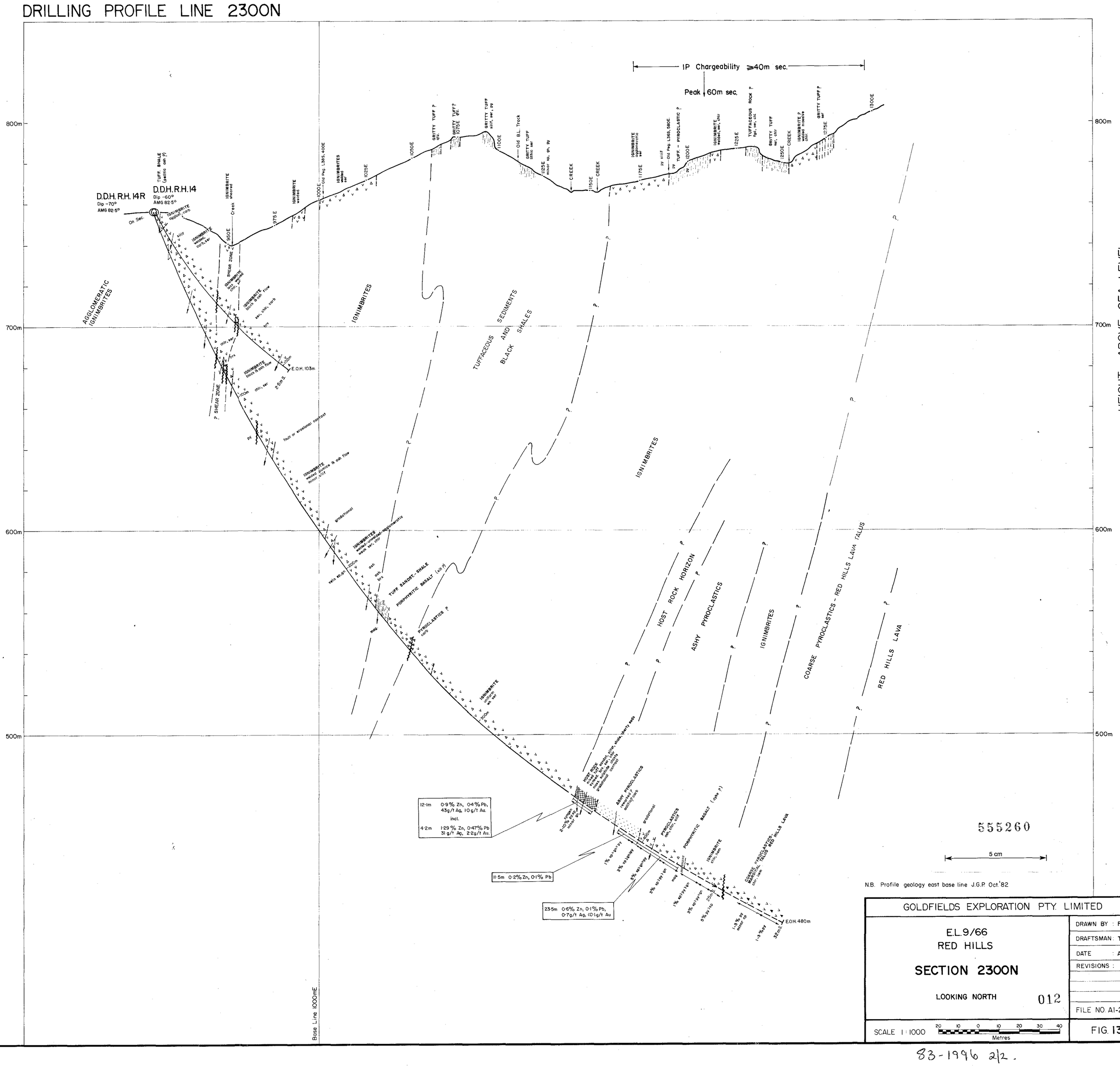
555259

5 cm

GOLDFIELDS EXPLORATION PTY. LIMITED	
E.L. 9/66 RED HILLS **SECTION 2250N** LOOKING NORTH	DRAWN BY : F.G.F. DRAFTSMAN : T.G.D.S. DATE : April '83 REVISIONS : FILE NO. AI-247-11
SCALE 1:1000 (20 10 0 10 20 30 40 Metres)	FIG. 12

83-1996 2/a : 011

DRILLING PROFILE LINE 2300N

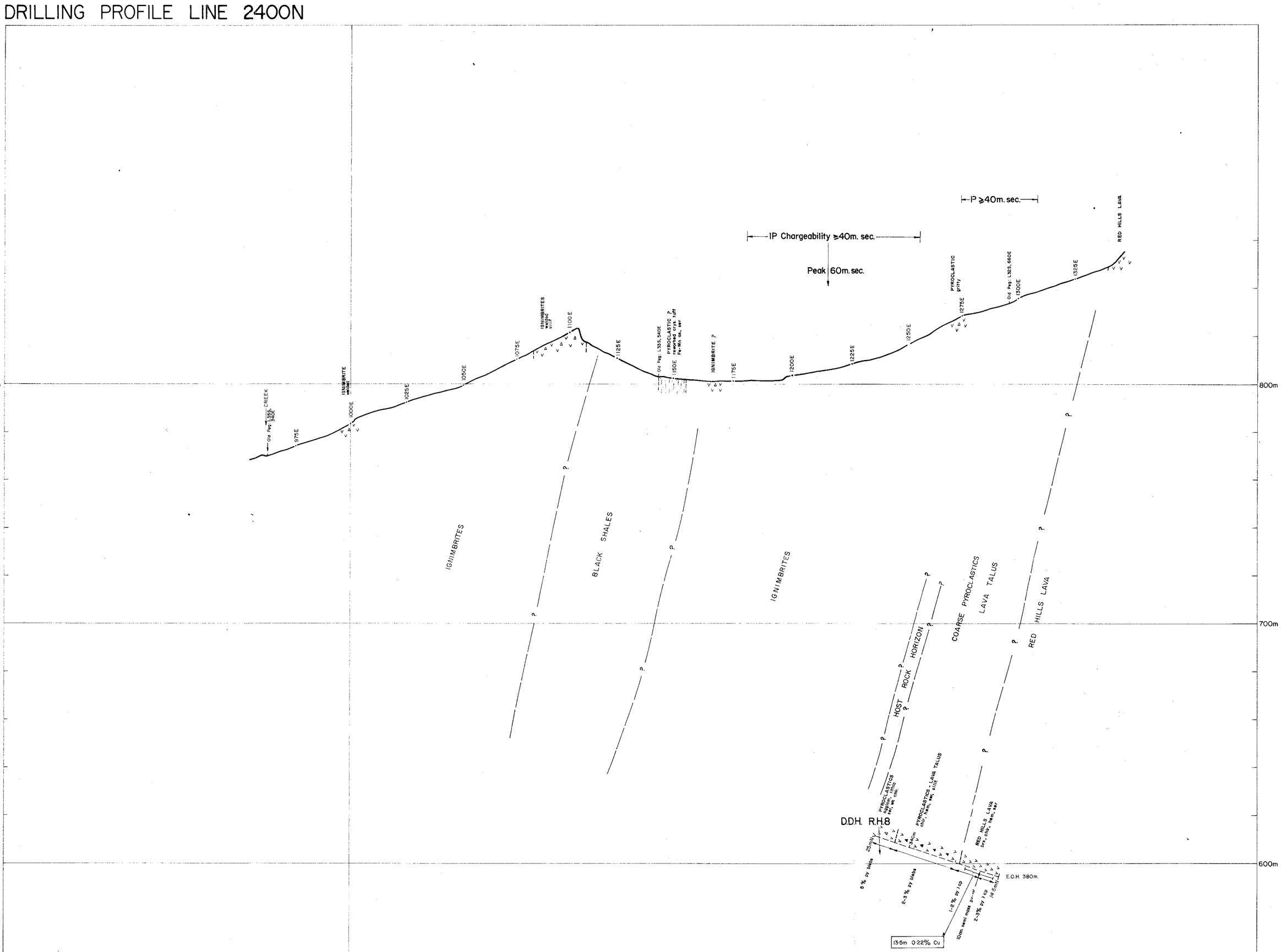


N.B. Profile geology east base line J.G.P. Oct.'82

GOLDFIELDS EXPLORATION PTY LIMITED	
E.L.9/66 RED HILLS **SECTION 2300N** LOOKING NORTH 012	DRAWN BY : F.G.F. DRAFTSMAN : T.G.D.S. DATE : April '83 REVISIONS : FILE NO. A1-247-10
SCALE 1 : 1000 (20 10 0 10 20 30 40 Metres)	FIG. 13

83-1996 2/2.

DRILLING PROFILE LINE 2400N



555261

5 cm

GOLDFIELDS EXPLORATION PTY. LIMITED

E.L.9/66
RED HILLS

SECTION 2400N

LOOKING NORTH

DRAWN BY : F.G.F.
DRAFTSMAN: T.G.D.S.
DATE : April 1983
REVISIONS :

