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A Presentation By

BAGDAD COPPER CORP.

To

New York Society
of Security Analysts

Speaker

David C. Lincoln, President
Phoenix, Arizona

March 26, 1970

Mr. David C. Lincoln, President
Bagdad Copper Corporation

It is a great honor to be here and a pleasure to have the opportunity to talk about my favorite subject, Bagdad Copper Corporation. With me this afternoon is Bob Bogart, Vice President of the Company and Assistant General Manager of the Mine, and Mr. William (Pat) Garrity, who has just joined us as my Assistant. One of Pat's jobs will be to maintain lines of communication with the financial world.

Perspective

Let me begin by putting Bagdad into perspective. Our sales are more than $20 million per year. After tax earnings are more than $3 million per year. Net worth is $23 million. We have about 1 1/3 million shares outstanding. On a per share basis, earnings in 1969 were $2.33, and book value is about $17. Recent price of our stock has been in the $26 region.

Our primary business is mining, milling, and refining of copper. We have diversified into steel fabrication and plastic molding. Mining operations are located at the Bagdad Mine, which is about 125 miles northwest of Phoenix. Steel fabrication is at Garland Steel Company in Phoenix; the plastic operations are in Phoenix and Santa Ana, California.

The Mine is by far the largest and most important segment of our business. Original claims on the Mine were taken in the 1880's. Between then and World War II, the operation was an on-again, off-again proposition, with a little stock promotion mixed in. World War II gave the impetus to make Bagdad into a producing mine.

The Lincoln family began to acquire Bagdad stock in the latter part of World War II and by the middle to latter part of the 1940's we had acquired a little more than 50%, which is our present position.

Present Objectives

Five or six years ago we were faced with a basic corporate decision. We had a well developed ore body that was generating cash. We decided to use this as a basis for future growth,

both expand our mining operation and diversify. We decided we wanted to stay independent and be the dominant partner in any acquisition.

Our primary growth target is mining, where copper is, of course, of most interest. We have also looked at a wide variety of other minerals. We are most interested in mines located in the western part of the United States, but we have looked elsewhere in the country and other places in the world.

Our second programmed target for diversification and growth is plastics. We have just completed a rather extensive study of the plastics business, and this appears to be an attractive diversification for us. We would be converters and would not make the basic material.

A third area of growth should be in steel fabrication, but here we expect growth to be internal to Garland Steel Company and not through acquisitions.

Base for Future

Let me tell you a bit about where we think we are now, what steps we have accomplished in our expansion and diversification, and then what we feel the future might hold.

I feel we have good management. This is particularly true at the Mine. Under George Colville, General Manager, and Mr. Bogart we have an excellent group of superintendents and foremen. Bill Garland built his company, Garland Steel Company, from nothing and has good people under him. In our plastics operations we have really not had a chance to evaluate management because these operations are so new. None of our operations have great depth of management. This is one of our weaknesses.

We have good employees. None of our operations are unionized, but we maintain wage and benefit levels comparable to our respective industries. We have a profit bonus system, and we think we have an edge on other operations in productivity.

We feel that a primary objective is to make a contribution to the commercial world. Unless we are contributing something, we feel that we

cannot expect to get something out. If we make a good contribution, we feel that profits will be good.

We feel that employees are our most important asset and should be treated accordingly. And, of course, we realize that the shareholders own the business.

The Mine is the base for the future. The ore body is well developed, as I mentioned a moment ago. Our equipment and facilities are not new, but they are adequate and in good order. We are in a favorable position as far as stripping is concerned. Mine life at our present rate of production will be another 22 years. Production from sulphide ore is 20 to 24 million pounds of copper per year.

Steps in Bagdad Growth

Let me outline some of the steps we have taken in our program over the years. First was the leaching operation which began in the early 1960's. This added 14 million pounds per year of copper production, bringing the total to 35 million pounds per year or more. Leaching production can be expected to taper off over the years, but we expect it to last at least as long as the 22 year life of the sulphide ore body. At our present rate of recovery, less than half the copper in the leaching ore would be recovered in the next 22 years.

The second step we took was refining of cement copper to powder metal for use in the powder metal trade. This was attractive to us because there should be good profit in this conversion. Also, refining some of our own production reduced our dependence on the smelter to which we otherwise ship our production. A third factor that attracted us was the fact that the powder market is small and specialized, one in which we could be a major factor, but one that was too small to be of interest to major copper companies.

The project has had many troubles since its inception, most of which have had to do with process and plant difficulties. We have recently gotten enough of these solved that the operation is now profitable. The project was started as a joint venture with Chemetals Corporation, but they have since left, and we have bought

their half. Capacity of the refinery is about eight million pounds per year, which is only half of its original design goal. However, at this rate we should make a comfortable profit, and we will be serving about a fifth of the market for our type of powder.

In 1969 the refinery had an operating profit of $269,000, which is four cents per pound. This should increase to about six cents per pound in future years. Depreciation will take about three cents per pound, so that before tax profit will be about three cents per pound. Average markup in 1969 over metal was 17 cents. We base our price approximately on the primary producer price.

A step we are currently taking is construction of a solvent extraction-electrowinning refinery. This should be onstream this coming summer and will enable us to produce cathode rather than cement copper. Cathode is about seven cents per pound more valuable than cement, but costs of producing cathode will be about the same as producing cement. This should give us about $1 million per year more income, which works out to be about 1/3 of a million dollars after taxes, or on the order of 25 cents per share.

