

RED HILLS PROSPECT

ADDITIONAL DRILLCORE ASSAYS 1984/85

85-2451

RELOG AUGUST 1982

**GOLD FIELDS EXPLORATION PTY LIMITED
DRILL CORE RECORD**

121001

11720 000

HOLE NO: RH5
STATE: Tasmania

ULV. PRESS

PROJECT	Red Hills	PURPOSE To test pole-dipole IP anomaly on line 32S and the altered contact on the western flank of the Red Hills Lavas.
DESIGNED BY	Stevens-Hoare/Broph	
RELOGGED BY	F.G. FitzGerald	
COMMENCED	14-2-77	
COMPLETED	1-3-77	

LOG SUMMARY	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 ash 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.
GENERAL COMMENTS	

ASSAY SUMMARY

INTERVAL		Cu	Pb	Zn	Ag	Au	S	COMMENTS	
From	To								
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	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			INTERVAL			VERTICAL			HORIZONTAL			SURVEY			INTERVAL			VERTICAL			HORIZONTAL								
Depth	Bearing	Dip	From	To	Distance	D.Sin.Dip	R.L.	D.Cos.Dip	Prog.Total	Depth	Bearing	Dip	From	To	Distance	D.Sin.Dip	R.L.	D.Cos.Dip	Prog.Total	Depth	Bearing	Dip	From	To	Distance	D.Sin.Dip	R.L.	D.Cos.Dip	Prog.Total
Collar	103.3°	-50°								140.3	103°	-45°																	
19.4		-50°								152.5	102°	-44°																	
25.5		-50.5°								164.7	101°	-43.5°																	
37.7		-51°								176.9	100.5°	-43°																	
56.0		-51°								189.1	100.5°	-43°																	
68.2		-50.5°								201.3	101°	-43°																	
80.4	105°	-49.5°								213.5	100°	-42°																	
92.6	105°	-48°								225.7	099°	-41°																	
104.8	105°	-47.5°								237.7	099°	-41°																	
115.9	104°	-47.5°																											
128.1	104°	-46.5°																											

25 JUL 1982
DEPT. OF MINES
1740/85

121003

GOLD FIELDS EXPLORATION PTY. LIMITED

DRILL CORE LOG AND ASSAY DATA

PROJECT: Red Hills

HOLE NUMBER: RH5

Page: 1.4

002

ULV. PRESS

INTERVAL		RECOVERY		DESCRIPTION	ASSAY DATA in ppm unless otherwise shown							
From	To	m	%		Sample No.	From	To	Rec. %	Cu	Pb	Zn	S
0.0	30.1	30.1	75	PYROCLASTICS (IGNIMBRITE?)	N/A	0.0	2.0	45	100	40	160	0.1%
				Fine-med. grained, light green to grey pyroclastic rock. Coarser		2.0	4.0	56	130	170	100	0.4%
				bands with prominent relict feld.crys. 1-3mm, zones up to 8m		4.0	6.0	66	160	200	60	0.1%
				thick define primary foliation e.g. 45°/LCA @ 13.7m.		6.0	8.0	78	130	240	70	0.1%
				Generally finer grained with diffuse dark elongate patches which		8.0	10.0	64	140	260	150	0.2%
				may represent original vitric component up to 2cm long.		10.0	12.0	61	100	130	810	0.2%
				Mod. pervasive sericite, minor chlorite and silicification.		12.0	14.0	75	90	30	380	0.2%
				Mod. cleavage particularly in coarser bands.		14.0	16.0	80	150	70	370	0.1%
				Scattered qtz-carb veins		16.0	18.0	72	490	60	760	0.3%
				Mineralization: Minor dissem. and veinlet py throughout much		18.0	20.0	66	170	30	570	0.2%
				weaker in the fine grained more massive sections.		20.0	22.0	68	130	270	300	0.1%
				0.0-11.3m zone of oxidation vuggy cavities filled with Fe oxide		22.0	24.0	100	100	40	570	0.1%
				and up to 2% relict py. Some recryst. py blebs and small stringers		24.0	26.0	100	100	80	790	0.2%
				11.3-16.0m fracture fill Fe + Mn oxides common, minor py often		26.0	28.0	93	120	80	950	0.2%
				elongated along cleavage.		28.0	30.0	90	110	70	1270	0.2%
				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.		30.0	32.0	90	180	320	580	1.3%
				Petrographic work recognized relict shard and pumice textures		32.0	34.0	88	110	300	820	1.4%
				@ 24.2m.		34.0	36.0	98	180	430	770	1.8%
						36.0	38.0	100	80	610	880	1.7%
30.1	66.7	36.6	85	BLACK SHALES		38.0	40.0	100	80	620	1090	1.8%
				Predominantly black fissile graphitic shales with very minor		40.0	42.0	98	100	580	800	1.5%
				tuffaceous siltstone-sandstone interbeds. 30.1-31.0m transition		42.0	44.0	98	110	250	330	1.8%
				zone where pyroclastic rocks above disrupt black shales, appears		44.0	46.0	90	120	240	320	1.6%
				conformable contact. Bedding not prominent, some fine laminations		46.0	48.0	72	160	180	250	2.2%
				e.g. 65°/LCA @ 38.5m, 60°/LCA @ 50.0m.		48.0	50.0	64	180	240	300	2.4%
				Well devt. slaty cleavage typically 40-45°/LCA.		50.0	52.0	60	140	160	160	2.4%
				31.0-39.0m scattered qtz-carb-py veins.		52.0	54.0	58	120	250	350	1.8%
				41.8-54.7m core very broken (due to friable rock)		54.0	56.0	66	180	190	590	1.5%
				Mineralization: Abundant pyritic min, mostly fine dissem		56.0	58.0	70	710	190	390	2.1%
				(syngenetic) often deformed along cleavage, also common vein		58.0	60.0	95	200	230	500	2.0%
				py, some in qtz-carb veins. Up to 5% py. 66.7m 25cm of massive		60.0	62.0	100	240	340	650	1.9%
				bedded py @ 50°/LCA. No other mins. evident.		62.0	64.0	90	80	280	390	1.6%
						64.0	66.0	90	70	410	320	3.7%

121004

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

PROJECT: Red Hills

HOLE NUMBER: RH5

Page: 2.

003

INTERVAL		RECOVERY		DESCRIPTION	ASSAY DATA in ppm unless otherwise shown										
From	To	m	%		Sample No	From	To	Rec. %	Cu	Pb	Zn	S	Ag	Au	
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	11686	68.0	70.0	98	30	0.13%	0.40%	1.2%	3.2	<0.01	
				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	11687	72.0	74.0	100	0.10%	0.11%	780	2.3%	6.2	"	
				elongated along a crude foliation. Possibly 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 intensely 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	11688	96.0	98.0	98	210	0.25%	0.82%	2.1%	6.8	"	
				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, qn 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%			

121005

GOLD FIELDS EXPLORATION PTY. LIMITED

DRILL CORE LOG AND ASSAY DATA

PROJECT: Red Hills

HOLE NUMBER: RH5

Page: 3.

ULV. PRESS

004

INTERVAL		RECOVERY		DESCRIPTION	ASSAY DATA in ppm unless otherwise shown													
From	To	m	%		Sample No.	From	To	Rec. %	Cu	Pb	Zn	S	Ag	Au				
				cement est. 10% py 2% sp, 2% gn 0.5% cpy, 92.9-96.8m veins av.	N/A	136.0	138.0	100	70	80	130	0.1%						
				5% py, 3% sp minor gn.		138.0	140.0	100	70	60	90	0.1%						
				99.8-122.6m marked decrease in sulphide, mainly vein py minor		140.0	142.0	96	120	290	180	0.2%						
				dissem. py.		142.0	144.0	95	70	0.19%	0.11%	0.2%						
				122.6-157.2m still <1% sulphide mainly vein py but minor sp, tr		144.0	146.0	98	50	510	230	0.1%						
				gn.		146.0	148.0	100	60	350	340	0.1%						
				157.2-164.7m increase in sulphide mainly py veinlets, some recryst		148.0	150.0	100	50	130	240	0.1%						
				blebs py, some cpy esp. 157.4-158.3m, minor sp, trace gn in veins.		150.0	152.0	96	80	400	720	0.2%						
				164.7-172.1m Only minor sulphide mainly py assoc. with qtz-carb		152.0	154.0	92	110	100	180	0.2%						
				veins or as breccia cement e.g. 164.7-165.0m with minor sp.		154.0	155.5	100	80	70	140	0.2%						
				172.1-179.5m Increase in sulphide assoc. with increase in		155.5	157.0	100	90	60	230	0.2%						
				chloritic alteration mainly vein/fracture py, minor cpy best	11689	157.0	158.5	100	0.29%	330	460	2.3%	10.5	<0.01				
				interval 172.7-173.3m.	11690	158.5	160.0	100	0.15%	180	350	1.0%	3.2	*				
				<u>Comment:</u> Appears to be sequence of ignimbrites, mostly quite,		160.0	161.5	100	600	180	620	0.9%						
				welded. Detailed petrographic work (Amdel report) frequently		161.5	163.0	98	150	90	180	0.4%						
				mentions devitrification textures, relict glass shards, spher-		163.0	164.5	98	100	100	150	0.4%						
				ulites etc. Scattered mineralization almost entirely related		164.5	166.0	100	90	130	0.17%	1.2%						
				to remobilized later fracture-fill and veinlet structures.		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%						
					11691	170.5	172.0	98	120	110	260	2.1%	0.7	<0.01				
					11692	172.0	173.5	100	0.60%	120	370	1.9%	5.0	0.02				
					11693	173.5	175.0	100	0.22%	70	550	0.6%	2.0	<0.01				
						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	196.0	16.5	96	STRONGLY WELDED IGNIMBRITE		179.5	181.0	100	100	90	110	0.2%						
				Pale orange to pink/red with green patches fine grained hard		181.0	182.5	96	720	520	240	3.5%						
				blocky rock. Striking feature is brecciated nature of much of		182.5	184.0	97	100	80	100	0.3%						
				the core with angular clasts similar to Red Hills felsic lava		184.0	185.5	95	160	150	150	2.5%						
				in cream coloured ashy matrix. Appears gradational contact with		185.5	187.0	100	260	140	120	0.9%						
				upper units as well as textural similarities to these rocks.		187.0	188.5	100	90	190	170	0.6%						
				Very little primary structure preserved apart from small flecks		188.5	190.0	100	160	170	0.18%	0.6%						
				of relict crys. and dark relict fiammé? The blocky clasts(?)		190.0	191.5	100	90	160	740	0.4%						

121018

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

PROJECT: Red Hills

HOLE NUMBER: RH 6 R

Page: 7

017

ULV. PRESS

INTERVAL		RECOVERY		DESCRIPTION	ASSAY DATA in ppm unless otherwise shown														
From	To	m	%		Sample No	From	To	Rec. %	Cu	Pb	Zn	Ag	Au						
312.5	314.9	2.4	100	<u>FINE GRAINED SEDIMENT (HOST ROCK EQUIVALENT?)</u> 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	0.3	<0.01						
				<u>Mineralization</u> Moderately mineralized increasing downhole 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. <u>Comment</u> Maybe equivalent to host rock horizon in RH5. However this unit must have thinned considerably to north and at depth from RH5 intersection.	11628	313.5	315.0	100	190	0.22%	1.02%	(7.2) 6.8	(2.0-01) <0.2						
314.9	341.2	26.3	98	<u>COARSE IGNIMBRITES</u> 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 resorbition(?). Generally weak pervasive sericite and weak to moderate chlorite alteration. Only weak cleavage throughout. <u>PORPHYRITIC BASALT DYKE</u> 321.2-322.6m Sharp contacts both @ 45°/LCA across general foliation of ignimbrites. Dark green fine grained rock with chilled slightly bleached margins becoming medium grained towards the centre. Fine accicular crystals aligned parallel to contacts, elsewhere relict phenocrysts of feld(?) up to 1cm in size now extensively replaced by carbonate. Mod. magnetic. Probably intrusive feeder of sills or flows intersected higher in hole. <u>Mineralization:</u> Moderately to well mineralized especially		315.0	316.5	95	300	620	0.67%	2.1	<0.2						
						316.5	318.0	96	100	90	0.47%								
						318.0	319.5	92	190	200	0.63%								
						319.5	321.0	92	200	130	0.97%								
						321.0	322.7	94	360	90	0.16%								
						322.7	324.0	100	300	190	0.75%	1.7	<0.2						
						324.0	325.5	100	350	100	1.10%	1.3	<0.2						
						325.5	327.0	100	550	280	1.62%	3.0	<0.2						
						327.0	328.5	100	520	50	0.76%	2.5	<0.2						
						328.5	330.0	100	440	40	150	1.4	<0.01						
						330.0	331.5	100	260	60	640	1.6	"						
						331.5	333.0	100	250	20	420	0.3	"						

121019

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

PROJECT: Red Hills

HOLE NUMBER: RH 6 R

Page: 8.

