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ARIZONA DEPARTMENT OF MINES AND MINERAL RESOURCES AZMILS DATA

PRIMARY NAME: INSPIRATION MINE

ALTERNATE NAMES:
RED HILL
JOE BUSH
THORNTON
LIVE OAK
PHELPS DODGE MIAMI OPERATIONS
MIAMI (PHELPS DODGE)
MIAMI (CYPRUS)
MIAMI SMELTER
CYPRUS MIAMI OPERATIONS
GMC LEACH FACILITY
KEYSTONE VEIN
BL LEACH FACILITY

GILA COUNTY MILS NUMBER: 136

LOCATION: TOWNSHIP 1 N RANGE 14 E SECTION 25 QUARTER NE
LATITUDE: N 33DEG 24MIN 30SEC LONGITUDE: W 110DEG 54MIN 00SEC
TOPO MAP NAME: INSPIRATION - 7.5 MIN

CURRENT STATUS: PRODUCER

COMMODITY:
COPPER SULFIDE
COPPER OXIDE
SILVER

BIBLIOGRAPHY:
ADMMR INSPIRATION MINE FILE
AZ MNG JNL, 2/1/22, P 16; 11/19, P 43
RANSOME, F.L. "GEOL GLOBE COPPER DIST" USGS PP 12, 160-161; 1903
PETERSON, N.P. "GEOL. & ORE DPSTS GLOBE-MIAMI DIST" USGS PP 342, P 137; 1962
AZBM BULL 145 "AZ ORE DPSTS" P 66-72; 1938
USBM IC 8154
ALSO IN SEC. 14, 26
ADMMR INSPIRATION SMELTER FILE
BL LEACH FACILITY IN SEC. 21, 22
GMC LEACH FACILITY IN SEC. 13, 14
TONTO N'TL FOREST, BLM, ARMY CORPS OF ENGRS, 1997, CYPRUS MIAMI LEACH FACILITY EXPANSION PROJECT; DRAFT EIS, APRIL 1997, 295 P.
TONTO FS, BLM, USCOE, FINAL EIS, 6/1998

INSPIRATION MINE(?)

Cyprus Minerals Company

7200 South Alton Way
Post Office Box 3299
Englewood, Colorado 80155
303-740-5000

For Immediate Release

CYPRUS MINERALS TO BUY INSPIRATION COPPER

Denver (May 25) -- Cyprus Minerals Company (NASDAQ: CYPM) today announced it has signed a letter of intent with Inspiration Resources Corporation to buy the assets of IRC's Inspiration Consolidated Copper Company subsidiary for $125 million.

Involved in the sale are open pit copper mines producing soluble oxide ore for dump leaching operations, a solvent extraction-electrowinning (SW-EX) plant, a smelter and a rod plant, all located near Miami, Arizona, about 75 miles east of Phoenix. These operations currently employ approximately 1,000 people. The sale is expected to close by July 1.

125 million pounds of SX-EW copper cathode will be produced from Inspiration's dump leach operations in 1989. Cyprus' total annual copper production is expected to climb to more than 525 million pounds in 1989, about one third of which will be from low cost leach operations. Additional electrowon copper production is planned at Twin Buttes and Casa Grande, recent Cyprus acquisitions.

Acquisition of the smelter, with annual smelting capacity of 450,000 tons of concentrates, eliminates Cyprus' dependence on short-term smelting contracts, allowing better control of costs. Acid produced in the smelting process is used in the dump leaching operation.

The rod plant, with a capacity of 265 million pounds a year, will allow Cyprus to benefit from conversion of about half of its annual copper production to higher margin wire bar, with access to a broader customer base.

-more-

Kenneth J. Barr, Cyprus president and chief executive officer, said, "This acquisition, in addition to contributing immediately to earnings, is a major step toward our goal of controlling all our costs of producing copper--from our mines to our customers--in order to be fully competitive in world markets."

The acquisition is subject to the approval of both companies' boards of directors, negotiation of documentation satisfactory to both parties, due diligence review by Cyprus, and the approval of the appropriate government agencies.