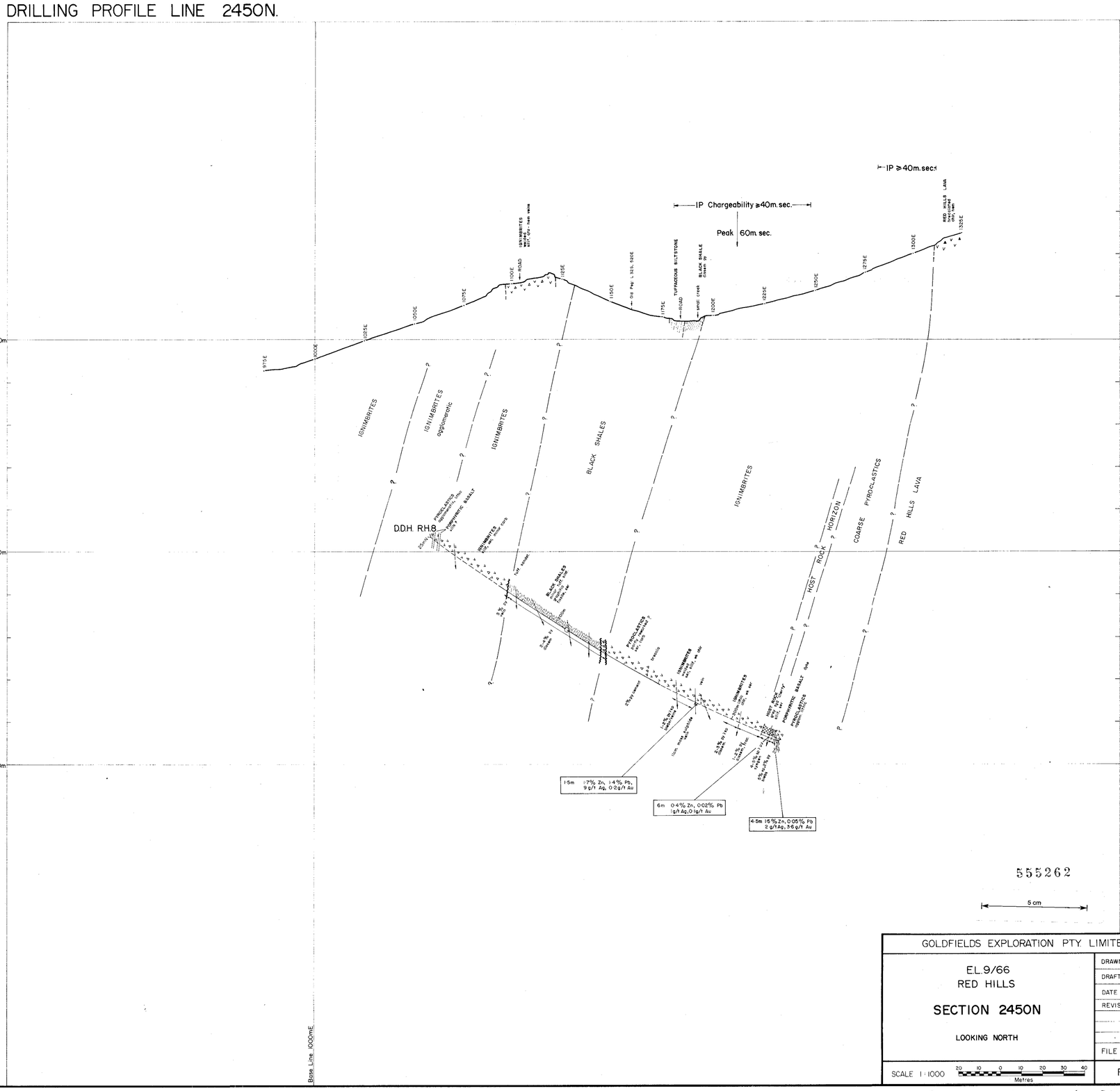
FILE NO. AI-247-8

SCALE 1:1000 — 20 10 0 10 20 30 40 Metres

FIG. 14

83-1996 2|2.(013

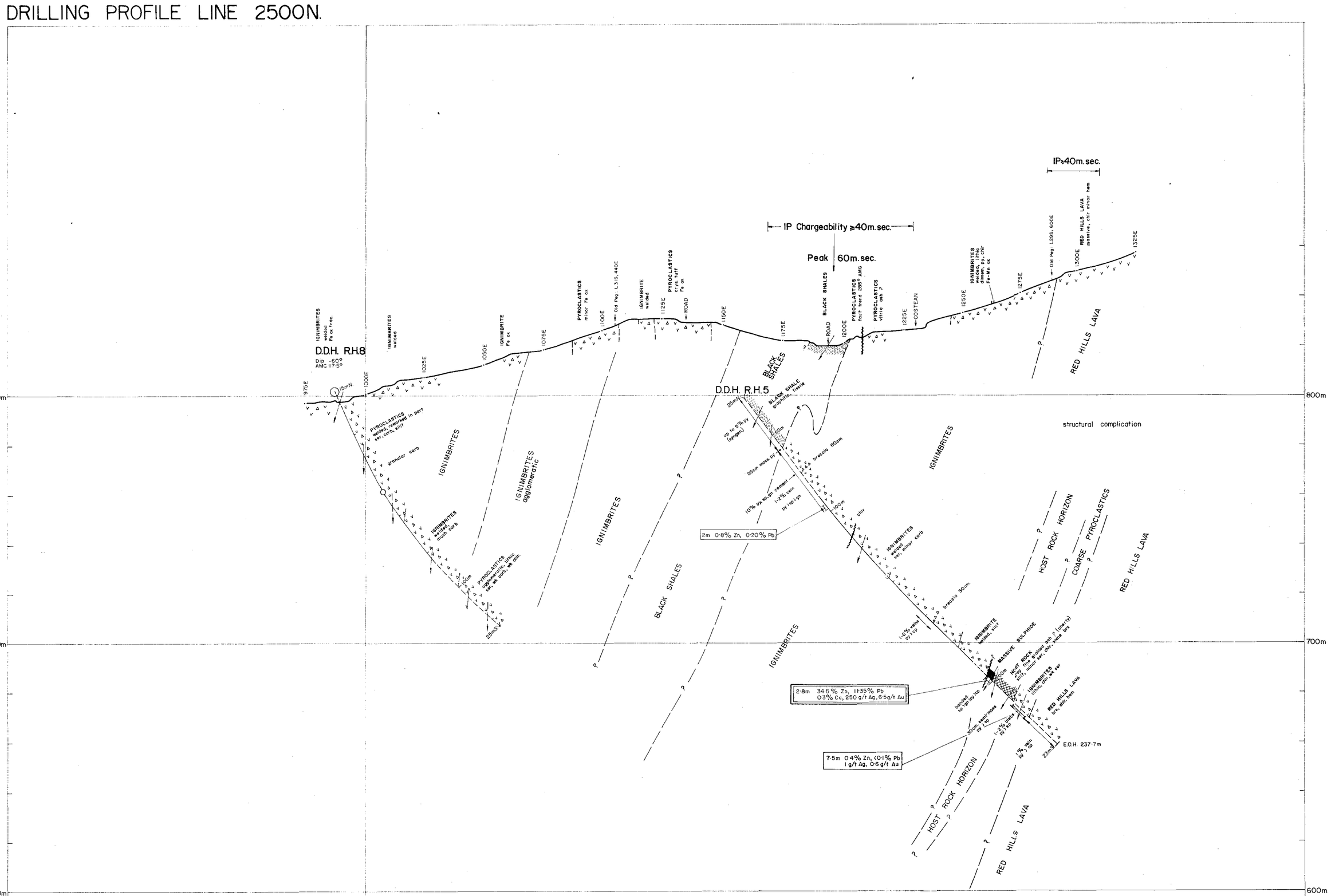
DRILLING PROFILE LINE 2450N.



GOLDFIELDS EXPLORATION PTY. LIMITED	
EL.9/66 RED HILLS **SECTION 2450N** LOOKING NORTH	DRAWN BY : F.G.F. DRAFTSMAN : T.G.D.S. DATE : April 1983 REVISIONS : FILE NO. Al-247-7
SCALE 1:1000 20 10 0 10 20 30 40 Metres	FIG. 15

83-1996 2/2. 014

DRILLING PROFILE LINE 2500N.



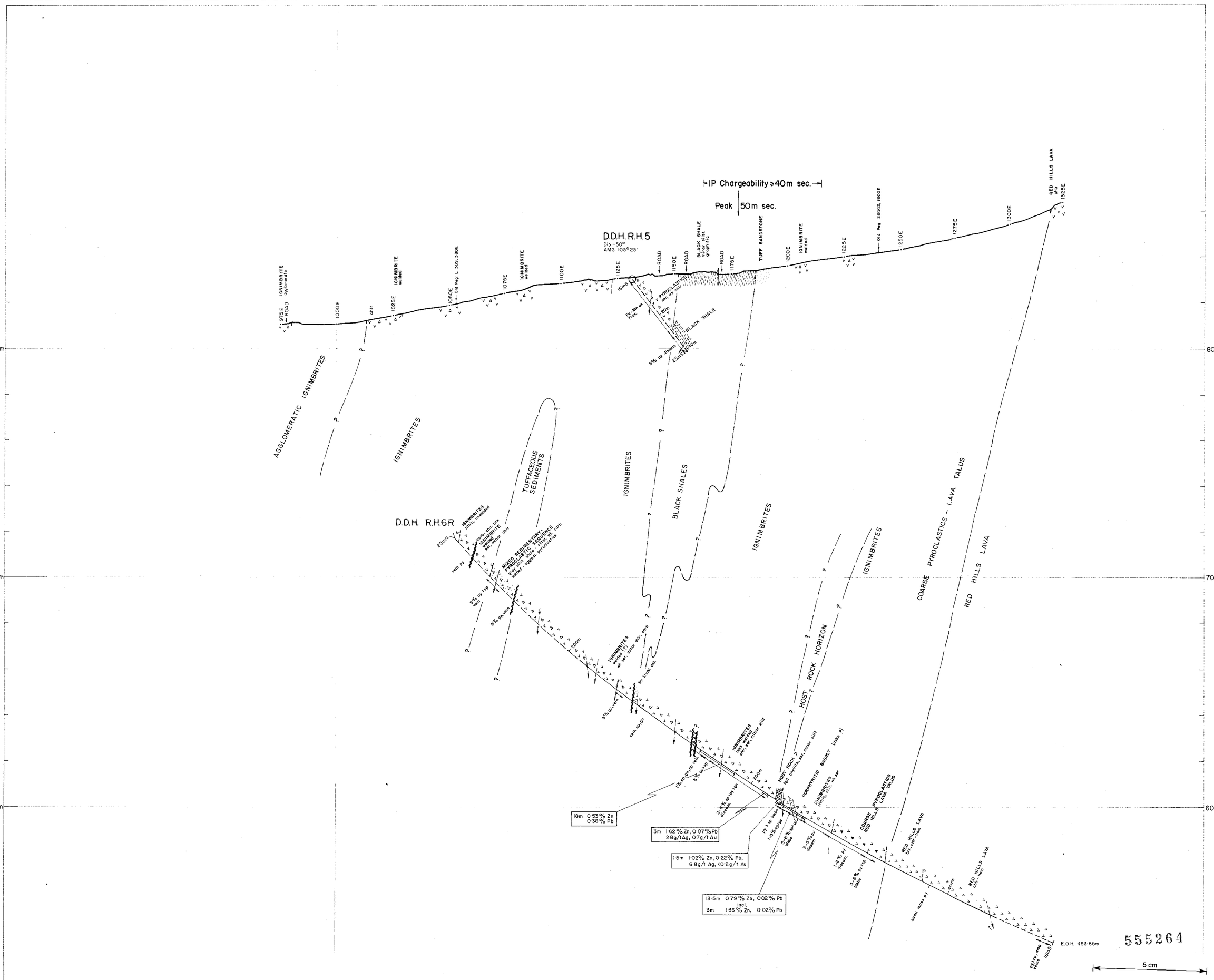
555263

5 cm

GOLDFIELDS EXPLORATION PTY. LIMITED	
E.L.9/66 RED HILLS **SECTION 2500N** LOOKING NORTH	DRAWN BY : F.G.F. DRAFTSMAN : T.G.D.S. DATE : April 1983 REVISIONS : FILE NO. AI-247-6
SCALE 1:1000 (20 10 0 10 20 30 40 Metres)	FIG. 16

83-1996 2/2 . c 015

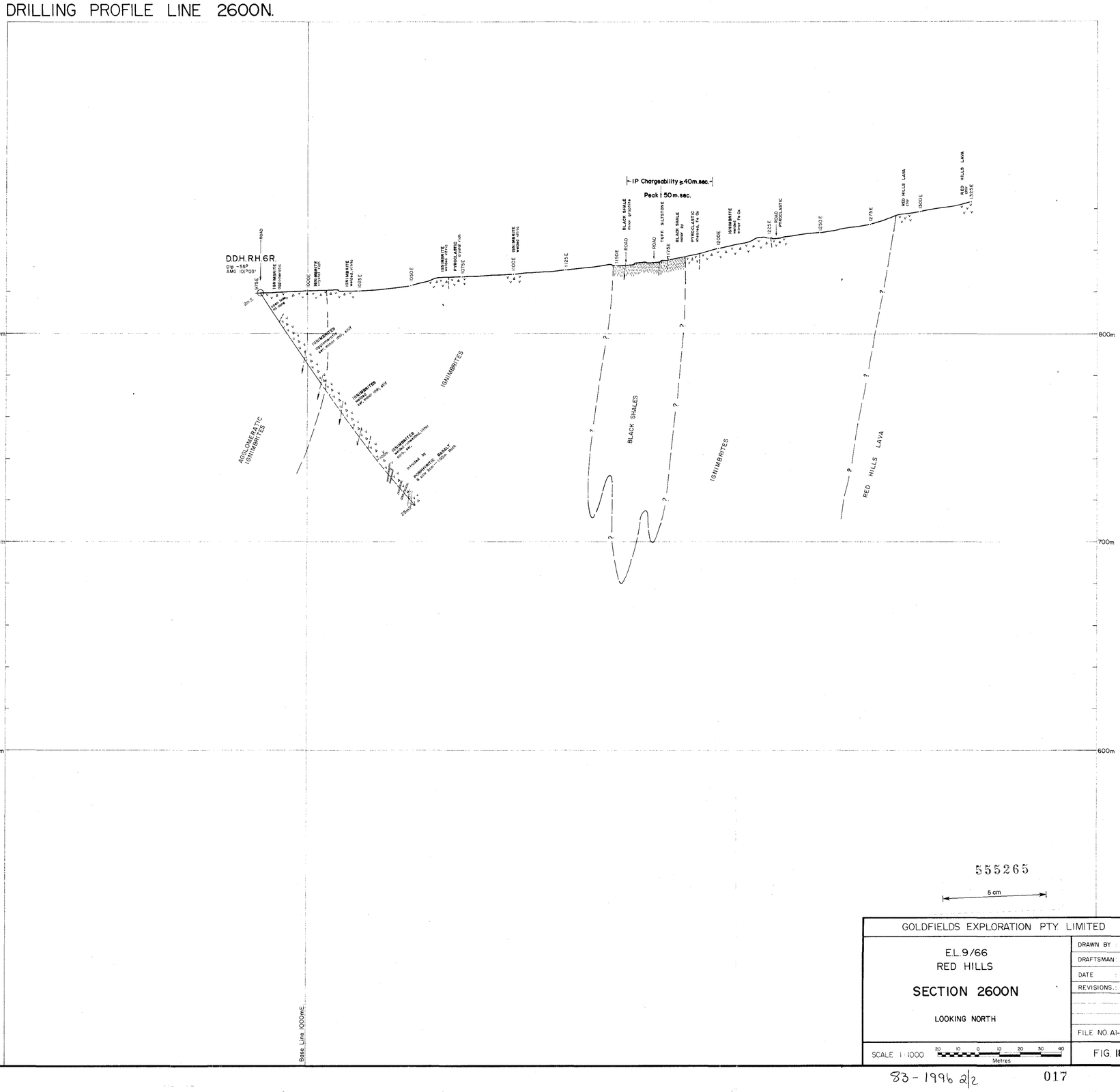
DRILLING PROFILE LINE 2550N.



GOLDFIELDS EXPLORATION PTY. LIMITED	
E.L.9/66 RED HILLS **SECTION 2550N** LOOKING NORTH	DRAWN BY : F.G.F. DRAFTSMAN : T.G.D.S. DATE : April '83 REVISIONS : FILE NO. AI-247-5
SCALE 1:1000 20 10 0 10 20 30 40 Metres	FIG. 17

83-1996 2/2 : 016

DRILLING PROFILE LINE 2600N.



