BLUE RIBBON COPPER PROPERTY
J.M. REYNOLDS
P.O. BOX 125
MINA, NEVADA

I acquired this property in 1966, with intentions of putting it in operation, but due to illness I have been unable to do so.

The metallurgy, flo sheet and leach report was prepared for my own use at that time.

Inclosures:

Metallurgy by William Kern

Flo sheet and leach report, our own lab.

Legal Description:

Report by H.M. Walker, Mining Engineer
Mag by Standard Slag
Sample Map by Mineral Industries Engineering Co.
Geo Chem by Phelps Dodge
IP's by Utah Construction and Mining Company
Geological Report for Howard Gable by David LaCount Evans

J.M. Reynolds

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

BLUE RIBBON COPPER

This property consists of 3 patented and 13 unpatented lode mining claims, and is situated only 3 miles from a paved highway, power line, railroad and water, at a point approximately 9 miles northwest of Mina and 3 miles southwest of Luning, Mineral County, Nevada. The property is very accessible. It lies at an elevation of only 5500 feet. Winter snows are no problem at this elevation and all year round operations can be carried on.

Twenty years of planning, writing and working have been spent in acquiring title to these 16 claims. The potential of this property was partialy realised in 1940, but so many individuals and groups were involved, at that time, in the various claims and properties, nothing could be done. The present owner acquired the 3 patented claims in 1951. Between 1951 and 1953, eight additional claims were acquired, and in 1960 five more claims were acquired, making the total of 16 -- the minimum neccesary to cover the tremendous deposits of copper exposed and indicated. Some of these claims were purchased, others were located as they became available.

As more and more of this great structure was acquired, additional roads were built and extended to the various outcrops and workings until, at the present time, approximately 5 miles of road have been constructed on the property by the present owner. All portions of the property are accessible by road.

The outstanding feature of this property is a great porphyry mass, over one mile in length and approximately 1200 feet wide. There are many copper outcrops in this porphyry, and large scale open pit mining can be carried on imediatley at several points-- without the removal of overburden. In approximately the center of the porphyry mass, there are showings of copper over widths of 200 feet and a length of 1000 feet. There are hundreds of thousands of tons of ore in sight in this one central outcrop. All of this ore is oxidised and in the form of asurite, malachite and tenorite.

On the north edge and the east edge of the porphyry, and extending throughout the entire length of the property, there are two paralled contact veins or zones, Approximately two miles of these veins or zones are visible. The word "zone" as well as the word "vein" is used because there are areas along these contacts where the mineralisation is so wide as to actually constitute a zone instead of merely a vein. These contact veins have been opened at many places, and hundreds of thousands of tons of copper ore are visible. These contact veins are ore-bearing throughout their entire length, and can be mined by large open cuts at many places. Open cut mining along these contact veins is made feasible at many places because of the dip of the contacts as related to the rolling terrain, resulting in some of the ore lying on the side of these rolling hills.

All of the contact veins carry tungston as well as copper. However, the tungston is not chemically combined with the copper. The tungston is in the form of scheelite. There is no cupro-scheelite on the property. Grinding will separate the scheelite from the copper minerals, and the scheelite should be recovered as a by-product. The copper in the contact veins, as in the case of the copper in the porphyry, is in the form of asurite, malachite and tenorite. A permanent market for tungston concentrates is available at Scheelite, Nevada, only 40 miles from the Blue Ribbon where Kennmetals maintain extensive tungston operations and refineries.

The potential of the Blue Ribbon is very great and the property is unique in many ways. Cheap open pit and open cut operations can be carried on at many points on the property. The accesibility of the property to rail, water and power makes for very cheap trucking from mine to mill, and the clean character of the ore should result in a very high recovery.

Charles F. Noble

This letter was submitted by Mr. Noble to me in 1966 while negotiating for the property. Since then I have added five more claims to the original group of 16, making a total of 21 claims in this property.

J. M. Reynolds

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.

ACKNOWLEDGMENTS

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.M. 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 500 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.

