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item 4

H. M. Walker M.E.
1221 Highland Dr.
Reno, Nevada
Mar. 10, 1969

Mr. J. M. Reynolds
P.O. Box 125
Mina, Nevada

Dear Sir;

Pursuant to your request, I have examined the Blue Ribbon Mine, and conducted such other tests, and research as required.

I herewith submit my report.

Very truly yours

H. M. Walker

H. M. Walker
Mining Engineer

Blue Ribbon Mine Abstract

Foreword

With the increasing need for copper, and the continueing problems in the copper producing countries in South America. The Major Mining firms in the U. S., and Canada are spending an estimated 3.7 million dollars per month exploring for the red metal in this country.

Copper being one of the oldest and most widely used metals known to man. The need for new production is evident.

Introduction

The author of this report has with all honesty and sincerity set forth to give an unbiased opinion and report on the Blue Ribbon Mine.

This report is done at the request of Mr. J. M. Reynolds, owner of the Blue Ribbon Mine.

Location

The Blue Ribbon Mine is located in T.7N.,R34E., 3.5 miles west of U.S. highway #95, 8 miles No. of Mina, Mineral Co., Nevada. The nearest major point of supply is at Reno, Nev., 160 north. There is good railway facilities at Luning, Nev. 4 mi. east, and at Mina. Limited housing exists at these communities, with additional housing at Hawthorne 25 mi. No.

Access to the mine is fair. There are several unimproved roads criss crossing the property. Most are passable with two wheel drive.

Description

The property consists of three patented mining claims, the Blue Jacket #1, & #2, and the Copper John. Along with eighteen possessorg claims, the Blue Ribbon #1 thru #9 inclusive, and the Blue Diamond #1 thru #9 inclusive, app. 420 acres.

In addition there are nine millsites, app.45 acres, located about 3 mi east. Between U.S. highway #95, and The Southern Pacific Railroad. A power line passes within 500 ft. of the property line. Sufficient water can be obtained by drilling to a depth of 200 ft.

History

The mine was originally located and worked for scheelite, which occurs in tactite layers in limestone that is intruded by a fine grained granitic rock.

Additional locations were later made to include almost all of the copper mineralized zone.

Mr. Reynolds upon viewing the property in July, 1966 realized the potential and aquired property. He has since spent a great deal of time and money, both in improving the mine and its reserves, and solving the metallurgy problems.

Geolgy

The limestones, are Triassic, and of the Luning formation, and consists dominantly of dolomite with subordinate shale and argillite. They are locally altered and silicified, and and mineralized with WO3 and cu.

The limestones are intruded by a quartz monsonite prophyry. Thetexture of this rock is particulary distinctive on a stained sawed surface and shows a fine grained interstitial ground mass in which are set euhedral to subhedral metacrysts. The metacrysts are almost completly ironized at the surface. This indicates surface leaching, which will enrich the area at the water table of that time.

The lower exposure of the intrusive is 400 ft. wide and mineralized with cu in the form of oxides, as well as minor amounts pyrites. The samples taken at this point assay 1.70% cu, running as high as 27% in the carbonate zone near the contact. The carbonates are in the form of chrysocolla, azurite, and malachite and are generally with iron and manganese.

The intrusion is striking W 4 deg No. and dipping 15 deg. So.

There is some volcanic tuff overlay on the southwest edge of the intrusion, and locally some quartz andesite. It is reddish brown in color and consists of 25 to 30% of crystals in a ground mass that is partly glassey, and partly crystallized, and is generally mineralized.

All evidence indicates surface oxidation only, therefore the sulfide zone should be shallow, and highly productive.

Ore Reserves

There are numerous shafts, pits, adits, and cuts present on the property, along with the shallow drilling done by a contractor in 1963 whom I personally know, it is with this knowledge that I estimate the oxide reserves in the silicified zone at 1.5 million tons, with an additional reserve of .75 million tons of carbonates. There is no way to estimate the tonnage in the sulfide zone with the information at hand. It could run in excess of 5 million tons.

