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Hunt - Arnold Coll.

(258A)

ITEM 29

MEMORANDUM RE: QUICKSILVER PROPERTY
NYE COUNTY, NEVADA

By

Ralph Arnold

INTRODUCTION

I visited this property on July 7, 1940, in company with the parties who control it. I was greatly impressed with the possibilities of the property at the time, and since then these same parties have carried on developments which they claim have opened up between 100,000 and 200,000 additional tons of ore which they believe will average 10 pounds to the ton or better. The total of past and present developments show virgin ore and metallic quicksilver in the vicinity of the condensers and furnace of a value which I believe is in excess of one million dollars. The property can be purchased for a fraction of this amount with a small initial payment and the balance coming out of royalty on the quicksilver produced.

LOCATION AND ACCESSIBILITY

The property is located about 4 miles south of Ione, about 90 miles southeast of Fallon, Nevada, and about 70 miles east of Mina, Nevada. The elevation is 7600 feet. The property is accessible over the Lincoln Highway from Fallon plus 30 miles of very good dirt roads. Good dirt roads also connect the property with Mina and Tonopah, 60 miles to the southeast.

TITLE

The property consists of 11 full sized mining claims,

totalling 220 acres. Assessment work has been completed for the coming year.

DEVELOPMENT

There are persistent records of production of at least 5000 flasks, or over 375,000 pounds, of mercury obtained over a period of five years when most of the mercury was sold, according to reports, at from $175.00 to $225.00 per flask. The production was taken from about 35,000 tons of ore or an estimated recovery of 70%, according to Mr. Pollok. The Bradley mines, immediately north of this property, are said to have produced over 16,600 flasks during the life of the properties.

I am advised that the tailings run from 2 to 5 pounds of mercury per ton. One hundred and sixteen samples of these tailings, collected by Mr. Zannette, are said by Mr. Wise to have averaged 5.01 lbs. per ton. One can readily believe these statements, as the old Scott furnace and the big condensers were clearly not very efficient.

The original development consists of a series of glory holes, or open quarries, over a distance of 750 feet on a width of about 200 or 300 feet. Each glory hole has a standard mine rail connection with the main trunk line that goes to the reduction plant about 1000 feet away. The level of the track is from 25 to 50 feet below the top surface of the glory holes. There is said to be a 60-foot shaft near the center of the property, about 2000 feet north of the glory holes. There are numerous test pits, cuts and old workings, most of which are concentrated in the southern end of the property. There are two tunnels reported on the property - one 200 feet and the other 300 feet in length with cross cuts adjoining the

glory holes. The elevation of the glory holes is 150 feet above the shaft collar, possibly more.

Recent developments consists of cross-cuts, pits and a shaft near the north end of the property. The cross-cuts and pits are said to have opened up about 100,000 tons of commercial ore, while the shaft has developed some high grade ore which is said to run as high as 100 pounds per ton. All these developments indicate a more or less continuous belt of productive ore extending at least a mile from north to south and averaging better than 200 feet in width.

IMPROVEMENTS

The improvements consists of a partially wrecked old Scott furnace and six brick condensers. These are valuable only for the contained mercury in the bricks. There is a Hanley furnace fully equipped, ready for operation and filled with ore, but it is the belief of most engineers who have examined it that it is not adapted for economical operation at this mine. Two Thousand dollars will put this furnace in working order, according to Mr. Wise. It can be operated as a pilot plant pending further testing of the property if necessary. Other equipment which can be used is a 12 x 16 crusher with a rated capacity of about 20 tons per hour or more, and a good switchboard with necessary attachments. There are several good mining cars on the premises, also the tramway with switches is in good condition. There is a 50 h. p. Sampson semi-Diesel engine slightly out of order, but which can be put in shape easily. All the machinery is run by electricity. The camp consists of superintendent's quarters, a large mess hall and several good

cabins for sleeping, large enough to house from 2 to 4 beds, and a shower bath, also an 8-car garage. These buildings have been recently reconditioned.

WATER

There are several springs of very fine water on the property, three of them at one time having been connected by pipe line to the mill and living quarters, furnishing plenty of water for all purposes. The pipe lines have been taken up, and will have to be replaced.

FUEL

Although there is wood to be had on the mountain sides of this region, it is believed that it will be better to haul in oil for fuel. This can be brought in from Fallon, the best rail head, as the roads between this town and the mine are better than those between Mina and the mine.

MINERALIZATION

According to Pollok, the mercury is derived from cinnabars, black sulphides, oxides and chlorides. A small amount of native mercury was found in some of the workings. The ore occurs in a massive bed which seems to underlie the entire property, according to Mr. Buck. There is little overburden, except in the bottom of the valley. Buck believes that the ore body is very consistent and that there is a large quantity of good milling ore in the mineralized belt.