This is only a six or seven per cent after tax return on the investment, which is not very good and leads to the real reason we are building the plant. Iron must be used in the present leach circuit, and this chemically contaminates our ore. The solvent extraction plant eliminates the use of iron and should enable leach production to be maintained at levels considerably in excess of what we would otherwise experience. Unfortunately, it may not enable us to increase production over past levels.

A fourth step in our expansion was acquisition of Garland Steel Company, which was accomplished in January of 1967. Garland is a good, well managed local company. It gives us some diversification without remote operating and management problems. Garland earned $162,000 in 1969. We have elected to rapidly write off a patent which should be completely off the books by the end of this year. If this write off had not been taken, 1969 profit would

have been about $220,000 after taxes, which about 15 cents per share.

The fifth step in our program has been plastics. This industry is attractive to Bagdad because we expect plastics to expand substantially in excess of the economy for the foreseeable future. Plastics is becoming a basic industry. It requires good, sound management, but it is not exotic like electronics. We have chosen to concentrate most of our diversification activity in one industry, rather than scatter through a wide range of industries.

The first milestone in plactics that I am shooting for is $1 million in after tax profit. This will require $20 million or more in sales, which gives us a long way to go, but the opportunities are there.

Packaging is a segment of the plastic industry that appears very attractive to us, and we are focusing current acquisition efforts there. We are not ignoring other parts of the industry.

Bagdad Plastics Company, started in 1967, and makes custom molded polystyrene packaging. This currently is very small, having only about one-quarter million dollars sales in 1969, but it has gained us familiarity with the industry and is growing.

Braham Industries was acquired last summer. This is a marketer of injection molded plastic valves. All of the molding is subcontracted. Markets are new, but the product appears to be gaining acceptance. I sort of hate to admit it, but plastics seem to do as good a job, or in some cases better, than brass valves which they replace. Braham is forecasting sales in 1970 of $1 million. If they can do this, it will be a real achievement.

Costs

This is about where we have come. Before we look at the future, let me comment on our mining costs.

In the sulphide part of our Mine, operating costs are about 20 cents per pound. Smelting and freight add about 11 cents to this, for a total of 31 cents per pound. This cost includes about eight cents per pound for stripping, but we are stripping at three or four times the rate

eded to keep up with mining. So perhaps a nickel of the eight cents might be considered for the future.

Leach operating costs are about 14 cents per pound. Smelting and freight add about eight cents to this, for a total of 22 cents per pound. It should be kept in mind, however, that all mining costs for leaching have been charged to sulphide under stripping.

Composite cost for the two operations, including smelting and freight, is about 27 cents per pound. Overhead adds about seven cents to this, and depreciation adds another three cents. Total cost then comes to about 37 cents. However, we produce some molybdenum and silver, and this produces a profit of about two cents per pound of copper, so that our break-even point is about 35 cents. If we remove the excess stripping expense, the break-even point drops to about 32 cents. This gives you a general idea of our costs. I don't think we are the lowest cost mine in the industry, but neither do I believe we are the highest.

This is, perhaps, an appropriate point to comment on why 1969 earnings were lower than 1968. In 1967 and 1968 there was an industry strike, but Bagdad continued to operate. We sold in 1968 about 3.5 million pounds of copper that was produced in 1967, but which could not be sold during 1967. During the industry strike we were selling outside of our regular channels, and these sales were charged a considerably smaller smelting and freight charge than normal. Averaged over all of our 1968 production, this was about 2.5 cents per pound. These two factors gave considerable boost to 1968.

Higher prices in effect in 1969 gave a boost to that year, but the 1969 boost was not sufficient to match 1968. With the higher prices currently in existence, I fully expect 1970 to be better than 1969.

Future Growth Prospects

Let me turn now to what I feel some of our future projects might be.

Plastics will continue to be our non-mining expansion target. If we are skillful, this should have an important impact on our future.

We are seriously searching for another leaching ore body that can provide feed for the powder refinery after the solvent extraction plant goes into operation.

A third possibility is refining of all our own copper. We have been looking for a method to do this for many years. There are some promising ideas, but nothing is imminent.

The most interesting thing currently is the large body of low grade copper material adjacent to our present ore. It is contiguous to our present ore body and is merely the lower grade material that occurs in any ore body. The further out you get from the heart of an ore body, the lower the grade becomes, but the larger is the tonnage.

We feel we have verified 200 million tons of material with 0.5% copper grade. Stripping ratio would be about 1.5:1. To put this in perspective, our present ore body is 46 million tons with a grade of 0.69% copper, and a stripping ratio of not much more than 1:1. Stripping for the 200 million tons would add about 110 million tons of leach ore to our leaching dumps, and the grade of this would be about 0.4%. When stripping of the present ore body is complete, we will have about 85 million tons of leach material in place with a grade of about 0.5%. We are currently having our data on the low grade material verified by independent consultants.

To add further perspective to this, at our present 6,000 tons per day rate of mining, the present ore body will last about 22 years. If we were to mine the 200 million tons at 25,000 tons per day, it also would last about 22 years. At this rate, we would recover about 35,000 tons per year of copper, which is about three times our present sulphide production.

We should also be able to increase leaching production from the present rate, but probably not three times. I honestly do not know costs of this project. Capital expenditure could be on the order of $50 million. We are beginning to look at operating costs, but it will be some time before we have the plant and operation well enough outlined to be able to guess at costs.

There are two advantages this project has that are unique to us. Metallurgy of extraction

the material should be pretty well known, since we are presently mining the adjacent material. Also, organization and support facilities to carry out the project are already at Bagdad and operating.

