

been done on this level, a block 75 feet high and 260 feet long being all, while of the ore which has been broken down there still remains some 3,000 tons lying in the stope ready to hoist as required. Values vary very much, anything from \$4 to \$70 being obtained. The average may, however, be taken as \$6 mill run. The width varies very little being about 3½ feet, though widening slightly in places.

The fourth level cuts the ore 360 feet west of the main shaft. From this point to the end, a distance of about 220 feet it is entirely in good clean ore. A slight break occurs near the end of the level, but not of a very serious nature. A raise has been put through between this level and the third entirely of ore, showing the continuity of it from one level to the other. In this west end chute you have fully two years of ore in sight.

Summing up I would point out that this mine differs from most in that values while getting richer (very much so in the case of the east chute) never get poorer with depth, also where the vein is found in place it varies very little in width. There is therefore only one thing to be afraid of, and it is a most serious one, that the vein may become too faulted to pay to work owing to the amount of dead rock which would have to be removed in prospecting. Should you ever have the good fortune to get through the faulting, the property will undoubtedly be one of the most valuable in the country. It is for this reason that I would advise work being continued on the third level west, this west chute showing more regularity than either of the others. With four or five hundred feet more drifting and a raise put through from the end to the surface, the ore being found consistent in width and value, you would be quite warranted in doubling your stamp capacity, which would double your receipts, while discontinuing work on the east end would cut your expenses down at least one-third; though I would not advise work being discontinued there until the Middle chute has been found on the fifth level and proved unworkable. Of course work can go on as at present and a small profit be made, but if the idea is to get large profits, an increase in milling capacity with a decrease in the cost per ton of ore handled is necessary.

In closing my report I would like to draw your attention to the excellent manner in which the work in this mine has been carried out by your superintendent, Mr. Keane. Expenses have been kept down to the very lowest figure commensurate with good work; also the admirable manner in which he always has succeeded in recovering the vein, however bad the break may have been, was a continual surprise and pleasure to see.

All of which is respectfully submitted,

HARRY McMASTER.

Copy of Assays—

West Chute.	East End Chute.
Per ton.	Per ton.
\$ 2 40	\$18 00
4 25	46 50
6 30	27 00
17 45	71 50
70 90	

THE AMERICAN BOY MINING CO.

At the annual meeting held in Spokane this month the manager, Mr. T. McGuigan, made the following report: The mine has been developed by 1,738 feet of tunnelling and drifting, 1,360 feet of raise, and 5,422 cubic yards of stoping. The mine shipped 1,743 tons of ore, netting the company \$45,962.28, or a net profit after paying all expenses at the mine of \$5,887. I estimate that the ore in transit to the smelters will clear all of the indebtedness at the mine. Aside from this the company has an indebtedness of but \$1,600. With the splendid showing in the mine there is every reason to

believe the property can be made a dividend payer within the next few months. There is between \$50,000 and \$60,000 worth of ore in sight, and steps are to be taken at once to drive tunnel No. 4, which we estimate will strike the same ore chute in which we are working in tunnel No. 3. The tunnel to the ore chute will not exceed 120 feet in length. The pay streak in No. 3 averages 2½ feet wide and assays from 75 to 81 per cent. lead and 150 ounces of silver. We have already followed the pay streak in No. 3 a distance of 35 feet.

The company now has employed at the mine a force of 22 men.

ACETYLENE MINE LAMPS.

SINCE the discovery in 1892 of the process of making calcium carbide in commercial quantities at a reasonable cost, acetylene gas as an illuminating agent has been before the public in many forms and for many uses, perhaps the best known of which is the brilliant acetylene bicycle lamp which has shown its immense superiority in all points over the older forms of using oil. It has recently been introduced and is meeting with success in a field where the lighting problem is a difficult one, namely, in tunnels and mines.

Various devices using oil, candles and electricity have been presented to solve the problem. Oil has many advantages—it is cheap, is easily obtainable and the men are accustomed to its use. It has, however,



two serious faults. The smoke from it is often so great as to drive men out of small workings, many mines requiring extra ventilation on this account. In gold and silver mines it cannot be used successfully because spilled oil interferes with the separation of the metal. From what figures are obtainable the cost of this method seems to average about 5 cents per miner's lamp for eight hours use.

In the west, paraffine candles have been generally adopted in mines of precious metals. They largely overcome the difficulty of smoke, lessen the fire risk, and are generally more satisfactory than oil, but are far more expensive. Figures obtained from a silver mine in New Mexico may be considered as fairly representative though others may show wide variation. Three hundred and fifty men are employed and the cost of candles is \$3 per man per month, working 30 days.

It would thus at first appear that electricity would be the ideal method of lighting a mine. It has proved satisfactory in many cases, but it has drawbacks. The lights cannot quickly and readily be moved from place to place and withdrawn when a blast is to be fired. The sharp rocks cut the covering and sulphur in the water fumes rapidly destroy the insulation. Conditions of operating vary so greatly that it is difficult to obtain figures which would be even approximately accurate for the cost of electricity per lamp in mining plants, but the general opinion seems to be that a 16 c. p. electric light costs from 8 cents to 10 cents per eight hours.

The ideal light must be bright and clear, free from smoke or smell, easily transported, and one which is inexpensive in first cost and cost