Buck states that the ore occurs in a soft rhyolite in small fissures impregnated with sulphides or mercury through the whole mass. This was practically the conclusion reached

by me in my very brief examination of the property. In general, I would say that the ore occurs along fracture planes in diorite or through partially altered igneous rocks. "Porcelain" ore from the south shaft may represent altered limestone. The geological horizon at this mine shows the property to be on the same rhyolite belt, running for some 90 miles through the country in a northeasterly-southwesterly direction, upon which there are several large deposits of mercury.

ESTIMATES OF ORE

Buck states that there is more than a million tons of good milling ore that will average 10 to 20 pounds of mercury to the ton, leaving out the high grade lenses. Pollok states that the claims made by others of available tonnage ranging between 500,000 and 1,000,000 tons are conservative. He is inclined to the view that the average of 6 lbs. to the ton is a reasonable estimate for the ore in sight.

I made a rough estimate of the available assets from ore and calcined tailings at the time of my visit to the property of about 56,000 tons of ore on the dumps valued around $400,000 at the present price of mercury. I also estimated that the free mercury which was lost by absorbtion by the bricks, mercury in soot and in the soil near the old furnace, will be worth around $300,000; grand total values of ore and free mercury in sight about $700,000.

Wise, who is developing the property at the present time, estimates that the ore in sight, as a result of his developments the past few months, is around 200,000 tons.

To sum up, I believe that it is conservative to es-

timate that all of the ore and free mercury available at the present time is worth in excess of $1,000,000 at the present price of mercury.

COST OF MINING AND MILLING

Buck estimates a total cost of $6.75 per ton for mining and milling the ore in 1929. Wise recommends the expenditure of $40,000 in the erection and equipment of the plant to handle 50 to 100 tons per day. I have had other estimates of the cost of furnaces to handle the ore direct which are considerably less than the estimates made by Buck. As this ore is ideal for concentration, permitting stepping the mercury content from 5 to 10 pounds up to 90 pounds, and as high as 200 pounds per ton, it is recommended that careful study be made of the possibility of concentrating before installing a major plant.

The cost of a crushing, grinding and concentrating unit would amortize itself in a relatively short time, and would greatly reduce the ultimate or total cost of recovering the mercury. By installing a concentrating plant Pollok estimates that the cost of production per flask can be held down to less than $46.00, depending on the grade of the ore. He believes that 20-pound ore can be mined and milled for around $15.00 to $20.00 per flask, while the lower grades of 2 to 5-pound ore will cost from $30.00 to $45.00 per flask.

Personally, I am open-minded as to what method of recovery should be used on this property. I would utilize the Hanley furnace for pilot runs for a starter.

MARKETING

The cost of marketing is usually 5% to 10% of the market value of the product. Long time contracts have been offered me at 8% below the New York market f. o. b. Fallon or Mina, or a set price of $151.50 per flask.

ESTIMATES FOR A MILL

Mr. Pollok estimates the total cost of mining, milling and reduction on the basis of 500 tons a day as $1.25 per ton. Assuming the ore to average 7 pounds per ton, the total cost of reduction would be $24.00 per flask. Assuming the price of mercury to be $100.00 per flask, would give a profit of $75.00 exclusive of marketing, etc.

Personally, I would be more inclined to place an estimate of $50.00 per flask for the entire cost of mining, milling and reduction, including marketing.

The cost of a 500-ton plant, including concentrating and calcimining units, should not cost in excess of $200,000, and a 1000-ton plant should not cost in excess of $350,000 - these figures not including excavating equipment. It is intended to contract to have the ore carried or shoveled and crushed to 2" or 2½" cubes and delivered in bins.

RECOMMENDATIONS

I recommend the acquiring of the bond and lease on this property with the idea of reconditioning the Hanley furnace for use as a pilot operation. At the same time I would install a crushing or grinding unit after the big crusher to reduce the soot, soil and bricks to a point where the free mercury can be recovered by gravity methods, such as by concentrating tables.

The cost of such a plan should not exceed $25,000.

Although the snow may interfere some during the next three months, I would recommend carrying on such work as can be reasonably done under the winter conditions.

Ralph Arnold

Ralph Arnold

Los Angeles, California.

December 19, 1940

REPORT ON NEVADA QUICKSILVER MINE

IONE, NEVADA.

CONCLUSION.

This property has a very good prospect of future production. The history of the property is favorable, and if it can be secured on reasonable price and terms, it warrants development work. It can be reasonably expected that sufficient ore averaging about 7 or 8 lbs. can be developed to warrant the installation of a modern Quicksilver furnace plant. The cost of producing Quicksilver at this mine from ore of this grade should be between $60.00 and $70.00 per flask. The prevailing price pn the New York market is $120.00 per flask.

