LV. PRESS

GOLD FIELDS EXPLORATION PTY. LIMITED

DRILL CORE RECORD

418054

HOLE NO.	LS 11
STATE	TASMANIA

PROJECT	TYNDALL
DESIGNED BY	J.G. PURVIS
LOGGED BY	A.J. CARTWRIGHT
COMMENCED	6-2-84
COMPLETED	27-2-84

PURPOSE

To test and I.P. anomaly in the Eastern Pyrite Zone on Line 208N of the Selina Grid.

LOG SUMMARY

0.0 -	6.0	WEATHERED COLLUVIUM.	
6.0 -	62.0	QUARTZ-FELDSPAR PHYRIC, LITHIC IGNIMBRITE.	SELINA
62.0 -	90.5	CRYSTAL, PUMICEOUS, LITHIC PYROCLACSTICS.	VOLCANICS
90.5 -	107.0	AUTOBRECCIATED RHYODACITE AND ASH.	
107.0 -	326.6	VOLCANICLASTICS WITH MINOR CHERTS AND LAVAS. PYRITIC.	
362.2	422.3	HORNFELSED? VOLCANICLASTICS WITH MINOR CHERTS. MAGNETITE RICH.	

GENERAL COMMENTS

SSAY SUMMARY

INTERVAL From	INTERVAL To													COMMENTS

OCATION

NORTHING	5365198
EASTING	386110
R.L.	396.2
GRID	A.M.G.
LENGTH	422.3

HOLE CONDITION

SIZE Hole Size	SIZE Depth
HQ	0.0-6.0
NQ	6.0-51.0
BQ	51.0-422.3

SIGNIFICANT CORE LOSS INTERVALS From	To	% Lost

POOR GROUND CONDITION ZONES From	To	Condition

HOLE CONDITIONS AFTER COMPLETION

Hole left open, and making abundant water.

URVEY 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
0.0	278	50.0	0.0	36.0	36.0	27.6	368.6	23.1	23.1
72.0	268	50.0	36.0	95.0	59.0	45.2	323.4	37.9	61.0
18.0	269	47.5	95.0	149.0	54.0	39.8	283.6	36.5	97.5
80.0	273	45.0	149.0	210.0	61.0	43.1	240.5	43.1	140.6
40.0	267	42.5	210.0	270.0	60.0	40.5	200.0	44.2	184.8
300.0	268	40.0	270.0	325.9	55.9	35.9	164.1	42.8	227.6
51.8	271	38.5	325.9	286.4	60.5	37.7	126.4	47.6	275.2
121.0	274	34.0	386.4	422.3	35.9	20.1	106.3	29.8	305.0

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

418055

GOLD FIELDS EXPLORATION PTY. LIMITED

LV. PRESS

PROJECT: TYNDALL

DRILL CORE LOG AND ASSAY DATA

HOLE NUMBER: LS. 11 Page: 1.