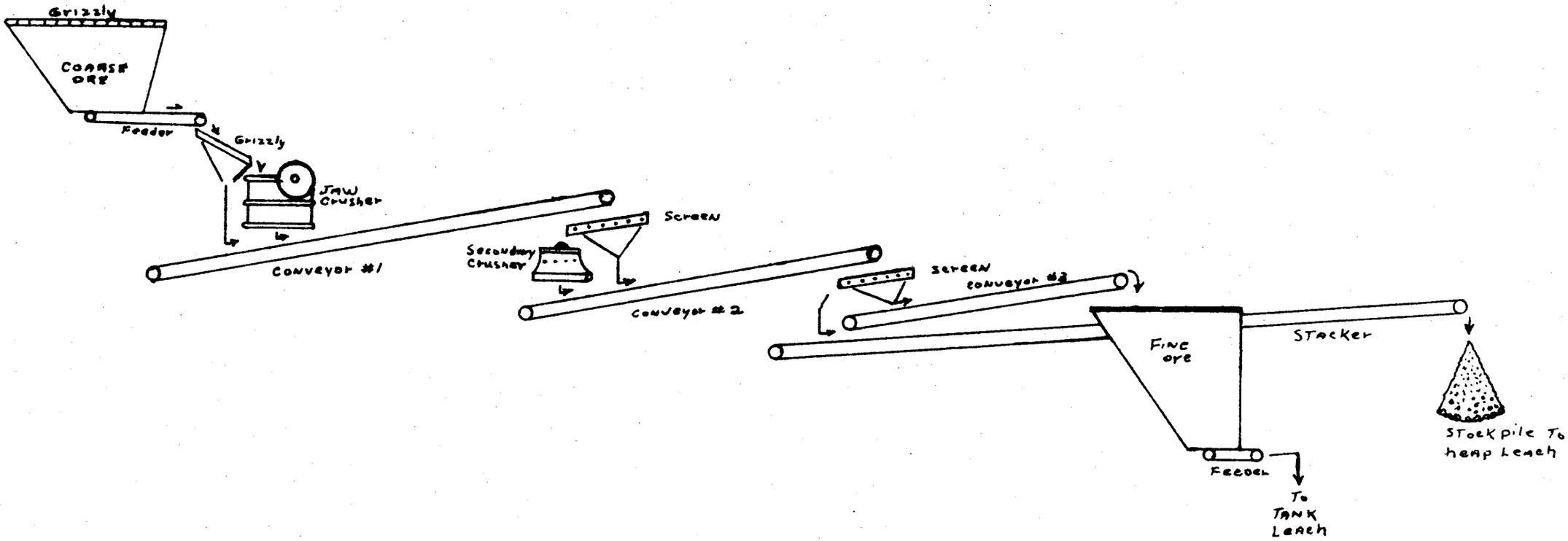
Tank Leach Figure # 3

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



Flow Sheet of Crushing Section Figure 1

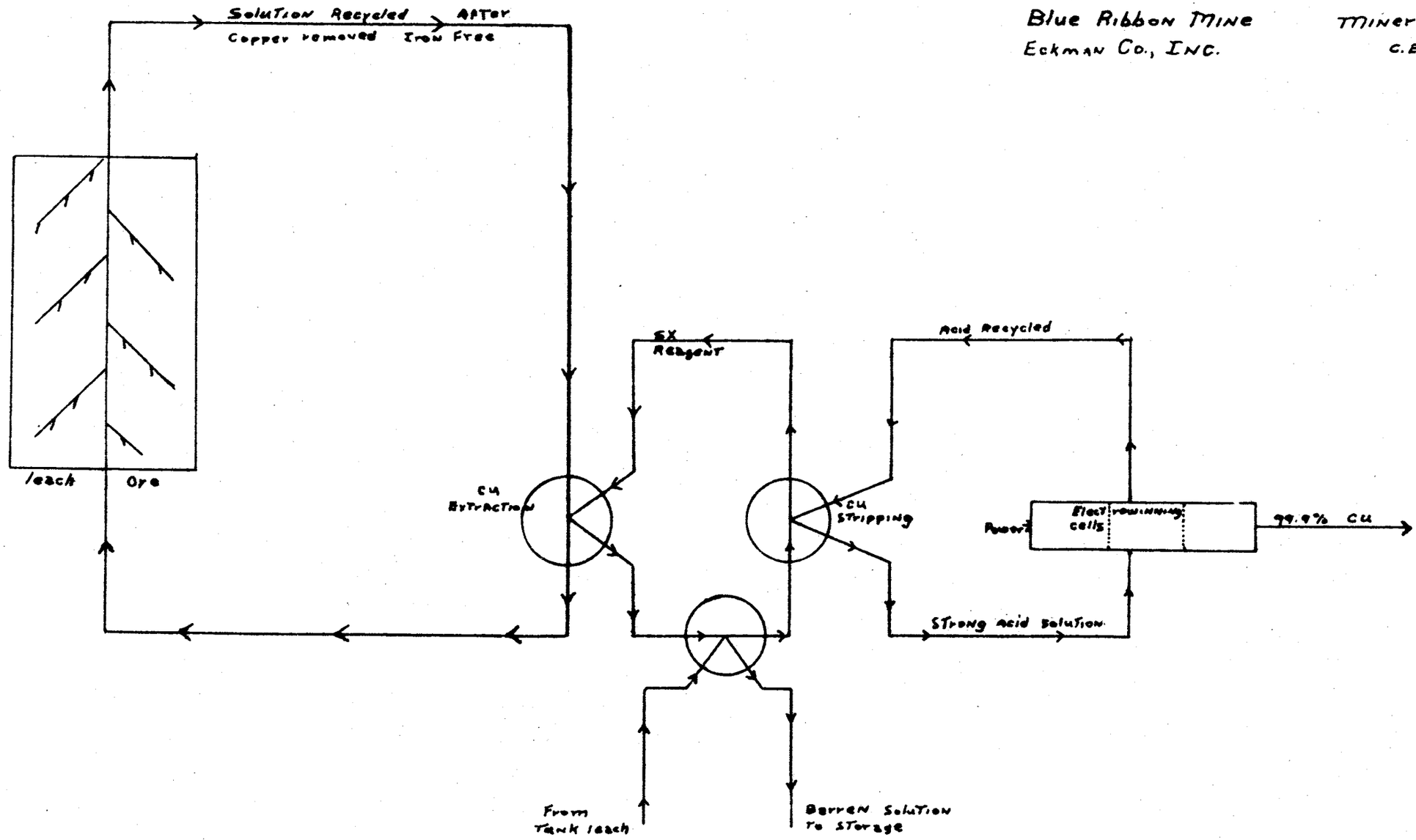
Blue Ribbon Mine Mineral County Nev.

