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Lead Silver Nevada  
Lucky Boy Mine.  
Hawthorne, Nevada

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This property is operated by the Champion City Mines, Inc. Total production has been \$600,000. In 1940, the mine was opened under new management and shipments netted the company \$40,000. Evans spent Aug 25, 26, 1941 examined the mine and its 16,000 feet of workings. The present operators have an option to purchase for a million dollars, and have spent \$160,000 to date. Mining and milling costs equalled the value of the \$40,000 shipped, and no profit was being made. A study of accurate records, with underground examination, indicate that it is unlikely that new ore bodies will be found of any size. The property was turned down.

## Report

LUCKY BOY MINE

Champion City Mines, Inc.  
Hawthorne, Nevada

INTRODUCTION

First mentioned in the weekly report dated May 5, 1941, the Lucky Boy property was opened to the western office for examination on August 25, 1941. Mr. Evans spent August 25 and 26, 1941, on the examination.

CONCLUSIONS

A study of accurate records of current production, an examination of the underground operation, a consideration of the property's history, and a perusal of geologic possibilities for new and undiscovered large orebodies, makes the property unattractive, and future interest is not recommended.

LOCATION

The Lucky Boy mine is located 5 miles southwest of Hawthorne, Nevada, in Mineral county, on the east slope of the Wassak range, and on the Hawthorne-to-Bodie gravel highway, which crosses Lucky Boy pass.

GENERAL & LIMITING CONDITIONS

Serviced by a good highway, and only 7 miles from rail connection, the property is ideally located for transportation facilities. Electric power reaches the mine over a one-mile connecting line from the main high-tension line of the district. Water for camp and milling purposes is piped 4 miles from Summit springs. An auxiliary supply is available from a sump in the Miller tunnel, and is relied upon during freezing conditions in the winter.

LEGAL TITLE

Champion City Mines, Inc., is the present holder of an option on the property. This option was taken from J. H. Miller, of Hawthorne, Nevada, (now deceased) who it is believed bought complete control of the Lucky Boy Consolidated Mines Company, which in 1923 was controlled by the Knight Investment Company, of Utah, with O. K. Knight as president, J. H. Miller vice-president and general manager. Mr. Kyto, business man of Duluth, Minnesota, is the principal stockholder and president of Champion City Mines, Inc. Champion City's option calls for total payments of \$1,000,000. The property consists of 14 unpatented claims.

HISTORY

The so-called Hubbard vein of the Lucky Boy area was encountered by chance in 1906, according to Mr. Vanderburg of the U. S. Bureau of Mines, by Guy E. Prichard, while widening the road over Lucky Boy pass. The writer does not have the names of the original locators, known as the Alma-Goldfield Lease & Development Company, but all work done on the property was conducted by lease, with no one large company consolidating the operation. The bulk of the activity occurred in 1908-09. Operation

since that date has been spasmodic. Jesse Knight, in 1909, took the property from the Alma-Goldfield Company. He then formed the Knight Investment Company, of Salt Lake City, Utah, and prepared to drive an 8,000-foot tunnel (the present Miller tunnel) to encounter a theoretical contact which was believed to be the source of ore. Six thousand two hundred feet of this tunnel was completed before 1923. It is reported that with the unfavorable price of silver in 1932-33, leasing operations ceased. The Miller tunnel allowed to cave became inaccessible.

Late in 1939, certain Reno promoters (a Mr. Stein, et al.) interested Duluth capital in the Lucky Boy's possibilities. The Reno promoters had rehabilitated the 125-ton mill at the property, and it was planned to mill the ore mined by Champion City Mines at \$5 per ton. Champion City Mines had no representative at the property, and Mr. Stein's group spent \$10,000 with nothing to show for the expenditure. By methods unknown to the writer, those promoting the property were eliminated. A refusal to deliver ore to the mill was probably a deciding factor in gaining complete control. With financial collapse assured for the milling company, the mill was easily acquired by Champion City Mines and was made an integral part of the operation.

All in all, a substantial sum, possibly about \$160,000, has been put into the property by Champion City Mines, Inc., with net smelter returns amounting to only \$40,000.