ULV. PRESS

INTERVAL		RECOVERY		DESCRIPTION	ASSAY DATA in ppm unless otherwise shown														
From	To	m	%		Sample No	From	To	Rec. %	Cu	Pb	Zn	Ag	Au						
				higher in sequence, predominantly blebs and finer dissem. sulphides with lesser fracture-vein (remobilized) min.	11632 N/A	333.0	334.5	100	240	10	130	<1	<0.01						
				314.9-316.7m est. 5-7% sulphide py>sp, minor qn, cpy mostly assoc. with qtz veins, also dissem.	3	334.5	336.0	100	160	10	190	"	"						
				316.7-321.2m est. 1-2% sulphide sp=py mostly blebs-stringers.	4	336.0	337.5	100	500	30	180	1	"						
				322.6-328.8m est. 5-6% sulphide py=sp minor gn,cpy, coarse blebs.	5	337.5	339.0	100	630	50	350	"	"						
				328.8-341.2m base metals decrease markedly, still 3-5% py, minor cpy towards base of section.	6	339.0	340.5	100	280	20	350	<1	"						
					7	340.5	342.0	100	170	90	500	1	"						
341.2	368.9	27.7	98	<u>PYROCLASTICS - RED HILLS LAVA TALUS</u>	8	342.0	343.5	100	250	30	140	<1	"						
				Dark grey very coarse pyroclastic. Abundant blocks of pink-red felsic lava up to 30cm in size, set in fine vitric matrix	9	343.5	345.0	100	230	<100	240	"	"						
				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.	11640	345.0	346.5	100	250	<100	750	"	"						
				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.	1	346.5	348.0	100	180	<100	0.16%	"	"						
				Rest of core est. 1-2% py ≤0.5% sp, minor cpy.	2	348.0	349.5	98	420	<100	<100	"	"						
				Comment: Appears to be close to margin of Red Hills lava, possibly talus breccia with pyroclastic (ashy) matrix.	3	349.5	351.0	98	580	<100	<100	"	"						
					4	351.0	352.5	97	730	540	350	2	"						
					5	352.5	354.0	100	430	<100	120	1	"						
					6	354.0	355.5	100	120	<100	350	<1	"						
					7	355.5	357.0	98	120	340	550	2	"						
					8	357.0	358.5	96	120	<100	1.16%	1	"						
					9	358.5	360.0	98	250	<100	0.83%	1	"						
					50	360.0	361.5	100	340	280	1.16%	3	"						
					1	361.5	363.0	100	310	<100	200	1	"						
					2	363.0	364.5	100	570	<100	110	1	"						
					3	364.5	366.0	100	200	<100	220	<1	"						
					4	366.0	367.5	100	270	200	310	2	"						
					5	367.5	369.0	98	0.17%	<100	130	<1	"						
368.9	387.4	18.5	99	<u>RED HILLS LAVA - BRECCIA</u>	6	369.0	370.5	98	170	<100	140	<1	"						
				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?)	7	370.5	372.0	98	310	<100	<100	"	"						
				Mod. chloritic alteration of matrix, perhaps disguising original fabric of rock. Rock tends to be blocky, no obvious foliation	8	372.0	373.5	100	360	<100	<100	"	"						
					9	373.5	375.0	100	110	<100	<100	"	"						
					60	375.0	376.5	100	60	<100	900	"	"						
					11661	376.5	378.0	100	60	<100	<100	"	"						

018

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 grain size 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.

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 phenocrysts 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.

121021

030

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.

121031

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 grain size. 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.

032

121033

RE LOG AUGUST 1982
 GOLD FIELDS EXPLORATION PTY. LIMITED
 DRILL CORE RECORD

HOLE NO.: RH 8
 STATE : Tasmania

ULV. PRESS

PROJECT	Red Hills	PURPOSE To test southern extension of mineralization intersected in RH 5 on line 32S (Red Hills imperial grid) down dip from RH 5.
DESIGNED BY	A.C. Walter	
RELOGGED BY	F.G. FitzGerald	
COMMENCED	31-10-77	
COMPLETED	16-11-77	

LOG SUMMARY	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 chalcocopyrite.
GENERAL COMMENTS	

ASSAY SUMMARY

INTERVAL		Cu	Pb	Zn	Ag	Au	Au g/t	Au g/t	Au g/t	Au g/t	Au g/t	COMMENTS
From	To											
281.0	284.0				g/t	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		N.B.	321.5 to 341.0	19.5 @	0.84		Red Hills rhyolitic lava.
333.5	338.0	0.05%	<0.01%	0.06%	<1 g/t	0.45 g/t						

LOCATION

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

HOLE CONDITION

SIZE	
Hole 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			INTERVAL			VERTICAL		HORIZONTAL		SURVEY			INTERVAL			VERTICAL		HORIZONTAL	
Depth	Bearing	Dip	From	To	Distance	D. Sin. Dip	R.L.	D. Cos. Dip	Prog. Total	Depth	Bearing	Dip	From	To	Distance	D. Sin. Dip	R.L.	D. Cos. Dip	Prog. Total
Collar	117.5°	-60°								149.0	103°	-36°							
15.0	ND	-58°								158.0	102°	-33.5°							
27.0	ND	-57°								174.0	ND	-33°							
39.0	ND	-54.5°								188.0	ND	-30.5°							
53.0	115°	-53°								210.0	ND	-30°							
65.0	113°	-50°								234.0	098°	-28°							
77.0	112°	-48°								258.0	ND	-27°							
89.0	109°	-45.5°								282.0	ND	-26°							
101.0	108°	-45°								306.0	094°	-29.5°							
113.0	106°	-42°								330.0	094°	-19°							
125.0	105°	-39°								354.0	093°	-18°							
137.0	104°	-37.5°								378.0	094°	-18°							

121037

GOLD FIELDS EXPLORATION PTY. LIMITED

DRILL CORE LOG AND ASSAY DATA

PROJECT: Red Hills

HOLE NUMBER: RH 8

Page: 3.

036

ULV. PRESS

INTERVAL		RECOVERY		DESCRIPTION	ASSAY DATA in ppm unless otherwise shown														
From	To	m	%		Sample No.	From	To	Rec. %	Cu	Pb	Zn	Ag	Au						
				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 fiammé evident but dark streaks may represent deformed pumice or vitric material. Apart from these only other features are 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	137.5	139.0	100	10	18	95	<1							
						139.0	140.5	100	12	30	75	<1							
						140.5	142.0	100	25	0.20%	95	1							
				Mineralization: Still very minor but increasing down hole both fine grained disseminated & rare thin veinlets.															
					N/A	170.0	171.5	80	42	15	80	<1							
						171.5	173.0	80	15	50	165	<1							
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 siltstone. Upper contact faulted with 20cm clay pug then 172.5-175.6m med grained crystal tuff with relict feld crys 1-3mm in schistose sericitic-carbonate matrix. Contact with main body of black shales obscured by broken core but appears gradational over 15cm. Shales mostly finely laminated e.g. 55°/LCA @ 177.8m, 30°/LCA @ 188.3m, 40°/LCA @ 194.8, 50°/LCA @ 207.4m, 60°/LCA @ 219.2m. Some evidence of slump folding within coarser beds e.g. 206.2m. Rock mod. fissile with well developed slaty cleavage typically at angle 10-50° to bedding e.g. 80°/LCA @ 188.3m, 47°/LCA @ 219.2m, 70°/LCA @ 222.5m. Basal contact		174.5	176.0	63	45	650	235	2							
						176.0	177.5	85	85	0.17%	815	3	0.01						
						177.5	179.0	85	55	235	130	1	"						
						179.0	180.5	73	80	485	0.14%	2	"						
						180.5	182.0	88	130	280	0.24%	2	"						
						182.0	183.5	83	415	315	715	4	"						
						183.5	185.0	83	90	195	0.16%	1	"						
						185.0	186.5	94	95	280	715	1							
						186.5	188.0	97	105	385	635	1							
						188.0	189.5	98	125	125	630	<1							
						189.5	191.0	100	95	160	315	<1							

121038

01 037

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

PROJECT: Red Hills

HOLE NUMBER: RH 8

Page:4.

ULV. PRESS

INTERVAL		RECOVERY		DESCRIPTION	ASSAY DATA in ppm unless otherwise shown													
From	To	m	%		Sample No	From	To	Rec. %	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 RENORKED?		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						

121040

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

PROJECT: Red Hills

HOLE NUMBER: RH 8

Page: 6.

039

ULV. PRESS

INTERVAL		RECOVERY		DESCRIPTION	ASSAY DATA in ppm unless otherwise shown									
From	To	m	%		Sample No.	From	To	Rec. %	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	0.48	
				Dark grey-green med-coarse grained rock with small lithic clasts. Upper contact obscured by broken core. Common small	4	284.0	285.5	100	50	12	75	<1	<0.01	
				dark fiammé 1-5mm long & scattered angular- sub rounded pink felsic lava clasts & feld. crys in med. grained pyroclastic	5	285.5	287.0	100	30	18	70	<1	"	
				matrix give rock speckled-stripped appearance. Possible primary	6	287.0	288.5	100	12	12	80	<1	"	
				layers of fine-med grained rock 3-10mm thick in places e.g.	7	288.5	290.0	100	22	25	275	<1	"	
				45°/LCA @ 284.4m, 80°/LCA @ 303.9m.	8	290.0	291.5	100	105	20	150	<1	"	
				315.5-316.2m broken core, appears to be agglomeratic rock.	9	291.5	293.0	100	18	35	175	<1	"	
				283.0-297.0m mod. pervasive chlorite some carbonate well developed cleavage e.g. 55°/LCA @ 290.8m.	130%	293.0	294.5	100	12	42	340	<1	"	
				297.0-304.4m weak-mod chlorite, some sericite less cleaved.	1	294.5	296.0	100	75	110	235	1	"	
				304.4-316.2m mod. chlorite, mod. sericite locally strong.	2	296.0	297.5	100	325	435	470	6	"	
				Qtz-carb± pink Kfeld? veins throughout up to 1cm thick.	3	297.5	299.0	100	500	155	0.11%	1	"	
				Mineralization: Variably developed, upper more chloritic	4	299.0	300.5	100	155	70	950	1	"	
				sequence carries mostly dissem. py. but lower down hole moderate	5	300.5	302.0	100	0.17%	610	0.12%	4	0.07	
				dissem and vein base metal mineralization occurs.	6	302.0	303.5	100	15	22	310	<1	<0.01	
				283.0-297.0m minor dissem & blebs py.	7	303.5	305.0	100	85	140	235	5	0.09	
					8	305.0	306.5	100	25	40	140	1	<0.01	
					9	306.5	308.0	100	42	38	135	<1	"	
					13100	308.0	309.5	98	55	75	215	1	"	

121041

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

PROJECT: Red Hills

HOLE NUMBER: RH 8

Page:7.