INTERVAL From	INTERVAL To	RECOVERY m	RECOVERY %	DESCRIPTION	ASSAY DATA Sample No.	From	To	Rec. %
				SUMMARISED LOG				
0.0	6.0	0.4	7	WEATHERED COLLUVIUM.				
6.0	62.0	44.6	80	SELINA VOLCANICS. QUARTZ-FELDSPAR PHYRIC WELDED? IGNIMBRITE WITH ABUNDANT LITHIC AND PUMICEOUS CLASTS. MODERATELY ALTERED AND STRONGLY WEATHERED OVER THE FIRST 30 METRES. WEAKLY FOLIATED.				
62.0	90.5	28.5	100	SELINA VOLCANICS. PYROCLASTICS RICH IN QUARTZ, PUMICE AND LITHICS. WEAKLY ALTERED AND WEAKLY HEMATITIC. PYRITE IS RARE. POSSIBLY SUB-AQUEOUS? WEAKLY FOLIATED. THE LOWER CONTACT IS A SHEAR ZONE.				
90.5	107.0	16.5	100	SELINA VOLCANICS. AUTOBRECCIATED RHYODACITIC LAVA AND ASH. THE LAVA IS QUARTZ PORPHYRITIC AND HEMATITIC, THE ASH IS CHLORITIC, WEAKLY ALTERED, THE ASH IS WEAKLY PYRITIC AND FOLIATED - ALSO POSSIBLY SUB-AQUEOUS?				
07.0	362.6	255.6	100	SELINA VOLCANICS. VOLCANICLASTICS (SUB-AQUEOUS) RICH IN QUARTZ AND PUMICE FRAGMENTS WITH MINOR CHERTY SEDIMENTS AND RHYODACITIC LAVAS. STRONGLY PYRITIC, CHLORITIC AND SERICITIC. THE BASAL PORTION OF THE UNIT IS STRONGLY HEMATITIC AND IS RICH IN MAGNETITE. THE LOWER CONTACT IS FAULTED. WEAKLY TO MODERATELY ALTERED.				
362.6	422.3	59.7	100	SELINA VOLCANICS. VOLCANICLASTICS (SUB-AQUEOUS) RICH IN QUARTZ AND PUMICE FRAGMENTS WITH MINOR CHERTY SEDIMENTS. STRONGLY DEVELOPED CHLORITE-MAGNETITE ALTERATION. WEAKLY PYRITIC AND HEMATITIC. POSSIBLY HORNFELSED.				
				DETAILED LOG				
				0.0-6.0 WEATHERED COLLUVIUM.				
0.0	6.0	0.4	7	Weathered colluvium of quartzite and quartzite-conglomerate. Sub-angular fragments (pebble + cobble sized) -unconsolidated.				

GOLD FIELDS EXPLORATION PTY. LIMITED

DRILL CORE LOG AND ASSAY DATA

PROJECT: TYNDALL HOLE NUMBER: LS. 11 Page: 2.

INTERVAL From	INTERVAL To	RECOVERY m	RECOVERY %	DESCRIPTION	ASSAY DATA Sample No.	From	To	Rec. %
				6.0-62.0 IGNIMBRITE QUARTZ-FELDSPAR PHYRIC WITH ABUNDANT LITHIC, MAINLY PUMICEOUS FRAGMENTS. MODERATELY ALTERED, STRONGLY WEATHERED AT FIRST.				
6.0	35.2	18.2	62	Weathered ignimbrite. Pale green-brown moderately to strongly weathered with abundant limonite and sericite developed. The ignimbrite is quartz-feldspar phyric with large (0.5cm) round quartz and feldspar (now sericitic) phenocrysts. It also contains sericitised pumiceous fragments elongated by the weakly developed foliation in the rock. These have been preferentially weathered out in many places, causing the rock to appear vuggy. Overall the rock is weakly altered and highly fractured and broken.				
Between 6.0-14.4,1.3m rec.)								
Between 14.4-28.7,11.7m rec)								
				Below 28.7 the pervasive brown limonitic developed is absent, and limonite is restricted to fracture coatings. The rock becomes greener and less fractured also.				
35.2	62.0	26.4	99	Incipinetly weathered green ignimbrite. Rich in white sericitic feldspar phenocrysts and rarer anhedral quartz crystals. The groundmass is pale green to green sericite (+chlorite?). Moderately-strongly fractured with limonite coatings (thin) on some fracture surfaces.				
Between 40.8-42.3,1.1m rec.)								
				At 42.4, a small clayey fracture zone occurs.				
				At 45.6, traces of the limonitic staining disappear. The rock remains strongly fractured 57.1.				
				Pale brown sericite replaces some of the pumiceous fragments and forms along small fractures below 55.0. Also, patches of darker green (more chloritic?) alteration occur within the sericitic (pale green) alteration state. With the darker sytle of alteration, thin irregular carbonate veinlets also exist. Overall, weakly altered.				
				62.0-90.5 PYROCLASTICS RICH IN QUARTZ AND PUMICE FRAGMENTS. WEAKLY ALTERED.				
62.0	90.5	28.5	100	Green pyroclastics, containing a wide variety of fragments.				