LOCATION.

This property is situated in the Union Mining District, Nye Co, Nevada. It is 3 miles southerly from Ione, and90 miles by a good road from Fallon, which is probably the best railroad shipping point. The narrow gauge railroad at Austin is 35 miles Northerly. The railroad station of Luning, Nevada, is 57 miles distant southwesterly but the road is in poor condition.

DESCRIPTION:

The holdings consists of ELEVEN unpatented mining claims covering approximately 216 acres, with a water supply from two springs sufficient for present requirements, the surrounding hills are sparsely timbered with pine, suitable for fuel. The elevation at the mine is about 7900 feet above sea level. There are three other Quicksilver properties in the District, one of which has made considerable production in the past under the ownership of the F. W. Bradley interests.

The equipment consists of a 60 ton Scott Furnace in fair condition with crushing plant, dryer and 60 K.V.A. electric generating plant, camp buildings to accomodate 30 men, ore cars, and about 2000' of track from the mine to the reduction plant. There are no machine drills or air compressor on the property.

HISTORY.

This mine was discovered about 1911 or 1912, and a Scott furnace was completed in 1914 and operated intermittently until 1922. The burned ore shows that about 25,000 tons ofore havebeen trated. Records of production were not available, but as hear as can be ascertained, the total production to date has been from 250,000 to 300,000 lbs. of quicksilver. The last shipment from the property sold for $41.00 per flask and the mine was closed down on account of the low price. Very little development work has been done since that time.

GEOLOGY:

The croppings in the immediate vicinity of the mine are rhyolite, of which there seems to be two or more flows overlying a hard siliceous rok resembling quartzite. The rhyolite flows have a slight dip to the Eastward and the erosion has exposed an area in the bottom of Cinnabar Gulch and on each side which shows mineralization. There appears to be at least two extensive shear zones crossing the gulch and in which cinnabar has been deposited. Considerable faulting with a small amount of displacement is in evidence. Mineralization took place in the shear zones, following the faulting and cross fracturing, making the deposit irregular and spotted.

ORE DEPOSITS.

The ore deposit which was developed and from which production was made is about 400 feet long, 75 feet wide and was mined from the surface down to a depth of about 40 feet by the glory hole method. A development tunnel under the deposit on the West side at a depth of about 75 feet did not show any values. The tunnel under the East side of the deposit at the same depth showed an ore shoot 29 feet wide opened up for a length of 22 feet. A winze 10 feet deep showed the ore extending below the tunnel level.

The development work done so far on the property indicates that the ore zone is dipping to the East, and that considerable tonnage of good grade might be developed in that direction. Since the mineralization took place alongthe fractures in the rock, the values are very irregular and some of the more blocky pieces shows no values except alongthe cleavage faces. The mine was caved and filled up so that some of the important points were inaccessible. Aside from the deposit already mentioned, the prospect pits on other parts of the property indicate the occurance of Cinnabar over a wide area, but no other bodies of commercial ore have been developed, hpwever several of the showings warrant further prospecting.

SAMPLES:

Samples were taken in the East Tunnel as follows:-

	Width of sample Feet	lbs. of Mercury Tons.
#1/	19	4
#2	9	8.5
#3	22	3.0
And from open pits above East Tunnel		
#4	8.5	19.5
#5	6.0	3.0
#6	12	7
From a mine dump		
#7		2

Samples 1 to 6 inclusive represent the character of the ore mined in the previous operations , and there are approximately 3,000 tons still standing above the levels of the tunnels. The winze previously mentioned shows this ore extended in depth, and future tonnage could be developed by sinking and drifting on this ore shoot towards the East.

The sample No.7 is of a dump containing about 2,000 tons andis apparentlu reject material from previous operations. The samples show that the ore may be expected to average from 7 to 8 lbs. per ton and while it is difficult to estimate the available tonnage developed, one could be reasonably assured of 4,000 or 5,000 tons ofore averaging 7 or 8 lbs. with the probability of developing considerable more tonnage of the same grade.

RECOMMENDATIONS.

It isrecommended, ifthe property can be secured on reasonable price and terms, that development work be commenced in the Easterly portion of the mine and that the winze be sunk on the ore further drifting to the Eastward be done to open up the deposit in that direction.

A crew of six men should be employed for from 30 to 60 days under proper direction and the undeveloped portion of the mine on the East of the present workings shouldbe blocked out to determine the advisability of equipping the property with a modern rotary furnace for the treatment of the ores.

RESPECTFULLY SUBMITTED,

H. W. GOULD & Co,

MAY 28th, 1929. (Signed) by Roy N. HILL