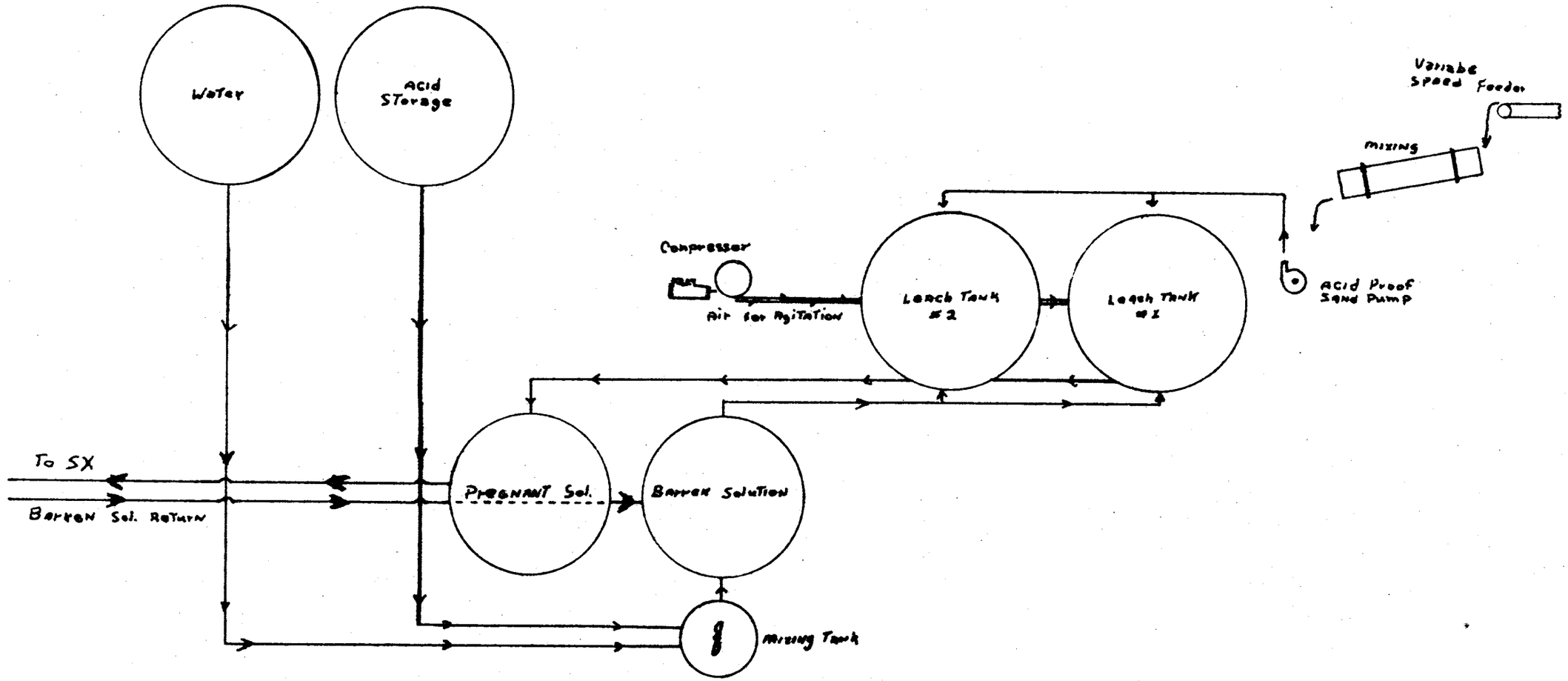
Eckman Co., INC. C E Porter

Flow Sheet of Solvent (SX) & Electrowinning Plant. Figure 2

Blue Ribbon Mine Mineral Co. Nev.

Eckman Co., Inc. C.E. Porter





Tank Leach Figure #3

Blue Ribbon mine Mineral County, Nev.

Eckman Co., Inc. C.E. Porter