Industry Comments

Let me briefly comment on our industries.

Copper is growing, but probably not at a rate equal to the economy generally. I estimate copper to be growing at about four per cent a year. Copper is a good, basic metal and its consumption is well spread throughout all industry. Because of this, it is not severely subject to rapid replacement by competing materials.

Bagdad is a small factor in the copper industry, but we do have the advantage of being an entirely domestic producer.

Copper price has been excellent for the last few years. Bagdad is tied to the primary producer price, but when we get cathode production from the solvent extraction plant, we will sell this in the dealer market, which under today's conditions should give us some benefit. I expect primary producer price to hold at 56 cents for at least most of 1970, but I also expect dealer premiums to decline. I must also say that I have been a terrible forecaster of copper prices in the past.

The government is investigating the copper pricing situation, but I do not really see that they can ask for many radical changes.

Markets for copper powder have been quite flat for the last two or three years as a result of limited supply and high prices. Over the long run, I expect powder markets to grow at about the same rate as copper generally. Bagdad can show production of powder starting from ore in the ground, which gives us an advantage over our competitors. If we in the powder industry can learn to lower the cost of producing powders so they can sell for about five cents over metal, I believe there would be tremendous new markets for this material. This requires a technological breakthrough.

Steel fabrication markets at Garland are

closely tied to the Arizona region, but growth in Arizona will probably exceed national averages for some time. Within its market Garland is well received, and the Special Products at Garland, such as the cotton machinery, add extra interest.

The plastics industry has been growing at two or three times the rate for the economy generally. One set of figures shows 14% per year compounded. The nature of this industry appears to be one that will call for scattered plants throughout the country rather than concentrated large plants. Freight is one reason for this. Another is that a large plant would merely consist of more machines of the same size, rather than fewer larger machines. This means that basic productivity does not increase as the production unit gets bigger.

Bagdad is attempting to acquire a series of well managed regional plants.

Overall Evaluation

Let me close with an overall evaluation of how I feel about Bagdad. We have a well developed ore body, which is giving good cash flow and is an excellent base for growth.

The low grade copper around our present ore body is a wonderful prospect for major expansion.

Plastics are an exciting diversification.

Bagdad is small, which obliges us to operate a little differently than bigger companies. We do not have great management depth, and in our mineral exploration we cannot appropriate the millions of dollars that the major companies do.

I thank you very much, and we would be happy to attempt to answer any questions you may have.

Questions

Question: Your Annual Report mentioned increasing income tax rates. Would you indicate what the effective tax rate will be in 1970?

Reply: (Mr. Lincoln) The new tax law puts a 10% tax on sheltered income, and depletion allowance is in this category. In the past, depletion has sheltered about a quarter of our before tax income. If my mental arithmetic is correct, our before tax income is $4 to $4½ million, and a 10% tax on a quarter of this is about $100,000. (Upon reviewing the answer to this question after returning home, I find my mental arithmetic was not correct. Depletion increases after tax income by about one quarter, so that it shields roughly half of before tax income. In 1969 before tax income was $4.9 million and a 10% tax on half of this would be about a quarter million dollars).

Question: How do you plan to finance exploitation of the low grade copper ore if you go ahead? I understand about $50 million is involved.

Reply: (Mr. Lincoln) The $50 million is only a guess. The true amount could be half of that; it could be twice that. We have not determined a method of financing. Our first approach would be to see if we could do it by ourselves through some combination of bank loans and debt and equity issues. If this is not possible, another approach would to join some larger company in a joint venture or merging.

Question: Has there been any feasibility study regarding the cost of the new project?

Reply: (Mr. Bogart) Presently, we're having an engineering construction firm prepare a detailed cost estimate of mill requirements, but this work is just beginning. We have a preliminary flow sheet. As yet, we have no cost figures on equipment or facilities.

Question: Could you give us some indication to specific markets for the powdered copper that you produce?

Reply: (Mr. Lincoln) We serve two markets. One is friction material such as clutches and brakes. These are principally for heavy equipment; although they are beginning to put disc brakes on automobiles.

The second market is molding and the largest application is sleeve bearings. In addition, powder can be molded into gears, locks, and all sorts of things. In many cases molding is much less expensive than casting or machining and molded powdered parts are about as strong as raw metal.

(Mr. Bogart) Another application is iron-copper powder mixes. For example, some steering parts on an automobile are made from pressed iron powder which will have added from 3% to 13% copper powder. The copper adds strength to the iron part.

Question: Would you give us some feeling about your mining, milling and smelting cost trend over the past three years and what you can expect over the next two years?

Reply: (Mr. Lincoln) Our costs, including overheads, during the past five years have increased at a compound rate of about 4%. Most of this has been in overhead. In the future I do not expect the 4% to decrease much. Inflation will continue. To counter this, we constantly improve in our efficiency, so our costs are increasing slower than normal inflation.

Question: Are you restricted to primary producer price for your copper?

Reply: (Mr. Lincoln) Any copper that we do not refine ourselves must be sold to American Smelting & Refining Co. at about primary producer price. We can sell metal that we refine ourselves in any market we choose. So far, we

e chosen to price copper powder approximately at primary producer price, plus tollage. When we get cathodes beginning this summer, they will be sold into the dealer market.

Question: What do you ultimately expect to be your capability for cathode production?

Reply: (Mr. Bogart) The electrowinning plant is designed for 14 million pounds a year. There may be a little excess capacity, but the 14 million pounds is our present full leach production.

Design is such that expansion should cost less per unit of production than the original plant.

