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Item 1

REPORT

on the

SILVER BUTTE MINING COMPANY

Paradise Mining District

Humboldt County, Nevada

By

D. C. Gilbert December 1935

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The Silver Butte Mining Company owns certain mining claims which include all of the mine workings on the Paradise and Wild Goose veins, except the Bullion claim on the latter vein. The company has an option on this claim. Certain mine dumps were thought to be sufficiently valuable for concentration and a small, flotation mill was recently constructed for this purpose. In operation it was found that the dump ore was not profitable and an effort was made to provide mill feed by mining remnants of ore shoots from the Paradise vein, but the mine output was not sufficient for regular mill operation. In addition, the mill performance was poor. The company has expended about $85,000 to date and is indebted in the sum of $15,000. International Smelting and Refining Company was asked to examine the property and recommend a course of prodecure for the owners.

The examination has been completed and the following is a summary of the recommendations:

First Milling operations should be deferred while an effort is made to develop sufficient tonnage of profitable ore. If, and when, this result is attained the mill should be improved to properly treat the ores.

Second Since it is evident that profitable ores were relatively shallow, the program should be confined to near-surface development. The cost should be very reasonable and there is a fair possibility that discovery of one or more shoots of bonanza-type ore will result.

General recommendations for this development are embodied in this report.

Third If the proposed development fails to indicate profitable operation by the company, it will then be advisable to quit before the loss is increased. Some salvage might be had by permitting lessees to mine remnants of ore.

GENERAL GEOLOGY

The Paradise and Wild Goose veins are north-striking, steeply dipping fissures which cut a sedimentary series composed of dark shales, schists and slates. The sediments have a generally east strike and northerly dip, but exhibit considerable folding. In the north portion of the developed area a number of strong, quartz veins occupy bedding planes in the sediments and a prominent rhyolite intrusive appears to be partly dike and partly sill.

The attached Composite Plan and Surface Geologic Map shows the general situation. The Wild Goose vein has been developed by three tunnels, the Wild Goose Drift, Wild Goose Adit and Bullion tunnel. About 1000 feet south of the Bullion tunnel portal, the West tunnel was driven at least 500 feet to crosscut the vein series. Between the Bullion and West tunnels there are several shorter tunnels not shown on the map.

Southwest from the portal of the Bullion tunnel there has been some stoping on a N 25° E fissure near a strong, quartz, bedded vein. This work is not shown on the map.

The Paradise vein lies 900 feet east from the Wild Goose vein, and is developed by No. 1, No. 2, NO. 3, and No. 4 tunnels. From the latter a 900 foot cross-cut was driven to the Wild Goose vein.

The East vein, which is practically undeveloped, lies 600 feet east of the Paradise vein, and resembles the ore-bearing fissures in many respects. The East vein is a mineralized fault fissure with north strike and about 70° east dip. From surface evidence it appears that a rhyolite flow has been down-faulted against the shaly sediments by the East vein.

Both the Wild Goose and Paradise veins are composed of a series of nearly parallel fissures and mineralization is found on more than one

fissure in each series. This fact may have an important bearing on future development, since the component fissures split, converge, change, dip and exhibit other irregularities, and ore shoots may exist on portions not fully developed.

The attached, separate level geologic plans show the fissure series. On these sheets, blue is used for slips, faults, fissure walls or any other planes of movement. Red is used to show mineralization, and this may be either ore or barren gangue such as quartz. Igneous rocks, such as rhyolite are shown in green. The bedding planes of the shale are in fine, black lines. The dips shown are angles from horizontal.

Since the maps were made with a Brunton Compass and 200 foot metallic tape they must not be used for accurate location. If the first development is sufficiently encouraging to warrant the expenditure, a transit survey should be made, since this will be needed as the work progresses.

ORE SHOOTS

Wild Goose Vein

The long section on the Wild Goose vein shows the ore shoots as nearly as known from the present examination. Dotted portions are from other information, or are purely speculative outlines. Assays are listed and shown on the section but with the exception of "A" on the Bullion level and "B" in the shallow winze on the Wild Goose Adit level, none of these were cut during the present examination. The assays were supplied by the Silver Butte Company and they are assumed to be fairly representative. Where the assays show low grade milling ore, or better, the sample number is ringed in red. Waste is ringed in black. The following possibilities for further development are shown on the long section and the separate level sheets:

Block "A"

The Christmas Tree stope appears to have been mined upward to a flat slip or bedding plane, beneath which the ore swelled out to form

a wide shoot. The rhyolite sill lies a short distance above the stope, and the vein appears on the surface just north of the sill where it ends against a bedded slip. Since both the Wild Goose and the Paradise veins have been especially productive near the surface, some additional prospecting should be performed in Block "A". The method to be followed is subject to further investigation but might best be a raise from the back of the Christmas Tree stope in such location that ore could be dropped to 2-65 or 2-66 raise. Probably 100 feet of raise will be needed here.