040

ULV. PRESS

INTERVAL		RECOVERY		DESCRIPTION	ASSAY DATA in ppm unless otherwise shown														
From	To	m	%		Sample No	From	To	Rec. %	Cu	Pb	Zn	Ag	Au(FA)						
				297.0-304.0m. est. 2-3% sulphide, py>sp dissem, blebs, minor veins.	13101 N/A	309.5	311.0	96	40	45	275	<1	<0.01						
				304.0-316.2m est. 1-2% sulphide locally 5% over 10cm intervals	2	311.0	312.5	97	25	25	220	<1	"						
				py>>sp, tr cpy stringers, fracture-fill, some dissem py even	3	312.5	314.0	97	25	45	125	<1	"						
				coarse clots of framboidal (?) py e.g. 308.0m.	13104	314.0	315.5	97	190	25	135	<1	"						
316.2	321.5	5.3	94	<u>FINE GRAINED SILICEOUS SEDIMENT-HOST HORIZON</u>															
				Grey fine grained siliceous sediment, cherty appearance in part.		315.5	317.0	97	70	550	0.15%	1	0.03						
				Contacts obscured by broken core, (whole section moderately broken) but appear sharp with enclosing coarse pyroclastics.		317.0	318.5	95	75	140	0.33%	1	0.08						
				Bedding between finer & coarser units 3-4mm thick 85°/LCA		318.5	320.0	92	155	135	0.49%	1	0.07						
				@ 320.4m. Some tuffaceous beds up to 10cm thick. Overall only moderate silicification, possible sericite also.		320.0	321.5	94	70	155	0.52%	1	0.29						
				<u>Mineralization:</u> 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	<u>COARSE PYROCLASTICS</u>		321.5	323.0	93	550	260	2.2%	4	8.14						
				Grey med-coarse grained lithic, agglomeratic rock. General increase in grain size down hole, possibly gradational upper contact but obscured by broken core. From 325.0m on red felsic		323.0	324.5	96	195	820	1.0%	1	0.64						
				lava clasts common from <1cm up to 40cm at base of sequence, mostly angular. Also common are dark fiammé and feld. crys		324.5	326.0	97	430	390	1.35%	2	1.96						
				fragments. Only weak-mod. pervasive sericite alteration and very minor chlorite evident. Cleavage only weak but possible alignment of clasts sub parallel e.g. 70°/LCA @ 327.7m.		326.0	327.5	97	120	220	0.53%	1	0.26						
				<u>Mineralization:</u> Well mineralized particularly in upper section base metal decreases quickly down hole as grain size increases.	13105	327.5	329.0	98	115	32	900	<1	0.08						
				321.5-325.0m. est 5% sp, 2% py tr gn, mostly blebs & stringers with minor remobilized veins, fracture-fill.	6	329.0	330.5	100	100	25	200	<1	0.07						
					7	330.5	332.0	90	170	15	75	<1	<0.01						
					13108	332.0	333.5	98	300	155	350	<1	0.03						

121042

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

PROJECT: Red Hills

HOLE NUMBER: RH 8

Page: 8.

ULV. PRESS

DUAL

INTERVAL		RECOVERY		DESCRIPTION	ASSAY DATA in ppm unless otherwise shown															
From	To	m	%		Sample No	From	To	Rec. %	Cu	Pb	Zn	Ag	Au							
				325.0-334.1m. est 5% py minor sp, mostly recryst blebs or coarse grained clots up to 1cm diameter.																
				<u>PORPHYRITIC BASALT DYKE</u> 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.	^{13/09} N/A	333.5	335.0	97	990	125	355	<1	0.30							
					^{13/10}	335.0	336.5	98	190	25	255	<1	0.13							
					1	336.5	338.0	100	195	100	0.12%	<1	0.91							
					2	338.0	339.5	100	90	60	160	<1	0.10							
334.1	362.0	27.9	98	RED HILLS LAVA TALUS MARGIN	3	339.5	341.0	100	105	115	290	<1	0.09							
				Very coarse agglomeratic dark grey rock with red-pink patches, Coarser equivalent to above rock with abundant felsic lava clasts sometimes with sharp margins often more diffuse with dark green chloritic reaction rims showing possible resorption in coarse pyroclastic matrix. Up to 344m definite fiammé evident further down hole obscured, by alteration. Overall blocky brecciated fabric enhanced by alteration, pink-red (hematitic), green (chloritic) and grey (sericite-siliceous) which is variably developed.	4	341.0	342.5	100	150	45	45	<1	<0.01							
					5	342.5	344.0	100	150	<5	50	<1	"							
					6	344.0	345.5	92	75	40	95	<1	"							
					7	345.5	347.0	94	25	12	52	<1	"							
					8	347.0	348.5	96	60	<5	80	<1	"							
					9	348.5	350.0	97	135	20	100	<1	"							
					^{13/20}	350.0	351.5	100	105	12	90	<1	"							
					1	351.5	353.0	100	80	30	140	<1	"							
					2	353.0	354.5	100	30	25	95	<1	"							
				<u>Mineralization:</u> Predominantly py with minor cpy as blebs, stringers and minor dissem & fracture fill. Some lava clasts contain coarse grained py. Grains of py in matrix up to 3mm & rounded. Est. 2-3% py overall, minor cpy.	3	354.5	356.0	100	95	22	100	<1	"							
					4	356.0	357.5	100	150	10	75	<1	"							
					5	357.5	359.0	100	170	<5	80	<1	"							
					^{13/26}	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 brecciation evident. Clasts appear in situ with dark grey fine grained ashy(?) matrix infill. Appears to be autobrecciated rhyolitic lava. Blotchy alteration pink-red (hematitic), dark green(chloritic) & grey (sericitic) mod-strong throughout. Numerous qtz-carb-chl. veins up to 5mm thick, usually mineralized.		362.0	363.5	93	520	65	180	<1								
						363.5	365.0	94	225	20	115	<1								
						365.0	366.5	98	0.14%	32	95	<1								
						366.5	368.0	99	0.14%	<5	95	<1								
						368.0	369.5	100	650	<5	80	<1								
						369.5	371.0	100	0.16%	70	125	<1								
						371.0	372.5	97	0.15%	12	130	<1								
				<u>Mineralization:</u> Py-cpy min. throughout mostly as blebs and grains, lesser stringers, veins & fracture-fill.		372.5	374.0	96	0.60%	12	95	<1								
						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% cpy in qtz-chl veinlets.		375.5	377.0	97	0.10%	<5	140	<1								

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 phenocrasts 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 volcanoclastic arenite with
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 volcanoclastic 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.

121044

Sample Number : 0514 RHB 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 cusped 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.

Leucoxenized, 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.

Sample Number : 0515 RHB 321.8m

Identification : Schistose tuff or pebbly volcanoclastic 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 manganese)
4-8%	sphalerite
0.1%	pyrite

Comments and Interpretation :

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

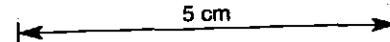
HOLE NO. RH9

GOLD FIELDS EXPLORATION PTY. LIMITED DIAMOND DRILL HOLE PLOT

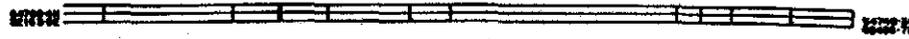
SCALE 1:2000  METRES

N

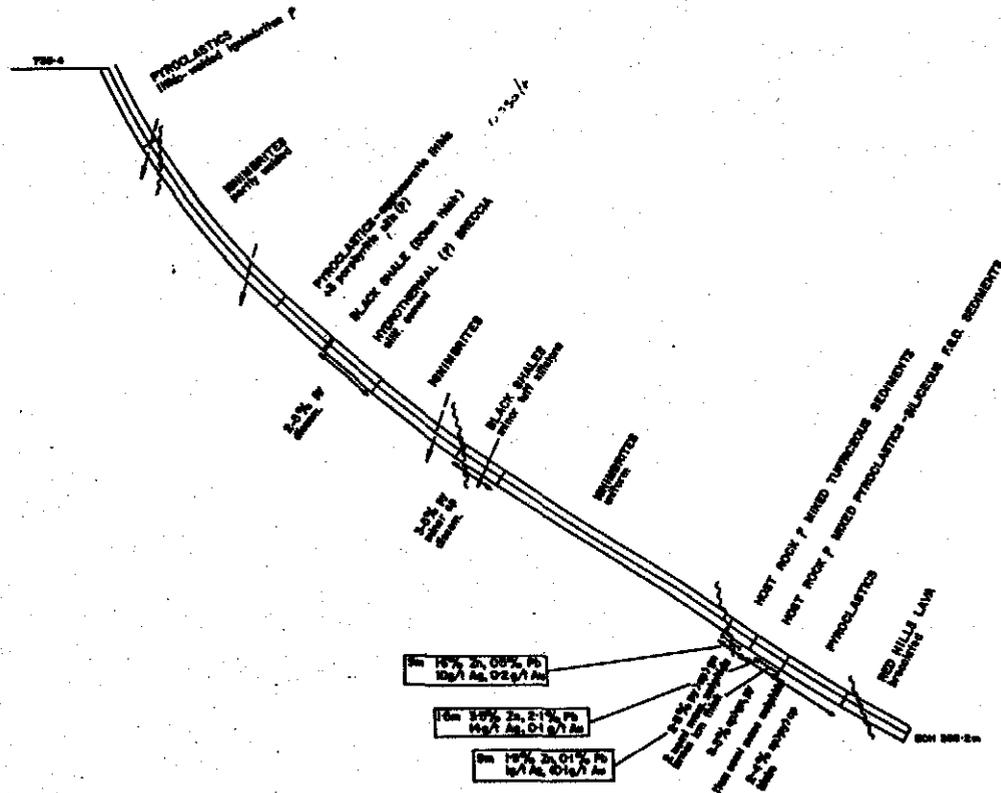


5 cm 

046



PLAN



121051

GOLD FIELDS EXPLORATION PTY. LIMITED

DRILL CORE LOG AND ASSAY DATA

HOLE NUMBER: RH 9

Page: 4.

