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COMMONWEALTH OF AUSTRALIA

**DEPARTMENT OF NATIONAL DEVELOPMENT
BUREAU OF MINERAL RESOURCES
GEOLOGY AND GEOPHYSICS**

RECORDS:

1945/57

Report on Maintenance

Big Bell Gold Mine

by

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Report No. 1945/57.

TOTAL. £1,378.12.0.

Under the recently revised schedule of expenses items marked X would not be allowed.

Usual Number of Men Employed - At full production about 500 men were employed. This was reduced to 387 before shutting down. Approximately 500 men will be needed to resume operations at full scale, which can be achieved in 2 to 3 months.

Ore Reserves - 2,289,500 tons, averaging 2.93 dwts. gold per ton on January 1st, 1943. Since then 23,900 tons have been mined. This ore reserve is calculated down to No. 6 (613') level only, but the ore body maintains its grade and size on that level, and possible reserves are very large.

Monthly Throughput - The average monthly tonnage mined was 35,000 tons, the maximum 43,000 tons.

Plant - This is a modern, well equipped plant with a large diesel driven powerhouse, a crushing mill and cyanide plant capable of treating up to 45,000 tons per month, workshops, stores and garages. The Company has provided extensive facilities which include manager's residence, 7 senior staff houses, 30 married quarters, 120 men's houses, male and female staff quarters, doctor's residence, air-conditioned offices, club, swimming pool, etc.

Mine - The ore body has been worked by gloryholing to the limit of open-cut mining and by centre heading stopes below that limit. The lowest level is 613', the level on which development has just commenced, and no ore has been mined between this level and the 433' level. Above the 433' level the greater part of the ore has been mined out.

The total production from the mine to the close of operations in February, 1943, was 2,224,271 tons for a return of 290,496 ounces of gold, an average recovery of 2.61 dwts. gold per ton.

Production during 1942 was 376,578 tons for 46,117 ounces of gold. The main central portion of the ore body is about 1,000' long by 90' wide and there are extensions of narrow width at both ends.

The dimensions of ore body are maintained to the 613' level and the average grade on this level is 2.9 dwts. per ton. The mine makes approximately 120,000 gallons of water per 24 hours. The water which is acidic and highly corrosive is pumped 5½ days a week. Most of the water makes above the No. 4 level where it is collected in a dam and pumped to the surface. During the weekend the dam overflows through a 3" drill hole to a sump on the No. 6 (613') level, from which the water is pumped up to No. 4 level on Monday and at other times as required. Another smaller pump at the bottom of the shaft, 800 feet vertical depth, is worked when necessary.

Requirements for Essential Maintenance - The mine has to be kept de-watered on account of the acidity of the water, and the large amount of expensive equipment which is installed underground. The mine drains have to be kept clear, especially after rains which wash in mud and fine silt from the gloryholes. Pipes, pumps, and fittings have to be repaired when necessary and replaced at intervals. Winding ropes are kept oiled and greased, and shaft timber checked periodically. All surface equipment and buildings are kept in good repair and moving parts such as crushers, belt conveyors, agitators, etc. are turned over occasionally to keep in working order. The power plant has to be maintained and one section is run on day shift to supply power for de-watering, and a smaller engine on afternoon shift to supply electric power and light to the community. Pipe lines on the surface from the water supply wells, 3½ miles distant have to be patrolled and maintained. The 8" main pipe line around the tailings dump is kept filled with water. Repairs to equipment are carried out as required, and the motor vehicles are maintained. Stores have to be obtained by truck

from Cue twice weekly.

The ball-mills and classifiers and other sections of the plant have had to be scaled and painted. Ten agitators, each 30 feet by 18 feet, and 5 thickeners, each 101 feet by 14 feet, have all been painted. Part of the expense for this work was borne by the Company. Further work along these lines is required in parts of the plant.

Details of Present Maintenance Programme -

The Accountant - In charge of office and warehouse and in over-all charge of the property; he pays the men and looks after the accounts.

Underground Foreman - In charge of dewatering and underground maintenance; attends to shaft timber, keeps ropes oiled and greased, looks after pumping and maintenance of pumps, which includes taking down the pumps and getting them out of the mine when required. Owing to the acidity of the water the pumps have to be thoroughly overhauled and repaired about every eight months.

Drill-shop Foreman - Assists Underground Foreman in the above work.

Winder Driver - Full-time day shift on winder, raising and lowering men and gear.

Powerhouse Foreman - In charge of powerhouse and any necessary repair and maintenance work. Also acts as relief engine driver.

Two Engine Drivers - One on day shift to keep large engine running to provide power for pumps, winder, etc. One on afternoon shift to keep smaller engine running to provide power and lighting.

One Electrician - Maintenance on electrical equipment and wiring and effecting repairs and replacements when necessary.

One Junior Assistant - Assists electrician.

One Welder Foreman - Does any fitting, turning and welding required, and maintains the Company's motor vehicles.

One Surface Foreman - Maintains 3½ miles of pipe lines from the wells to the over-head tanks, and keeps 8" main around tailings pump filled with water; attends to pipe repairs, and sewers.

One Carpenter Foreman - Maintains and repairs community houses, men's huts, and all plant buildings; also goes to Cue twice weekly for supplies. (There is at present no train service on the branch line from Cue to Big Bell).

One Caretaker and Gardener - Looks after the married quarters, the manager's residence, staff houses; cleans up yards of community houses and does odd jobs about the property.

One Carpenter - By arrangement with the State Government, one carpenter is employed at the Big Bell townsite, half a mile south of the mine, to maintain and repair the unoccupied houses belonging to employees called up, enlisted, or forced to leave Big Bell when the mine closed.

One Painter and one Assistant Painter - (employed by Company). At present painting Company's houses; previously engaged on painting of sections of the mill equipment.

One Junior - (employed by Company). Assists Accountant in re-arranging warehouse and stores; has spent some time on maintenance jobs which has been charged to the Commonwealth Maintenance Fund.

The various foremen listed above are paid the same salary as when the mine was operating. This means that routine work capable

of being carried out by tradesmen and labourers, is being done by comparatively highly paid officers of the Company.

While it is desirable from the Company's point of view to retain the key men of their previous staff, it does not seem equitable that the Commonwealth should be charged what amounts to exorbitant rates for maintenance work. In addition, the question arises as to whether these men, who are skilled specialists, could not be better employed elsewhere. However, all are married and have their homes and families at Big Bell, whereas it might be difficult for them to find suitable accommodation at another centre at which they might be employed.

Recommendations - That the same number of men continue to be employed on the maintenance, but that, if the Company desires to retain its key men in maintenance jobs, the Company should be responsible for portion of their salaries; the Commonwealth to pay the following rates:

Accountant..	..	..	..	..	\$50	per month.
Mine Foreman	..	..	..	..	\$50	" "
Powerhouse Foreman	..	..	..	..	\$40	" "
Drill-shop Foreman	..	..	..	..	\$36	" "
Electrician.	..	..	..	..	\$36	" "
Carpenter Foreman	..	..	..	..	\$36	" "
Surface Foreman..	..	..	..	..	\$33	" "

The above are nett rates which are, in most cases, approximately the award rates for the district, and do not include accident insurance, Mine Workers' Relief, payroll tax, etc.

It is also recommended that the Commonwealth be responsible for registration and maintenance charges of two motor vehicles only (at present four are in use).

Date..... (Commonwealth Geologist).

Date..... (State Inspector of Mines).