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COMMONWEALTH OF AUSTRALIA

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

RECORDS:

1945/56

Report on Maintenance

Triton Gold Mine

by

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DEPARTMENT OF SUPPLY AND SHIPPING.

MINERAL RESOURCES SURVEY.

REPORT ON MAINTENANCE

TRITON GOLD MINE.

Report No. 1945/56.

Situation of Mine - At Reedy, 36 miles Northeast of Cue by road.

Financial Position of Company at March 31st, 1944 -

Capital..	..	..	..	..	..	..	..	..	£480,000
Dividends Paid	..	..	..	..	..	..	..	..	£264,000
Credit in Appropriation A/C..	..	..	..	..	..	..	..	..	£146,670
Investments in War Loans and Bank Fixed Deposit..	..	..	..	..	..	..	..	..	£ 54,618

Representatives - Triton Gold Mines, N.L., Collins House, 360 Collins Street, Melbourne; The General Manager of the Western Mining Corporation in Kalgoorlie, who act as General Managers for Triton Gold Mines, N.L. is Mr. F.F. Espie, Gold Mines of Kalgoorlie, Kalgoorlie.

Maintenance Commenced - August, 1942.

Average Amount Per Calendar Month - (August, 1942 - September, 1944) £1,159.

Present Monthly Expenditure (See Below) - is £1,266.

Men Employed on Maintenance - (4 weeks ending July 10th, 1945).

1 Supervisor..	..	..	..	..	..	£52. 1. 8.	per month.
1 Engineer ..	..	..	..	..	..	52. 1. 8.	" "
3 Working Shift Bosses..	..	..	..	..	..	39. 0. 0.	" "
1 Winder Driver ..	..	..	..	..	..	55.19. 7.)	} Includes Overtime.
2 Power House Drivers ..	..	..	..	..	..	47.15.10.	
1 Pumpman ..	..	..	..	..	..	47. 6. 5.)	} Half wages charged to Maintenance, half to development.
1 Fitter. ..	..	..	..	..	..	35.10. 4.	
1 Cageman ..	..	..	..	..	..	14. 1. 8.)	
1 Braceman ..	..	..	..	..	..	14. 1. 8.)	
1 Cleaner ..	..	..	..	..	..	14. 1. 8.)	} half to development.
1 Labourer ..	..	..	..	..	..	16. 2. 7.)	
4 Timbermen ..	..	..	..	..	..	36.10. 0.	per month (average).
1 Labourer ..	..	..	..	..	..	29.12.11.	per month.
1 Carpenter ..	..	..	..	..	..	35.15. 8.	

These rates exclude Holiday Pay, Mine Workers' Relief Fund, Accident insurance, etc.

Expenses per Month - (Average November, 1944 to March 1945).

Wages..	..	..	..	..	..	..	..	£724.18. 9.
Fuel ..	..	..	..	..	..	..	..	247. 9.10.
Stores. ..	..	..	..	..	..	..	..	179.19. 6.
Accident Insurance ..	..	..	..	..	..	..	..	50. 0. 9.
Mine Workers' Relief Fund..	..	..	..	..	..	..	..	2.10. 6.
Payroll Tax. ..	..	..	..	..	..	..	..	17.18. 4.
Holiday Pay. ..	..	..	..	..	..	..	..	33. 7.10.
Sundry Expenses..	..	..	..	..	..	..	..	10. 4. 5.
<u>TOTAL.</u>								£1,266. 9.11.

This claim has been submitted on the recently revised basis. Expenses claimed for periods prior to the above included monthly charges of approximately £45 for Fire Insurance, £35.8.0. for Superannuation, and £110 for Administration.

Usual Number of Men Employed - From 260 to 310. Approximately 300 men will be required to resume full scale operations.

Ore Reserves - The total ore reserves at present are estimated at 226,000 tons, averaging 7.0 dwts. of gold per ton, of which 173,000 tons averaging 7.1 dwts. can be extracted.

In addition prospecting work is being carried out in various parts of the mine, and there are possible reserves of near surface ore in the South Emu Section, 1,500' south of the main mine.

To re-open the mine the company estimates that it will cost approximately £53,000 for repairs and re-conditioning, and that £163,000 profit can be made on the extraction of gold valued at £530,000 from present ore reserves, not allowing for the repayment of the £53,000 spent on reconditioning.

Average Monthly Throughput - The normal throughput of the plant is 10,000 tons per month. During the last year of operations an average of 6,300 tons per month was treated. The re-opening programme contemplates treating 9,000 tons per month after nine months reconditioning work.

Plant - The plant, which is all apparently in good condition, consists of a diesel driven power house, compressors, steel headframe, two electric winders, ore bins, crushing plant, belt conveyors, ball mills, classifiers, thickeners, agitators etc. and Oliver filters; also blacksmith's shop, tool sharpening and other workshops, change houses, offices, 24 company houses, and 80 employees' huts.

Mine - The mine has been opened up to the No. 15 level (a vertical depth of 1,775'), and the main ore body has been developed to the lowest limit of payable ore. The main lode averages 12 to 14 feet wide, and has a maximum stopable length of 860 feet. The tonnage amounts to 605,128 tons of an average grade of 7.03 dwts. gold per ton for a return of 191,712 ounces of gold, equivalent to a recovery of 6.34 dwts. gold per ton.

