

REPORT ON MINIMUM AREA TO BE BORED AT 326P/M, GOSHEN

The question of minimum area of proved ground which would warrant erection of a plant is a difficult one. I consider that the absolute minimum should be an area containing alluvial tin ground of a profitable grade so that the treatment of such area would yield sufficient profit above all working and other expenses to repay all capital expenditure. The capital expenditure would include the purchase of all plant materials and the cost of the erection of same, and the cost of all preliminary work necessary to enable operations to be commenced.

The capital outlay is estimated by Mr. Chapman as:

Gravel Pump	}	£650
Portable Buffalo Steam		
Engine and boiler		
900 feet of 15" pipes		£100
Sluicing Nozzles		Already possessed and not to be taken into account.
Timber for sluice boxes		£50
Tools and Sundries		£50
Labour in installing Machinery, pipe-line, constructing sluice box, dam and making hole to start operations.	}	£200

In addition to the above, Mr. Chapman desires another £100 to cover cost of wages, &c., during the first month's sluicing operations. If this is regarded as capital expenditure, the areas, &c., given below would have to be increased by 10%.

The total capital outlay (including cost of all preliminary work) would, therefore, be £1,050.

The leasees expect to obtain 0.5 short tons of cassiterite per week, which would have a market value of approximately £100. It is difficult to estimate the profit per week, but a tentative figure of £20 can be assumed. I checked Mr. Chapman's figures with him and on the basis of one shift per day and testing 25 cubic yards per hour of 1 lb. ground, the expenses per week would be £60. I deem it advisable to estimate the expenses at £80 and so reduce the profit from £40 to £20 per week. On this basis it would be necessary to treat ground for 50 weeks (which would yield 25 tons of cassiterite) in order to refund the total capital expenditure. It would, therefore, be necessary to prove by boring 2.5 acres with a grade of 0.5 lbs. per cubic yard or such other area as may be determined by the grade proved (1 acre of ground 15 feet deep, and with a grade of 1 lb. per cubic yard contains 10.8 tons of cassiterite.)

It would probably be advisable to test the portion of the ground which would, if of profitable grade, be worked first by the lessees. Thus a strip 800 feet (or approximately 12 chains) long and 2 chains wide, and extending north-westwards along the strip which it is proposed to work first, could be tested. In such a strip five lines of holes, 200 feet apart, with three holes one chain apart in each line, would probably be sufficient.

Alternatively the lessees might desire to sluice a strip only one chain wide and it would be necessary to bore another 1.25 acres in the southern portion of the lease and adjacent to the one chain strip. Probably 20 bore-holes would be required for the alternative area. The exact position of each area would have to be governed by the edge of the flat and the progress drilling results would have to be considered in the final definition of the areas. The two alternative areas shown on the attached tracing. For ground with a grade of 0.5 lb. per cubic yard, the areas and number of bore holes would have to be doubled.

The matter depends so much on the grade of the ground, that it would have to be reviewed at intervals as progress results were received.

The manner and cost of working depends so much on the nature of the wash and overburden, that it would be advisable to sink a shaft as early as possible.

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