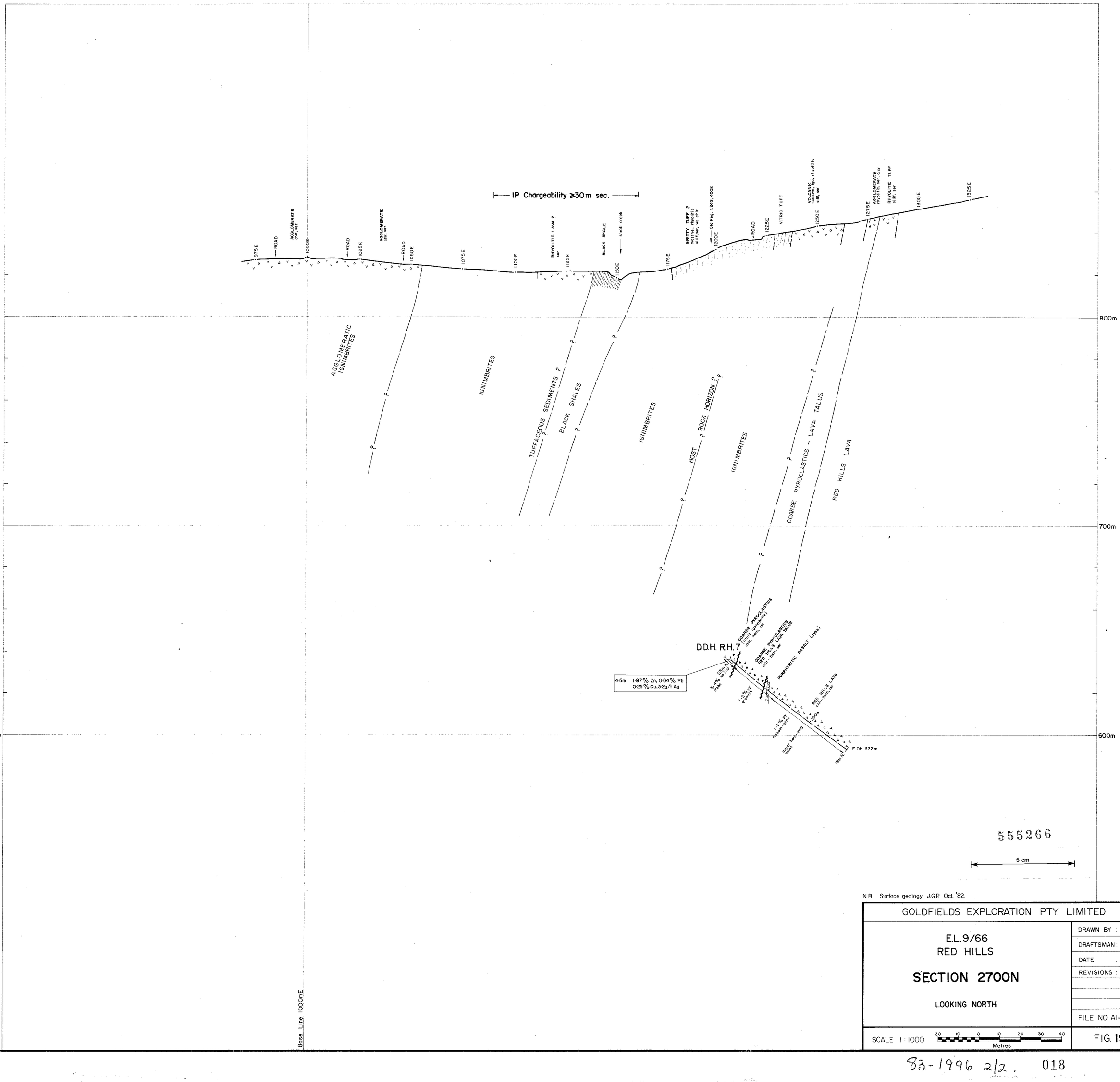
555265

5 cm

GOLDFIELDS EXPLORATION PTY LIMITED	
E.L.9/66 RED HILLS **SECTION 2600N** LOOKING NORTH	DRAWN BY : F.G.F. DRAFTSMAN: T.G.D.S DATE : April REVISIONS.: FILE NO AI-247-
SCALE 1:1000 (20 15 0 10 20 30 40 Metres)	FIG. 18

83-1996 2/2 017

DRILLING PROFILE LINE 2700N



555266

5 cm

N.B. Surface geology J.G.P. Oct. '82.

GOLDFIELDS EXPLORATION PTY. LIMITED

E.L. 9/66
RED HILLS

SECTION 2700N

LOOKING NORTH

DRAWN BY : F.G.F.
DRAFTSMAN : T.G.D.S.
DATE : April '83
REVISIONS :
FILE NO. AI-247-2

SCALE 1:1000 — 20 10 0 10 20 30 40 Metres

FIG. 19

83-1996 2/2. 018

DRILLING PROFILE LINE 2750 N.



555267

5 cm

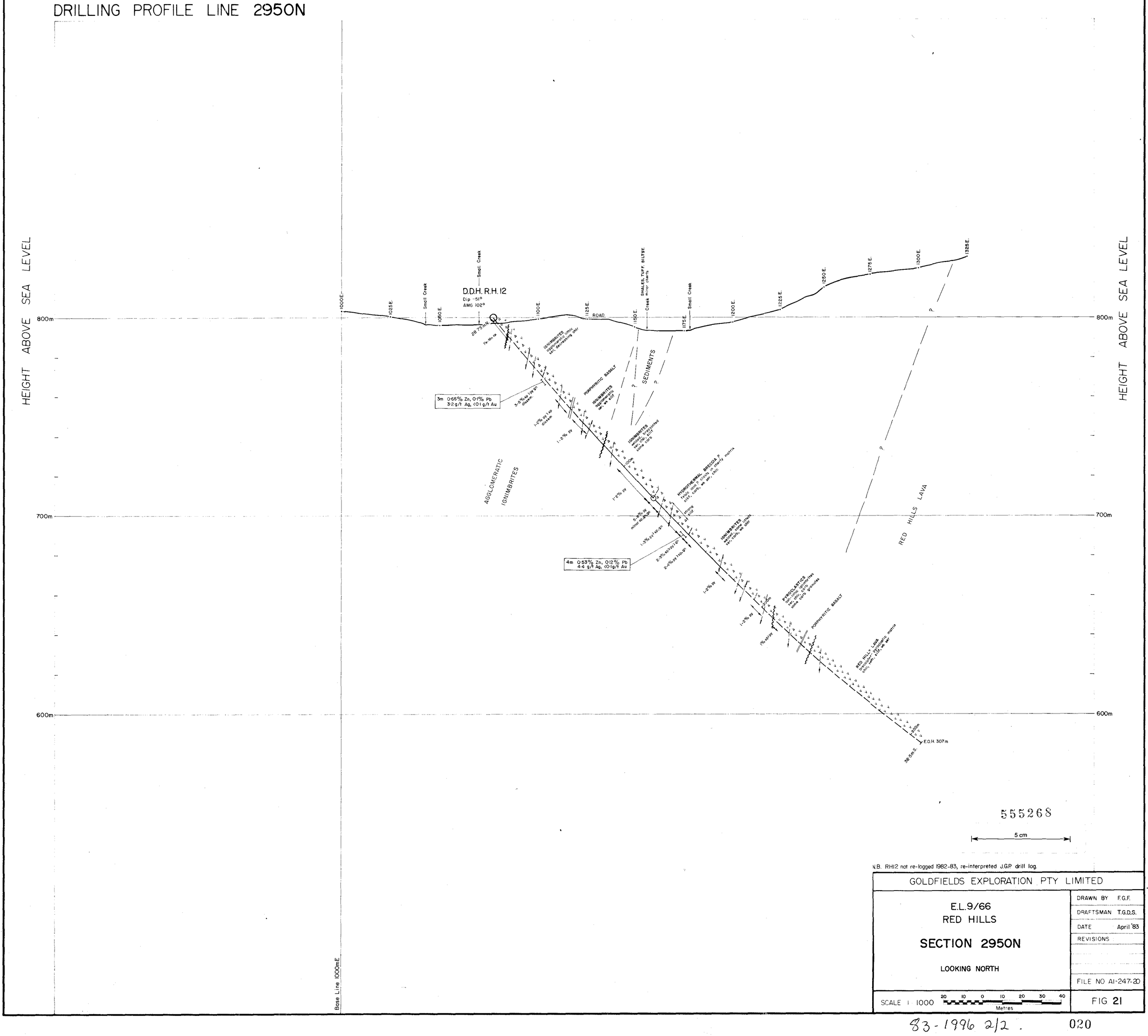
N.B. Surface geology J.G.P. Oct. '82.

GOLDFIELDS EXPLORATION PTY. LIMITED	
E.L. 9/66 RED HILLS SECTION 2750N LOOKING NORTH	DRAWN BY : F.G.F. DRAFTSMAN: T.G.D.S. DATE : April, '83 REVISIONS : FILE NO. AI-247-1
SCALE 1:1000 (20 10 0 10 20 30 40 Metres)	FIG. 20

83-1996 2/2

019

DRILLING PROFILE LINE 2950N



N.B. RH12 not re-logged 1982-83, re-interpreted J.G.P. drill log.

Base Line 1000mE

GOLDFIELDS EXPLORATION PTY LIMITED

E.L.9/66
RED HILLS

SECTION 2950N

LOOKING NORTH

DRAWN BY F.G.F.
DRAFTSMAN T.G.D.S.
DATE April '83
REVISIONS
FILE NO AI-247-20

SCALE 1 : 1000 20 10 0 10 20 30 40 Metres

FIG 21

83-1996 2/2 . 020

15m Pb-Zn Massive Sulphide Exposed in Costean

NB 85 ppm. Pb Soil Anomaly at 1600E on L47N

PROPOSED HYDRO LAKE

Proposed Lake Level 934m

HENTY RIVER

BASELINE 7000E

LINE 7200N

LINE 7100N

LINE 7000N

LINE 6900N

LINE 6800N

L48N

L47.5N (approx. only)

L47N

HFZ 11

HFZ 5

HFZ 6

HFZ 9

HFZ 10

HFZ 3

HFZ 4

TO HENTY GRID 100N

FORWARD ROAD

To Queenstown

LEGEND

- Massive Sulphide Zone Projected to Surface
- 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
- + L48N, 1000E 1973 Imperial Grid Co-ordinates

MAG. N. 12° A.M.G. N.

355269

5 cm

LOCALITY DIAGRAM

SCALE 1:50000

HENTY FAULT

E.L. 9/66 BOUNDARY

AREA SHOWN IN DETAIL IN PLAN

COSTEAN

MASSIVE SULPHIDE OUTCROP

Broadhaws Road

To Howards Anomaly

Imperial Road

To White Spur

HENTY FAULT WEST BRANCH

N (A.M.G.)

GOLDFIELDS EXPLORATION PTY. LIMITED

E.L.9/66

HENTY FAULT ZONE

DIAMOND DRILLING PLAN

DRAWN BY : P.W.E.

DRAFTSMAN : T.G.D.S.

DATE : Sept. '82

REVISIONS :

P.W.E. Oct. '82

J.G.P. Dec. '82

FILE NO.

SCALE 1:2000 40 20 0 20 40 60 80 Metres

FIG. 22

83-1996 2/2

021

NORTH

SOUTH

NORTHERN
LIMIT OF GRADIENT ARRAY
IP ANOMALY
(12 m.sec. CONTOUR

APPLIED POTENTIAL ANOMALY

SOUTHERN
LIMIT OF GRADIENT ARRAY
IP ANOMALY
(12 m.sec. CONTOUR)

7200 N

Costean c 1·5m massive sulphide
(Projected 50m. west)
1·7 % Cu,
1·7 % Pb, 1·5 ppm Au.
0·2% Zn,
95 ppm Ag,

7120N

HENTY RIVER

7000 N

6900N

HENTY RIVER

6800 N

R.L. 550m.

HFZ 11 barren
(Projected 13m. west)

R.L. 500m.

HFZ5 barren
(on section)

HFZ6: (0·55m)
(Projected 5m. west)
1·1 % Cu,
4· % Pb,
7· % Zn,
85 ppm Ag,
2 ppm Au

R.L. 450m.

HFZ 9 : (0·7m)
(Projected 35m. east)
1·1 % : Cu,
1·1 % : Pb,
2·1 % : Zn,
41 ppm : Ag;
1·3 ppm Au

HFZ 10 (0·6m)
(Projected 30m. east)
3·75% Cu,
1·3% Pb,
0·6% Zn,
126 ppm Ag,

R.L. 400m.

R.L. 350m.

555270

5 cm

LEGEND

HFZ 9 (0·7m) - intersect point of hole on eastern side of Henty Fault Zone, with true thickness of massive sulphide.

Possible limits to massive sulphide body.

GOLDFIELDS EXPLORATION PTY. LIMITED

E.L.9/66

HENTY FAULT ZONE

LONGITUDINAL SECTION 7075N.

LOOKING EAST

DRAWN BY P.W.E., J.G.P.
DRAFTSMAN T.G.D.S.
DATE : Dec. 1982
REVISIONS :
J.G.P. Dec. '82
FILE NO.

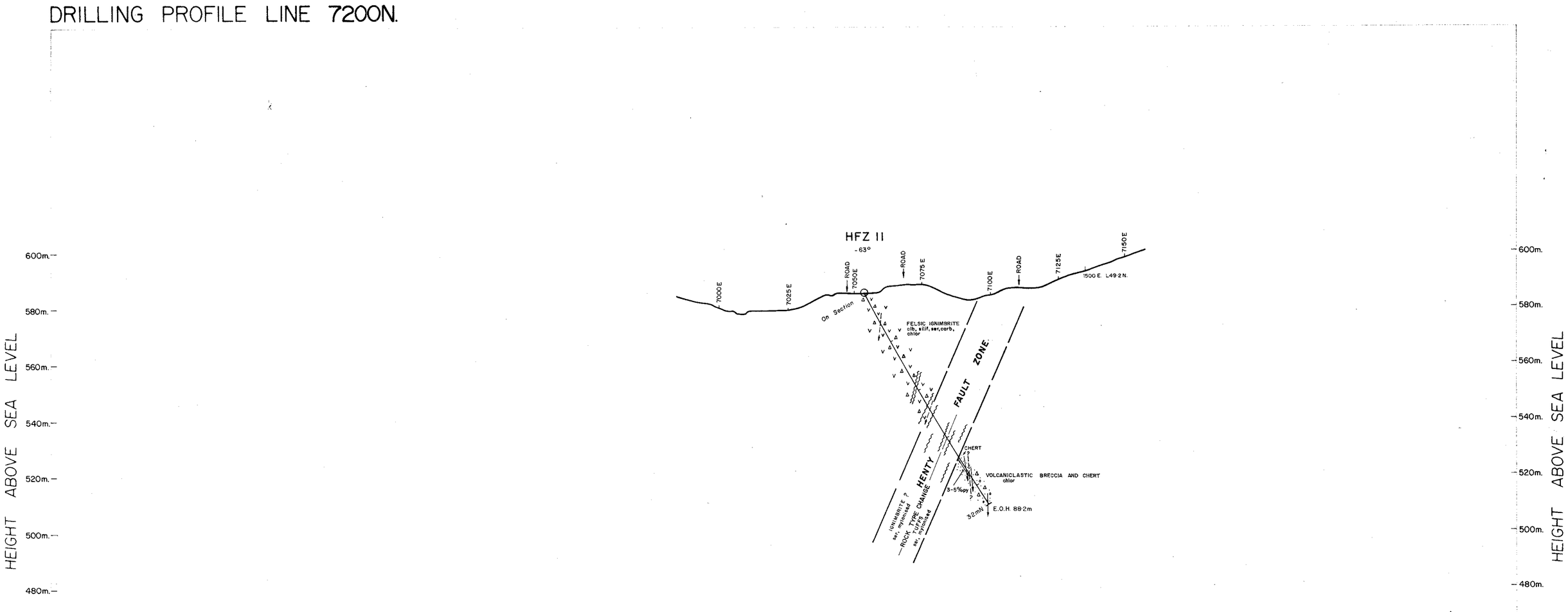
SCALE 1 1000 20 10 0 10 20 30 40 Metres

FIG. 23

83-1996 2/2.