Cyprus also produces copper at the Bagdad, Sierrita, Twin Buttes, Casa Grande, and Mineral Park mines in Arizona and at the Pinos Altos mine in New Mexico.

Cyprus Minerals Company, a Fortune 500 company headquartered in Englewood, Colorado, is a major producer of copper, molybdenum, gold, lithium, coal, talc and barite. Following the Inspiration copper acquisition, the Company will employ approximately 6,400 worldwide.

# # # #

May 25, 1988

Richard H. Hagman
Manager
Public, Government and
Investor Relations
(303) 740-5362

INSPIRATION RESOURCES CORPORATION

250 Park Avenue
New York, N.Y. 10177
Telephone: (212) 503-3100
Telex: 291 533 IRC UR

INSPIRATION

News Release

FOR IMMEDIATE RELEASE

CONTACT: James Simon
(212) 503-3115 (Office)
(201) 744-3909 (Home)

INSPIRATION RESOURCES, MINORCO NAME NEW GOLD PARTNERSHIP

New York, NY, January 4, 1988-- Inspiration Resources Corporation (IRC) and Minorco have named their equally owned gold partnership, "Western Gold Exploration and Mining Company Limited Partnership" ("WestGold"). The formation of the limited partnership which is valued at $160 million, was completed on January 1, 1988.

WestGold consists of the assets of Inspiration Gold Incorporated, a wholly owned subsidiary of IRC, and $80 million in cash contributed by Minorco. The partnership's objective is to increase gold production from 65,000 ounces in 1987 to over 200,000 ounces, and to increase reserves to about 2.5 million ounces by the early 1990's. According to WestGold Managing Director John J. Ellis, exploration is currently underway at 17 properties throughout North America, and the partnership plans to spend $12 million for exploration in 1988.

IRC is a diversified natural resources company, which provides products and services for agriculture, mines base and precious metals and coal, and leases equipment.

Minorco is a publicly-held, Luxembourg-based company with investments in companies that operate worldwide and cover a broad spectrum of activities principally related to natural resources, of which gold mining is the most important.

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FOR IMMEDIATE RELEASE

CONTACT: Richard Horton
(602) 473-7004

INSPIRATION CONSOLIDATED COPPER COMPANY ANNOUNCES ORGANIZATIONAL CHANGES

Claypool, AZ, December 28, 1987 -- Inspiration Consolidated Copper Company (ICCCo.), a subsidiary of Inspiration Resources Corporation (IRC), has announced several organizational changes following IRC's recently announced creation of a new gold partnership. IRC's gold and copper operations had been headquartered in Scottsdale, AZ.

John Ellis has been chosen to lead Inspiration's new gold company partnership with Minorco and will shortly relocate Inspiration Gold's headquarters to Denver.

Robert A. Prescott, formerly V.P. and General Manager of ICCCo., has appointed named General Manager of the gold placer project at Nome, Alaska.

According to ICCCo. President Jacob Timmers, the following appointments reflect the expanded scope of responsibilities given the centralization of ICCCo.'s operations at its Claypool-based mining complex.

° Howard Bardwell has been promoted to Vice President of Operations from Manager Metallurgical Operations.

° Richard L. Horton, formerly Director, Personnel Services, has been appointed Vice President of Administration and Human Resources.

° Al Tittes, formerly Manager Metallurgical Services, has been named Vice President of Technology.

° Jack Winderl joins ICCCo. as Vice President of Finance and Treasurer. He previously served as Vice President of Administration & Information Services at Nerco Coal.

IRC is a diversified natural resources company, which provides products and services for agriculture, mines base and precious metals and coal, and leases equipment.

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INSPIRATION
RESOURCES
CORPORATION

250 Park Avenue
New York, N.Y. 10177
Telephone: (212) 503-3100
Telex: 291 533 IRC UR

final (+)

INSPIRATION

News Release

FOR IMMEDIATE RELEASE

CONTACT: James Simon
(212) 503-3115 (Office)
(201) 744-3909 (Home)

INSPIRATION RESOURCES AND MINORCO FORM GOLD PARTNERSHIP, PLAN TO EXPAND GOLD EXPLORATION AND PRODUCTION

New York, NY, December 17, 1987 -- Inspiration Resources Corporation (IRC) and Minorco today announced their agreement to form a partnership to explore for and develop gold properties in North America. The transaction is expected to be completed by year end.