### PRODUCTION

Major: According to the present operators, production exceeded 2,000,000 ounces of silver from the time of discovery until the present day. According to Francis Church Lincoln, writing in "Mining Districts and Mineral Resources of Nevada," published in 1923, "The bulk of recent production of the district (Hawthorne) has come from the Lucky Boy mine." The production of the Hawthorne district from 1907 to 1921, as recorded by "Mineral Resources" of the U. S. Geological Survey, amounted to 11,201 tons containing \$55,400 gold and 746,265 ounces silver, together with 194,434 pounds copper and 1,124,449 pounds of lead, valued in all at \$572,220.

Lincoln's figures are specific and in the writer's mind represent the maximum output for the Lucky Boy from the time of discovery until 1921. Production since then has been small and would have little effect on the total.

Recent: Since taking over the property, Champion City Mines have mined 4,615 tons of material, giving a net smelter return of \$39,969.86. Of this total, 1,042 tons were taken out by mining ore in place, and these tons assayed approximately 20 ounces in silver, 2.7% lead and 0.1% copper. These tons represent the "new strike" reported in our weekly report of May 5, 1941, as assaying 180 ounces of silver and 33% lead. The remaining 3,573 tons have come from old fills and cleanup. Total production would therefore be slightly in excess of \$60,000.

### GEOLOGY

At the Lucky Boy mine, granodiorite is intrusive into limestone and the ore deposit appears to be a complex vein at the contact. The Hubbard structure strikes east and west. Dips are steeply to the south. Whereas there is a definite continuity of structure along the entire strike, ore deposition appears to be characteristic of limestone areas; i.e., pockety and lenticular.

Varying in width from inches to 8 feet, the average width in the Hubbard orebody is about 5 feet. High-grade ore is limited to narrow streaks across such a width and commercial shipments depend on one's ability to cob out the high-grade. On

the Hubbard structure, two main ore shoots existed; namely, the Hubbard and the McCormack. An average overall length of 400 feet for the combined shoots, plus an average continuation down the dip of about 850 feet, would give a total available tonnage of approximately 150,000 tons. Shipments of about 15,000 tons indicate the selective mining employed. The above figures must be considered approximations.

It is believed that other shoots of ore exist in this major structure, and that they will be found with future work. However, be it remembered that about 16,000 feet of horizontal and vertical advance were put into the Lucky Boy mine for this tonnage. The present operators talk with confidence about the chance of developing parallel structures which should carry good ore. Some thought was given to such possibilities in the past, as evidenced by crosscuts driven here and there into the footwall and by shafts sunk on parallel possibilities at the surface. Only negative information resulted. Some 600 to 1,000 feet of crosscutting has been conducted by the present operators. Results have been discouraging. Mineralization consists of galena and tetrahedrite, with a barite gangue. High-grade silver is associated with the tetrahedrite. Oxides, carbonates and some silver chloride is reported from the upper workings.

#### DEVELOPMENT

The property is developed by a total of 16,000 feet of workings. Thirteen shafts have been driven into the property to various depths. Two of these shafts, the Hubbard and the McCormack, produced results. Of the remaining ones, representing quite an investment, are the Collins, the O'Keefe, the Mitchell, the Spencer, and the Oddie. The bottom tunnel is known as the Miller tunnel, and cuts in a westerly direction for 5,800 feet along the trend of the structure. Crosscuts from the Miller tunnel give a total footage in excess of 6,000 feet. Its elevation is 5,466 feet. The Hubbard shaft, scene of major production, is the most westerly shaft, and has an elevation of 6,441 feet at its collar. Between the Hubbard collar and the Miller tunnel, 14 levels expedite the mining of the Hubbard ore shoot.

#### SAMPLES

No samples were cut during the examination. Access to production records vouches for by Smelter return receipts, eliminated the necessity of sampling.

#### ORE RESERVES

No reserves of positive ore exist at the Lucky Boy mine. A block being mined at the time of examination had the following maximum possibilities: Length, 65 feet; depth, 200 feet; width, 3.5 feet. Such dimensions would give a total maximum tonnage for the block of 3,000 tons. With 1,000 tons already mined from this block, 2,000 tons might be considered a possible reserve. On the basis of smelter returns, these 2,000 tons might carry 20 ounces of silver per ton, 2.7% lead, and 0.1% copper.

#### TREATMENT METHODS

Mining: Present mining is based on a simplified benching method. Raises are driven up the vein, which then serve as ore passes for material broken by undercut mining, bench by bench. Broken ore is then hauled 5,800 feet through the Miller tunnel in 15-ton shipments by ton and a half cars, conveyed by battery locomotives.