022

DRILLING PROFILE LINE 7200N.

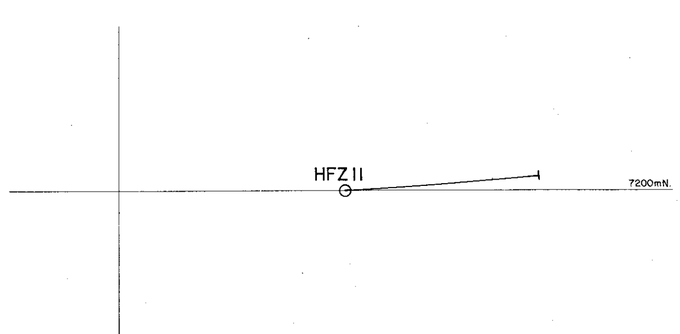


LEGEND

- Geological Contact
- Bedding
- Primary layering - flow banding
  ? bedding, ash flow layering
- Zone of shearing
- 7000 E — 1982 Metric Grid Co-ordinates
- 4989N 1000E — 1973 Imperial Grid Co-ordinates
- (10, 20, 30) Cu p.p.m., Pb p.p.m., Zn p.p.m.

Alteration Type

ser - sericitised
chlor - chloritised
epi - epidotised
alb - albitised
silf - silicified
carb - carbonated
pot - potassic



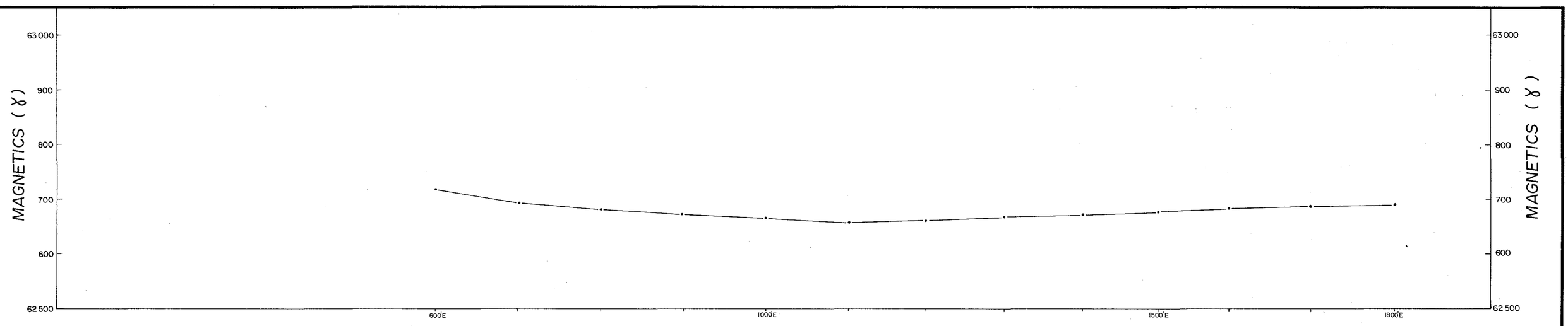
555271

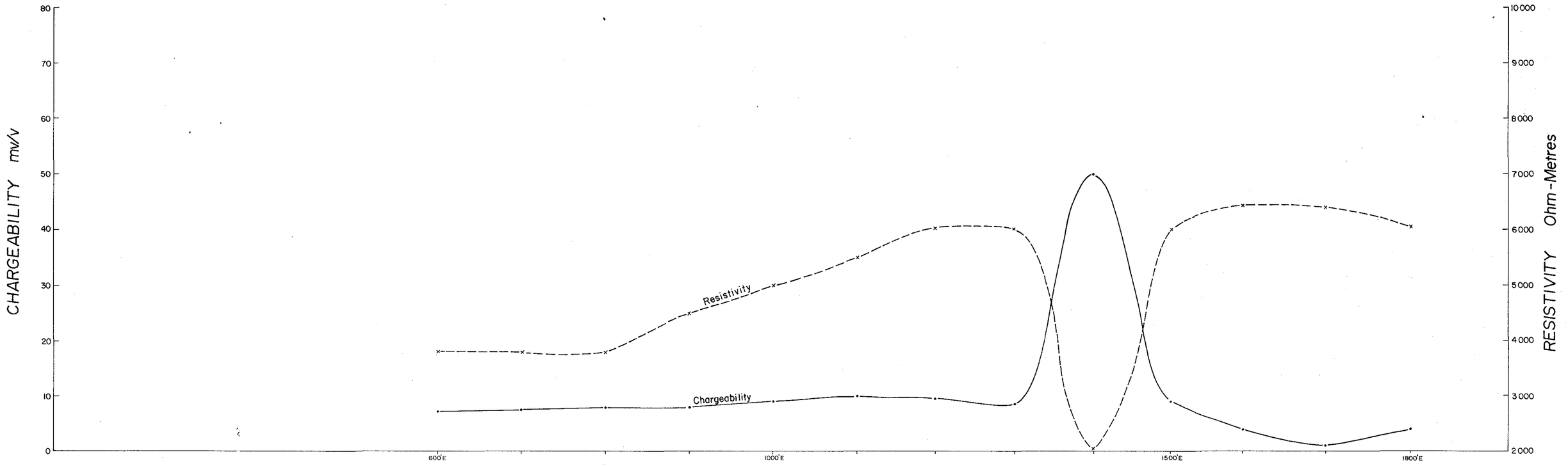
5 cm

GOLDFIELDS EXPLORATION PTY. LIMITED	
E.L.9/66 HENTY FAULT ZONE **GEOLOGICAL SECTION LINE 7200N.** **HFZ II** **LOOKING NORTH**	DRAWN BY PWE, J.G.P. DRAFTSMAN T.G.D.S. DATE Aug.1982 REVISIONS J.G.P. Dec. '82 FILE NO
SCALE 1:1000 20 10 0 10 20 30 40 Metres	FIG 24

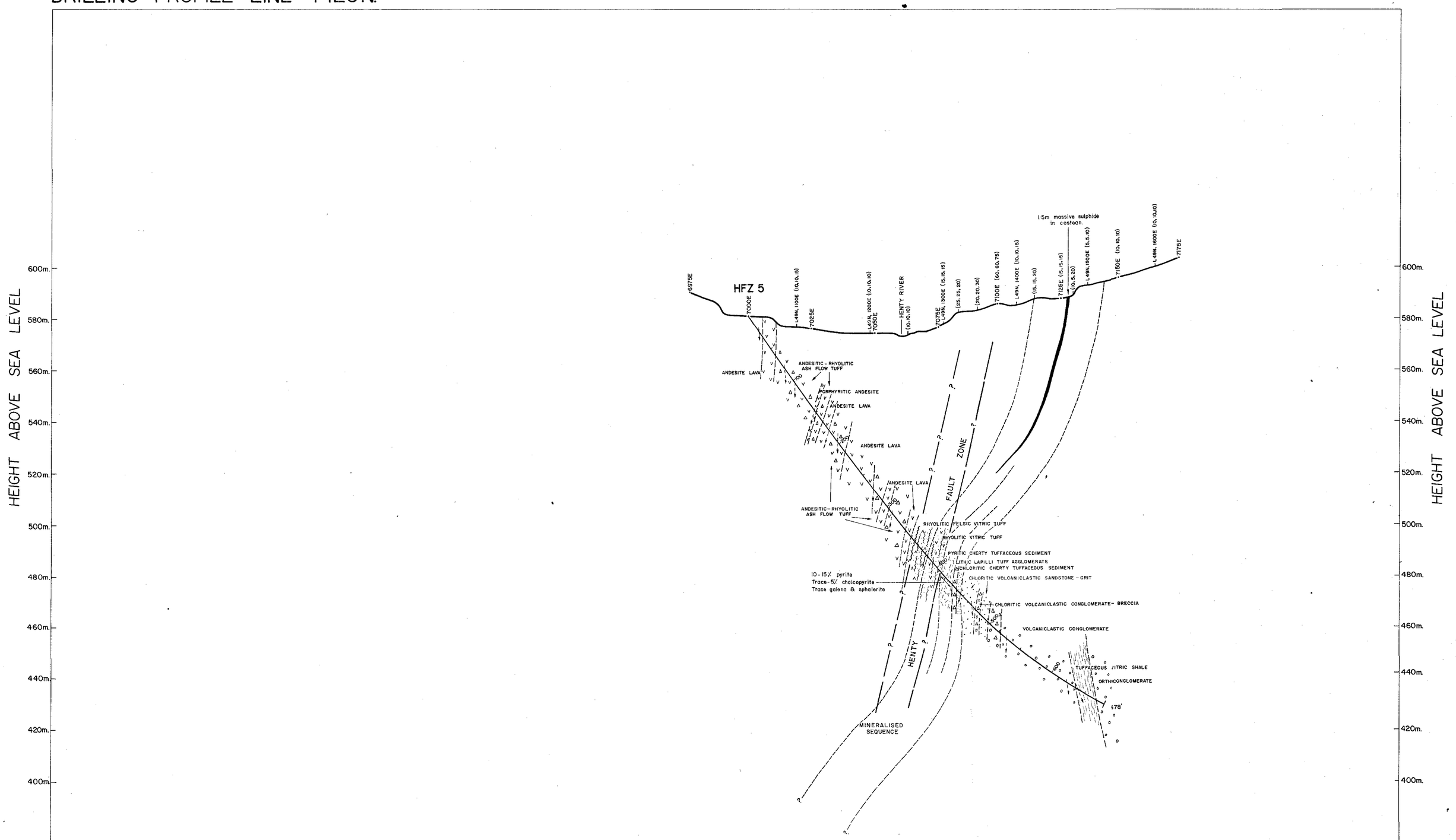
83-1996 2/2

023



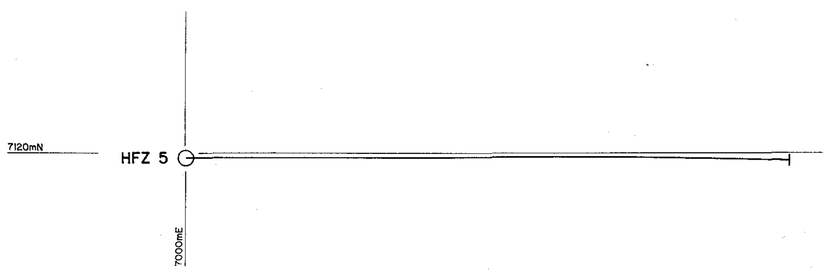


DRILLING PROFILE LINE 7120N.



LEGEND

- Geological Contact
- Bedding
- Primary layering - flow banding ? bedding, ash flow layering
- Zone of shearing
- L49N,1100E — 1973 Imperial Grid Co-ordinates
- 7000E — 1982 Metric Grid Co-ordinates
- (10, 20, 30) Cu ppm., Pb ppm., Zn p.p.m.



555272

5 cm

GOLDFIELDS EXPLORATION PTY. LIMITED

E.L.9/66

HENTY FAULT ZONE

GEOLOGICAL SECTION LINE 7120N.

