

## PHOENIX EAST LINE—No. 3 BORE.

Depth in Feet.	Succession of Strata.	Assay Values (lbs. per cubic yd.).	Sample No.
0' 0" to 6' 0"	5ft. sand overlying laterite ... ..	.37	G. 155
6' 0" to 11' 0"	Laterite at 9ft. becomes kaolinised sediment ... ..	.05	G. 156
11' 0" to 16' 0"	do. do. do. do. ... ..	.03	G. 157
16' 0" to 21' 0"	do. do. do. do. ... ..	.01	G. 158
21' 0" to 26' 0"	do. do. do. do. ... ..	.01	G. 159
26' 0" to 31' 0"	Sandy wash ... ..	.005	G. 160
31' 0" to 36' 0"	do. ... ..	.02	G. 161
36' 0" to 41' 0"	do. ... ..	.02	G. 162
41' 0" to 46' 0"	do. ... ..	.01	G. 163
46' 0" to 51' 0"	do. ... ..	.01	G. 164
51' 0" to 56' 0"	Coarser wash ... ..	.03	G. 165
56' 0" to 61' 0"	do. in clay ... ..	.01	G. 166
61' 0" to 66' 0"	Coarse wash ... ..	.01	G. 167
66' 0" to 71' 0"	Coarse wash at 69ft. becomes granitic alluvium ... ..	.01	G. 168
71' 0" to 76' 0"	Granitic alluvium ... ..	.32	G. 169
76' 0" to 81' 0"	do. ... ..	.01	G. 170
81' 0" to 86' 0"	do. ... ..	.002	G. 171
86' 0" to 91' 0"	At 90ft. becomes granite ... ..	.001	G. 172
91' 0" to 96' 0"	do. do. do. ... ..	.005	G. 173
96' 0" to 101' 0"	do. do. do. ... ..	.085	G. 174
101' 0" to 105' 0"	Granite (not sampled) ... ..	...	...

LEINSTER GOLD MINE—MT. SIR SAMUEL,  
EAST MURCHISON GOLDFIELD.

(F. G. Forman, B.Sc.)

On the 17th December last, accompanied by Mr. Frank Atkins, I made an examination of the Leinster Mine, with the object of assessing the possibility of re-locating the reef below the existing bottom level (400 feet, vertical depth).

The mine has only recently been unwatered and the shaft reconditioned; the levels were found to be in excellent condition and easily accessible, but it was not possible to make an examination of the old stopes. Information supplied by Mr. Atkins enabled me, however, to gain an idea of the conditions which formerly existed in the reef.

The ore body in the mine was a quartz reef of lenticular habit about 300 feet in length, occurring as a metasomatic replacement in a shear zone of fine grained serpentinous greenstone. It strikes roughly north and south and has an almost vertical dip. Four levels have been driven at depths of approximately 100, 200, 300 and 400 feet. An examination of the Nos. 1, 2, and 3 levels made it clear that the reef had a decidedly northerly pitch of about 60°. The faces of these three drives were examined and the shear track could be seen to continue through the country rock, and the quartz reef, which has all been removed, apparently had quite blunt terminations. According to Mr. Atkins, who was employed on this mine when it was formerly worked, the reef on two occasions was found to have vertical blanks and gave out at a depth of 60 feet and was found again at a depth of 100 feet; it gave out at a depth of 220 feet and made again at 250 feet. The reef finally gave out at a depth of about 380 feet from the

surface and was not again located. On each occasion when the reef cut out, a narrow shear track continued in its place, and it was by following down on this shear that the reef was again located.

At the present bottom level, vertical depth 400 feet, a considerable amount of driving has been done both north and south, on a rather indistinct shear about 25 feet east of the shaft. A much more distinct shear track is visible in the walls of the main crosscut, 16 feet east of the shaft. Two west crosscuts from the north drive have intersected the same shear, and rises put up from the ends of these crosscuts on the shear track have broken into the bottom of the old stopes at a depth of about 380 feet. It seems certain, therefore, that this more distinct shear cut in both the west crosscut and the main east crosscut, represents the reef channel.

Mr. Atkins assures me that the behaviour of the reef when it cut out at 380 feet was similar in all respects to its behaviour when it was lost on the two former occasions at the 60 ft. and 220 ft. levels. As the reef was successfully re-located on both these occasions by sinking on the shear track, I can see no reason why it should not be re-located by similar methods below the 400 ft. level. It is impossible to form an estimate of the possible extent of the blank, but judging by the extent of the former blanks, I would not expect the present one to be much more than 50 to 60 feet in depth; it may, however, be greater. In my opinion the best method to prospect for the continuation of the reef at depth is to sink a winze on the shear track at the 400 ft. level in the most northerly of the two west crosscuts from the north drive. A winze from this crosscut would be preferable to one in the southerly crosscut, as there would be less chance of missing the reef because of its northerly pitch.