PROJECT: Red Hills

ULV. PRESS

INTERVAL		RECOVERY		DESCRIPTION	ASSAY DATA in ppm unless otherwise shown									
From	To	m	%		Sample No.	From	To	Rec. %	Cu	Pb	Zn	Ag	S	Au
				evident.	11864	144.5	145.5		15	50	10	<1		<0.01
				130.8-131.0m est 5% py.	6		146.5		155	40	30	2		"
				138.0-147.5m est. 1-2% py, less brecciation and cement.	6		147.5		75	40	10	2		"
				147.5-154.1m est. 5% py.	7		148.5		125	60	20	3		"
				154.1-157.0m est. 1-2% py decreasing down hole, related to qtz-carb-chl veins.	8		149.5		20	70	30	1		"
				9	9		150.5		70	90	90	2		"
				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.	11870		151.5		350	100	20	6		"
				1	1		152.5		30	50	70	1		"
				2	2		153.5		10	60	90	<1		"
				3	3		154.5		20	80	180	"		"
				4	4		155.5		35	140	240	"		"
				5	5		156.5		30	190	210	"		"
					11876		157.5		10	40	170	"		"
157.0	193.1	36.1	93	<u>IGNIMBRITES</u>	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 Veins of qtz-carb-chl up to 25cm thick are common, some are mineralized.		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%	
						172.5	174.0	95	30	20	60		<0.1%	
						174.0	175.5	96	90	20	60		0.1%	
						175.5	177.0	96	85	40	60		0.2%	
				189.5-193.1m broken core, last 15cm fault pug.		177.0	178.5	100	30	15	60		0.1%	
				Mineralization: Generally weakly mineralized, mostly minor fine grained dissem py, some vein fracture py.		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%	
				168.5m tr dissem cpy.		181.5	183.0	100	55	65	85		0.1%	
						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%			

050

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 phenocrasts 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 phenocrasts. 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 volcanoclastic, despite some uncertainty about whether shard-like textures visible in the sample do reflect former vitric shards. The subhedral form of the plagioclase phenocrasts 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 manganeseiferous.

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 volcanoclastic 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 volcanoclastic arenite which has experienced deformation and sericitic alteration of its matrix and many mineral clasts.

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, cusped 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.

121059

059

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 grain size. 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 volcanoclastic 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.

121060

060

DIAMOND DRILL RECORD

121061

Hole Number	RH 11				Purpose	To test the mineralized zone intersected in RH 5, at RL 1600', 6800's (grid), 3600' south of RH 5.														
Location	E.L. 9/66 MT. TYNDALL AREA																			
Level	RED HILLS L6800 S, 2150 E																			
Co-ordinates	Imperial: 844811.614 N		362019.632 E																	
	Metric: 772498.07 N		331031.75 E																	
Collar R.L.	2106.99' ; 642.213																			
Length	381.0m																			
Survey Depth	180.0m	372.0m	Collar	Surface collar pick-up																
Bearing			95° mag.																	
Inclination			-70°																	
Rod Size	0-41.7m, HQ; 41.7 - 290.0m, NQ; 290.0 - 381.0m BQ.				Comments	Fine grained sphalerite-galena within black carbonaceous pyritic shales intersected 164.0 - 174.5m, 10.5m at 0.982% Zn, 0.348% Pb, 0.02% Cu including 167.6 - 168.7m, 1.1m at 5.80% Zn, 1.62% Pb, 0.056% Cu. This zone is most probably not the same mineralized horizon intersected in RH 5. The zone of mineralized silicified fine and coarse grained tuff corresponding to the RH 5 mineralisation was not intersected. "Red Hills" type lava intersected at 358.1m.														
Machine	Longyear 38		LONGYEAR																	
Logged by	A. C. Walter																			
1:500 Plans																				
1:500 Sections																				
Drilling Contractor	Longyear Aust. Pty. Ltd.				Commenced	17th January, 1978.														
					Completed	4th February, 1978.														

ADVANCE		RECOVERY		ASSAYS								BULK ASSAYS						REMARKS		
From	To	m.	%	From	To	% Cu	% Pb	% Zn	g/t Ag	% Mn	Augt	From	To	m.	% Cu	% FeS ₂	Augm/mT		Agm/mT	
0.00	8.00	60	14	117.5	119.0	0.004	0.048	0.088	-	1.1	0.30									
8.00	9.20	35	29	119.0	120.5	0.009	0.050	0.108	-	1.9	0.10									
9.20	10.00	40	50	120.5	122.0	0.008	0.042	0.038	-	3.0	0.30									
10.00	11.20	60	50	122.0	123.5	0.011	0.185	0.105	-	2.6	0.26									
11.20	12.00	60	75	123.5	125.0	0.008	0.061	0.028	-	2.2	0.06									
12.00	13.00	20	50	125.0	126.5	0.011	0.030	0.030	-	1.3	0.11									
13.00	13.80	30	37	126.5	128.0	0.021	0.700	3.100	10	3.3	0.08	<0.01								
13.80	14.60	35	44	128.0	129.5	0.159	0.340	0.820	12	7.3	0.13	-								
14.60	15.40	20	33	129.5	131.0	0.008	0.013	0.007	-	0.8	0.56									
15.40	15.50	10	100	131.0	132.5	0.008	0.038	0.094	-	0.7	0.33									
15.50	17.00	130	87	132.5	134.0	0.013	0.135	0.006	-	1.9	0.22									
17.00	17.70	40	57	134.0	135.5	0.006	0.310	0.570	10	1.2	0.29	<0.01								
17.70	18.50	40	57	135.5	137.0	0.007	0.120	0.114	-	1.5	0.09									
18.50	19.40	75	75	137.0	138.5	0.004	0.019	0.015	8	0.3	0.22	<0.01								
19.40	20.10	30	60	138.5	140.0	0.008	0.025	0.127	-	0.4	0.16									
20.10	21.00	60	67	140.0	141.5	0.007	0.160	0.345	-	0.7	0.10									
21.00	21.50	15	30	141.5	143.0	0.010	0.167	0.450	-	1.6	0.07									
21.50	23.90	230	96	143.0	144.5	0.007	0.179	0.500	-	0.1	0.10									
23.90	26.10	215	98	144.5	146.0	0.012	0.102	0.215	-	0.9	0.09									
26.10	27.50	125	89	146.0	147.5	0.012	0.020	0.035	-	0.7	0.10									
27.50	29.70	210	97	147.5	149.0	0.005	0.011	0.022	-	0.1	0.07									
29.70	30.50	70	87	149.0	150.5	0.007	0.104	0.225	-	1.6	0.07									
30.50	33.50	280	93	150.5	152.0	0.008	0.093	0.078	-	3.4	0.09									
33.50	36.50	290	97	152.0	153.5	0.006	0.177	0.126	-	2.3	0.32									
36.50	38.80	220	97	153.5	155.0	0.005	0.205	0.037	-	1.5	1.56									
38.80	39.50	65	93	155.0	156.5	0.010	0.263	0.253	-	2.3	0.12									
39.50	41.70	215	98	156.5	158.0	0.007	0.095	0.243	-	0.9	0.10									
41.70	44.00	200	87	158.0	159.5	0.009	0.095	0.227	-	1.2	0.14									
44.00	45.50	110	73	159.5	161.0	0.009	0.095	0.166	-	1.3	0.13									
45.50	48.10	235	90	161.0	162.5	0.006	0.227	0.033	-	3.0	0.15									
48.10	48.80	70	100	162.5	164.0	0.007	0.210	0.048	-	1.8	0.69									
48.80	51.80	270	90	164.0	165.5	0.008	0.255	0.300	-	1.6	0.37	<0.01								
51.80	52.90	40	36	165.5	167.6	0.020	0.270	0.560	-	2.3	0.12	0.02								
52.90	55.80	105	36	167.6	168.7	0.056	0.620	5.800	22	4.4	0.12	<0.01								
55.80	56.60	25	31	168.7	170.0	0.013	0.240	0.490	-	0.9	0.17	0.02								
56.60	59.00	220	92	170.0	171.5	0.018	0.082	0.500	-	0.9	0.18	0.01								
59.00	60.10	75	75	171.5	173.0	0.031	0.145	0.240	10	1.1	0.21	<0.01								
60.10	62.00	190	100	173.0	174.5	0.031	0.176	0.375	-	1.8	0.13									
62.00	63.30	115	88	174.5	176.0	0.008	0.155	0.135	-	1.1	0.12									
63.30	65.00	145	85	176.0	177.5	0.007	0.145	0.260	-	0.4	0.08									
65.00	68.00	290	97	177.5	179.0	0.008	0.073	0.102	-	1.8	0.10									
68.00	69.80	135	75	179.0	180.5	0.011	0.049	0.960	-	1.7	0.02	0.01								
69.80	71.00	100	83	180.5	182.0	0.007	0.074	0.070	-	2.5	0.05	<0.01								
71.00	74.00	255	85																	
74.00	75.20	75	63	195.0	196.5	0.002	0.015	0.063	-	0.2	0.19	<0.01								
75.20	77.00	150	83	196.5	198.0	0.011	0.013	0.038	-	0.4	0.41	0.03								
77.00	78.30	110	85	198.0	199.5	0.006	0.008	0.128	-	0.5	0.10	0.05								

063

ADVANCE		RECOVERY		ASSAYS % S.										BULK ASSAYS						REMARKS
From	To	m.	%	From	To	% Cu	% Pb	% Zn	g/t Ag	% S	% Mn	Ag/t	From	To	m.	% Cu	% FeS ₂	Ag gm/mt	Ag gm/mt	
78.30	80.00	140	82	199.5	201.0	0.007	0.014	0.093	-	0.3	0.12	0.01								
80.00	81.10	100	91	201.0	202.5	0.006	0.014	0.118	-	0.3	0.18	0.03								
81.10	83.00	175	92	202.5	204.0	0.002	0.007	0.019	-	0.1	0.23									
83.00	84.00	15	15	204.0	205.5	0.006	0.021	0.022	-	0.2	0.21									
84.00	86.00	10	5	205.5	207.0	0.001	0.007	0.170	-	0.1	0.14									
86.00	86.90	5	6																	
86.90	89.00	60	29	219.4	220.9	0.006	0.103	0.290	-	0.8	0.13									
89.00	89.10	5	50	220.9	222.4	0.012	0.067	0.135	-	2.0	0.17									
89.10	90.80	100	59	222.4	223.9	0.011	0.037	0.112	-	0.6	0.08									
90.80	91.80	70	70																	
91.80	94.50	200	74	233.0	234.9	0.005	0.097	0.250	-	2.0	0.18									
94.50	95.50	80	80	234.9	236.0	0.005	0.070	0.445	-	1.3	0.17									
95.50	95.90	15	37	236.0	237.5	0.008	0.005	0.265	-	0.8	0.09									
95.90	98.00	75	36	237.5	239.0	0.006	0.009	0.037	-	0.1	0.10									
98.00	99.10	70	64	239.0	240.5	0.003	0.008	0.024	-	-	0.22									
99.10	99.70	10	17	240.5	242.0	0.005	0.006	0.011	-	-	0.22									
99.70	100.50	40	50	242.0	243.5	0.006	0.006	0.013	-	0.1	0.11									
100.50	102.30	150	83	243.5	245.0	0.002	0.014	0.028	-	<0.1	0.16									
102.30	103.70	110	79	245.0	246.5	0.013	0.075	0.183	-	1.9	0.08									
103.70	104.00	20	67	246.5	248.0	0.002	0.008	0.054	-	<0.1	0.15									
104.00	104.90	65	72																	
104.90	105.30	20	50	281.0	182.5	0.003	0.005	0.008	-	-	0.13									
105.30	105.90	45	75	282.5	284.0	0.002	0.004	0.007	-	-	0.13									
105.90	106.30	25	63	284.0	285.5	0.001	0.006	0.006	-	<0.1	0.17									
106.30	107.40	55	50	285.5	287.0	0.007	0.006	0.011	-	<0.1	0.09									
107.40	108.00	20	33																	
108.00	109.60	85	53	316.0	317.5	0.004	0.006	0.012	-	-	0.12									
109.60	110.80	85	71	317.5	319.0	0.002	0.007	0.012	-	<0.1	0.11									
110.80	111.40	35	58	319.0	320.5	0.005	0.008	0.009	-	0.1	0.20									
111.40	116.80	225	94	320.5	322.0	0.007	0.013	0.020	-	0.1	0.09									
116.80	117.50	65	93																	
117.50	120.00	220	88	207.0	209.5	0.003	0.004	0.016	-	-										
120.00	121.70	150	88	210.0		0.008	0.027	0.070	-	1.4										
121.70	124.80	265	85	211.5		0.010	0.018	0.028	-	0.6										
125.80	127.90	280	90	213.0		0.011	0.008	0.021	-	0.6			126.5	128.0			<0.01	13.0		
127.90	129.60	130	70	214.5		0.004	0.004	0.011	-	0.3			128.0	130.0			"	11.7		
129.60	130.60	30	30	216.0		0.009	0.016	0.025	-	0.4										
130.60	132.10	55	37	217.5		0.003	0.015	0.022	-	0.2										
132.10	133.00	40	44	219.4		0.005	0.013	0.024	-	0.1										
133.00	134.10	75	68																	
134.10	134.50	20	50	224.0	225.5	0.003	0.014	0.011	-	-										
134.50	135.50	50	50	227.0		0.010	0.033	0.042	-	0.4			166	168.7			"	2.2		
135.50	136.00	20	40	229.5		0.006	0.021	0.210	2	1.0										
136.00	137.00	85	85	230.0		0.008	0.026	0.130	2	1.1										
137.00	139.00	190	95	231.5		0.010	0.025	0.190	2	2.0										
139.00	140.50	80	53	233.0		0.012	0.021	0.145	3	2.1										
140.50	141.20	25	36																	