Question: In order to justify expanding the electrowinning plant, you would have to have another source of leach material; is this correct?

Reply: (Mr. Bogart) Either our own or purchased. There is a possibility we might make a small profit by toll refining copper for others. We have no plans for this, but if the capacity is such that to operate at 100% requires some toll refining, we might do this.

Question: Can you readily get another supply of leach material? Isn't this something that other miners generally try to process themselves?

Reply: (Mr. Lincoln) Cement copper is available from smaller mines than sulphide. To bring a sulphide ore body into production is a major project. To bring a leaching operation into production is not nearly as difficult and there are leaching operations too small to justify having their own refining capability.

Question: Do you see the possibility of acid raw material costs coming down in the near future?

Reply: (Mr. Bogart) The softened sulphur market has already lowered our cost of making sulphuric acid. Longer range, as the smelters reduce pollution by converting their emissions

to sulphuric acid, the price of acid could d to a point that we would want to purchase acid and put our plant in standby.

Question: Could you comment on the present state of political environment towards pollution in Arizona? Is there legislation pending in the near term that would have an impact on you or some of the other miners in the area?

Reply: (Mr. Lincoln) Bagdad creates no pollution because we do not smelt.

In Arizona we have much the same political situation on pollution that exists elsewhere in the country. Smelters do pollute the air and they have been mildly denying this for years. I don't mean this in any derogatory way against my fellow copper miners. They have been denying it for good and logical reason because about 85% of the pollution in Arizona comes from the automobile. Why attack the smelters first when elimination of all that pollution might reduce the total only 4% or 5%. On the other hand, smelter stacks are an obvious source of pollution. If they fail to clean up themselves, legislation will require it.

To their credit, the smelters have been spending millions and millions of dollars to solve this problem, and they are making good progress. This started before any legislation forced them.

It is a tough problem technically. I think the smelters will eliminate 80% to 90% of their emissions before long and without inordinate difficulty. However, you can clean up 90% of the pollution from a smoke stack, and it will not look much different. Going from 90% elimination to 99% is the tough job, and that is where research effort is now being applied.

Question: Would you make a comment about your exploration activity and your plans in that regard?

Reply: (Mr. Lincoln) Last year we spent about $150,000 on exploration. This is small compared to the major companies. I don't know how it compares in ratio of our size to their size.

Question: Are you doing any exploration outside of your immediate area?

Reply: (Mr. Lincoln) Yes. Most of this is visual observation and prospecting. Occasionally we find something that is interesting enough to drill or do some I.P. work.

Question: You made a comment in your remarks about the growth that you estimated for copper, saying that it was approximately the same as that for the gross national product. Is this an evaluation of the growth of copper in the United States or is there a larger sphere of consumption that you are referring to:

Reply: (Mr. Lincoln) I had in mind world consumption. In the next ten years there may be a greater rate of growth in foreign markets than in U.S. markets.

Question: Do you anticipate any increase in molybdenum and silver production and have you discovered any nickel?

Reply: (Mr. Bogart) Molybdenum and silver production about parallel the production of copper. There will be fluctuations in each, but probably less fluctuation in molybdenum. We have found no nickel in our ore body.

Question: Has there been any indication that any of your customers have been able to build up any inventory in recent months?

Reply: (Mr. Lincoln) All of our output other than powder goes to American Smelting & Refining Company. Whether or not their customers have been able to build inventory, I do not know. My understanding is that inventories are low at this time.

Our powder customers do not ever hold much inventory. If they want to build inventory, they ask us to do it, and for good reason. Shelf life of powder is short compared to most products. This is because it is finely divided and, therefore, subject to oxidation. Customers do not like to keep more than a couple of months supply on hand.

Question: Is this powdered product a standard product; or are there variations in what you sell?

Reply: (Mr. Bogart) We make two grades of powder. Friction grade is a very fine, low density powder. The other is molding grade. Almost every molding customer has his own specifications covering particle size, apparent density, growth, and all sorts of physical characteristics. Most of the production problems have to do with physical characterisitcs, not chemical. Powder production is still an art, not a science.

Question: Mr. Lincoln has said that he does not think the price of copper will come down as a result of President Nixon's task force on copper. Would he care to speculate as to what that study group will recommend?

Reply: (Mr. Lincoln) I think they have a political hot potato. There is obviously some unfair allocation of copper at the primary producer price. Present allocations are based on patterns of several years ago, and the industry has changed since then. One solution that seems most obvious to everyone is to unpeg the domestic producer price and let it float at world prices. If that happened, the world price would probably come down some and the producer price would go up some. It would solve the problem of allocation of copper, but I wonder what the situation would be with regard to the battle against inflation. The administration would, in effect, have raised the price of copper, and it probably would be a substantial increase. Politically I just don't think they can do that now.

Question: You mentioned in your remarks that you thought there was a possibility that somewhere along the road your plastics business could generate sales of better than $20 million, roughly as much as you're presently getting from the rest of your business. Does this presuppose that you're getting into other types of plastics business, or does this mean that you anticipate that with the basic technology you

presently have, you have enough of a growth rate to achieve this objective?

Reply: (Mr. Lincoln) This will require a program of acquisition. Our present two plants will not reach $20 million in sales.

The packaging segment of the plastics industry is growing very rapidly and the untouched markets are very much greater than the markets now being served.

For example, in food packaging, plastics is very rapidly replacing glass and some metal. These are new markets for plastics, beyond the present capacity of the industry to serve them. The opportunities are there and if we are smart, we can capitalize on them.