HFZ5

LOOKING NORTH

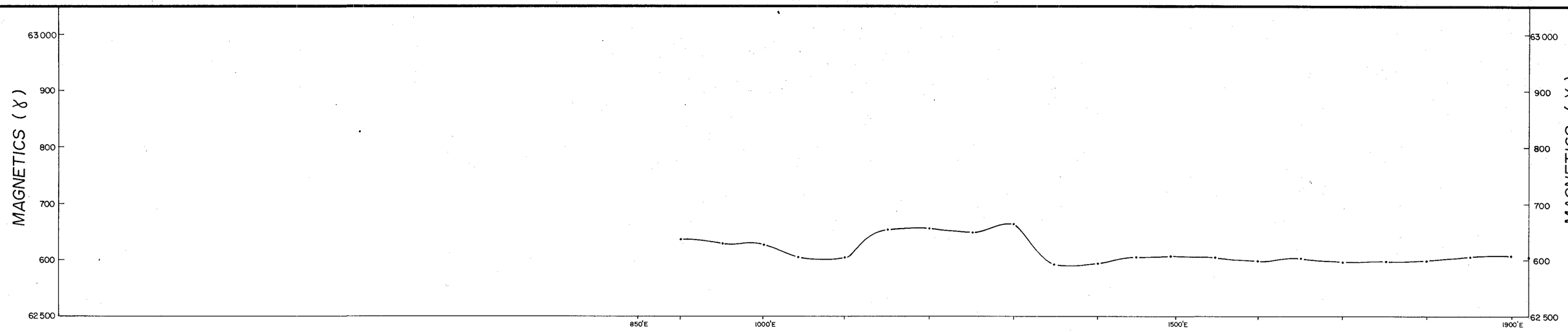
SCALE 1:1000 — 20 10 0 10 20 30 40 Metres

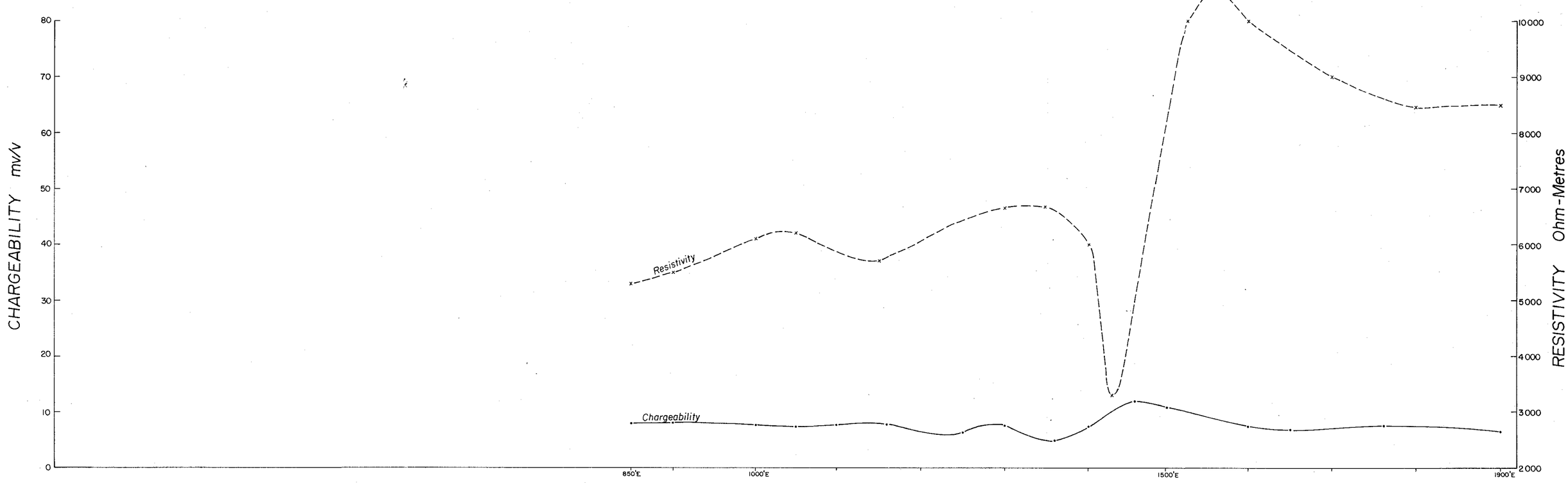
DRAWN BY : P.W.E.
DRAFTSMAN: T.G.D.S.
DATE : Sept. '82
REVISIONS : J.G.P.
P.W.E. Oct. '82
FILE NO.

FIG. 25

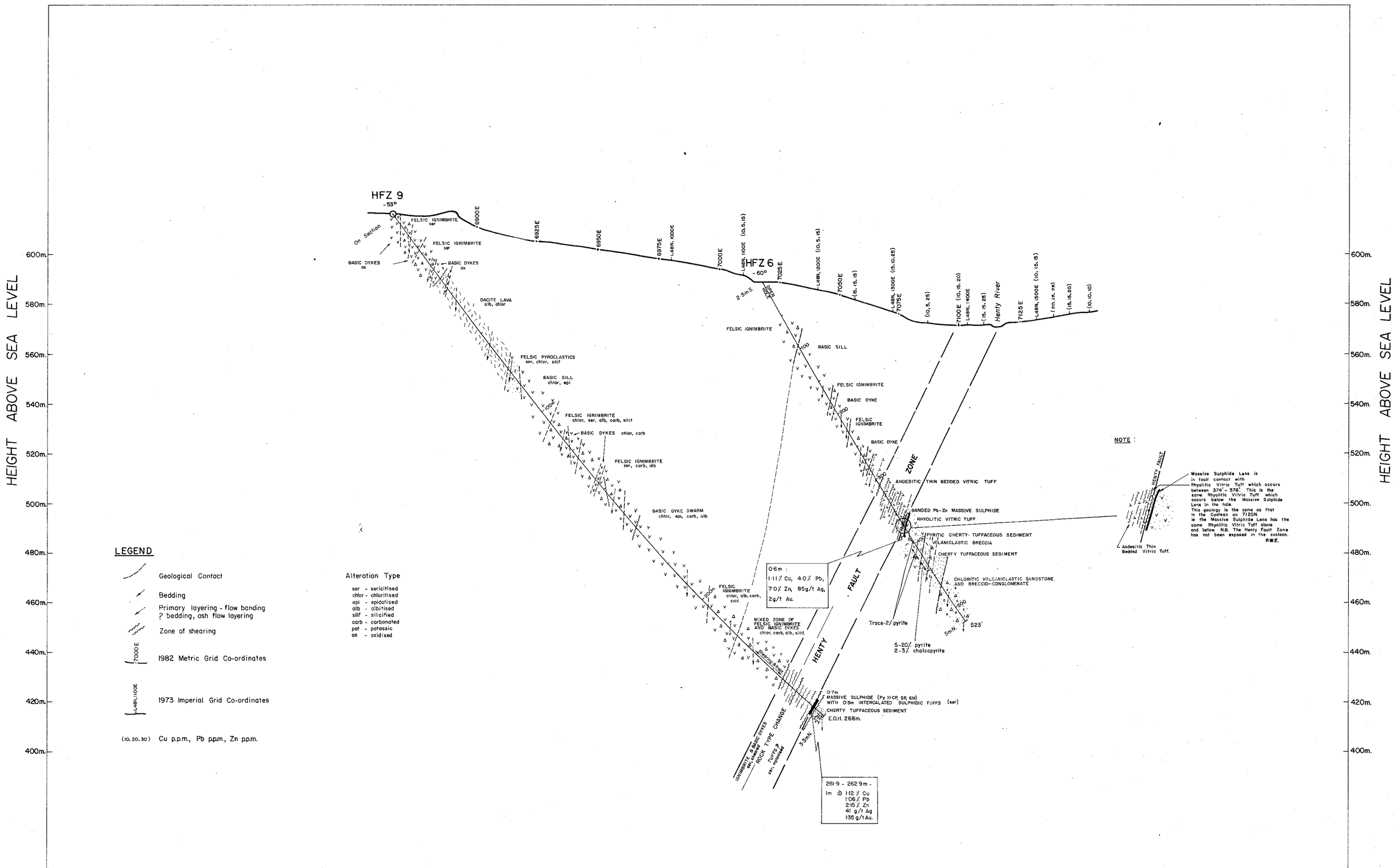
83-1996 2/2

024





DRILLING PROFILE LINE 7000N.

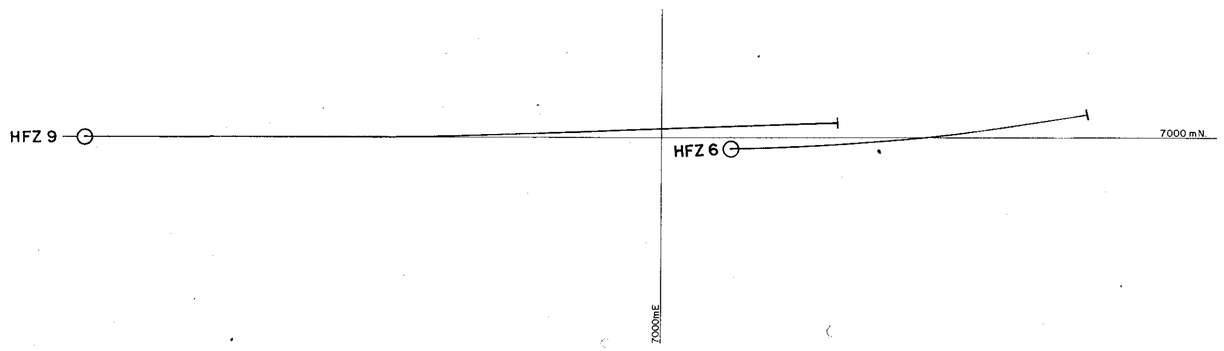


LEGEND

- Geological Contact
- Bedding
- Primary layering - flow banding ? bedding, ash flow layering
- Zone of shearing
- 7000E — 1982 Metric Grid Co-ordinates
- L48N:1100E — 1973 Imperial Grid Co-ordinates
- (10, 20, 30) Cu p.p.m., Pb p.p.m., Zn p.p.m.

Alteration Type

ser - sericitised
chlor - chloritised
epi - epidotised
alb - albitised
silif - silicified
carb - carbonated
pot - potassic
ox - oxidised



555273

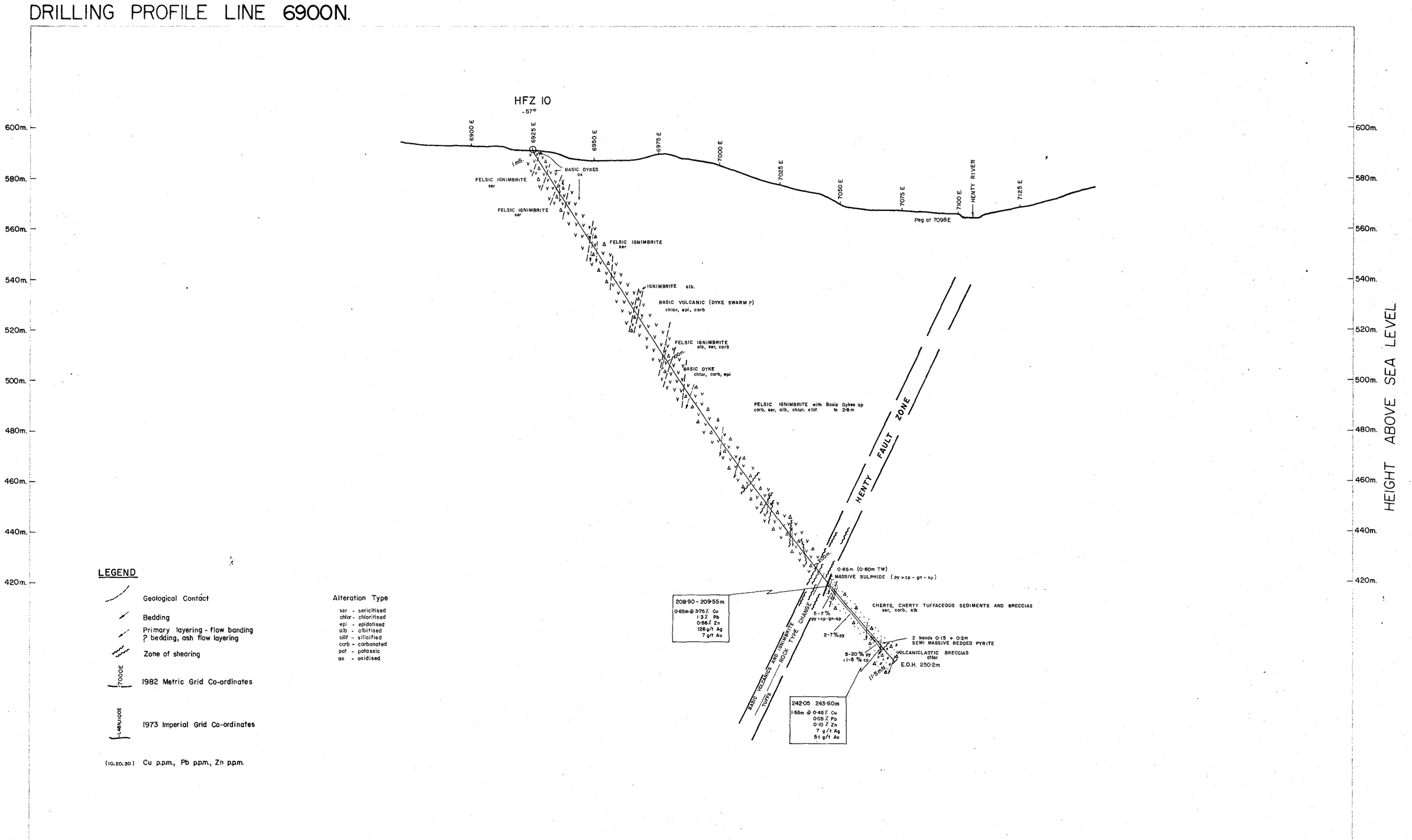
5 cm

GOLDFIELDS EXPLORATION PTY. LIMITED	
E.L.9/66 HENTY FAULT ZONE **GEOLOGICAL SECTION LINE 7000N.** **HFZ 6 & HFZ 9** LOOKING NORTH	DRAWN BY : P.W.E., J.G.P. DRAFTSMAN : T.G.D.S. DATE : Sept. 1982 REVISIONS : P.W.E. Oct. '82 J.G.P. Dec. '82 FILE NO.
SCALE 1:1000 (20 10 0 10 20 30 40 Metres)	FIG. 26

83-1996 2/2

025

DRILLING PROFILE LINE 6900N.

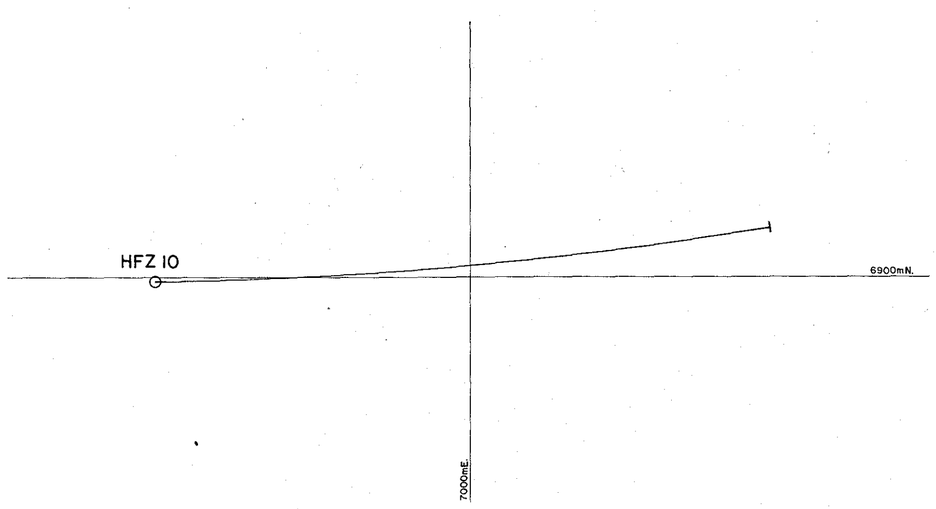


LEGEND

- Geological Contact
- Bedding
- Primary layering - flow banding ? bedding, ash flow layering
- Zone of shearing
- 7000E — 1982 Metric Grid Co-ordinates
- L48N 1100E — 1973 Imperial Grid Co-ordinates
- (10, 20, 30) Cu p.p.m., Pb p.p.m., Zn p.p.m.