Milling: The ore enters a 15-ton outside receiving bin, from whence it is fed through a 9 x 15 Blake jaw crusher, which produces 1.5-inch maximum feed to the mill. A 500-foot belt conveyor transports the crushed ore up a steep incline to a 150-ton surge bin, which feeds directly into an 8 x 30 Hardinge ball mill. This ball mill is enclosed circuit, with a 6 x 20 Dorr classifier. The overflow from the ball mill goes directly to four Kraut flotation cells, where the sulphides in the ore are floated off. Reagents used are pine oil, fuel oil, and reagent 242 for frothers, and Zanthates 26 and 425 for collectors. Material not concentrated by the first four cells passes on to six additional Kraut flotation cells, where the addition of sodium sulphide causes sulphidization. Some additional frothing reagent is added, but sufficient reagents are added at the start of the flotation operation to carry across to retrieve the sulphidized non-sulphide mineral particles.

The concentrate is piped to settling tanks, where the accompanying solution is decanted to be pumped back to solution storage tanks at the start of the flotation operation. The partially dry concentrate is then pumped to a rotary filter. From here, practically dry concentrate is roasted to a 1% moisture content and then sacked.

#### EQUIPMENT

General: The mine is well equipped with buildings, etc., for operating purposes, but inadequately equipped with accommodations for the miners and staff. With Hawthorne only 5 miles distant, this is considered unimportant.

Yard: (1) Compressor house: Equipped with Gardner-Denver compressor of 415 cubic feet maximum capacity, which delivers 360 cubic feet of air to a point 5,200 feet from the compressor through a 4-inch line, in which there are some 3-inch replacements. Battery chargers, change room, etc. (2) Blacksmith shop: Equipped with all necessary materials, including one new Gardner-Denver steel sharpener. (3) Motor house: For changing batteries in the locomotive at the end of each shift. (4) Assay office: Not in use, and probably poorly equipped. (5) Scales: Fairbanks-Morse scales for weighing all mine production and all concentrate shipments.

Mill: No detailed listing has been compiled of mill equipment. The reader should refer to "Treatment Methods" for a general picture. The mill has a 125-ton capacity per 24 hour day and is operating on an 8-hour basis, with frequent shutdowns for one week to a month because of lack of ore. The mill could probably be evaluated at \$90,000.

Mine: No listing was attempted of mining equipment.

#### COSTS

Omitted from this report is a detailed consideration of the costs of operation. A few general figures were available and these in conjunction with certain assumed figures are given to evaluate the possible profit or loss to date; cost per ton of mining has been placed at \$2.20, milling at about \$2, and smelting at \$2. Minimum royalties amount to \$6,000 per year, and it is assumed that two such payments have been made. Seventy thousand dollars were spent in opening up the Miller tunnel, and about \$40,000 on the mill.

4,615 tons mined at \$2.20 . . . . .	\$10,153
4,615 tons milled at \$2 . . . . .	9,230
4,615 tons marketed at \$2 . . . . .	9,230
(as 131 tons of concentrate)	
Royalty payments - approximate . . .	<u>12,000</u>
Total . . . . .	\$40,613

This figure roughly equals the \$39,969.86 net smelter returns, and no account has been taken of countless other items, such as supervision, development, assaying, taxes and contingencies which enter into a complete cost analyses. Also not considered has been the cost of opening the tunnel, rehabilitating the mill and getting the operation under way.

#### EXISTING CONTRACTS & REGULATIONS

At the time of this writing, no indication has been given the undersigned of the type of agreement offered Freeport Sulphur Company. It was reported to the writer that the lease and option held by the Champion City Mines, Inc., called for a total payment of \$1,000,000, based on a minimum annual payment of \$6,000, or to come from royalties grading upward from 10% of the net smelter returns on \$50 ore.

#### SUMMARY

The property, with a total production of about \$600,000, has been offered to Champion City Mines for \$1,000,000. Champion City Mines took such an option with no ore developed, and as a result are probably at least \$200,000 in arrears. The geologic picture is not attractive. Lenticular deposits of ore in limestone are erratic and the few lenses developed in the past have not produced great tonnage. It is believed that this is another opportunity to recover another party's losses, and that the gamble involved is not worth the opportunity.

D. L. Evans  
Reno, Nevada  
August 27, 1941

cc- Mr. Williams  
Mr. Shirley  
Mr. Gentry  
Mr. Lundy  
Mr. McIver  
Mr. Lee