GOLD FIELDS EXPLORATION PTY. LIMITED

DRILL CORE LOG AND ASSAY DATA

418057

LV. PRESS

PROJECT: TYNDALL

HOLE NUMBER: LS. 11

INTERVAL		RECOVERY		DESCRIPTION	ASSAY DATA			
From	To	m	%		Sample No.	From	To	Rec. %
				The unit appears to be an airfall ash, with many lithic-fragments: weakly hematitic lava clasts, quartz crystals and flattened (by the foliation) pumiceous fragments (now replaced by sericite-quartz-calcite). The groundmass-tufaceous matrix is sericitic-chloritic with a moderately well developed calcareous componenet as well. The unit is crudely bedded (10-20cm scale) into fragment rich (lithics up to 1cm wide) lenses and paler coloured very fine grained ash and crystal rich layers. Bedding is approximately 35° CA. Quartz-dark green chlorite veins with traces of pink hematite rarely occur (1-2cm wide). With depth, the lithic (lava) clasts become more hematitic (redder). Rare pyrite dissemination also occurs. This unit may be sub-aqueous. The lower contact of this unit, at 89.5, is strongly sheared and fractured over 1.0m.				
				90.5-107.0 AUTOBRECCIATED RHYODACITIC LAVA AND ASH, WEAKLY PYRITIC AND ALTERED.				
90.5	107.0	16.5	100	Red hematitic, autobrecciated rhyodacitic lava with green chloritic ash. The lava is continuous to 105.0, where it becomes autobrecciated, being intercalated with the ash deposits. The degree of hematisation varies, producing a pink to deep red colour range. Hematite and minor chlorite replace the groundmass, the lava contains many quartz phenocrysts (up to 0.5 cm) and other phenocrysts (now replaced by chlorite-quartz) are of a similar size and distribution. The lava also contains many quartz-dark green chlorite veins at irregular altitudes. The lava is not foliated. After 105.0, small pieces of lava (up to 40cm) occur in a dark green, bedded, pyritic chloritic ash. The ash is medium to fine grained. The lava block/ash contacts are varied; some are clean aprupt surfaces, others are diffuse and broken. This unit may be a sub-aqueous volcaniclastic.				

GOLD FIELDS EXPLORATION PTY. LIMITED

418058

V. PRESS

PROJECT: TYNDALL

DRILL CORE LOG AND ASSAY DATA

HOLE NUMBER: LS. 11

Page: 4.

INTERVAL From	INTERVAL To	RECOVERY m	RECOVERY %	DESCRIPTION	ASSAY DATA (p.p.m) Sample No.	From	To	Rec. %	Au	Cu	Pb	Zn	Ag
				107.0-362.6 PYRITIC VOLCANICLASTICS RICH IN QUARTZ AND PUMICE FRAGMENTS, WITH MINOR CHERTS AND RHYODACITIC LAVAS. STRONGLY MAGNETITIC AND HEMATITIC AT DEPTH.	12784	107	109	100	<0.01	310	<10	60	< 1
					12785	113	115	100	"	60	<10	30	<1
107.0	164.0	57.0	100	Pale grey-green cherts and volcaniclastics. This unit is bedded, sub-aqueous and moderately pyritic - 5-10% vol. It is also moderately altered with abundant quartz and pale green sericite (all cryptocrystalline)-obscuring the bedding relationships. Some of the volcaniclastic beds contains small chloritic clasts otherwise they are fine grained. The pyrite occurs as veinlets and disseminations in both rock types. With depth the cherty sediments change, some being pale pink (hematitic?) and patches of semi-massive pyrite are developed. Overall the unit is incipiently foliated.	12786	119	121	100	"	520	<10	40	<1
					12787	125	127	100	"	25	<10	30	< 1
					12788	131	133	100	"	25	<10	20	<1
				Below 145.0, the volcaniclastics begin to dominate and become rich in quartz crystals (up to 2-3mm). Minor chalocpyrite occurs with the pyrite and as small blebs.	12789	137	139	100	"	50	<10	50	<1
				At 161.0, a 20cm zone of chlorite-pyrite occurs. The pyrite forms lenses or beds of rounded aggregates (about 75% pyrite by vol.) - suggesting a syn-sedimentary origin.	12790	143	145	100	"	60	<10	30	<1
164.0	217.0	53.0	100	Pale grey hematitic and pyritic volcaniclastics. The unit is very crudel bedded i.e. is more massive, and appears to be sub-marine. The contact between this unit and the one above is entirely gradational. The volcaniclastics are very coarse grained-almost grits, with abundant quartz crystals ranging up to 0.5cm across in size and many small angular chloritic and weakly hematitic fragments. Pyrite forms small thin stringers and semi-massive layers similar to that at 161.0 above. Pale pink-red hematit e patches are developed. The matrix is altered to chlorite-sericite; overall the unit is moderately altered. Foliation is incipiently developed. Minor chalcopyrite blebs are scattered throughout the core. Some of the fine grained units are inluded as fragments in the coarser lithologies (soft-sediment deformation?). Calcite occurs rarely as small	12791	149	151	100	"	50	<10	60	<1
					12792	155	157	100	"	55	<10	40	<1
					12793	161	163	100	"	295	<10	110	<1
					12794	167	169	100	"	195	<10	70	1
					12795	173	175	100	"	65	<10	60	<1