121065

HOLE NUMBER RH 11

06A

ADVANCE		RECOVERY		ASSAYS								BULK ASSAYS								REMARKS							
From	To	m.	%	From	To	m.	%Cu	%FeS ₂	Aggm/mt	Aggm/mt					From	To	m.	%Cu	%FeS ₂		Aggm/mt	Aggm/mt					
141.20	143.20	190	95																								
143.20	144.20	35	35																								
144.20	145.30	110	100																								
145.30	146.00	35	50																								
146.00	147.70	140	82																								
147.70	148.40	35	50																								
148.40	149.70	70	100																								
149.70	150.10	15	37																								
150.10	152.00	90	47																								
152.00	153.20	45	56																								
153.20	155.00	180	100																								
155.00	156.00	95	95																								
156.00	158.00	190	95																								
158.00	159.40	110	79																								
159.40	159.60	10	50																								
159.60	160.80	115	96																								
160.80	162.60	140	78																								
162.60	163.40	20	25																								
163.40	165.20	85	47																								
165.20	165.80	30	50																								
165.80	168.80	285	95																								
168.80	170.20	110	79																								
170.20	173.00	245	88																								
173.00	173.70	30	43																								
173.70	175.40	90	53																								
175.40	176.00	45	75																								
176.00	178.50	190	76																								
178.50	179.30	35	44																								
179.30	181.10	110	79																								
181.10	182.00	80	88																								
182.00	185.00	290	97																								
185.00	187.00	200	100																								
187.00	193.00	600	100																								
193.00	196.00	280	93																								
196.00	199.00	290	95																								
199.00	202.10	310	100																								
202.10	205.30	305	95																								
205.30	206.00	65	93																								
206.00	209.00	300	100																								
209.00	212.00	290	95																								
212.00	215.00	300	100																								
215.00	216.00	100	100																								
216.00	218.00	200	100																								
218.00	220.00	185	92																								
220.00	223.00	280	93																								
223.00	226.00	300	100																								
226.00	228.00	195	97																								

065

ADVANCE		RECOVERY		ASSAYS								BULK ASSAYS								REMARKS							
From	To	m.	%	From	To	m.	%Cu	%FeS ₂	Ag _g m/m ³	As _g m/m ³					From	To	m.	%Cu	%FeS ₂		Ag _g m/m ³	As _g m/m ³					
228.00	230.50	240	96																								
230.50	231.20	50	71																								
231.20	234.20	245	82																								
234.20	237.20	270	90																								
237.20	239.00	180	100																								
239.00	242.00	290	95																								
242.00	245.00	300	100																								
245.00	248.00	280	93																								
248.00	252.00	300	75																								
252.00	254.00	195	97																								
254.00	255.30	110	85																								
255.30	257.00	150	88																								
257.00	260.00	295	98																								
260.00	263.00	240	80																								
263.00	275.00	1200	100																								
275.00	278.00	295	98																								
278.00	287.00	900	100																								
287.00	290.00	290	97																								
290.00	293.00	280	93																								
293.00	335.00	4200	100																								
335.00	338.00	290	97																								
338.00	341.00	290	97																								
341.00	347.00	600	100																								
347.00	350.00	295	98																								
350.00	359.00	900	100																								
359.00	359.80	80	100																								
359.80	361.00	110	92																								
361.00	363.30	230	100																								
363.30	366.30	300	100																								
366.30	369.40	310	100																								
369.40	372.50	310	100																								
372.50	375.60	310	100																								
375.60	378.50	270	90																								
378.50	380.00	150	100																								
380.00	381.00	100	100																								
E.O.H.																											

	DESCRIPTION	REMARKS
0 - 820m:	Moraine rubble and gravel containing volcanic and Owen Conglomerate material.	
8.20 - 99.00m:	Sequence of mixed and alternating black carbonaceous shales, grey sericitic-carbonaceous shales, dark grey-pale grey fine-medium grained sericitic calcareous tuffs and intraformational slump and auto-brecciated fine grained sediments. Rocks are variably calcareous; in parts recrystallization of calcite is common producing veining and clots of calcite. Minor fine grained pyrite is common in all units occurring as discrete aggregates, small lenses and smears along partings. Rock types are usually intimately mixed but some grouping is possible.	
8.20 - 15.30m:	grey carbonaceous-sericitic pyritic shales. 23.50 - 26.20m: intraformational tuff/shale breccia with mosaic appearance of calcite recrystallization. 29.80 - 34.20m: as above.	
35.35 - 38.75m:	grey fine-medium grained sericitic calcite pyrite tuffs. 38.90 - 42.50m: black carbonaceous calcite pyrite shales. 46.00 - 49.95m: as above. 49.05 - 52.90m: grey calcareous pyrite sericitic fine-medium grained tuffs.	
52.90 - 65.40m:	black carbonaceous calcite pyrite shales. 68.25 - 89.10m: well laminated (with some slumping) alternating grey fine grained tuffs and black carbonaceous shales; calcite and pyrite throughout. 81.90 - 94.60m: fine grained sericitic tuffaceous shale. Bedding structures are very common throughout, including slumping, small scale soft sediment deformation and faulting, autobrecciation, crude flame structures (e.g. 16.70m, uphole younging). At 40.30m increase in pyrite content at interface of medium grained sericitic tuff and laminated black sericitic and fine grained tuffs and associated barite occurring as small-large (2 cm) recrystallized clots. Broken weathered ground to 15.40m. Quartz calcite veining at 22.40m, 23.40m, 49.2 - 50.8m. Shearing with sericitic-clay at 39.9m. Very broken core at 83.00 - 100.50m. Altered porphyritic (basic) intrusives: 92.00 - 94.20m: lower "contact core angle" 40 - 50° with chilled margin. Medium grained speckled grey-off-white feldspar porphyritic intrusive; groundmass is very fine grained feldspar-matic mineral with some chlorite. Rock is undeformed. Minor very fine grained pyrite along joint partings. Large feldspar phenocrysts (to 3mm) often altered to calcite; fewer finer grained crystals also altered. 95.70 - 97.90m: uphole contact is very ragged and includes black shale fragments. Lower "contact core angle" = 40°. Pale grey feldspar sericitic calcite porphyritic altered intrusive containing minor fine grained pyrite. SCA at 24.4m = 40°. 41.0m = 40°. 77.0m = 50°.	Facing-uphole younging.
99.00 - 110.90m:	Black carbonaceous and graphitic shales with minor laminated fine grained tuffs and sericitic shales. Fine grained pyrite occurs as smears and as small clots and lenses. Core is very broken. SCA at 101.8m = 30°.	Altered basic intrusive
110.90 - 117.50m:	Medium grey sericitic fine grained tuff and tuffaceous shales. Fine grained pyrite occurs along partings. Calcite veinlets common. 115.70 - 116.70m: grey speckled feldspar calcite porphyritic intrusive, as for 92.00-94.20m. Lower contact core angle = 25°, with chilled margin. Occasional calcite veinlets and very minor fine grained pyrite.	Altered basic intrusive
117.50 - 136.80m:	Mainly black and dark grey carbonaceous and sericitic shales with minor fine grained tuff bands showing laminated bedding and slumping features. Fine grained pyrite is common as smears, lenses and discrete clots. SCA at 122.20m = 45°. Very broken core at 129.5 - 136.3m. 127.70 - 130.60m: Fault-quartz veins containing brecciated black shale, pyrite, pyrrhotite, galena, sphalerite and chalcopyrite over short intervals generally 3cm, e.g. 128.0m.	Fault
136.80 - 139.20m:	Pale grey fine grained sericitic-silica sediment. Galena, sphalerite occurs as small coarse grained aggregates on uphole contact; minor pyrite occurs as discrete blebs and occasional stringers throughout. Calcite veinlets are common. Concordant bands of more sericitic, and more siliceous rock occur occasional.	
139.20 - 145.95m:	Lower contact angle = 35°. Grey sericitic shale grading into black carbonaceous pyritic shale from about 140.6m. Occasionally more tuffaceous sericitic units - pyrite. Pyrite occurs commonly as extremely fine grained smears along partings, and occasionally as veinlets, bands and clots. Occasional calcite veinlets. Very minor pyrrhotite occurs in association with pyrite.	
145.95 - 148.70m:	Pale grey moderately well foliated fine grained sericitic tuff containing pyrite throughout as parting infill, often medium grained, smears, clots and veinlets and occasional medium grained crystals. Some fracturing in more siliceous units - clay development. Downhole 20cm contains laths and fragments of shaley material orientated parallel to foliation (bedding). SCA at 148.6m = 50°.	
148.70 - 182.15m:	Mainly black carbonaceous pyritic shale sequence. 148.8 - 148.9m: very pale grey discordant (jagged cross-cutting contacts) altered feldspar porphyritic (now sericitic) intrusive with grey soft sericitic-clay groundmass. Pyrite is common throughout (up to 5%) occurring as bands and veinlets (sub-parallel or cross-cutting foliation), blebs and smears, often associated with thin more sericitic bands and fracture infill. Occasional bands of autobreccia and slumping often with an increase in calcite veining. Very broken core 162.4 - 167.2m. 166.8 - 167.0m: fault quartz veins containing calcite and chlorite, and	Altered basic intrusive
		Fault