Question: Will plastic plumbing ever really make it past the quality test?

Reply: (Mr. Lincoln) I think there are two parts to your question. First, is it a good valve and second, can it overcome the negative image that plastics have with respect to brass?

I think it is a good valve. It does not corrode nearly as much as brass. It is pliable, so that the freezing problem is less severe.

We do not have long field experience on plastic valves. Life tests indicate good performance. Plastic is pliable enough so that these valves seal themselves without a washer. Plastic does have the negative image. It doesn't look like a good valve. But it also costs a lot less.

BAGDAD COPPER CORP.

Presentation To
Financial Analysts Federation
Fall Conference

Phoenix, Arizona

October 19, 1971

Speaker
David C. Lincoln, President

Introduction

It is an honor to be here this morning and tell you about Bagdad Copper Corporation.

Background

Let me start by highlighting our past. We are primarily an open pit copper miner, located 120 miles northwest of Phoenix. Our original claims were patented almost 100 years ago, but real development of the mine did not begin until World War II. Bagdad was an underground mine during World War II but was converted to open pit during the latter 40's.

Starting in 1942 and continuing for several years the Lincoln family acquired stock in Bagdad, and our group now owns slightly more than half of the outstanding stock.

Present Status

Bagdad currently mills about 6,000 tons per day of ore with a grade of 0.67% copper, and the present ore body will last for 20 more years. Ratio of waste to ore is now about 0.8:1, but for a number of years we have been stripping at a rate of about 4:1, so we have been gaining on this factor. The mill produces a sulphide concentrate that is sold to American Smelting & Refining Company for processing through their smelter at Hayden, Arizona. Price is based on primary producer price, with deductions for smelting, refining, and freight. Copper content of the sulphide concentrate is between 20 and 24 million pounds per year.

We also produce about 14 million pounds per year of copper from leaching ore. Much of the material overlaying the sulphide ore has acid soluble copper that will not respond to the concentrate milling process. This has been piled in canyons over the years, and about ten years ago we commenced leaching operations. Weak acid is sprinkled on the ore and the resulting solutions are treated by our new liquid-ion exchange electrowinning plant. The output of this is pure cathode copper and is sold to tube and wire mills. Life of the leaching operation is difficult to forecast because ore is treated in place. If all leaching

copper were recovered at the present rate, there would be 40 or 50 years remaining life. Assuming half is recovered, life of the leaching ore will be somewhat longer than the sulphide ore.

We also produce pure copper powder by hydrometallurgical techniques. Feed for this plant is purchased and the powder is sold to the powder metal trade for use in bearings, clutches, brakes, etc. Powder sells for a premium of 15 to 20 cents per pound over base metal price.

We have acquired some non-copper operations for diversification. Chief of these is Garland Steel Company, which is a sound local steel fabricator, with some interesting proprietary products. Bagdad Plastics Company is a second diversification that produces rigid foam for packaging and has a line of patented plastic valves. We like the growth potential of the plastics industry. One diversification move that did not work out was the car wash business. We entered this because Garland had been manufacturing equipment for Hurricane Car Wash Systems, Inc., and over the years had built up a considerable inter-company receivable. In mid-1970 Hurricane encountered financial difficulties, and rather than eat the receivable we decided to support Hurricane by acquiring a majority of its stock and advancing it money. We were right on a couple of things; the Hurricane product line is as good as any in the industry, and the car wash industry is growing very rapidly. However, we were wrong on a couple of things; Hurricane's marketing organization was not well developed, and many of the actions taken by Hurricane before we entered the picture have lead us to lawsuits which became so numerous that we were spending most of our time on them. Consequently, we decided to withdraw further support. We will write off our interest in Hurricane in 1971, which will really hurt earnings this year. However, the loss is in no way large enough to effect the basic strength of Bagdad.

A word or two about costs. In 1970 production cost of our sulphide copper was about 19 cents per pound. Refining, smelting, and

freight deductions were about 11 cents per pound. We have been stripping ahead, so that about a nickel of the production cost might be assigned to advanced stripping. Cathode production just started last year, but this year to date cathode costs, including freight, have been about 13 cents per pound. G&A costs spread over all production are about eight cents per pound. Molybdenum and silver give a credit equivalent to about one and one-half cents per pound of all of our copper. Putting these numbers together gives a break-even point of about 30 cents per pound of copper. Depreciation adds on the order of four cents per pound, but these figures include the cost of excess stripping.

Copper Markets

Trying to forecast the copper market is like trying to forecast the location of a trout in a mountain brook. During 1971 the industry emerged from several years of excellent markets. We are perhaps a trifle spoiled. It appears that productive capacity will exceed demand for the next few years, but there are a number of things that could influence this. The situation in Chile is unstable, with some loss of production occurring. Peru could go the same way, although they appear to be learning from the lesson of Chile. Copper consumption in eastern Europe and China will undoubtably increase. Whether or not their production will increase to match this is unknown. Status of Free World economies is also a significant modifier. Putting these factors together, there is some feeling in the industry that markets will be soft until mid-decade, after which demand will catch up with present excess capacity and markets will firm.

Bagdad sells most of its copper in the primary producers market, which has less fluctuation, both up and down, than dealer markets.

Future

Where is Bagdad going in the future? We are pointing toward a major expansion of our present mine. We have blocked out an addi-

tional 230 million tons of ore with a grade of 0.47% copper. Stripping ratio over this is not much more than 1:1. The project would increase milling capacity for the sulphide part of our business by four times; to 24,000 tons per day. Leaching production would not be changed. This would increase total copper production to about three times present levels during the first years of the project, and it would taper off to somewhat more than two times present production during the last years of the project. Including some additional ore below the 230 million tons, mine life of the expanded operation would be about 30 years.