418059

GOLD FIELDS EXPLORATION PTY. LIMITED

DRILL CORE LOG AND ASSAY DATA

PROJECT: TYNDALL HOLE NUMBER: LS. 11 Page: 5.

INTERVAL From	INTERVAL To	RECOVERY m	RECOVERY %	DESCRIPTION	ASSAY DATA (p.p.m) Sample No.	From	To	Rec. %	Au	Cu	Pb	Zn	Ag
				veinlets.	12796	179	181	100	<0.01	410	<10	90	1
				Below 205.5, quartz-green chlorite veins appear-metamorphic veins.									
				Overall the pyrite content is 5-10% vol.									
					12797	185	187	100	"	270	<10	120	<1
17.0	245.5	28.5	100	Pale grey-green coarse grained chloritic-sericitic volcaniclastics									
				with large (up to 30cm across) moderately to strongly brecciated									
				fragments of red hematitic lava. The brecciating material	12798	191	193	100	"	90	<10	160	<1
				is very strongly chloritic (dark green) and pyritic. The									
				lava has the strong quartz porphyritic character (phenocrysts									
				up to 0.5cm) of the rhyodacite above. The lava fragments are	12799	197	199	100	"	240	<10	160	<1
				commont to 237.0, but then, become far less abundant and smaller									
				as well. The chalcopyrite blebs are slightly larger (up to									
				2cm across) between 237.0 and 45.5. After 245.5, no lava	12800	203	205	100	"	60	<10	100	<1
				fragments occur; the volcaniclastics occur as before.									
45.5	301.9	56.4	100	Pale grey-green, coarse grained volcaniclastics. Variably	12801	209	211	100	"	260	20	60	1
				but moderately altered with abundant sericite and patches									
				of dark green chloirte associated with lenses of pyrite. Ash									
				fragments are very common and are replaced by white sericite.	12802	215	217	100	"	40	10	140	<1
				Coarse grained quartz crystals (anhedral) are also common. The									
				unit is bedded with several thin, dark green chloritic, fine									
				grained beds at 50° CA. Overall the unit has 5-10% vol pyrite.	12803	221	223	100	"	70	<10	80	<1
				Chalcopyrite rarely occurs. A weak foliation is developed. The									
				grading in thin, fine grained bed at 260.9, indicates that the									
				hole is progressing up through the sequence. Minor calcite vein-	12804	227	229	100	"	120	<10	40	<1
				ing occurs throughout.									
				At 293.5, small scale fault (post-mineralisation) occur with									
				1-2cm offsets.	12805	233	235	100	"	3,300	<10	120	2
				With depth, the volaniclastics become finer grained and contain									
				large patches of pale pink cherty sediments.									
					12806	239	241	100	"	1,150	30	70	1
101.9	336.1	34.2	100	Green-grey volcaniclastics, pale pink cherts and minor reddish									
				hematite fragments. A sub-aqueous sequence of interbedded pale									
				and dark green volcaniclastics containing numerous, small quartz	12807	245	247	100	"	830	<10	60	<1
				crystals, sericitic pumiceous fragments and hematitic fragments?									

