# The Dives-Pelican and Seven-Thirty Mines

SILVER PLUME, COLORADO

Report of Committee of Investigation

P1884

# Report of the Committee of Investigation of the Dives-Pelican and Seven-Thirty Mining Company

Your committee arrived in Denver, March 9, 1904, and immediately pushed on into the Clear Creek Valley, and to the mine. We conceived it to be our duty to investigate not only the mine itself, but also the character and standing of our engineer, Mr. McReynolds, upon whose written report we had relied for most of the information we had about the property. We made many inquiries of various persons as to Mr. McReynolds. We also saw a great deal of him personally for days together, and, in Mr. Embry's case, for weeks, and we became fully convinced that he is a competent, accurate and reliable engineer, having great pride in his profession, and of a conservative turn of mind. He impressed us also as a straightforward man, incapable of deception, even if he had interests adverse to those of this company, and we do not see how he could have any interest in deceiving us in this matter. We therefore came to regard him and his statements and work as thoroughly reliable.

## The Mine

The mine is situated on the bank of a large creek, which will furnish us an abundant supply of water the year round, and a railroad passes right by the mouth of the tunnel.

We found the property to be of almost inconceivable extent. There are said to be eighteen miles of underground levels, tunnels, shafts, upraises, etc. We went through many miles of these workings ourselves, though, of course, not all of them, and we found a vast property, which naturally divides itself into two distinct propositions: (1) High grade or smelting ore; (2) low grade or milling ore. These should be

considered separately, for they are quite different as to methods of operations, and as to the certainty of results.

### (1) High-Grade Ore

As is well known to the stockholders, there are two mines, the Dives-Pelican and Seven-Thirty Mines, both have yielded in the past very large amounts of high grade ore. In fact, they have been worked throughout all these miles of underground borings for this kind of ore alone, and the output of both is a matter of record, and contained in the published report. That both mines are still capable of producing this kind of ore is practically certain. There is a large extent of territory, more or less developed, and still unworked in both of them. There is also a large amount of territory not yet explored or developed, which probably contains ore of the same character as that already extracted. Much ore is now actually being taken from both mines every week, and there has recently been opened up on the Seven-Thirty vein one of the richest streaks of high grade ore ever discovered in either vein,—a streak of nuknown extent, but which ought to be and will be developed at the earliest possible moment. There is every reason to believe that this streak of ore will in itself yield very large sums of money in the next few months, and that other streaks similar in richness are likely to be found in the unexplored portions of both veins. That great returns can be gotten from this sort of mining, we regard as just as certain as the nature of mining operations can be, but the nature of this kind of mining is such as to make it always partake, more or less, of the character of a lottery. The pay streaks of ore vary so in thickness, extent and value; they come in and go out with such unpredictable irregularity that it is the opinion of the committee that our company, in its present situation, ought not to depend, to any great extent upon this sort of mining, and it will be better to make this incidental to the other and

more reliable proposition involved in the low grade ore. Moreover, in order to push the mining of the high grade ore in a progressive and productive way so as to greatly increase the amount and certainty of the product, it will be necessary to finish the Burleigh Tunnel, which was described in Mr. McReynolds' report, and thus open up the unworked and probably the richest territory of the Seven-Thirty Mine, which is now flooded with water. To finish this tunnel would require some $20,000, in money, and some nine or ten months in time, both of which requisites place it out of the question for our company at present. The mine has hitherto been worked on the lease system, which is inexpensive, and we believe that this system ought to be continued for the present, supplemented by such cautious and conservative development work as is made apparent by rich streaks of ore plainly in sight. These considerations led your committee to consider with much more thoroughness and earnestness, and more in detail, the second feature of the property, namely.

## (2) Low Grade or Milling Ore

It should be stated, that the property was taken up and considered from the start by Mr. Eaton and Mr. McReynolds more with reference to this character of ore than the other.

We found, upon investigation, that both mines contained practically unlimited quantities of low grade ore, which has already been mined, as will be explained later. The figures given in Mr. McReynolds' report were fully verified, and more than verified by personal inspection of the committee. In fact, we believe the figures there published were altogether under the real amount.

There are three sources of low grade ore in both mines:

(1) THE DUMPS consisting of vast quantities of material that has been removed from the workings and placed on the side of the mountain at the mouths of the various tunnels.

(2) THE STOPES consisting of immense quantities of vein rock shot down and left lying on the timbers by the miners in their search for the high grade ore, which is always a very small fraction of the material that has to be shot down in order to drive the levels and work the property.

(3) THE UNMINED MATERIAL in both veins, which has either never been opened up at all, or has been opened up without ever having been worked out.

Your committee is of the opinion that either one of these sources of low grade ore would furnish a sufficient quantity of material to run the largest mill we could construct for very many years. The estimates of the engineers, based upon measurements and careful calculations, places at a half million tons, the amount in a few of the largest dumps, —about three or four times that much lying on the timbers of the stopes, and many times that much still in the veins, and easily accessible through ordinary mining operations. In short, we feel that as to quantity of low grade ore there need be no uneasiness, or concern whatever, there is certainly plenty of it.