DESCRIPTION	REMARKS
pyrite with minor coarse grained sphalerite and galena. 167.6 - 168.7m: Black shale zone, contorted and slumped containing fine grained sphalerite, with galena and very minor chalcopryrite occurring as breccia infill (167.55 - 167.75m main sphalerite rich zone); also veinlets cross-cutting and subparallel to foliation direction, and thin concordant bands and lenses. 172.20 - 173.00m: fine grained chlorite-sericite-carbonaceous shale containing minor pyrite and galena blebs near uphole contact. From about 173.5m fine grained sericitic tuff content increases to form a sequence of alternating shales and tuffs.	
Downhole increase in calcite content with more slumping and general sediment instability.	
182.15 - 219.40m: Medium-coarse grained lithic tuff with sericite groundmass with minor pyrite and calcite. Fragments are arranged subparallel to foliation, and include sericite, silica-sericite, siliceous and shaley clasts up to 3cm, becoming coarser grained downhole to about 193.5m then becoming fine grained. 184.95 - 185.15m: shales, banded with much calcite veining. From about 196 - 205m very minor and occasional sphalerite blebs. 208.7 - 209.3m, 209.8 - 210.1m: black shale bands, often contorted and brecciated with calcite and pyrite veinlets. From 215.5m rocks contain a small crystal content (sericite after feldspar). 216.9 - 217.0m, 217.3 - 217.4m: quartz veins with chlorite-sericite and waterworm wuhs. SCA at 219.2m = 50°.	Fault
219.40 - 222.85m: Black carbonaceous pyritic calcitic shale. 221.9m: quartz calcite vein containing pyrite and minor sphalerite.	
222.85 - 226.70m: Uphole contact 55°. Medium Grey speckled dark medium-coarse grained lithic tuffs. Angular fragments with rough alignment sub-parallel to foliation orientation. Minor zones of crystal tuff. Fragments are generally shaley or fine grained tuffs with occasional lava fragments.	
226.70 - 234.90m: Black carbonaceous (pyritic) shales with calcite veinlets common. Some slumping and autobrecciation. Thin laminations of sericitic fine grained tuffs are common.	
234.90 - 245.25m: Grey speckled medium-coarse grained lithic tuff with pyrite and occasional sphalerite blebs throughout; as for 222.85-226.70m. 236.1-236.7m, 239.5-239.9m, 240.9-242.20m, 244.2-245.20m: Fault quartz veins containing country rock, chlorite-sericite, calcite pyrite and occasional sphalerite and galena.	Fault
245.25 - 246.15m: Black carbonaceous shale and fine grained grey sericite carbonaceous tuffs; contorted bedding, minor calcite veining. 245.45 - 245.50m: fault quartz vein with chlorite siderite calcite pyrite sphalerite.	
246.15 - 253.00m: Slumped upper contact. Lower contact conformable bedding BCA = 50°. Mainly pale greenish grey slightly speckled calcareous medium-coarse grained lithic crystal tuff. Uniform rock with white calcite clots and blebs and occasional quartz calcite veinlets. Unit is moderately altered, mainly sericite-calcite-quartz with minor chlorite. Lithic fragments to 2cm are indistinct in a groundmass of calcite phenocrysts (replacement) and sericite-quartz-calcite. 251.70 - 251.80m; 252.10-253.10m grey-black carbonaceous (sericite pyrite) shales. Bedding is irregular, BCA varies 40-55°; at 253.1m = 55°.	
253.00 - 256.30m: Dark-light grey carbonaceous-sericite-pyrite shales and fine grained tuffs. Calcite veining common.	
256.30 - 258.20m: Fault with coarse grained lithic tuff country rock and quartz calcite sericite chlorite clay veining; broken ground.	Fault
258.20 - 261.50m: Grey coarse grained lithic tuff. Altered, with silica and sericite rich clasts and groundmass zones. Fragments to 2cm often angular include porphyritic siliceous felsic volcanics, fine grained siliceous sediments/lavas, fine grained sediments in a quartz sericite pyrite groundmass.	
261.50 - 262.00m: Fault: quartz sericite veining; broken ground.	Fault
262.00 - 276.00m: Gradational downhole contact. Grey uniform fine grained silica sericite altered tuff - some calcite content in groundmass and as veinlets. Occasional fracture zones with increased quartz-calcite veinlets. SCA at 269.8m = 55°. Occasional medium grained tuff zones, usually sericitic + pyrite.	
276.00 - 284.00m: Gradational downhole contact. Grey speckled medium grained crystal tuff with buff-pink clots of feldspar-sericite-clay (altered feldspar phenocrysts) in a sericite silica calcite feldspar groundmass. Calcite-quartz veinlets common.	
284.00 - 308.30m: Gradational downhole contact. Dull grey fine-coarse grained lithic tuff, mainly medium grained with chlorite-sericite clots and replacement clasts generally 1-4mm long, elongated sub-parallel to foliation direction in a sericite silica groundmass. Calcite occurs variably as clots, veinlets and as replacement of occasional phenocrysts. SCA at 305.0m = 65°.	
308.30 - 319.00m: Similar to above unit, i.e. grey with darker sub-parallel mottling corresponding to chlorite altered clasts; becoming coarser grained with clasts increasing in number and size to about 20% of the rock.	
319.00 - 329.15m: Pink and greens and greys indistinctly mottled altered coarse grained lithic crystal tuff. Clasts are chlorite-sericite tuff?	
and pink siliceous altered lava? in a groundmass of sericite-chlorite-quartz-calcite - fine grained pyrite in blebs to 2mm.	
329.15 - 358.10m: Mainly greys with occasional chlorite green fragments, plus siliceous pink zones, medium-coarse grained lithic tuffs, in part	

	DESCRIPTION	REMARKS
0 - 14m	<p>RHYOLITIC LAPILLI TUFF AND INTERBEDDED FINE GRAINED VITRIC TUFF Pale creamy green. Flattened clasts of pumice up to 25mm average 3mm, in fine grained vitric groundmass with small qtz phenocrysts to 1mm. Moderate to strong sericitic alteration, minor chlorite. Strongly schistose. Much brecciation - possibly occurred while rock immature. Rock waterlain but usually not clearly bedded. Bedding at 7.3m 55°/LCA, at 14m 50°/LCA. Sheared zone 12-12.8m</p>	<p>Fe & Mn oxides, especially on stronger joints Some gossanous limonite associated with gash veins. Trace py at 10m</p>
14 - 52m	<p>RHYOLITIC TUFFACEOUS VOLCANICLASTIC Light green and grey. Large angular to sub-rounded, or flattened, clasts of pumice, lapilli tuff, pink Red Hills lavas, tuffaceous volcaniclastics, tuffs, etc. up to 150mm average 10-30mm, in coarsely sandy matrix composed of fragments of glass, feldspar, volcanics and qtz phenocrysts. Clasts form discrete bands in the core. Bedding indistinct 45°/LCA, @ 21.5m, 50°/LCA @ 32m, 60°/LCA @ 38.9m (possible grading up-hole), 45°/LCA @ 47.5m, 52°/LCA @ 52m Mod-strong sericitic alteration, much chlorite (particularly in some clasts). Strong schistosity (parallels bedding). Alteration blurs clast margins in places. Some clasts irregular and moulded around others - evidently soft when deposited. Much brecciation as in above unit - possibly while rock immature. Rock probably mixture of explosively-derived material and water-transported material, all deposited in water. Waterlain character increases with depth.</p>	<p>Oxidation on joints down to 50m. Dog-tooth qtz veins up to 100mm @ 32.5 & 33m. Barren 16-40m; Minor py>sp, gn-cp. Py veins to 15mm @ 30.3 & 31.2m, 40-43m: 3-5% dissem sp>py-gn>cp 43-52m: Minor py>sp>gn-cp.</p>
52 - 64.6m	<p>RHYOLITIC TUFFACEOUS GRIT Grey. Angular to sub angular clasts up to 15mm, average 1-4mm, of altered creamy or pink rhyolitic lava (?), feldspar fragments and pumice fragments, in vitic tuffaceous sandy matrix. Bedding poorly developed. 48°/LCA @ 55.5m. No sorting. Moderate to strong sericitic alteration with minor chlorite. Slightly schistose.</p>	<p>52-61.5m: 1-2% dissem. py>sp>gn-cp 61.5-64.6m: Minor py Trace sp.</p>
64.6-65.4m	<p>BASALTIC DYKE Dark grey-green. Medium grained. Laths of feldspar and phenocrysts of pyroxene (hypersthene?) up to 10mm, average 2-3mm. Upper chilled margin 53°/LCA approx // to bedding in tuffs. Basal chilled margin 55°/LCA 25mm wide and bleached. Both contacts approx // to bedding in tuffs. Centre section very crumbly and broken.</p>	<p>Moderately magnetic</p>
65.4-74.7m	<p>RHYOLITIC TUFFACEOUS GRIT As before. Subangular to subrounded clasts up to 30mm, average 1-5mm, of altered creamy or pink rhyolitic lava (?), pumice, feldspars, tuffs and minor qtz. In sandy tuffaceous, highly vitric matrix. Waterlain, but almost no sorting. Bedding poorly developed 50°/LCA @ 70m. Moderately to strongly sericitic, very minor chlorite. Moderately to strongly schistose. Some carbonate alteration. Strongly silicified 74.3-74.7m Badly broken 73.2-74.9m</p>	<p>65.4-67.5m: 2% py. Minor sp-gn 67.5-70.5m: 1% py. Trace sp-gn 70.5-74.7m: Minor py>sp-gn</p>
74.7-75m	<p>FINE GRAINED TUFF Grey. Sericitic and silicified.</p>	<p>1% py. Minor sp-gn</p>
75-76.55m	<p>RHYOLITIC TUFFACEOUS VOLCANICLASTIC Greyish-green. Smearred, indistinct clasts up to 30mm, average 5-7mm, in coarsely sandy tuffaceous matrix. Clasts angular to sub-rounded pumice, lava, tuffs and qtz. Highly sericitic and schistose. Patchy silicification. Basal contact bedding plane with carbonate sweat-outs on it. 55°/LCA</p>	<p>1% py with minor sp-gn Locally 1-2% sp-gn-cp Silicified zones up to 50mm</p>