418060

GOLD FIELDS EXPLORATION PTY. LIMITED

LV. PRESS

PROJECT: TYNDALL

DRILL CORE LOG AND ASSAY DATA

HOLE NUMBER: LS. 11 Page: 6.

INTERVAL From	INTERVAL To	RECOVERY m	RECOVERY %	DESCRIPTION	Sample No.	From	To	Rec. %	Au	Cu	Pb	Zn	Ag
									ASSAY DATA (p.p.m)				
				Pale pink cherty sediments are also interbedded (20-30cm Scale).	12808	251	253	100	<0.01	1,470	60	970	1
				The unit is moderately pyritic with approx. 5% by vol. pyrite -									
				mainly as thin colloidal-type beds. Bedding is at 40° CA, and									
				a foliation is developed at a similar altitude. Quartz-chlorite,	12809	257	259	100	"	950	790	340	2
				hematite metamorphic veins are developed and small veins of hem-									
				atite also occur. Overall, alteration is weak, with chlorite-									
				sericite-weak hematite developed. Evidence for small scale faulting	12810	263	265	100	"	760	<10	120	<1
				(possibly syn-sedimentary) is widespread. The volcaniclastic									
				vary widely with quartz crystal rich layers; gritty and coarse									
				grained; very fine grained, dark green chloritic beds and very	12811	269	271	100	"	1,550	30	110	<1
				coarse grained lenses containing the hematitic fragments (up									
				to 10cm wide). These lithologies are interbedded on a fine scale	12812	275	277	100	"	1,290	10	110	<1
				(1-10cm).									
				The cherty sediments are rare below 315.0.									
				Bands or veins (1-2cm wide) of magnetite occur. Magnetite often	12813	281	283	100	"	2,320	10	70	<1
				forms the matrix for the brecciated hematitic fragments also.									
				Large scale beds (20-30cm) of colloidal pyrite with minor magnet-									
				ite rarely occur.	12814	287	289	100	"	2,590	30	100	<1
36.1	362.6	26.5	100	Pink-green volcaniclastics as above, strongly altered and replaced									
				with magnetite-hematite-quartz. This alteration assemblage has	12815	293	295	100	"	7,600	<10	140	51
				replaced, veined and overprinted the original volcaniclastic									
				sequence as described in the unit above. Massive patches and									
				veins of quartz-secondary feldspar?-hematite-magnetite occur.	12816	299	301	100	"	1,250	30	90	<1
				Magnetite occurs pervasively through the volcaniclastics (which									
				are still strongly chloritice and pyritic). Small fault/vein?									
				filled breccias of quartz-hematite-altered volcaniclastics frag-	12817	305	307	100	"	340	30	80	<1
				ments in a black magnetite matrix occur at 339.3 (10cm wide)									
				and 342.3 (5cm wide). Their attitudes parallel the prevailing									
				foliation (40° CA). Metamorphic veins of red hematite-quartz	12818	311	313	100	0.15	250	20	190	<1
				are common throughout. Zones of stronger hematite-quartz alteration									
				(+ secondary feldspars?) are distinguishable as bright red patches									
				in the core.	12819	317	319	100	<0.01	400	120	1,320	<1
				Between 339.3 and 347.0, the chlorite-magnetite alteration									
				style dominates.									

418061

GOLD FIELDS EXPLORATION PTY. LIMITED

LV. PRESS

PROJECT: TYNDALL

DRILL CORE LOG AND ASSAY DATA

HOLE NUMBER: LS. 11 Page: 7.