The second, and most important question is the quality of this low grade ore. Of course, it does not matter how much there is if it is not of a sufficiently high grade to admit profitable working; so this is the most important feature of the whole enterprise, and your committee spent most of their time investigating this point, examining carefully the tests of the ore already made, and having new tests made of sufficient thoroughness and variety to remove all possible doubt as to the gross value of the ore, the percentage of saving that could be made by a mill properly constructed, and the expenses of operating such a mill. Messrs. Eaton and McReynolds had already made very extensive tests before the mine was purchased, but the quantity of ore is so vast, and the difficulty of making tests, upon thoroughly representative samples of ore

are so great, and the importance of accurate and reliable results so overwhelming, that the committee thought more tests ought to be made, larger bodies of the ore ought to be treated, and various mills and processes ought to be tried before we could thoroughly and absolutely convince ourselves of the practicability of working the ore at a profit.

Pursuing this policy, we had shipped to Idaho Springs, where there are several mills, large quantities of the ore. The first shipments were ten (10) carloads,—243 tons, to be treated by two of the mills,—the Newton Mill and the May Mill. Neither of these mills is especially adapted to the working of our ore,—one of them is an old mill, badly constructed, and which has never been able to keep going for any length of time on any ore that they have ever tried. The other, the Newton Mill, is a new mill with excellent machinery and large capacity, but it was constructed for an entirely different type of ore, which the owners get out of a mine of their own, and therefore the results obtained from our ore would be very much less satisfactory than could be obtained by a mill especially adapted to it. However, we have secured the results of the tests of these 243 tons of Dives-Pelican ore worked through these two mills. We found the average gross value of the ore to be twenty (20) ounces of silver, or $11.05 per ton. The average percentage of saving effected by the Newton Mill to be 51.2 per cent.; the average saving by the May Mill, 46.9 per cent.

The net cash profit, after paying all the large expenses of hauling, shipping, milling, &c., was $1.38 per ton. With a mill of our own, constructed on our property and run by our own milling men could have added to this net profit the following items:

(1) The cost of freight from the mine to Idaho Springs,—75 cents.

(2) Hauling the ore from the tunnels to the cars,—85 cents.

This could be trammed to a mill of our own for 10 cents,—making a saving of 75 cents on this item.

(3) The milling charge, $1.50, less 50 cents—the cost of operating a mill of our own, would be $1.00, making a total of $2.50 per ton. Moreover, we have reason to believe, as will be shown later, that a mill of our own could save 25 per cent. more of the values than were saved on these mills. This computed on the basis of $11.00 ore would add $2.75 to the net profit. This would make a total of more than $5.00 per ton increase in the net profit over the $1.38 made by the mills at Idaho Springs. This would give us a net profit of $6.38 a ton, working in a mill of our own, granting that the ore would run at this high value all through the mine.

We also had shipped to the Jackson Mill, in Idaho Springs, another lot of ore—about 200 tons, and this mill is now at work running this ore, but no reports have as yet been received from them as to results. In fact, they have not yet finished the tests.

We also made arrangements to test a lot of the ore on the Alliaud Mill, at Dumont, and considerable quantities of the ore have been shipped to this mill, but an insufficient water supply has prevented the owner of this mill from finishing the tests up to the present time, although he guarantees to make a saving of 75 per cent. of the value, or make no charge whatever for the milling. However, the most important and scientific tests were those made by the Davis Iron Works, at Denver. This is a large manufacturing establishment for supplying milling and other machinery to mines throughout the West. They use all of the most approved appliances for testing ore and securing thoroughly accurate and reliable results, and they agreed to make the tests on our ore, and guarantee that a mill constructed according to the plans and specifications, which they would advise, and operated by competent millmen, would make a saving which they would show to be possible, or in case it did not make such a saving, they would not ask us to pay for the mill. This great company is perfectly reliable and responsible,

and their guarantee is perfectly good. Under this arrangement, we shipped them 2½ tons of ore, taken from various lots which came from the stopes in various parts of the mine, and they made the test, and gave a written report that a mill could save 75 per cent. of the values. These tests and other investigations and researches have fully convinced your committee that, at least, 75 per cent. of the values of the low grade ore can be saved by a mill properly constructed and properly managed, and it remains simply to figure out the enormous profits that could be realized from a mill of the daily capacity of 300 tons, operating upon ore that seem unquestionably to have a gross value anywhere from $6.50 to $12.00 per ton, and which exists in sufficient quantities to run a mill of this sort for at least a half century.

It is our belief that the tests that have been made upon the ore were made upon samples sufficiently scattered and various to be thoroughly representative of the whole mass of low grade ore in the mine; and that they were made by disinterested parties employed by your committee; and that there is no chance for disappointment when we come to running the whole body of ore through the mill. And that this phase of our enterprise simply reduces itself to a manufacturing proposition in which we have only to consider the cost of supplying and operating the machinery. The quantity and quality of the raw material and the extent and reliability of the market for the product are entirely removed from the field of uncertainty.

A 300 ton mill, running 300 days in the year, and making a net profit of $6.00 per ton, would realize for its owners a net profit of ~~$540,000~~ a year. Even half of this would make a dividend of more than 100 per cent. on the entire investment, eliminating the high grade proposition altogether,—and this ought to satisfy even the most ambitious.

We therefore recommend that a mill be installed upon the admirable mill site owned by the company at the mouth of the Burleigh

Tunnel, and on the railroad, at the earliest possible moment; that this mill be equipped with the machinery planned and guaranteed by the Davis Iron Works, and also that an aerial tram be constructed for delivering the ore to the mill in the most economical way. If this is done, we do not see how the enterprise can possibly fail to be an early, constant and continuous dividend earner of the most satisfactory sort.

ARTHUR YAGER,
G. W. EMBRY,
CHAS. H. SHEILD,
Committee.