We are quite comfortable with the project through production of concentrates. Mine and milling processes would be the same as the present operation. We would merely handle four times as much ore. Stripping rate would be about the same as at present because we are currently stripping at about four times the necessary rate. No additional advanced stripping would be needed. We could use most of our present support and townsite facilities, although some expansion would be necessary. Employment for the expansion would increase only 10% to 25%, depending on whether or not we smelt at Bagdad. Up to this point the project looks very attractive to us.

A problem arises with smelting. American Smelting & Refining Company cannot take the additional material, and their pollution problem will increase smelting costs substantially. We are studying three alternatives, all of which meet present pollution requirements. The first is construction of a smelter at Bagdad to treat only our material. This would be a small smelter by industry standards, and would use a new Australian process called WORCRA. This is inherently less costly than other processes, so not much economy would be lost as a result of the small size. The second alternative is a joint venture smelting project with other Arizona copper operations that are in our situation. This would be a full size smelter, and we would own our pro-rata share. The third alternative would be to custom smelt our concentrate through a new custom smelter that is proposed to be built somewhere in the Mississippi River Valley. All three alternatives are still open.

Capital cost for the Mine part of the program is about $54 million, most of which is for a completely new concentrator. The present concentrator would operate up to the time the new one started, which should eliminate production loss due to changeover. Capital cost for either of the smelting options would add $25 million. Of course, the custom smelter option would have no additional capital costs. Breakeven copper price for this project is on the order of 25 to 30 cents per pound, plus debt service which might be on the order of ten cents per pound. It can be seen that the project will lower our before debt service breakeven point, and because of the increased production, give a considerable boost to earnings per share.

We have sufficient cost data to prepare preliminary projections, and we are talking to several people that might be helpful in financing. We are establishing patterns of finaccing that might be available, and we will attempt to do the project without equity surrender. Hopefully, we can get the smelter picture clarified by the end of this year, and have the financing framework in focus by that time. During 1972, we could complete financing arrangements and do most of the engineering. Construction would take place during 1973 and 1974, and we would be on stream in 1975, which is about mid-decade when the sages say the copper market will strengthen.

Until this project is complete, we have no further diversification in mind. Our corporate course following the Mine expansion is unplanned. We will probably want to spend the first years after the new program goes on stream concentrating on debt reduction.

Thank you.

David C. Lincoln, President
Bagdad Copper Corporation
Phoenix, Arizona

CATHODE REFINERY DEDICATION

BAGDAD COPPER CORPORATION

Tuesday, November 17, 1970
11:30 A. M.

Bagdad, Arizona

PROGRAM

Invocation
Reverend John T. Cain, Pastor
Bagdad Community Church

Welcome
George W. Colville, General Manager
Bagdad Copper Mine

Introductions
David C. Lincoln, President
Bagdad Copper Corporation

Chronology
Robert C. Bogart, Assistant General Manager
Bagdad Copper Mine

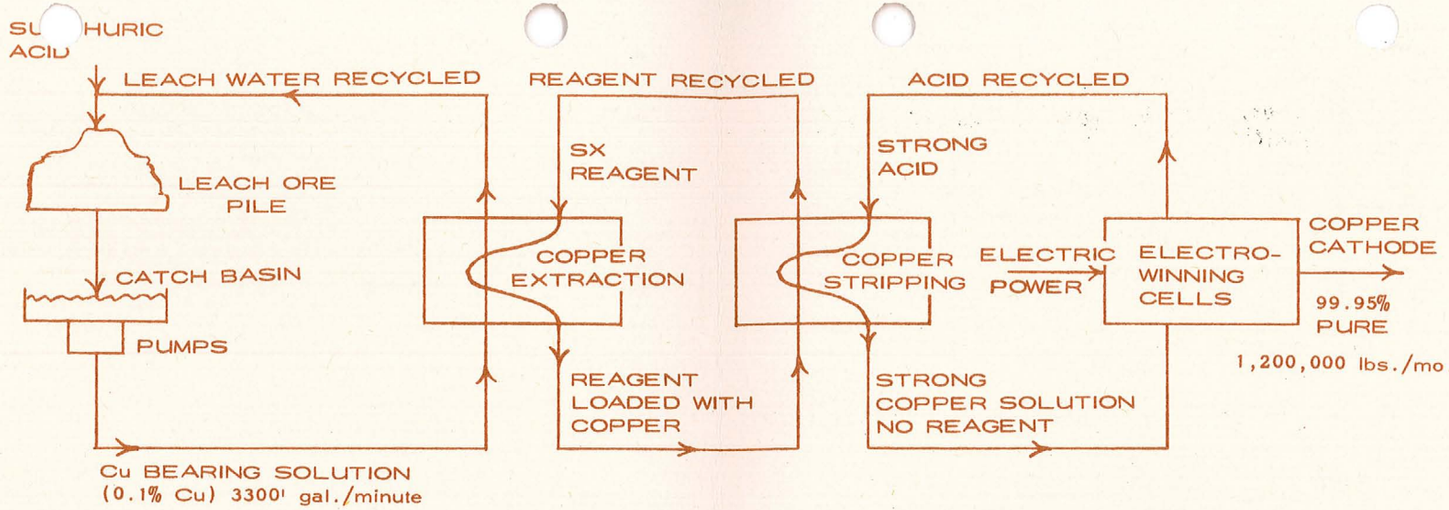
Guest Speakers
James P. McFarland, Chairman of the Board
General Mills, Inc.