Alteration Type

ser - sericitised
chlor - chloritised
epi - epidotised
alb - albitised
silif - silicified
carb - carbonated
pot - potassic
ox - oxidised



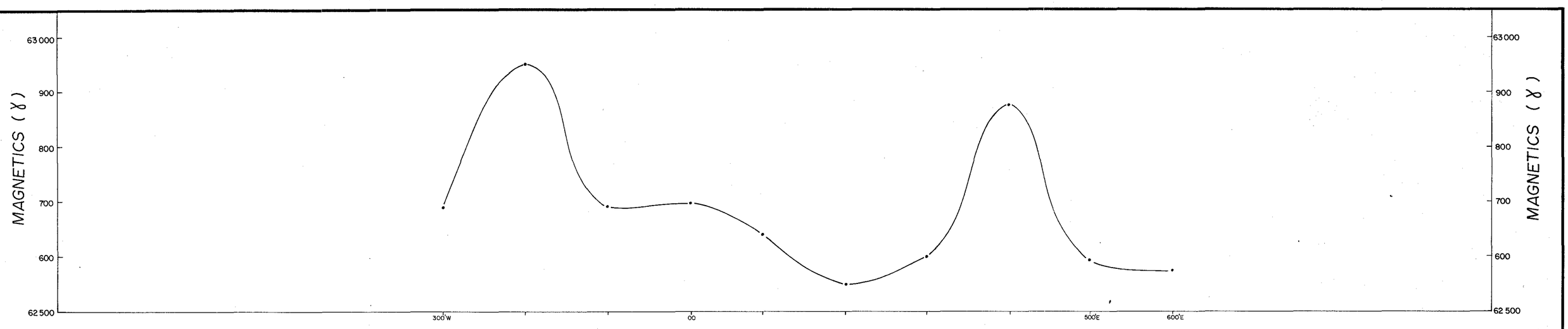
555274

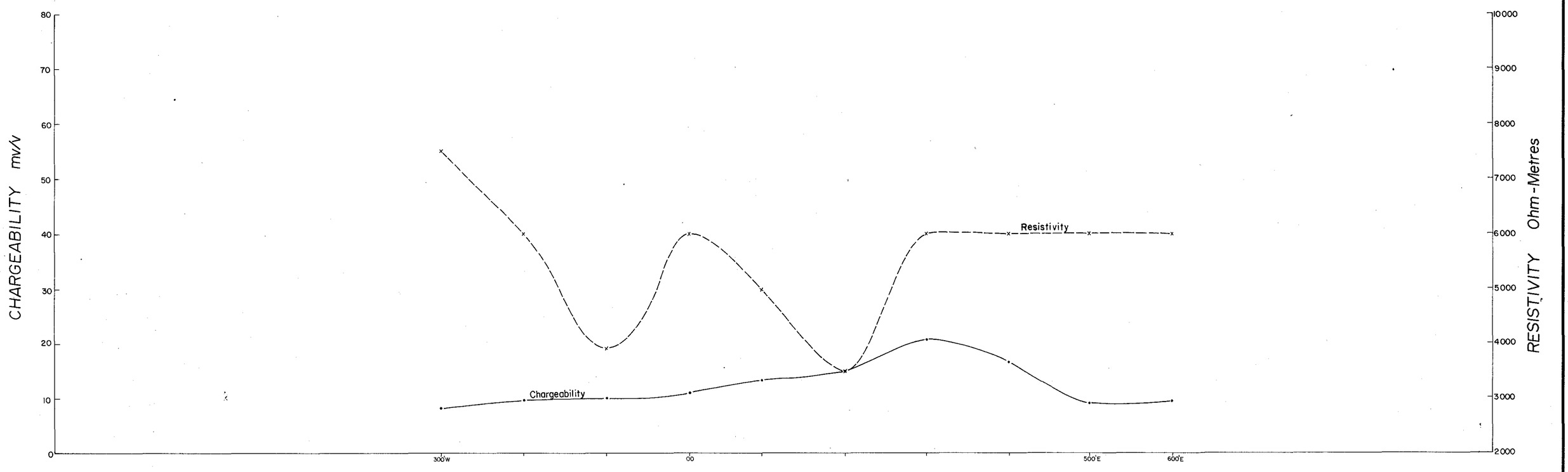
5 cm

GOLDFIELDS EXPLORATION PTY. LIMITED	
E.L.9/66 HENTY FAULT ZONE **GEOLOGICAL SECTION LINE 6900N** **HFZ 10** LOOKING NORTH	DRAWN BY P.W.E., J.G.P. DRAFTSMAN T.G.D.S. DATE Aug. 1982 REVISIONS : J.G.P. Dec. '82 FILE NO
SCALE 1:1000 (20 10 0 10 20 30 40 Metres)	FIG 27

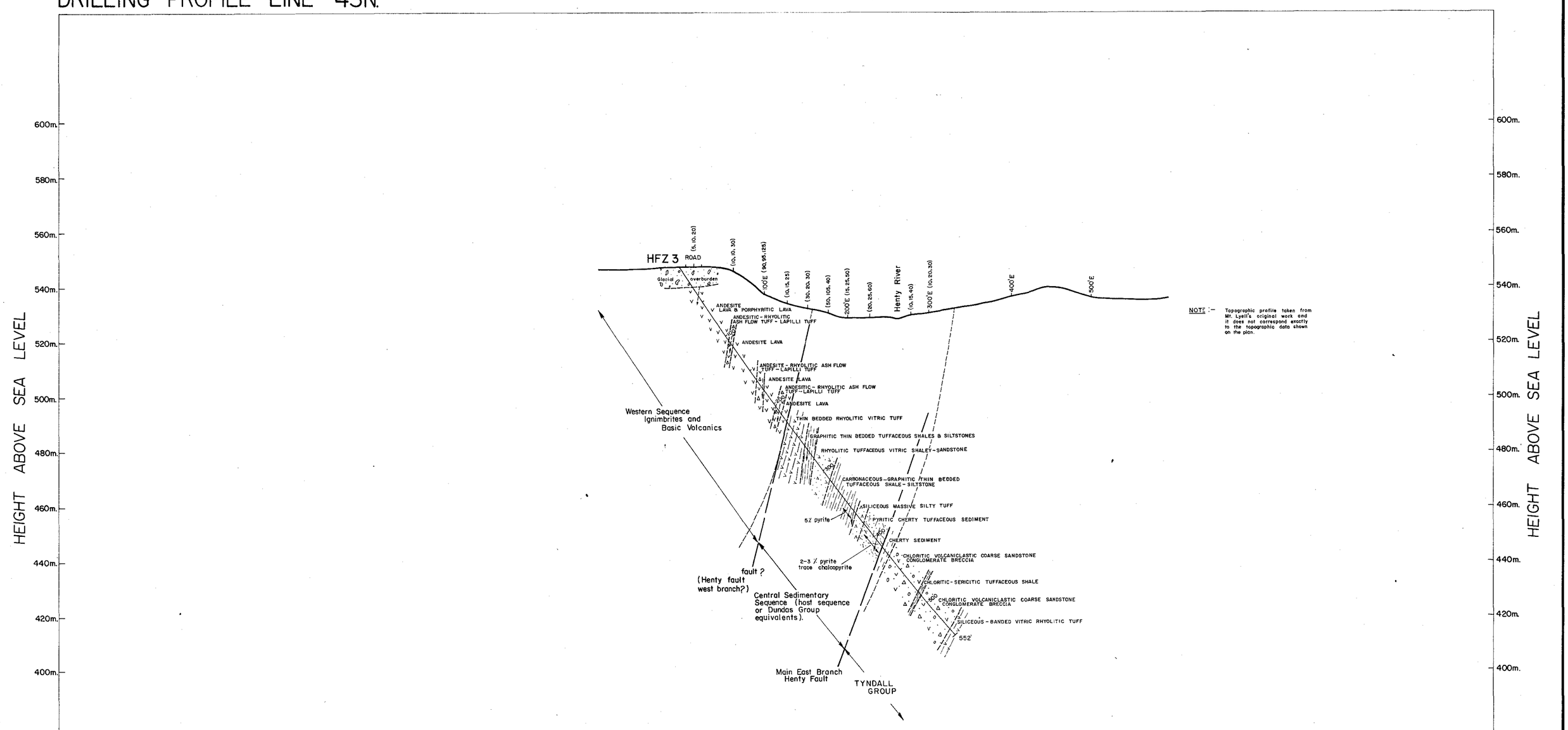
83-1996 2/2

026





DRILLING PROFILE LINE 43N.



NOTE :- Topographic profile taken from Mt. Lyell's original work and it does not correspond exactly to the topographic data shown on the plan.

LEGEND

- Geological Contact
- Bedding
- Primary layering – flow banding ? bedding, ash flow layering
- (10,20,30) Cu ppm., Pb ppm., Zn ppm.
- L48N,1100E — 1973 Imperial Grid Co-ordinates

HFZ 3

555275

5 cm

GOLDFIELDS EXPLORATION PTY. LIMITED

E.L.9/66

HENTY FAULT ZONE

GEOLOGICAL SECTION LINE 43N.

HFZ3

LOOKING NORTH

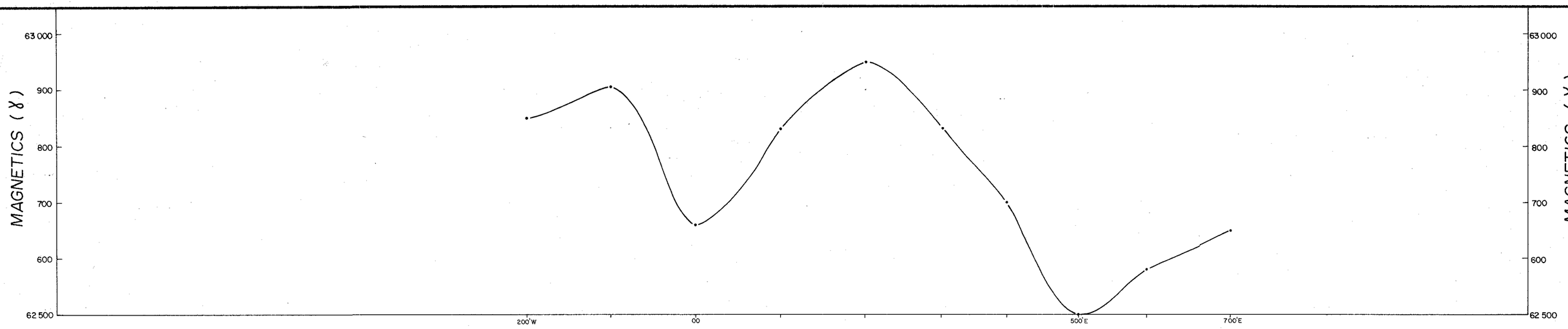
SCALE 1 : 1000 — 20 10 0 10 20 30 40 Metres

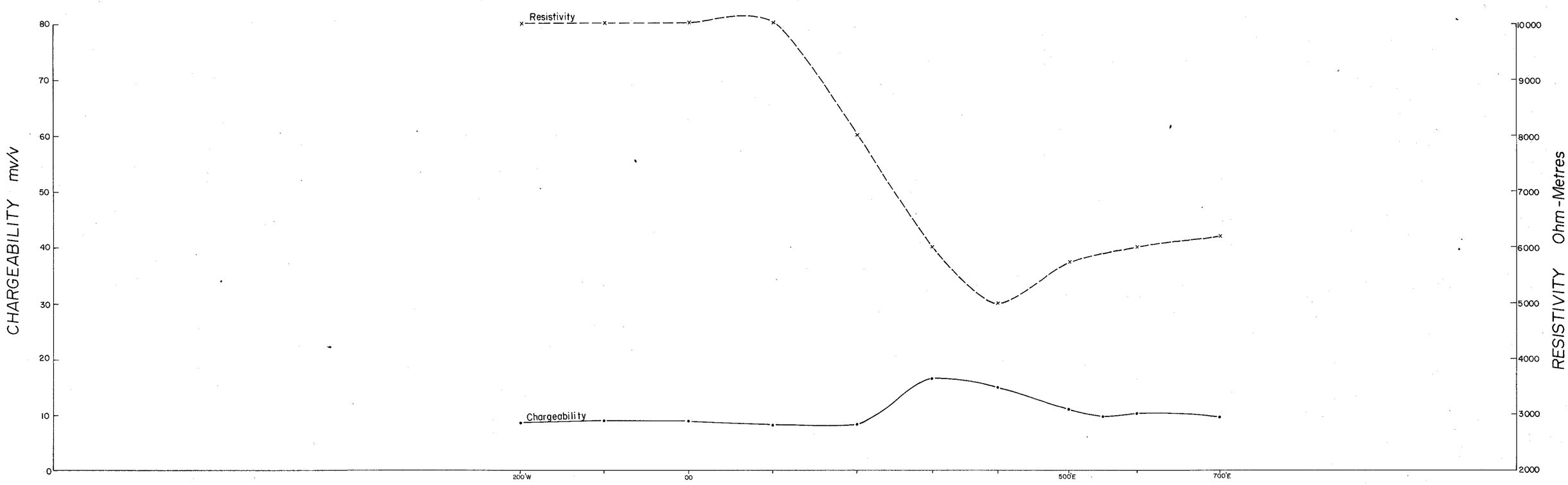
DRAWN BY : P.W.E.
DRAFTSMAN : T.G.D.S.
DATE : Sept 1982
REVISIONS : J.G.P.
P.W.E. Oct. '82
J.G.P. May '83
FILE NO.