INTERVAL From	INTERVAL To	RECOVERY m	RECOVERY %	DESCRIPTION	Sample No.	From	To	Rec. %	ASSAY DATA (p.p.m) Au	Cu	Pb	Zn	Ag
				Primary textures can be seen through both types of alteration.	12820	323	325	100	<0.01	140	10	470	<1
				In places, the quartz crystals become abundant and large (up to 0.5cm) creating gritty lenses. The small breccia/veins? at 339.3, also occur deeper in this unit. Thin breccias containing	12821	329	331	100	"	400	70	900	<1
				cherty or silicified fragments occur below 358.0. Calcite veinlets (secondary) also can be found throughout this altered sequence.									
				At 362.0 this alteration style replaces a pale green chert/ silicified volcaniclastic? unit. The chert? is fractured and veined by quartz, hematite and chlorite. The chert? unit is	12822	335	337	100	"	130	20	1000	<1
				0.5m thick the upper contact (with the altered volcanicastics) is gradational. Minor pyrite occurs.	12823	341	343	100	"	170	50	320	<1
				At 362.5, a 10cm of large (2-3cm sized) angular, loosely fitting blocks of the chert? are bound together with calcite and chlorite (banded; calcite cement then chlorite cement alter nate with increasing depth). The fragments are smaller and the	12824	347	349	100	"	170	30	80	<1
				matrix dominates within the chloritic section.	12825	353	355	100	"	150	<10	70	<1
				At 362.6, a 3cm zone consists of 2cm of calcite with minor, small chert? fragments, underlain by a breccia of chert? (tiny fragments) in dark green chlorite.	12826	359	361	100	"	60	<10	150	<1
				This zone as described above, is interpreted to be a fault which was in itially formed by hydrothermal fracturing (clacite deposition and re-sealing), re-fractured (and again sealed with calcite) and finally remobilised with a considerable offset? as there is an abrupt contact with the unit below.									
				362.6-422.3 CRYSTAL AND PUMICEOUS FRAGMENT RICH VOLCANICLASTICS WITH MINOR CHERTY SEDIMENTS. STRONG MAGNETITE-CHLORITE ALTERATION. WEAKLY PYRITIC AND HEMATITIC. POSSIBLY HORNFELSED.									
362.6	369.5	6.9	100	Dark green cherty sediments and medium-fine grained volcaniclastics. Distinctly bedded (on scales of a few cm to 10cm) chloritic-sericite, weakly to incipiently altered cherts and volcaniclastics. The latter are quite fine grained with several lenses of coarser quartz-crystal rich detritus (av. size 1-2mm). Minor pyrite (1-2%) and red hematite occur-as bedded or foliated layers. Bedding									

INTERVAL From	INTERVAL To	RECOVERY m	RECOVERY %	DESCRIPTION	ASSAY DATA Sample No.	From	To	Rec. %
				is 38°CA. The foliation is very weakly developed. A gradational contact with unit below occurs.				
69.5	422.3	52.8	100	Dark green volcaniclastics. These are rich in pumiceous fragments relatively undeformed by the weak foliation, but replaced by white sericite. Small crystals of quartz and magnetite are common and the matrix is altered to chlorite and minor pink hematite. The rock is quite hard and could be hornfelsed. Pyrite-hematite veins occur (approx. 1% pyrite), as do rare calcite veinlets. Quartz-chlorite metamorphic veins are also present. Between 390.0 and 391.5, a paler green, more sericitic zone occurs - highly fractured and sheared core. Below 394.5, wide (up to 20-30cm) zones of pyrite-magnetite, apparently bedded-selective replacement? occur. Overall the pyrite content is 10-20% vol. This lasts until 399.0, where the level of pyrite-magnetite intergrowths drops to approx. 5% pyrite. The frequency of the calcite veinlet occurences increases with depth below 400.0. Also with depth, magnetite begins to replace patches of the volcaniclastic alongside the chlorite. The weakly developed hematitic alteration becomes more visible below 411.0m.				
				END OF HOLE 422.3				