DESCRIPTION	REMARKS
76.55 - 85.55m : FELSIC SANDY TUFF (ASH?) Pale grey or green. Abundant tiny fragments up to 2mm, angular or sub angular. Much fine grained feldspar. Rather massive with very indistinct layering. Moderately sericitic, chloritic in places. Schistose. Numerous carbonate sweat-outs. Below 81.75m vague swirls and patchy markings in the core. Strong fault 85-85.55m	Minor hematite and py.
85.55 - 93.6m : RHYOLITIC TO DACITIC WELDED PYROCLASTIC OR LAVA Gradational change from basal part of above unit. Indistinct angular clast-like shapes up to 30mm in felsic matrix with glass shards (?) and rare qtz phenocrysts. Some flattened angular clasts with delicate edges. Indistinct irregular patches and masses 20-300mm of hard, siliceous, fine grained, pale pink Red Hills lava - possibly brecciated and welded rubbly lava mass margin? Sericitic with much chlorite throughout. Chlorite in threads, patches and replacing matrix in fine grained zones. Lination poorly developed - flow banding? 60°/LCA @ 88.5m, 52°/LCA @ 92m	Up to 1% py Trace sp
93.6 - 120.85m : BRECCIATED RHYOLITE LAVA Gradational upper contact. Grey-green Very even sandy texture to 11m, then 'blotchy' texture after original fragmental nature of the lava. Very indistinct clast-like shapes within the lava, with sub-rounded margins. Up to 40mm, average less than 10mm. Fragments of carbonate material. Groundmass siliceous and felsic. Small dark feldspar laths 1-2mm. Moderate sericitic alteration, minor chlorite, moderate to strong carbonate alteration. Weak schistosity. Moderate to strong silicification, increasing in strength below 11m. Below 118m rock is bleached, leached and strongly carbonated. Some clear brecciation esp around zones now occupied by barren qtz-carbonate veins up to 100mm thick. No marked primary lination. Clast band @ 99m 60°/LCA. Below 119.7m fragments flattened and lineated 65°/LCA, with cherty and ashy bands. Basal contact 70°/LCA.	93.6-99.5m: V. minor py 99.5-102.1m: 2% py in patches and stringers associated with silicification. 102.1-120.85m: 1-2% py. patchy
120.85-122.50m : VARIABLE TUFF Grey or creamy grey Siliceous and hard. Sericitic and carbonated Intercalated irregular bands of bedded vitric tuff, chert, fine volcaniclastics and minor coarser debris. Composed of fine lithic and lava fragments, glass and pumice. Clasts of lava to 60mm, most fragments 1-5mm. Some small qtz phenocrysts Well-developed bedding in vitric tuff @ 121.75m 60°/LCA.	3% py. Minor sp-gn. Locally 5% py and 1% sp-gn.
122.5 - 148.7m : TUFFACEOUS RHYOLITE LAVA BRECCIA Grey or greyish-green Blocks, up to 170mm average 10-40mm, of creamy-grey or pink Red Hills lava, in matrix of grey cherty silica and fragments up to 10mm of chert, pumice, feldspars, lava and other acid volcanics. Becoming finer grained below 137m, with clearer waterlain character, although essentially unsorted with poorly developed bedding. Bedding: 60°/LCA @ 127m; 55°/LCA @ 135m, 48°/LCA 143.3m. Some interbeds of sandy tuff below 143m. Lava blocks angular to sub rounded. Some have irregular cracked margins - bombs? To 130m chalcedonic silica with some colloform texture concentrated around margins of lava blocks and partly replacing them. Some disrupted beds of chert. From 130-143m silicification strong but pervasive - no replacement of lava block margins. No silicification below 143m. Rock is sericitic, with chlorite in stringers and replacing matrix from 140-143m. Carbonated below 143m.	122.5-124m: 7-10% py, minor sp-gn. 124-126.5m: 10-15% py, 1-2% cp-sp-gn. 126.5-128.5m: 5-7% py, 1-2% sp>gn-cp. 128.5-144m: 1-3% py, up to 1% sp-gn>cp. 144-144.35m: 3-5% gn-sp>cp-py, dissem. 144.35-148.7: 2% py, 1% sp-gn except: 146.2-146.8: 2% gn-sp>py trace cp.
	147.15-147.75: 3-5% gn-sp-py. trace cp.

DESCRIPTION	REMARKS
<p>148.7 - 153.90m : TUFFACEOUS GRIT Grey, hard, silicified. Silicification decreasing with depth. Waterlain acid volcanic debris with distinct primary lineation but no bedding planes. Angular to sub-rounded clasts up to 15mm, average less than 5mm, of acid volcanics esp lava, and pumice. Coarsely sandy matrix. Sericitic, slightly carbonated. Basal contact an irregular bedding plane 55°/LCA.</p>	<p>148.7 - 153.9m: 3% py, 1-2% gn-sp</p>
<p>153.9 - 169.7m : VITRIC TUFF Light grey. Fine to medium grained, even-textured. Rock composed of vitric fragments, rarely larger than 1mm. Below 157.5m, some indistinct white clasts (pumice?) with rounded flattened outlines, often partly or wholly replaced by chlorite. These clasts up to 20mm, average 5-10mm. Highly sericitised and carbonated. Schistose. Below 163.7m tuff is siliceous with some irregular and disrupted chert bands. Bedding 60°/LCA @ 155m, 60°/LCA @ 160m, 55°/LCA @ 168m. 153.9 - 156m core badly broken by fractures//LCA.</p>	<p>153.9 - 164m: Minor py>sp-gn 164 - 169.7m: 1% py, minor sp-gn. Trace pp.</p>
<p>169.7 - 177.7m : VARIABLE TUFFACEOUS VOLCANICLASTIC Upper and lower gradational contacts. Dark green to light grey, variably textured and patterned. Very indistinct creamy clasts up to 30mm average 10mm, of rounded and flattened pumice, also lava and other volcanic rocks. Vitric and siliceous tuffaceous matrix with coarsely sandy texture. Moderately to strongly sericitised, some chlorite and minor carbonated alteration. Silicified in places. Strong schistosity 60°/LCA @ 174m</p>	<p>1-2% py, Minor sp-gn</p>
<p>177.7 - 195.4m : VITRIC TUFF Grey. Numerous tiny fragments of glass, qtz, feldspars and volcanic debris 1-3mm, rarely up to 15mm, below 187.5m, in vitric and slightly siliceous matrix. Strongly sericitised and carbonated. Strongly schistose. Chlorite in stringers often associated with carbonate, and replacing glass fragments. Schistosity (probably follows primary layering) 65°/LCA @ 183m, 62°/LCA @ 189.5m. Below 191.5 numerous veins and patches of carbonate. Abrupt basal contact.</p>	<p>Minor py, locally 1% Minor persistent sp>gn-cp</p>
<p>195.4 - 234m : RHYOLITIC TO DACITIC WELDED? TUFFACEOUS PYROCLASTIC Light to dark green or fawny grey. Rock essentially a fine fragmental with welded or lava-like texture in places. Felsic and vitric. Linedated flattened pumice and glass shards (?), 1-10mm. Rare pumice fiammé. Numerous small white flecks 1-3mm, up to 5mm-most flattened, some appear euhedral - either carbonated feldspars and/or pumice. Often partly replaced by chlorite. Below 207.5m indistinct white clasts of crystalline carbonate up to 15mm, average 3-10mm. Below 218m some of these are angular, equidimensional and unoriented - airfall material? Indistinct pink altered patches up to 180mm - possibly after blocks of Red Hills lava. Some definite clasts of pink lava below 218m - average 5mm. Rock is sericitic, moderately to strongly chloritised, very strongly carbonated with numerous sweat-outs and veins of carbonate. Schistose with weak primary layering: 60°/LCA @ 202.3m, 55°/LCA @ 219.5m, 68°/LCA @ 228.5m 204-216m core broken and leached. Fault zones 207.55 and 208-208.4m, shears 75°/LCA 233.3-234m - core very broken and clayey. 226.95-227.25. BASIC DYKE Green, soft. Fine grained ophitic felsic groundmass, with phenocrysts of amphibole up to 5mm. Rounded chloritic sphericles (1mm). Upper contact 78°/LCA, lower contact 70°/LCA</p>	<p>195.4-203m:1-2% py. Trace sp-gn. Minor hematite on joints. 203-210m: Minor py-sp 210-213.5m:1% sp>py 213.5-234m: Minor sp>py locally 1% sp-gn assoc. with carbonate Minor hematite throughout.</p>

ADVANCE		RECOVERY		ROD		ASSAYS - (PPM)						BULK ASSAYS															
From	To	m	%	m	%	From	To	m	Cu	Pb	Zn	Ag	Au	From	To	m	%Cu	%FeS2	Au g/mT	Ag g/mT	SG						
0	3	0.6																									
3	4.1	0.6																									
4.1	7.1	2.8																									
7.1	10.1	2.15																									
10.1	13.1	2																									
13.1	16.1	2.75																									
16.1	19.1	2.8																									
19.1	21.1	1.4																									
21.1	22	1.15																									
22	25	3																									
25	28	2.95																									
28	31	2.9																									
31	34	2.7																									
34	37	2.95																									
37	40	3.05																									
40	42	2				40	42	2	240	350	9200	0.3	<0.1														
42	43	1				42	43	1	130	1500	4200	6.0	<0.1														
43	46	2.8																									
46	49	3																									
49	52	2.9																									
52	55	3																									
55	58	2.7																									
58	61	2.95																									
61	64	3.1																									
64	67	3																									
67	70	3																									
70	73	2.65																									
73	76	2.4																									
76	79	2.85																									
79	82	3																									
82	85	2.65																									
85	88	2.85																									
88	91	3																									
91	94	3																									
94	97	3																									
97	100	3																									
100	103	3																									
103	106	3																									
106	109	3																									
109	112	3																									
112	115	3																									
115	118	3																									
118	121	3				120.8	122.5	1.7	50	1000	2100	3.1	0.05														
121	124	3				122.5	124	1.5	200	200	420	1.2	0.1														
124	127	3				124	126	2	1050	300	1300	6.3	0.1														
127	130	2.85				126	128.5	2.5	620	130	1450	1.8	0.1														
130	133	3				128.5	130	1.5	50	60	500	0.4	0.1														

NOTE: Cu, Pb, Zn, Ag - analysed by AAS at Mt. Lyell
 Au - analysed by Fire Assay at Mt. Lyell

Sample Number : 1107 RH12 87.25m
Identification : Weakly metamorphosed andesitic crystal tuff
Description :

The hand specimen is a core sample of fine grained rock composed of streaks of dark greenish grey and light olive grey.

A cobaltinitrite test revealed no K-feldspar.

In thin section the sample is seen to be crudely schistose. It consists of abundant phenocrasts of twinned plagioclase, about 0.2 to 0.5mm in size, and a few small phenocrasts of quartz set in a fine matrix of untwinned albite, quartz, chlorite, sericite, colourless carbonate, opaque oxides and pyrite.

An approximate mode is :

20-25%	plagioclase phenocrasts
1-2%	quartz phenocrasts
50-60%	untwinned albite and minor quartz
8-12%	chlorite
5-10%	sericite
3-5%	carbonate (apparently calcite)
0.2%	opaque oxides
0.2%	pyrite

Comments and Interpretation :

The sample is thought to represent an andesitic crystal tuff which has experienced mild deformation and metamorphism.

The traces of very fine pyrite in the sample may be original constituents of little significance.

Sample Number : 1108 RH12 97.0m
Identification : Sericite-quartz-carbonate-chlorite schist
Description :

The hand specimen is a core sample of fine-grained, speckled, dark greenish grey rock.

The sample accepted some cobaltinitrite stain, but not in a fashion clearly interpretable as indicating the presence of K-feldspar.

In thin section the sample displays a finely schistose texture and is seen to consist largely of sericite, anhedral colourless carbonate and anhedral quartz, commonly finer than 0.1mm. Chlorite is a conspicuous, but minor constituent.

Remnant phenocrasts of plagioclase, up to about 1mm in size, and a few smaller phenocrasts of quartz are recognisable.

There are a few "earthy" small aggregates of opaque oxide and conspicuous, though minor, disseminated grains of euhedral pyrite. There is also a late, branching, fissure veinlet of pyrite.

An approximate mode is :

50-60%	sericite
3-5%	carbonate (apparently calcite)
20-30%	quartz
10-15%	albite
1-2%	chlorite
0.1%	opaque oxides
0.2%	pyrite

Comments and Interpretation :

The sample is a sericite-quartz schist with conspicuous carbonate and chlorite.

The only metallic mineralization is a trace of pyrite as disseminated grains and a late veinlet.

The precursor rock was probably an acid crystal tuff.