FIG. 28

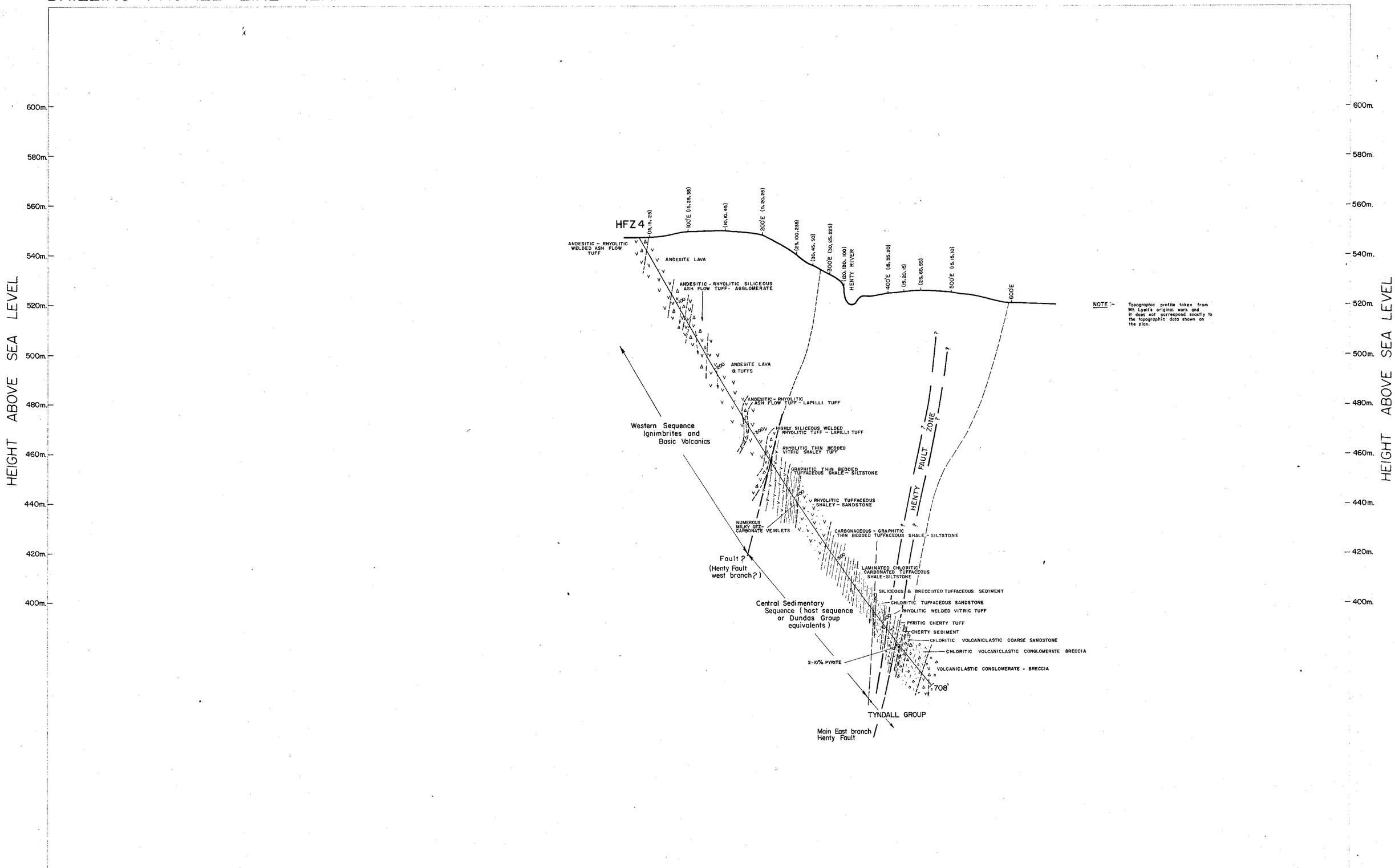
83-1996 2/2

027





DRILLING PROFILE LINE 42N.



NOTE :- Topographic profile taken from Mt. Lyell's original work and it does not correspond exactly to the topographic data shown on the plan.

LEGEND

- Geological Contact
- Bedding
- Primary layering - flow banding ? bedding, ash flow layering
- (10, 20, 30) Cu p.p.m., Pb p.p.m., Zn p.p.m.
- 100'E 1973 Imperial Grid Co-ordinates

HFZ4

555276

5 cm

GOLDFIELDS EXPLORATION PTY. LIMITED

E.L.9/66

HENTY FAULT ZONE

GEOLOGICAL SECTION LINE 42N.

HFZ4

LOOKING NORTH

SCALE 1:1000 20 10 0 10 20 30 40 Metres

DRAWN BY	P.W.E.
DRAFTSMAN	T.G.D.S.
DATE	Sept. '82
REVISIONS	J.G.P.
	P.W.E. Oct. '82
	J.G.P. May '83
FILE NO.	
FIG.	29

83-1996 2/2 .

028



LEGEND

QUARTERNARY

Glacial morraine and boulder fan deposits

ORDOVICIAN

Owen Conglomerate - conglomerates, sandstones & minor shales

Jukes Formation - Purple Volcanoclastic conglomerate

CAMBRIAN

*(Not necessarily in stratigraphic order)

Whip Spur Sequence - dark green andesitic agglomerates, tuffs, green shales & minor cherts

Volcanoclastic conglomerate

Massive grey fine to medium grained rhyolitic ignimbrite

Massive splotchy pink to green rhyolitic lava & agglomerate, patchy albitization, minor hematite, some flow banding

Dark green very chloritized agglomerate & tuffaceous shale

Cherts & fine grained vitric crystal tuffs & minor vitric tuffs

Reworked fine to medium grained tuffs & bedded fine grained crystal tuffs & minor cherts

Medium to coarse grained rhyolitic vitric crystal tuff to crystal lithic tuff

Bedded to massive fine to medium vitric tuffs, vitric crystal tuffs & tuffaceous cherts

As above with hematitic matrix & some bedded hematite

Bedded fine grained vitric crystal tuff, disrupted by deformation or autobrecciated ?

Chloritized

Rhyolitic welded agglomeritic ignimbrite

Rhyolitic agglomeritic ignimbrite

Chloritized

Chloritized dacitic, agglomeritic ignimbrite

Dacitic agglomerate

Dacitic to andesite crystal lithic tuffs

INTRUSIVE

Chloritic dyke

Gossan development

UNIT BOUNDARIES

Observed

Approximate

Uncertain

FAULTS

Definite

Probable

Possible

Bedding without facing

Bedding with facing

Cleavage

Major fold axis

SEALED ROAD BRIDGE

VEHICULAR TRACK

LOGGING TRACK BULLDOZER SCAR

WALKING TRACK

RAILWAY TRAMWAY ABANDONED

PROMINENT PEAK

TRIG STATION

BENCH MARK

SPOT ELEVATIONS

RIVER CREEK

LAKE

SWAMP

POWER LINE & PYLONS

BUILDING

FLYING FOX

PIT

COSTEAN TRENCH

ADIT

SHAFT (Depth metre)

OPEN CUT

ALLUVIAL WORKINGS

DUMP

MAP INDEX

AIRPORT	TOWNSHIP	PRINCESS
LYNCHFORD	OWEN	TOFFT
NEWALL	HUXLEY	KING

Photography: Lands Department 1979-80
South West Project Y617
Photogrammetry: Associated Aerial Surveys Pty Ltd 1980

Grid Lines are 1000 Metre intervals of the Australian Map Grid Zone 55
Grid Values are Shown in Full Only at the South West Corner of the Map
Horizontal Datum: Australian Geodetic Datum 1966
Vertical Datum: Australian Height Datum (Tasmania)
Transverse Mercator Projection

555277

100 0 100 200 300 400 500

Metres

5 cm

83-1996 2/2

THE MOUNT LYELL MINING & RAILWAY COMPANY LTD

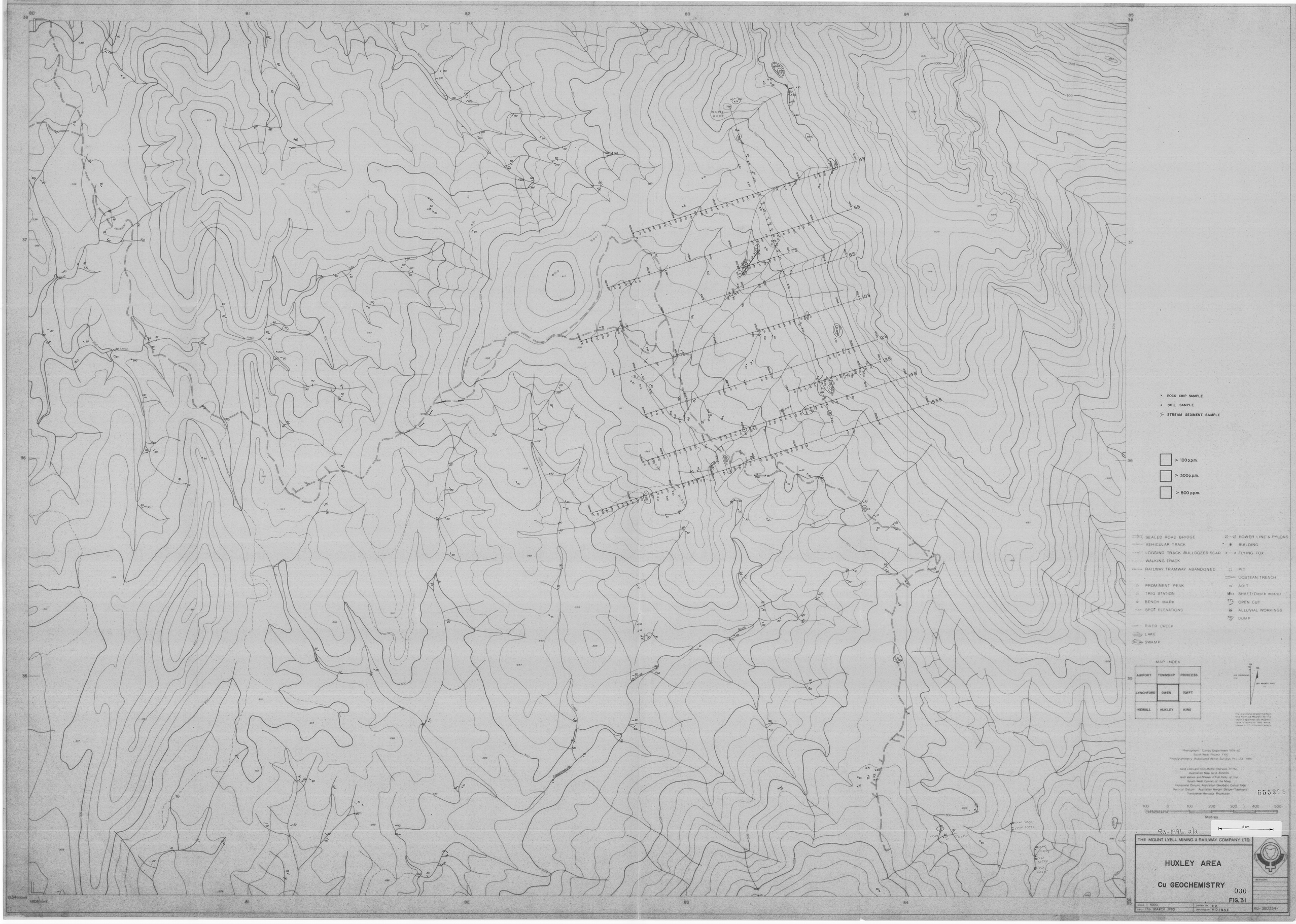
HUXLEY AREA

029

INTERPRETATIVE GEOLOGY

FIG. 30

SCALE 1:5000	DRAWN BY PK	REVISIONS
DATE 17th MARCH 1980	DRAFTSMAN H.D.J & S.J.E	AO-380334-



83-1996 2/2

THE MOUNT LYELL MINING & RAILWAY COMPANY LTD.

HUXLEY AREA

Cu GEOCHEMISTRY

030

FIG. 31

SCALE 1:5000 | DRAWN BY P.K. | AC-380334-

DATE 17th MARCH 1980 | DRAFTSMAN H.D./B.S.F.



× ROCK CHIP SAMPLE

• SOIL SAMPLE

STREAM SEDIMENT SAMPLE

> 100 p.p.m.

> 300 p.p.m.

> 500 p.p.m.

SEALED ROAD BRIDGE
VEHICULAR TRACK
LOGGING TRACK BULLDOZER SCAR
WALKING TRACK
RAILWAY TRAMWAY ABANDONED
PROMINENT PEAK
TRIG STATION
BENCH MARK
SPOT ELEVATIONS
RIVER CREEK
LAKE
SWAMP

POWER LINE & PYLONS
BUILDING
FLYING FOX
PIT
COSTEAN TRENCH
ADIT
SHAFT (Depth metre)
OPEN CUT
ALLUVIAL WORKINGS
DUMP

MAP INDEX

AIRPORT	TOWNSHIP	PRINCESS
LYNCHFORD	OWEN	TOFFT
NEWALL	HUXLEY	KING

Photography: Lands Department 1929-30
South West Project F810
Photogrammetry: Associated Aerial Surveys Pty Ltd 1980

Grid Lines are 1000 Metre Intervals of the Australian Map Grid Zone 55
Grid Values are Shown in Full Only at the South West Corner of the Map
Horizontal Datum: Australian Geodetic Datum 1966
Vertical Datum: Australian Height Datum (Tasmania)
Transverse Mercator Projection

555279

100 0 100 200 300 400 500
Metres

5 cm

83-1996 2/2

THE MOUNT LYELL MINING & RAILWAY COMPANY LTD.