Block "B"

In the present examination no inspection was made of work above the 1-50 drift south of the Pipe raise. If the long section shows the true situation, a raise or drift should be driven into this block. 50 feet of work should determine the possibilities.

Block "C"

It is possible that the ore shoots in the Wild Goose vein have a "Flat", northerly rake, instead of pitching steeply to the 4-26 and 4-24 drifts. It may thus be presumed that the main ore shoots will follow the vein downward to the north, controlled by the rhyolite sill and/or the quartz bedded veins. The face of the 2-52 drift shows good vein matter which has not been sampled. The 2-71 stope was not entered. In 2-69 winze, in an easterly split of the vein, we cut a four foot sample which assayed 0.95 ounces gold and 29.5 ounces silver per ton. In block "C" about 60 feet of work on present ore showings should determine whether or not the ore shoot can be pushed down"flatly" to the north.

Block "D"

At the north face of 1-50 drift, southwest of 1-53 winze, the main vein is undeveloped for 120 feet, where it again appears in the Christmas Tree stope. 30 feet of drift should determine the possibilities of this vein segment.

Blocks "E" and "F"

The possibility of new ore in these blocks depends upon the ac-

curacy of our Brunton survey. Before starting the following development it will be advisable to check the relative locations of the portals of the Wild Goose Adit and the Bullion tunnel. On the Adit level there is a strong, easterly vein split just north of the old Steam winze. From the present survey it appears that the Bullion tunnel is on this east split while the main stopes and the Steam winze are on the west split. Seven feet of vein at the north Bullion face returned 0.02 ounces gold and 4.9 ounces silver, and this 3-50 drift should be continued northerly possibly 100 feet, to develop Block "E". At some point in 3-50 drift near the present face, a crosscut should be turned due west for 80 feet to tap the main vein.

WILD GOOSE DEVELOPMENT SUMMARY

In addition to the principal development blocks described above, there are many locations at which small ore showings should be developed. On these, as well as in developing the main blocks, it must be remembered that every effort should be made to follow the best mineral showings as this is the most certain method of discovering any ore which may exist.

These development recommendations are preliminary. Each should be investigated further before any considerable expenditure is made. They do, however, represent logical points of attack. Whether the Bullion tunnel or the Wild Goose Adit should eventually be the main working level should depend largely upon the results attained in blocks "E" and "F".

Paradise Vein

In general, the possibility of valuable ore shoots in the Paradise vein seems less attractive than in the Wild Goose vein. Most of the work in the Steam shaft is under water and in the present examination there was little checking of conditions between the main tunnels. The following blocks appear to be worthy of development.

Block "J"

Near the portal of No. 4 tunnel there is an ore shoot which was underhanded below the tunnel level. Since the present data indicate that no depth was attained on this ore it should be good policy to in-

spect the bottom of the stope. It may have been early-day mining, stopped because of water before the Steam shaft drained the area. If this location appears to be attractive upon further investigation, the 4-8 winze could be used and a drift could be driven south under the old stope. About 100 feet of work should be sufficient.

Block "K"

There are many indications that a good body of near-surface ore has been left in this location. Some stoping was recently in progress just below No. 2 tunnel level, near sample 38 on the long section. The block could be best developed by driving a raise on the vein from a point near sample 43 and inclining it upward to the north; also by driving south on the vein from a point near sample 29. About 60 feet of raise and 80 feet of drift will be required.

Blocks "L" and "M"

These are relatively small propsects for ore left beneath the floor of No. 1 tunnel. The stope outline shown on the map is open to question. About 60 feet of work will determine the possibilities in both blocks.

Block "N"

As in the Wild Goose vein, there is a possibility that the main ore shoots will rake north at low dip, controlled by quartz, bedded veins such as the one near 1-6 winze. There is a considerable vein left to the north in No. 1, No. 2, and No. 3, tunnels. These, as well as the north breast of the stope above 2-7 drift, should be sampled and an effort made to push the ore bodies northward in this section. Probably 100 feet of work will suffice.

Block "P"

Here again it may be possible to push the old ore shoot northward. The 3-5 drift at the top of 4-22 raise is on the main Paradise vein, but as shown on the small section on the geologic plan sheet, this vein apparently goes into the footwall of the raise a few feet below No. 3, tunnel. The remainder of the raise is on a west split of the vein which has also been developed by 4-17 drift. The main portion of the vein ap-

pears in 4-16 crosscut. The 3-5 drift also left the main vein but the latter goes strongly out of the east side of the drift. In starting development of block "P" the first attempt should be to underhand ore beneath 3-5 drift just north of 4-22 raise. The next effort might well be to drive about 50 feet northerly on the vein which crosses 4-16 crosscut at 30 feet east of 4-2 drift.