Morgan Greenwood, President
Holmes & Narver, Inc.

Dedication Speaker
Honorable Jack Williams, Governor
State of Arizona

Announcements
David C. Lincoln

Benediction
Reverend John T. Cain



CATHODE REFINERY

Pilot plant work on the Cathode Refinery began in 1966 when it became apparent that iron used in the former precipitating process was contaminating the copper oxide ore. Construction of the Refinery began in 1969, and it was accepted from Holmes & Narver, the engineering contractor, in August 1970. The solvent extraction portion of the plant uses a reagent manufactured by General Mills which eliminates the need for iron.

Copper recovery begins with sprinkling of weak acid solutions on the copper oxide ore dumps. Acid dissolves copper as it trickles through the ore pile and these copper bearing solutions are pumped to a catch basin. Up to this point the present process is unchanged from that formerly used. In the new process weak copper solutions from the catch basin are mixed with the General Mills' reagent which extracts the copper. The copper-free solution has additional acid added and is recirculated back to the ore to dissolve more copper from the ore pile.

The reagent bearing the copper is then mixed with strong sulphuric acid. Under these conditions, the reagent will give up copper to the sulphuric acid. The reagent is then recirculated to gather more copper. The strong acid-copper solution is sent to the electrowinning portion of the plant. An electric current is passed through the solution and this deposits copper on a thin copper sheet called a "starter sheet." In about a week the starter sheet grows to approximately 130 pounds of copper. It is then removed and replaced with another starter sheet to repeat the process.

The Refinery will benefit Bagdad in two ways. First cathodes produced are six to seven cents per pound more valuable than the former precipitated copper. Second, and even more important, will be elimination of iron from the leach system, which in turn should greatly extend life of the leaching ore bodies.

The Cathode Refinery cost slightly more than $5 million. It is the second and largest plant of this type built to date and will produce about 40,000 pounds of copper cathode per day with a purity on the order of 99.95% copper.

The plant operates 24 hours a day, seven days a week, and it takes a total of about 41 people to operate the entire leach system, most of whom are in the Cathode Refinery.

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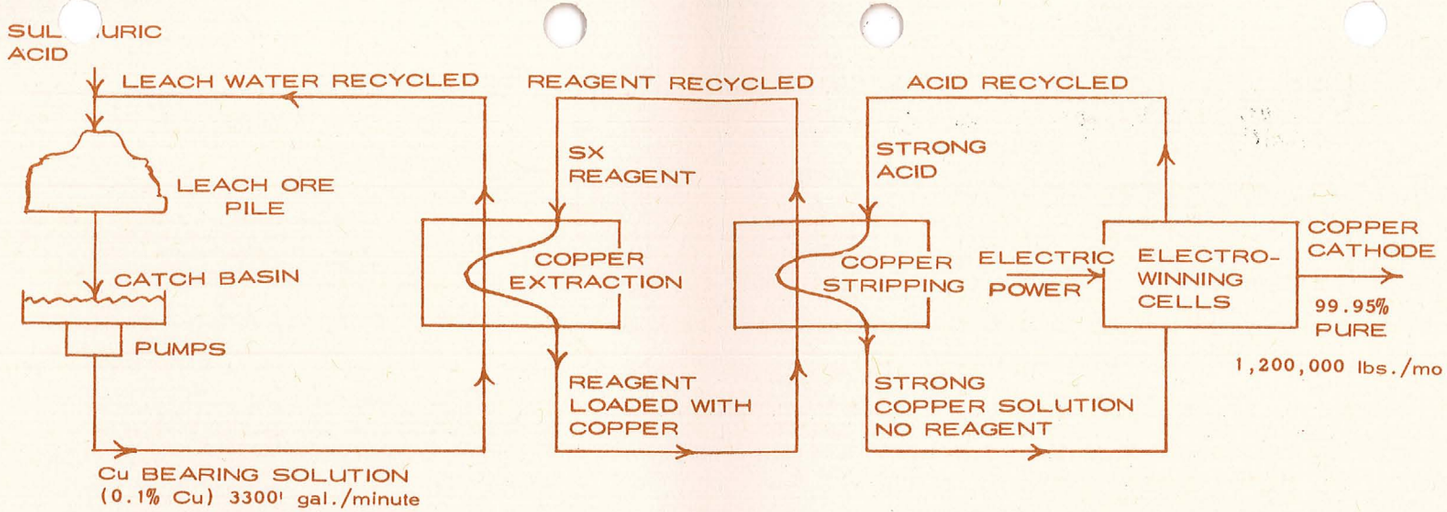

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November 10, 1972

BAGDAD COPPER CORPORATION
NINE MONTHS REPORT 1972

A summary of operating results for the Company is shown in the table below. Figures are consolidated but unaudited.

	First Nine Months 1972	First Nine Months 1971
Sales	$ 24,041,000	$ 18,284,000
Net Income from Operations	$ 3,099,000	$ 2,019,000
Extraordinary Item		$ (838,000)
Net Income	$ 3,099,000	$ 1,181,000
Per Share*		
Net Income from Operations	$ 1.93	$ 1.26
Extraordinary Item		$ (0.52)
Net Income	$ 1.93	$ 0.74
Copper Production - pounds	28,968,000	29,495,000
Copper Sales - pounds	33,200,000	23,725,000
Copper Price per Pound	50.5¢	51.1¢

* Based on currently outstanding 1,606,740 shares.