Conclusion and Recommendations

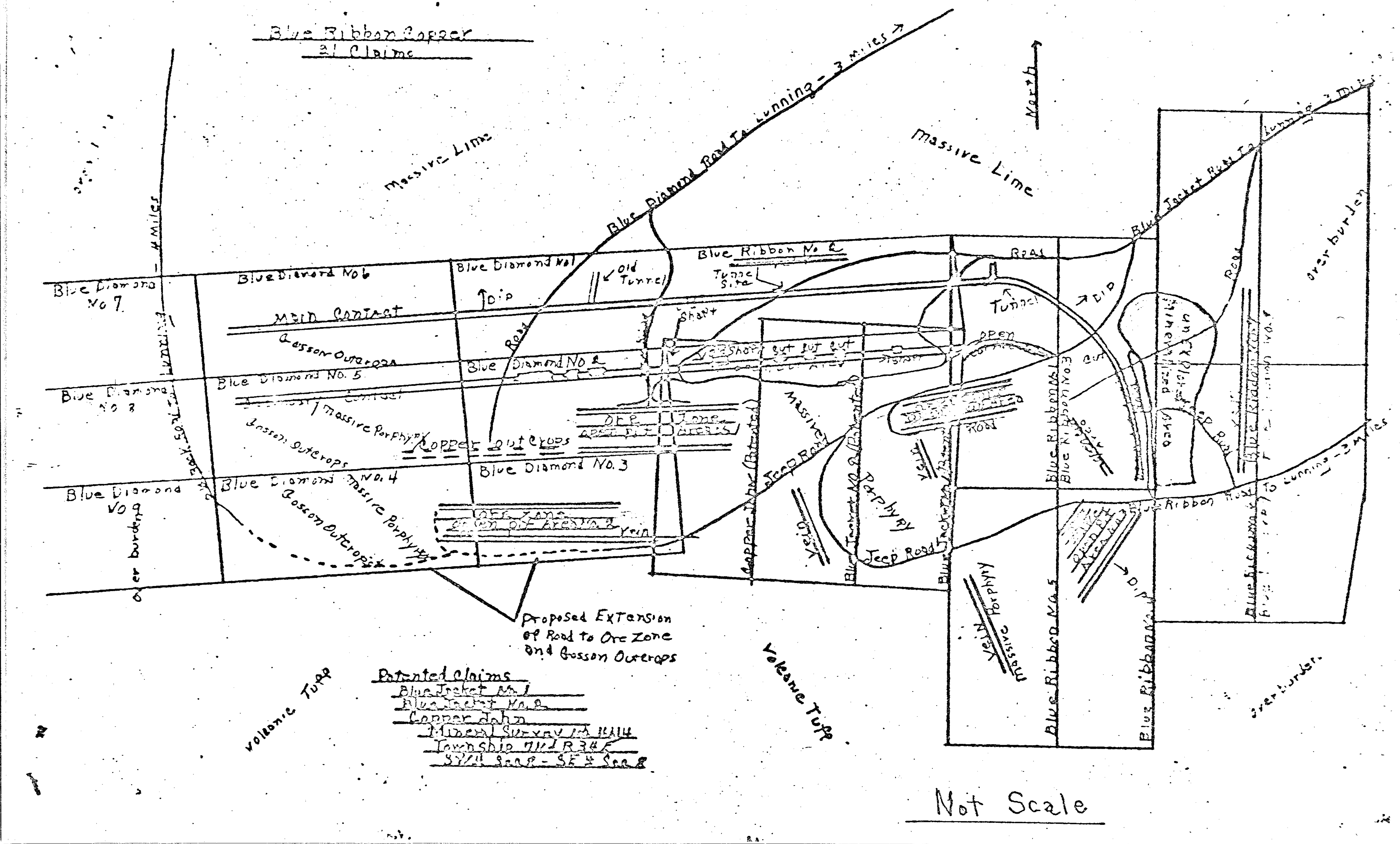
There is sufficient reserves of oxide ore to warrent a 500 tpd leaching operation. This could be accomplished with a min. of development, and at the same time conduct an exploration program of deep drilling to prove the sulfide zone, whereas a flotation plant of adequate size will be needed to process that ore.

I am in no way interested in the Blue Ribbon Mine, or Mr. J. M. Reynolds.

Respectfully submitted

H. M. Walker

H. M. Walker
Mining Engineer


Blue Ribbon Copper
21 Claims
Blue Diamond Road To Lunning - 3 Miles
North
Massive Lime
Massive Lime
Blue Jacket Road To Lunning
over burden
Blue Diamond No 7
Blue Diamond No 6
Blue Diamond No 1
Blue Ribbon No 2
Old Tunnel
Tunnel Site
Shaft
Tunnel
Dip
Dip
Road
Road
Main Contact
Gosson Outcrops
Blue Diamond No 2
Open
Blue Diamond No. 5
Blue Diamond No 8
Massive Porphyry
Gosson Outcrops
Copper Outcrops
Blue Diamond No. 3
Blue Diamond No. 4
Blue Diamond No 9
Massive Porphyry
Gosson Outcrops
Vein
Massive
Jeep Road
Porphyry
Vein
Jeep Road
Blue Ribbon No 1
Blue Ribbon No 3
Unexplored Mineralized Area
Blue Ribbon Road To Lunning - 3 Miles
Vein
Massive Porphyry
Blue Ribbon No 5
Blue Ribbon No 4
Dip
over burden
over burden
Proposed Extension
of Road to Ore Zone
and Gosson Outcrops
Volcanic Tuff
Volcanic Tuff
Patented Claims
Not Scale