Quartz Vein and East Vein

The two productive veins, the Wild Goose and Paradise, strike nearly north and dip steeply to the west. There are at least two veins on the property, both within the mineralized zone, which strike north and dip easterly. The first of these is shown on the surface map as the Quartz vein, the other as the East vein. The Quartz vein dips 45 east and due to this low dip its true strike does not appear on the surface map. It is composed of six feet of massive quartz of rather uninviting appearance. The vein should be carefully sampled but development will not be jusitified at the present time unless the assays lend some encouragement.

The East vein is a mineralized fault fissure of attractive appearance. Both the Wild Goose and Paradise veins are also mineralized fault fissures but the Quartz vein shows little evidence of movement. Surface appearance suggests that extrusive, igneous rocks of rhyolite type have been down-faulted against shaly sediments by the East vein or fault, and that this fault is strong with sharp continuity both laterally and in depth. At some 400 feet north of the Boarding house the East vein shows a strong outcrop of quartz and jasperoid with a narrow rhyolite dike along the west wall. This little dike is very similar to one which follows the west wall of the Paradise vein. During former operations a short tunnel was driven to cut the vein on the hanging wall side. Apparently very little was accomplished. Vein stuff at the outcrop assays two ounces to five ounces of silver per ton. The vein should now be developed by driving a tunnel northerly in the vein, starting from a location which will provide at least 50 feet of depth on the vein when the tunnel arrives at the location of the former hanging wall tunnel. At

least 100 feet of drift tunnel will be needed and the vein will probably merit an additional 100 feet of drift. Further development will depend upon assays obtained from this work.

At about 150 feet southwest of the boarding house the Silver Butte management states that attractive gold assays have been obtained from the East vein. A small amount of development has been done in shale beds in the footwall of the vein. Suggested development is to cut east about 20 to 30 feet and explore the vein near the best mineralized shale exposure.

GENERAL DEVELOPMENT

In general, the following concepts which are based upon somewhat similar mines elsewhere, should be heeded:

First

The ore shoots will probably become lower grade as depth is attained. This is apparently the reason for cessation of early day mining, although the deeper level work is not accessible.

Second

In mines of this type it is almost a rule that ore shoots within a transverse vein are controlled or guided by bedded slips, sills and bedded veins if these exist. There isstill a fair possibility that this condition will be found at the Silver Butte, i.e. that the Wild Goose ore shoots will rake down to the north at a low angle (Block C) and that the Paradise shoots will do likewise (Blocks N and P). Although "old timers" were excellent miners they may have made too great effort to push the ore shoots almost vertically down the veins, and may have overlooked north-raking extensions.

Third

However much the operator may be helped by geologic map data, there is no development as attractive as following assays into new country. Ore solutions have risen along the vein fractures, guided by secondary controls such as rolls, beddings and crossings, and the

downward trail of the ore can usually be followed whether it be steep or nearly flat. The depth to be attained is governed, however, by commercial changes.

Fourth

In any mine which had excellent ore at higher elevations but low grade in depth, it is certainly good policy to confine new development to unexplored upper areas.

COST OF PROPOSED DEVELOPMENT

It is assumed that drifts and raises can be driven for $10.00 per foot. The proposed development is now listed, with an asterisk (*) before those which appear most attractive at the start.

Block	Feet	Cost	
A	100	$1,000	
B	50	500	
*C	60	600	$ 600
D	30	300	
*E-F	180	1,800	1,800
J	100	1,000	
**K	140	1,400	1,400
L-M	60	600	
N	100	1,000	
P	50	500	
**East	150	$1,500	1,500
Total	1,020 ft	$10,200	$5,300

SUMMARY

In view of the present investment in the Silver Butte mine, the owners should do some additional development in the hope that their investment will be returned. The direct cost of this work is estimated to be $10,200. This does not include development upon a number of small ore showings which should be followed, and it will be very desirable to provide at least $15,000 to determine whether or not there is a suf-

ficient ore reserve to embark upon a regular program of mining and milling. As soon as first development appears to be successful, an accurate survey and sampling of all work, including stopes, should be made since the cost of this work will be returned many times if the mine is operated. An ordinarily competent mine surveyor, rather than a high-priced mining engineer, should be employed for this work.

It would be very unwise to leave this property without making a real effort to develop it. It would be extremely poor business to improve the mill and attempt to run it with less than six to twelve months supply of profitable ore, reasonably assured. If a program is based upon the preceding recommendations the chances for success are equally as good as in the average development undertaken by the leading mining companies of the Western United States.

Respectfully submitted,

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James Cazier

DCG:P