121078

077

Sample Number : 1109 RH12 212.0m

Identification : Fine sericite schist with nodular or oolitic carbonate and traces of sulphide

Description :

The hand specimen is a core sample of medium light grey, fine-grained rock with a few clasts or patches of light grey carbonate, up to about 10mm in size, and with widely spaced, carbonate-filled fractures.

The sample accepted some cobaltinitrite stain, but not in a fashion clearly interpretable as indicating the presence of K-feldspar.

In thin section the sample is seen to consist largely of schistose sericite and subordinate quartz which is finer than about 0.02mm. There is one small sand grain of quartz.

Ovoid aggregates of coarsely crystalline, slightly grey carbonate occur as disseminated bodies resembling oolites, commonly about 1 to 2mm in size, but lacking concentric growth rings. Two such structures contain anhedral grey-brown grains of sphalerite and several grains of chlorite. Additional carbonate occurs as late, narrow, fissure veins with traces of quartz.

Tiny grains of pyrite are evenly distributed throughout the rock.

An approximate mode is :

60-70%	sericite
25-30%	quartz
4-6%	carbonate (perhaps slightly different to calcite)
0.1%	pyrite
tr	sphalerite
tr	chlorite

Comments and Interpretation :

This sample is a sericite schist which appears to have formed from a pelitic rock which carried oolitic or nodular carbonate and traces of pyrite and sphalerite. It may represent a distal variety of sericitic, fine host rock.

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

PROJECT: Red Hills

HOLE NUMBER: RH13

Page: 3.

082

ULV. PRESS

INTERVAL		RECOVERY		DESCRIPTION	ASSAY DATA in ppm unless otherwise shown									
From	To	m	%		Sample No	From	To	Rec. %	Cu	Pb	Zn	Ag	Au(FA)	S
				Moderate slaty cleavage sub-parallel to bedding becoming less pronounced down hole.										
				75.4-92.6m Zones up to 2m wide of broken/rubble rock, some with significant core loss.										
				Mineralization: Dissem. recryst. py throughout often medium grained, sometimes as small clots, usually concentrated along bedding planes. Also fracture fill and veinlet py developed.	0556	95.0	97.0	95	70	480	210	2	<0.1	1.7%
				Py content quite variable from 1% to 6-7% over minor 20cm intervals, est. overall 1-2% py.	0557	97.0	99.0	91	60	510	400	3	<0.1	2.5%
				72.5m trace pyrrhotite	0558	99.0	101.0	97	50	360	370	3	<0.1	2.8%
				88.8-90.8m trace sphalerite both brown and dark varieties as recryst. blebs.										
				97.6-102.3m py up to 5% with unusual worm-cast-like patches of dark recryst. material including sphalerite, quartz, carbonate, these are quite oblique to bedding.										
102.3	126.9	24.6	88	<u>MIXED TUFFACEOUS SEDIMENT</u>										
				Generally medium to coarse grained volcanoclastic	11714	104.0	105.0		10	20	40	<1	<0.01	
				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.	5		106.0		10	10	60	"	"	
				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.	6		107.0		5	10	90	"	"	
				Possible bedding 40°/LCA @ 116.4m, some slump bedding (?).	7		108.0		5	10	60	"	"	
				Coarser "units" predominantly feldspar grains but some quartz occurs.	8		109.0		5	10	50	"	"	
				Weak chloritic haloes around some "clasts" in upper part.	9		110.0		5	10	50	"	"	
				Generally weak sericitic altering but considerable carbonate as irregular patches and after feldspars.	11720		111.0		10	30	170	"	"	
				103.2m 20 cm fault pug, quartz rubble in clay matrix.	1		112.0		20	140	280	"	"	
				110.8m 20cm possible fault, very broken core.	2		113.0		25	150	270	"	"	
				120.0-120.35m breccia, subangular blocks tuff sandstone in khaki (sericitic) cement.	3		114.0		20	220	520	"	"	
					4		115.0		20	180	340	"	"	
					5		116.0		10	90	180	"	"	
					6		117.0		20	210	320	"	"	
					7		118.0		15	300	380	"	"	
					11728	118.0	119.0		15	140	410	"	"	

121085

08A

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

PROJECT: Red Hills

HOLE NUMBER: RH13

Page: 5.

ULV. PRESS

INTERVAL		RECOVERY		DESCRIPTION	ASSAY DATA in ppm unless otherwise shown											
From	To	m	%		Sample No.	From	To	Rec. %	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.	11729	203.0	204.0		50	30	60	<1			<0.01	
				some offset by up to 3cm, associated py in veins.	11730		205.0		35	50	80	"			"	
				206.2-207.7m increase in py to 2% disseminated and vein.	11731		206.0		40	30	70	"			"	
					11732	206.0	207.0		290	230	720	2			0.25	
207.1	216.1	9.0	95	<u>HOST ROCK HORIZON-SILICEOUS SEDIMENT</u> 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 and in small fractures minor sp associated with py both dissem- inated and in clasts. 213.0-216.1m increase in sp as blebs, stringers and disseminated est. 1-2% sp with last 60cm up to 5% sp. This mineralization continues below. This is equivalent of host lithology in RH 5 but base metal content markedly reduced.												
					2810	207.0	209.0	100	170	2400	0.58%	5	4.7	0.2		2.2%
					2811	209.0	211.0	94	350	1200	1.14%	3	2.7	0.2		3.1%
					2812	211.0	213.0	100	100	640	0.58%	4	3.7	0.2		2.1%
					2813	213.0	215.0	97	120	640	1.01%	4	3.9	0.2		2.4%
					2814	215.0	216.0	78	450	1250	3.01%	4	8.1	1.0	1.1	4.1%

ULV. PRESS

0.01

INTERVAL		RECOVERY		DESCRIPTION	ASSAY DATA (ppm)																
From	To	m	%		Sample No.	From	To	Rec. %	Au	Cu	Pb	Zn	Ag	Ba							
				strong below 249m in diffuse patches and bands, of fi gr chalcidonic type.																	
				Mod-strong schistosity.																	
				Minor py, assoc with silif. Trace gn 251-252m.																	
				Strong fault 244.5m 67°/LCA. Shear 251.5m 55°/LCA. Basal shear 73°/LCA.																	
267.3	329.45	62.15	100	<u>MASSIVE SILICEOUS AND FELSIC IGIMBRITE (?)</u> Grey, med gr. even-text, massive. Siliceous-numerous even-distrib qtz grains <1mm. Felds av 1mm or less, up to 5mm below 323m. Pumice to 20mm, av <5mm. Minor lithics to 10mm. Mod-strong carb dec to weak below 290m, mod ser, weak chlor, sl bleaching. Patchy pink pot alt + silif 305-320m. Non-schistose 1° layering (grain size change) 55°/LCA @ 276m. Persistent prob 1° lineation of pumice and felds, 48°/LCA @ 294m. Minor py. 267.3-273m: minor sp-gn mainly in veinlets. 319.5-327.5m: minor coarse gn-sp in comb-struct, metamorphic qtz-carb-pot veins to 80mm. Transitional basal contact.																	
329.45	345.3	15.85	100	<u>TRANSITIONAL UNIT</u> Appears part of above ignimbrite, but more variable. Creamy grey or fawn. Med-coarse gr with some fi gr sections below 339m. Banding in fi gr sections: 50°/LCA @ 340m. Pumice frags to 10mm, green porph plagioclase to 5mm (to 2-3mm below 339m), rare qtz to 2mm. Strong pervasive silif, making rock v. hard. Mod ser, weak chlor, bleaching. 329.45-339m: sp-gn-py replacing feld and glass frags, often in assoc with py-sp-gn-cp veins ± qtz-carb. Locally 3% over 0.3m. 338.5-338.85m: 10-15% dissem + vein sp-gn-py>cp centered on 2x20mm sulph veins. 339-345.3m: 1-5% sp-gn-py>cp in dissem assoc with silif, excl: 340.1-340.35m: 40-50% py-sp-gn>cp dissem + vein network.	12370	332	334		<0.01	50	630	1380	2	1140							
					12371	334	336		0.16	40	430	2170	2	1200							
					12372	336	338.4		0.54	145	3400	4670	11	1350							
					12373	338.4	339		0.89	200	24,000	32,000	33	1380							
					12374	339	341		0.61	210	20,000	28,000	26	1350							
					12375	341	343		0.06	220	1,850	3,360	4	1800							
					12376	343	344.1		<0.01	95	3,540	4,110	11	1800							
					12377	344.1	345.3		0.03	75	3,960	4,250	8	2030							
					12378	345.3	346.6		<0.01	120	4,000	10,000	11	450							
					12379	346.6	347.8		0.04	100	2,630	19,000	13	1020							
					12380	347.8	349		0.09	155	4,590	22,000	10	750							
					12381	349	349.75		<0.01	90	1,910	3,960	3	550							
					12382	349.75	351		<0.01	60	700	2,510	<1	450							

PROJECT: RED HILLS, TYNDALL E.L. 9/66

DRILL CORE LOG AND ASSAY DATA

HOLE NUMBER: RH 16

ULV. PRESS

INTERVAL		RECOVERY		DESCRIPTION	ASSAY DATA (ppm)														
From	To	m	%		Sample No.	From	To	Rec. %	Au	Cu	Pb	Zn	Ag	Ba					
				344.1-345.3m: 5-7% sp-py>qn>cp dissem. Transitional basal contact.															
345.3	349.75	4.45	100	<u>VARIABLE TUFACEOUS SEDIMENTS (HOST ROCK HORIZON)</u> Incl finely bedded tuff-shale, chert and breccia (with lithic clasts to 80mm, av <20mm). Bedding 65°/LCA @ 345.7m. Mod ser, carb in places. 345.3-346.6m: 5-7% py>sp>gn>cp dissem and bedded in shales, also in large qtz veins. 346.6-349m: 25% py-sp-gn, cp as dissem and fi qr banded semi-massive sulph in cherty seds and breccias. 349-349.75m: 3-5% sp-gn>py, dissem.															
349.75	365.75	18	100	<u>FINE VOLCANICLASTIC SEDIMENTS WITH CARBONATE</u> Grey, even-textured. Characteristic cream-coloured wispy clasts of carb up to 40mm av <10mm, in sandy to silty matrix containing carbonated felds. Carb replacing pumice and (poss) lithics - below 358m carb is weaker and clasts of felsic pumice and subangular lithic volcs are visible. Mod ser, weak chlor below 358m. Mod schistosity. Unit becomes finer fr at base, with tuff-shale, tuffaceous siltstone and sandstone below 365.4m. Bedding: 52°/LCA @ 352.7m, 65°/LCA @ 366m. 1% persistent sp-gn>py>cp, dissem and small veinlets. Locally 5% over 0.3m below 365m. Basal contact conformable 68°/LCA.															
365.75	386	18.25	100	<u>FINE VOLCANICLASTIC SEDIMENTS</u> Green. Interbedded finer epiclastic with prominent thin green 'streaks' after glass frags av 10mm (some replaced by sp), and zones of coarser breccia-conglomerate with angular to subrounded lithic volc clasts (mostly red silif rhyolite lava) up to 60mm, av <20mm, in gritty matrix full of lithics and pumice.	12383	365.4	367.75		<0.01	115	1,400	14,000	1	530					
					12384	367.75	370		<0.01	80	250	12,000	1	780					
					12385	370	372		<0.01	425	150	9,000	1	730					
					12386	372	374		<0.01	150	460	8,000	2	770					
					12387	383	384.5		<0.01	185	770	5,100	4	1370					
					12388	384.5	386		<0.01	280	440	5,240	3	1120					