During the last 12 months' work, 75,742 tons were mined for a return of 21,495 ounces, a recovery of 5.7 dwts. of gold per ton.

The lode material itself is fairly solid, although it tends to break in horizontal slabs in places of considerable size, but the walls of the lode, which consist of epidiorite schist for 30 feet on either side, behave in a most remarkable manner. The schist rock is very sheared and crushed and as soon as the lode is opened up, the walls, for as much as 15 feet on either side of the lode, tend to crack and bulge and swell, exerting tremendous pressure on the workings and on the mine timbering, which has to be constantly picked up and renewed. Both backs and floors of the workings are subject to tilting and the mine rails may be raised in places as much as a foot by differential pressure. This condition is worse on the lower than on the upper levels. The character of the walls of the Triton lode is unique probably throughout Australia, and presents a maintenance problem which is unparalleled in any other mine.

In order to keep open the drives necessary for working the mine, the following lengths of level have to be kept in repair -

No.	3	Level	500	feet.
"	4	"	500	"
"	5	"	720	"
"	6	"	860	"
"	7	"	780	"
"	8	"	720	"
"	9	"	560	"
"	10	"	340	"
"	11	"	340	"
"	12	"	280	"
"	13	"	340	"
"	14	"	340	"

The mine makes 100,000 gallons of water every 24 hours. This is pumped in four stages, from No. 12 to No. 9 level, from No. 9 to No. 6, from No. 6 to No. 3, and from No. 3 to the surface. Pumping is continuous 7 to 8 hours per day, seven days a week.

Requirements for Essential Maintenance - The mine has to be kept unwatered, as the effect of letting the water rise, considering the character of the walls of the lode, would be disastrous. Moreover, it is necessary to keep the levels open in order to be able to carry out the necessary maintenance work.

The work being done on repairing the levels and replacing the timber is being kept to a minimum, as it is found that new timber put in may have to be replaced again within a year or so. Consequently the broken caps are often supported with tons in the centre of the drive instead of being replaced and temporary repairs effected, sufficient to keep the drive open until such time as the mine is ready to re-open, and the levels can be put into working order.

The pumps and the power units which are in use have to be kept in repair, and current maintenance is done on shaft timbers and on surface plant, buildings and equipment.

In addition to the above maintenance work, which represents practically the minimum necessary to keep the mine open a very extensive programme of mine repair work will be necessary before production can be resumed. All the levels, especially Nos. 9, 10, and 11, will have to be thoroughly reconditioned, and in most cases tracks will have to be relaid and ore passes repaired, as far as possible.

Before closing down all stopes were close filled right up to the back, but in many cases large slabs of ore have come down on top of the ore passes, and these will have to be broken up and another breast taken off the back of the stope. A detailed submission on this subject has been made by the Management to the State Mines Department.

Details of Present Maintenance Work -

One Supervisor - (Formerly underground foreman and later acting Mine Manager) in charge of maintenance and development work.

One Engineer - In charge of powerhouse, pumps, and electrical work, and does any turning on the lathe that may be required.

One Senior Shift Boss - Acts as general underground foreman, goes through all levels and stopes and makes regular inspections to decide priority of repair work required; lends hand on maintenance work where most required.

Two Working Shift Bosses - In charge of timber repair gangs.

One Winder Driver - Full time on winding engine, 8 hours per day, 7 days a week.

Two Powerhouse Drivers - One on day shift, 8 hours a day, 7 days a week, running engine to supply power for pumps and winder, one on afternoon shift to supply power and light. (Power is sold to the town at 5/- per month per house, and to the hotel at £6 per month, and water pumped from a drillhole on No. 3 level at 2/6 per thousand gallons).

Revenue from these sources is credited to the Commonwealth Government Maintenance Fund.

One Fitter - Repairs pumps, overhauls powerhouse, equipment etc. His time is allocated to maintenance or to development, according to the work done.

One Pumpman - Full time looking after pumps 7 days a week.

Four Timbermen - Repairing levels. These men work on contract when it can be arranged.

One Labourer - Assists Timbermen, cleans drives and drains, and does odd jobs about the mine and plant.

One Cageman and one Braceman - Run cage and maintain supplies of timber to maintenance crews and stores etc. to development crews, and haul mullock as required.

One Cleaner - Attends to sanitation and cleaning up around the plant.

The above three men are charged half to maintenance and half to the Company's account for development.

One Carpenter - By arrangement with the State Government one carpenter is employed to keep in repair the cottages of the workmen who have enlisted or have been called up, or were forced to leave Triton when the mine closed. He also repairs the company's buildings if available but has not done any as yet.

The position of the maintenance work in relation to the development work being carried out by the company has been examined, and it is considered that the equivalent of the above staff would be required at the mine for maintenance alone if no development work were being done. The only question which arises is whether part of the salaries of the Supervisor and the Engineer should be borne by the company.

Recommendations - That maintenance be continued on the present basis. It should be recognised, however, that a much heavier charge against maintenance will be incurred before the mine can be re-opened to full production.

Date..... (Commonwealth Geologist).

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