

LYNDHURST GOLD FIELD

Mining operations in the vicinity of the old Lyndhurst township have been carried out on two distinct lines of reef and therefore the Lyndhurst Gold field could better be described as two fields instead of one. The two fields would be the Lyndhurst Gold field near the old township and the Southern Cross Goldfield situated about a mile to the south east of the township.

Reports have previously been written on these fields:-

<u>By</u>	<u>Date</u>
Chas. Gould	1864 and 1869
G. Thureau	1881
P.B. Nye	1931
F. Blake	1947 his report being based on field work of 1934.

The information contained in the above reports may be summarised as follows:-

The field was discovered in the early sixties and was first abandoned in 1873. Many revivals were attempted the last being in 1907. It is doubtful whether these revivals were serious attempts to reopen the field.

Quoting the main features of some of the reports:-

Blake in 1947 wrote "The Railway reef.... workings consist of a line of shallow trenches and shaft, together with surface stopes bearing in a north-easterly direction over a distance of 160 feet. The reef..... varies in width from one to six feet and dips to the north-west at 67°"

The Alliance Mine. Information of date 1888 quoted from F. Blake's report.

"In the old underlay shaft a level had been

driven at a depth of 25 feet, the stone being cut at both ends, a distance of nearly 60 feet, and had been stoped nearly to the surface. Driving north and south the reef was in view about 11 feet deep and of an average thickness of nine inches, very heavily charged with mineral. At a depth of 39 feet in the old Whim shaft a cross-cut has been driven east 30 feet cutting through reef eight feet from the shaft.....The reef was one foot thick where cut, and nearly two thirds minerals".

About this period (1888) a parcel of 53½ tons of ore yielded -

53½ tons by battery (Amalgamation)	10oz. 15dwt. 16grs.
18 tons 11 cwt. pyritic concentrates	
from above ore	30oz. 17dwt. 0grs.
	41oz. 12dwt. 16grs.

A recovery of 15.6 dwts. per ton of ore

The Pioneer Mine:

There is little information available about the Pioneer Mine. Early information suggests that the reef, where first cut showed up to 12 feet in width, but at a depth of 30 feet was only 3 feet in width. Galena Iron pyrite and Arsenopyrite were present in the ore.

In 1881 the shaft was over 100 feet in depth.

In 1907 John Wren held the area as a lease.

The shaft was dewatered and the reef was considered too small for working.

The surface workings at Lyndhurst suggest the occurrence of at least three reefs and trenches and shafts have been sunk on them. Little information can now be gathered in the field for the old workings are now in a collapsed condition. Shafts have been filled in, trenches have become overgrown and difficult to find and in many cases the spoil dumps from the shafts have been removed for

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purposes of road construction. In only one case was it possible to obtain a sample of the ore remaining. In this instance the ore was selected with a view to determining whether or not the sulphidés contained gold. It matters little however whether this sample is auriferous for gold returns show that a considerable proportion of the gold recovered was won from the sulphide concentrates.

Of the reefs proved to exist there is one which has in places shown a reasonable width of stone.

At the Railway workings a width of from one to six feet over a length of 160 feet has been proved.

At the Alliance Mine, a width of one foot over sixty feet in length and stoping suggests that an economic grade of ore was won.

A second reef at the Alliance was also one foot in width but there is no mention of development.

At the Pioneer Mine, the reef originally up to 12 feet in width was only three feet in width at 30 feet in depth. The shaft was continued to over 100 feet in depth but no information relative to width of reef is available. The reef was heavily mineralised.

The workings of the field extend for upwards of a mile and although no reef has been exposed over some portions of this distance it is reasonable to assume that the ore channel is continuous over that distance and that the reefs are lenticular along that channel with sections showing no development of reef. The greatest length of reef mentioned in old reports is 160 feet and the greatest length of surface stopings observed by me is 150 feet on the old Pioneer workings. The greatest depth recorded for any of the workings was "over 100 feet" for the Pioneer

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but the Spoil dumps of the Alliance Mine would suggest either a depth much in excess of 100 feet or more or less extensive underground workings.

It is therefore reasonable to assume that the reefs persist to depths greater than 100 feet and that the ore is heavily mineralised.

There is no evidence to show how wide the reefs are at depth and as lensing of the reefs occurs at the surface so also can it be expected at depth.

That some moderately high grade ore occurs is confirmed by the only authentic crushing recorded from the field. From that crushing of $53\frac{1}{2}$ tons of ore from the Alliance Mine a total of 41 oz. 12 dwt. 16 grns. of gold bullion was won. This represents an overall recovery of 15.6 dwts. per ton. Of this recovery a total of 36 ozs. 17 dwt. were won from the pyritic concentrates which totalled 18 tons 11 cwts. This represents a recovery of 1 oz. 13 dwts. 6 grns. per ton of concentrate of 11 dwt. 12 grns. per ton of ore.

The bullion won from the ore was of a low grade being valued at £2.19.6 to £3.2.0 per ounce when fine gold was valued at £4.5.0 per ounce. On prices at present ruling viz. £15.10.0 per ounce the Lyndhurst bullion would be valued at £10.18.9 per ounce and the crushing quoted alone would yield under Lyndhurst conditions £8.10.6 per ton which with modern equipment and better methods should be improved upon.

There is no evidence to show how wide the reefs are at depth but it is to be expected that conditions at surface will to some extent be repeated at depth and lensing of the reef can be anticipated with sections showing no reef at all. It is not possible to assert that the reason for the closure of the mines was the low grade of ore for the only crushing recorded reveals an ore of moderate grade.

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The two main reasons for the closure of the mines would likely be -

- (1) Inability to treat economically the heavily pyritic ore by the old chlorination process.
- (2) Narrowness of the reefs at depth which would necessitate the mining of a large proportion of country rock which would result in a lowering of grade generally.

In general terms the above statements can be applied to the Southern Cross field but of the two fields, should testing by boring be decided upon, the Lyndhurst section is the more promising of the two fields and should receive priority.

Some preliminary work would be necessary before bore sites could be selected.

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