HUXLEY AREA

031

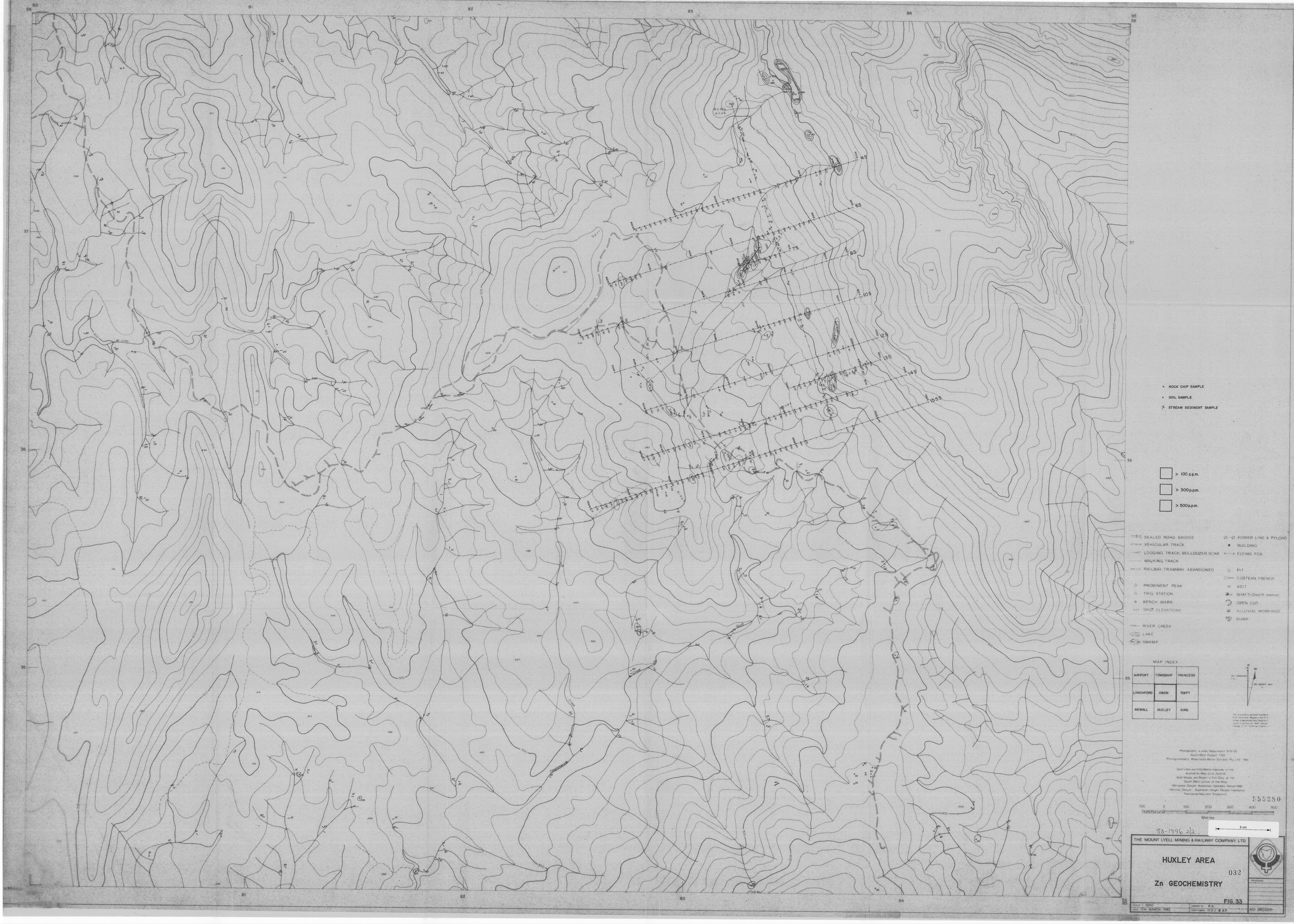
Pb GEOCHEMISTRY

FIG. 32

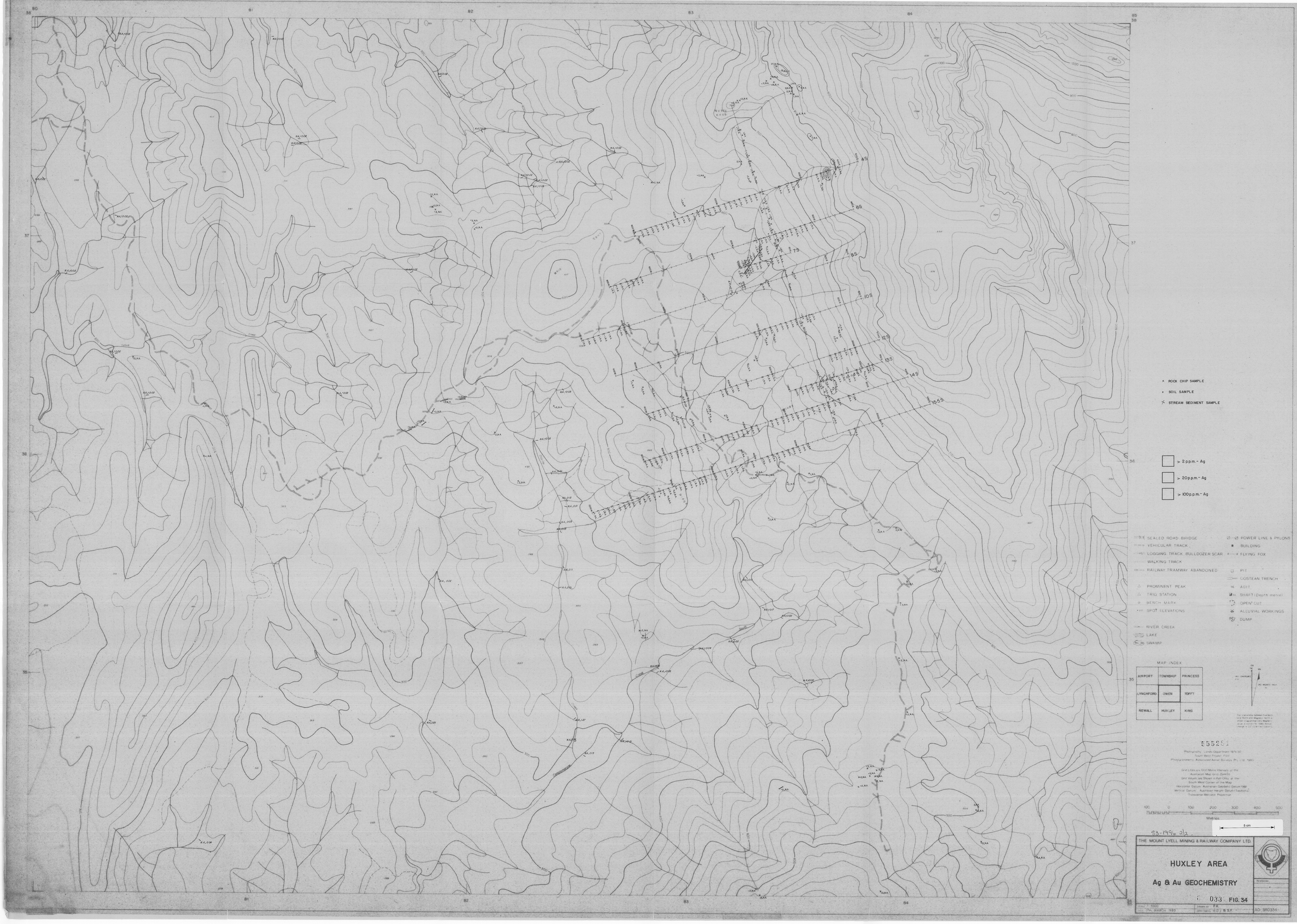
SCALE 1:5000 | DRAWN BY P.K.
DATE 17th MARCH 1980 | DRAFTSMAN H.D.J. & S.F.

REVISIONS

AD-380334-



ROCK CHIP SAMPLE
SOIL SAMPLE
STREAM SEDIMENT SAMPLE
> 100 p.p.m.
> 300 p.p.m.
> 500 p.p.m.
SEALED ROAD BRIDGE
VEHICULAR TRACK
LOGGING TRACK, BULLDOZER SCAR
WALKING TRACK
RAILWAY TRAMWAY ABANDONED
PROMINENT PEAK
TRIG STATION
BENCH MARK
SPOT ELEVATIONS
RIVER CREEK
LAKE
SWAMP
POWER LINE & PYLONS
BUILDING
FLYING FOX
PIT
COSTEAN TRENCH
ADIT
SHAFT (Depth metre)
OPEN CUT
ALLUVIAL WORKINGS
DUMP
MAP INDEX
AIRPORT
TOWNSHIP
PRINCESS
LYNCHFORD
OWEN
TOFFT
NEWALL
HUXLEY
KING
Photography: Lands Department 1979/80
South West Project F637
Photogrammetry: Associated Aerial Surveys Pty. Ltd. 1980
Grid Lines are 1000 Metre Intervals of the Australian Map Grid Zone 55
Grid Values are Shown in Full Only at the South West Corner of the Map
Horizontal Datum: Australian Geodetic Datum 1966
Vertical Datum: Australian Height Datum (Tasmania)
Transverse Mercator Projection
555280
100 0 100 200 300 400 500
Metres
5 cm
83-1996 2/2
THE MOUNT LYELL MINING & RAILWAY COMPANY LTD
HUXLEY AREA
032
Zn GEOCHEMISTRY
FIG. 33
SCALE 1:5000
DATE 12th MARCH 1980
DRAWN BY P.K.
DRAFTSMAN H.D.J. & S.F.
AO-380334-



555281

Photography: Lands Department 1979-80
South West Project F637
Photogrammetry: Associated Aerial Surveys Pty. Ltd. 1980

Grid Lines are 1000 Metre Intervals of the Australian Map Grid, Zone 50
Grid Values are Shown in Full Only at the South West Corner of the Map
Horizontal Datum: Australian Geodetic Datum 1966
Vertical Datum: Australian Height Datum (Tasmania)
Transverse Mercator Projection

83-1996 2/2

THE MOUNT LYELL MINING & RAILWAY COMPANY LTD.

HUXLEY AREA

Ag & Au GEOCHEMISTRY

033 FIG. 34

SCALE 1:5000	DRAWN BY P.K.	
DATE 1TH MARCH 1980	DRAFTSMAN H.D. & S.F.	AO-380334

ROCK CHIP ASSAYS

Sample No.	Cu.	Pb.	Zn.	As.	Fe%	W%	Mn.	Ba.
21001	580	-	50	<2	2.3	0.1	1080	-
21002	230	10	60	-	4.5	<0.1	50	-
21003	200	-	20	-	0.7	0.2	120	-
21004	270	-	30	-	1.7	<0.1	40	-
21005	200	-	40	-	1.4	0.1	70	-
21006	230	-	20	-	0.6	<0.1	-	-
21007	110	-	-	-	0.2	0.1	-	-
21008	150	20	40	-	1.2	<0.1	90	-
21009	120	-	-	-	0.2	0.1	-	-
21010	120	-	110	-	2.8	<0.1	430	-
21011	80	170	100	-	1.7	0.1	370	-
21012	90	10	100	-	5.4	0.3	150	600
21013	110	20	10	-	0.4	<0.1	20	-
21014	250	10	120	-	6.2	-	260	-
21015	70	10	40	-	2.2	-	90	-
21016	110	-	30	-	2.4	-	70	-
21017	90	90	-	-	1.2	1.7	20	-
21018	70	-	190	-	2.2	<0.1	1240	-
21019	40	20	20	-	0.2	0.1	70	-
21020	130	20	110	-	1.5	0.1	380	-
21021	70	30	220	-	9.0	<0.1	440	-
21022	40	-	30	-	1.2	0.3	20	-
21023	160	20	160	-	6.6	<0.1	160	-
21024	110	-	60	-	2.5	-	60	-
21025	250	20	140	-	6.0	0.1	1020	-
21026	130	1.5%	10	20	0.6	0.3	50	-
21027	100	150	70	-	4.0	<0.1	390	-
21028	120	140	20	-	2.8	0.2	50	200
21029	50	50	70	-	4.0	<0.1	190	-
21030	80	70	160	-	7.0	-	290	-
21031	50	-	20	-	1.3	-	290	-
21032	120	-	40	-	2.8	0.2	850	-

ppm unless otherwise stated
- = below detection limit
NA = NOT ASSAYED

Sample No.	Cu.	Pb.	Zn.	As.	W%	Mn.	Ba.
21033	60	<10	30	<2	0.1	60	<100
21034	70	10	80	-	<0.1	300	-
21035	50	10	70	-	<0.1	150	-
21036	80	<10	130	-	<0.1	240	-
21037	50	10	90	-	<0.1	160	-
21038	30	<10	90	-	0.1	100	-
21039 A	70	20	10	-	0.2	30	1000
21039 B	220	40	240	-	<0.1	2100	300
21040	50	<10	20	-	<0.1	120	<100
21041	60	20	80	-	0.1	170	-

ppm unless otherwise stated
- = below detection limit
NA = NOT ASSAYED