OPERATIONS

Sales for the first nine months of 1972 were 31% greater than for the same period in 1971. This increase is primarily due to increased sale of copper products from the Mine. Net income to date in 1972 is 162% greater than for the same period last year, and net income from operations is 53% greater. This improvement comes primarily from three sources: first, last year's earnings were depressed by writeoff of the Hurricane subsidiary, second, 9.5 million pounds more copper were sold this year than last, and third, profit contribution from subsidiaries is greater this year.

Increased sale of copper this year did not result in a proportionate increase in net income because of industry cost increases since last year. For the first nine months of 1972 compared to the same period in 1971, costs on concentrate smelting and freight increased more than two cents per pound of copper, and all cost increases spread over all copper amount to about five cents per pound. We can expect additional increases in smelting and freight costs, but I believe the major cost increases at the Mine are behind us.

Recent markets for copper have not been active. Primary producer price continues to be 50.6 cents per pound, and there is sufficient supply so that increase of this price in the near future is not likely. On the other hand, costs in the copper mining industry are high enough so that price deterioration is not likely. Markets for copper powder are showing slight improvement.

Inventory of cathodes and powder are at normal levels, but at the end of September we still had three million pounds of copper in concentrate form. This is down from 4.3 million pounds at the beginning of the year. We expect to ship about half of this inventory by the end of this year. It will be shipped to White Pine, Michigan, which will incur a freight penalty. We continue to ship the majority of our concentrate to the ASARCO Smelter at Hayden, Arizona, but they are unable to take all of our output. We have agreed to a new one-year contract with ASARCO starting in October of this year. This contract will increase costs about two cents per pound.

Sales at Garland are significantly greater this year to date than for the first nine months of last year. Net income is also greater this year. Shop and field crews at Garland are currently as busy as they ever have been. The Company appears to be well organized for the future and making good progress.

Sales at our Plastics operation have also been higher this year to date than last year. This operation is now showing nice profit ratios, which compare to quite large loss ratios last year. Additional improvement is expected when the move into the new plant has been completed.

EXPANSION

During the third quarter we engaged Parsons-Jurden Company (a large engineering contractor) to evaluate application of Roast-Leach-Electrowinning (RLE) as a method of treating concentrate produced at Bagdad following our expansion. This technique underwent about two years of pilot testing at Bagdad in the 1950s and worked well from the operating and technical standpoints, but economics were not attractive at levels of production that existed in the 1950s. Acid produced in RLE is more difficult to dispose of than from many other techniques. The RLE process is in use in the production of copper at other operations in the world and is performing satisfactorily, including removal of sufficient sulphur to meet Arizona pollution standards. RLE has the advantage of producing a fully refined product. It also uses production techinques much closer to the competence of our present organization than other methods. We are currently evaluating the Parsons-Jurden report to determine if economics are satisfactory at the expected expanded levels of production.

We will meet with lead banks the second week of November to determine how much of our expansion financing they are willing to undertake. This will establish the magnitude of the remaining financing, and will enable us to be specific with those that might provide this. It is probable that the portion of the financing not provided by the banks will require some equity participation in the project. Several organizations have expressed definite interest in negotiating an arrangement as soon as we are able to be specific.

I hope to have financing sufficiently arranged by the end of December so that we can proceed with full scale engineering and design at that time. Completion of the program through engineering, construction, and start up will require about three years, although this time might be shortened slightly as the result of preliminary engineering and design activity during the past year.

DIVIDEND

At a meeting of the Board of Directors on September 27, 1972, dividends were declared in the amount of 9.6 cents per share cash and 6% in stock. Both of these are payable November 10 to stockholders of record October 10. Fractional shares are being paid in cash. Accordingly, enclosed are the following:

1. A check for a cash dividend of 9.6 cents per share of stock. This is reduced from the normal 10 cents per share because of the Economic Stabilization Act. Total cash dividends paid in a year are not allowed to grow more than 4%. Bagdad paid a 5% stock dividend at the end of last year, so that if we had continued 10 cents per share for all four quarters of 1972, our total cash dividend payout would have exceeded the 4% allowed by 1%. We placed the 1% reduction all in the fourth quarter dividend.
2. A stock certificate representing the 6% stock dividend. If on October 10 you owned less than 17 shares of the $2.50 par value Common Stock, no certificate is enclosed.
3. A check representing payment in lieu of any fractional stock to which you otherwise would be entitled as the result of the 6% stock dividend. All fractional shares are being paid in cash at the rate of $33.50 per share, which was the stock price on October 10, 1972. For example, if you owned 95 shares on October 10, the stock dividend would entitle you to 5.7 shares. A certificate for 5 shares would be enclosed, in addition to a check for $23.45 representing payment for the 0.7 fractional share at $33.50 per share.
4. Internal Revenue Service Form 1099 showing aggregate dividend paid to you by Bagdad during the year 1972 and any cash received by you in lieu of fractional shares referred to in paragraph 3 above.

In opinion of counsel for the Company:

1. All dividends are taxable as ordinary income.
2. No income tax is payable by reason of receipt of the stock as a stock dividend.
3. The cash paid in lieu of fractional shares is taxable as ordinary income.

The 1099 Form is for your records, and this information should be taken into account in preparing any income tax returns that you file for the year 1972.

Sincerely,
BAGDAD COPPER CORPORATION
David C. Lincoln, *President*

26,170,000

27,900,000

BAGDAD COPPER CORP.

Phoenix, Arizona

NINE MONTHS REPORT 1972