Blue Ribbon Heap And Tank Leach Report

Forward

The treatment of oxide copper ores by means of Hydrometallurgy has been well established for many years. However due to the different characteristics of copper ores, each presents different problems. The Blue Ribbon ore is similar to the ores now being successfully leached in several locations throughout Nevada and Arizona.

There is however problems, unique to this location, that we have had to solve through carefull research and laboratory testing. This report, along with the metallurgy report and flow sheets are the end results of three years work on these problems.

ACKNOWLEDGEMENTS

The author of this report is indebted to Dr. Vernon E. Scheid, Director of the Nevada Bureau of Mines, Reno, Nevada for his help in obtaining data, the use of the library and facilities of the Bureau Of Mines.

To Dr. John Butler, Reno University, Professor of Metallurgy, Mackay School Of Mines for his assistance on the flow sheet problems.

To William Kern, Metallurgist, who worked long and hard in the laboratory, to R.W. Taylor, Richard Flagg, chief metallurgist and Henry C. Hurd Jr. of Denver Equipment Co. Denver, Colorado for their worthy advice and council.

To Mr. H. Snedden, Test Engineer, Humphreys Engineering Co., Denver, Colorado for his assistance in the screen tests, and to Mr. H.M. Walker M.E. for his wise council.

I particularly want to express my thanks to Mr. J.H. Reynolds for his encouragement in our darkest hours, for his patience in our times of dispair, and for the opportunity to overcome this challenge.

CRUSHING - See Figure # 1

The crushing should be done through open circuit crushing and screening designed for one man operation, with sufficient size to handle total plant capacity in one 8 hour shift.

The system is designed to crush and screen to minus 3/4 inch, with minus 3/4 inch plus 1/4 inch to heap leach, and minus 1/4 inch to tank leach.

Haulers will dump the ore onto a 18 inch grizzly, located over a coarse ore bin, Any over size will have to be broken through the grizzly by means of plastering with explosives. Over size can be controlled by proper drilling and blasting procedure at the mine. Any excess of crusher capacity will be stock piled near by for later feeding by a large rubber tired loader.

The feeder bin will be constructed with sloping sides for maximum live load capacity AN inexpensive 36 inch pan, plate or belt feeder is used to deliver ore evenly, positive rate of feed over a 3 ft. by 8 ft. steel grizzly, minus 3 inch dropping directly to conveyor # 1. Thus reducing crusher wear and increasing capacity.

A strong cast steel frame crusher is required, due to the pressure of hard silicious rock, which would damage an ordinary cast iron frame crusher.

The jaw crusher is set with 3" discharge, undersize, together with the fines from the grizzly, is carried on a 36 inch conveyor, traveling at 220 ft. per minute, on an incline not to exceed 22 degrees, to a 4 ft. by 8 ft. vibrating screen. The plus 3/4 over size from the screen falls to a secondary cone crusher set at 3/4 inch discharge, the minus 3/4 inch along with the secondary discharge drops to Belt # 2 to a second screen with 1/4 inch cloth, plus 1/4 inch to Belt # 3 and stockpile for heap leach, minus 1/4 inch to fine ore bin for tank leach.

Heap Leach - Figure # 2

Approximately 6500 tons of crushed ore is spread to a depth of approx. 3 ft. over an inclined Bituminous pad 200 ft. X 300ft. by the rubber tired loader, and is then sprayed with a solution of 8 % sulphuric acid, which works through the ore and down grade where it is collected in a inclined ditch. The pregnant solution is then pumped through an agitator tank where the copper is extracted from the sulphuric solution by a solvent solution containing a reagent called LIX- 64. The solvent solution is then separated from the barren solution through an oil and water type separation. The barren solution is then recycled to the leach pads and the pregnant solvent solution is then stripped of the copper by a high strength acid solution, which in turn serves as the copper- bearing electrolyte which is circulated through electrowinning cells. In these cells, copper is plated onto copper starting sheets which when removed weigh approximately 200 lbs. of 99.95% pure copper.

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Tank Leach Figure # 3

The fine ore is fed to a scrubbing and mixing drum by means of a variable speed feeder, for aglomeration with sulphuric solution at about 40 % solids, and then pumped to wood tanks with air agitators. The pregnant and wash solutions are then pumped to solution tanks and on to the solvent extraction plant.

Conclusion

The value of cathodes is six or seven cents a pound more than the value of leach copper cement. SX will eliminate the cost of iron and replace this with the cost for SX reagents, and power for electrowinning. Operating cost for producing cathodes with SX are only a trifle higher than producing leach copper cement with iron, so that most of the increase in value of the product can be credited against depreciation and return of investment.

C.E. Porter

S. Lee Richardson
MINING ENGINEER
160 SO. GRAMERCY PLACE
LOS ANGELES 4, CALIFORNIA

December 27, 1969

Mr. Joe Reynolds
P. O. Box 125
Mina, Nevada 89422

Dear Mr. Reynolds:

This is a letter to confirm my visit to your copper claims north west of the town of Mina in Mineral County, Nevada, of which three claims are patented and I believe 18 are unpatented. This visit was made on the 13th of December and if you remember I spent nearly all day with you and your superintendent walking and driving over the property.

The property consists mainly of a strong intrusive dike of marmatic origin and a porphyritic texture with an easterly westerly axis of mineralization, apparently dipping to the south. This intrusive is several hundred feet in width on the narrower portions and I don't know how wide further development will prove it to be but the dike is very strong and very long. Evidence of outcropping can be seen practically across the range of considerably over a mile. Wherever any development work was attempted either by stripping or by trenching or just simply by roadwork good mineralization was in evidence. It appears to me a conservative estimate of the ore now showing is well over a million tons but a systematic program of drilling on coordinates should now be initiated.

Dikes are more often than not lacking in mineralization but when they are mineralized they are probably the most dependable ore bodies known and usually persist to be profitable to great depths. This seems to be one of those. This property should develop into a reliable economically profitable low grade producer for many years and may well become one of Nevada's important sources of copper.

Very truly yours,

S. Lee Richardson

SLR:vhr

ECKMAN COMPANY INC.
P. O. BOX 125
MINA, NEVADA 89422

Legal Description of Claims as recorded in the Official Records of Mineral County, Nevada

PATENTED LODE MINING CLAIMS:

Blue Jacket #1
Blue Jacket #2
Copper John

Book 14 of Deeds, Pages 506-507

UNPATENTED LODE MINING CLAIMS:

Blue Ribbon #1
Blue Ribbon #2
Blue Ribbon #3

Book 13 of Deeds, Pages 544-545

Blue Ribbon #4
Blue Ribbon #5
Blue Ribbon #6

Book 14 of Deeds, Pages 163-164

Blue Ribbon #7

Book 14 of Deeds, Page 471

Blue Diamond #1

Book 13 of Deeds, Page 566

Blue Diamond #2
Blue Diamond #3
Blue Diamond #4
Blue Diamond #5
Blue Diamond #6

Book 20 of Deeds, Pages 497-499

Blue Ribbon #8
Blue Ribbon #9

Book 7 of Deeds, Pages 59-60

Blue Diamond #7
Blue Diamond #8
Blue Diamond #9

Book 7 of Deeds, Pages 61-63

EXHIBIT A

500tpd Operation cu prices @ .52

Open pit mining operations
Overburden varies from 0' to 60' in depth.
Average haul 2.5 mile

Assays cu values range 1.50 % to 27%
Operation should be geared to operate at 2% head values = $20.80 @ ton.

Average cost mining, stripping and hauling to millsite $3.60 @ ton, based on net cost.

Leaching plant cost based on crushing to ½" min. Screening to 1/8" min.
All 1/8" min. to scrubber and open circuit agitators.

½" min. plus 1/8" mesh to heap leach pads for treatment. App. cost $3.90 @ ton.

Note: Cost depending on lime ores to siliceous ore ratio, involving acid losses.

Giving a total mining & milling cost of $7.50. Balance $13.39 per ton gross profit on 2% ore, based on 100% recovery.

Estimate recovery 90% = to adjusted gross profit of $11.22 per ton.
500tpd = $5,610.00 @ day.
This does not include amortizing plant or mining equipment.

These figures do not include the by-products of silver or tungsten. In this mill complex there would be installed a grinding and recovery circuit for rare metals, such as gold and silver mined from our own properties and some custom ores being bought.

It might be advisable in the future to add a small circuit for the purpose of handling mercury ores which can be acquired very easily.

As the housing situation is below normal in this location there would have to be eight or ten, two bedroom homes built for rental purposes for key supervision.

EXHIBIT B