The partnership will consist of all the assets of Inspiration Gold Inc. (IGI), a wholly owned subsidiary of IRC, and $80 million in cash contributed by Minorco. IGI's interest in the partnership will be 50% and, as general partner, IGI will manage the venture. Minorco will indirectly hold a 50% limited interest in the partnership. The partnership's objective is to increase gold production from 65,000 ounces in 1987 to at least 200,000 ounces by the early 1990's and to increase reserves ~~by~~ to about 2.5 million ounces by the early 1990's. John J. Ellis, currently Senior Vice President, Mining of IRC will become Managing Director of the partnership.

After this transaction, the partnership will have two producing operations -- a wholly owned offshore mining project near Nome, Alaska, and a 72.5 percent owned gold mine and mill at Austin in Central Nevada. In addition, IGI is contributing 15

exploration properties in the western United States. The increase in reserves and production will be achieved through the acquisition of new properties, increased exploration and development efforts and joint venture participation in exploration and development programs.

The new venture with Minorco's significant capital contribution will greatly accelerate IRC's ability to develop substantial gold production. The partnership plans to spend over $12 million in 1988 to explore and develop U.S. gold properties.

IRC and Minorco already are equal participants in Mingold Resources Inc., a Canadian gold mining and exploration company that was formed earlier this year. It is expected that Mingold Resources will be added to the partnership following receipt of favorable tax rulings.

Minorco is a publicly-held, Luxembourg-based company with investments in companies that operate worldwide and cover a broad spectrum of activities principally related to natural resources, of which gold mining is the most important.

IRC is a diversified natural resources company, which provides products and services for agriculture, mines base and precious metals and coal, and leases equipment.

# # #

Directors

C. Sterling Bunnell, *Retired – Former Chairman, Credit Policy Committee, of First National City Bank*
Richard R. Hobbins, *Partner – Chadbourne, Parke, Whiteside and Wolff, Attorneys*
H. Myles Jacob, *President of the Company*
George E. Kruger, *Vice President and Technical Services Division Executive of The Chase Manhattan Bank*
John H. Mathis, *Chairman of the Board of Lone Star Cement Corporation*
H. Carroll Weed, *Vice President and General Manager of the Company*
William Wraith, Jr., *Consulting Metallurgical Engineer*

Officers

H. Myles Jacob, *President*
H. Carroll Weed, *Vice President*
Edward F. Wendt, *Secretary and Treasurer*
Robert F. Morison, *Assistant Secretary and Assistant Treasurer*

Operating Staff

At Inspiration, Arizona

H. Carroll Weed, *Vice President and General Manager*
Abner H. Neal, *General Superintendent*
Henry Allen, Jr., *Assistant General Superintendent*
Richard R. Hyde, *Special Assistant to the General Manager*

J. Robert Watts, *Mine Superintendent*
Herbert H. Mellus, *Chief Mine Engineer*
H. Daniel Harper, *Superintendent – Leaching and Refining*
Paul M. Musgrove, *Concentrator Superintendent*
W. Harold Foard, *Smelter Superintendent*
John T. Eastlick, *Chief Resident Geologist*
Hugh W. Olmstead, *Chief Exploration Geologist*

Robert F. Morison, *Assistant Secretary and Assistant Treasurer*
Howard M. Propper, *Mechanical Engineer*
Thomas E. Tizard, *Chief Engineer – Power Plant*
William A. Mitchell, *Director of Research*
Duncan MacDonald, *Director of Industrial Relations*
Joseph M. Fentress, *Purchasing Agent*
Kenneth W. Whiteaker, *General Storekeeper*

At Christmas, Arizona

Robert H. Marshall, *General Superintendent*

INSPIRATION CONSOLIDATED COPPER COMPANY
Inspiration 85537
Phone: 473-2411
R. C. Cole, V. P., Gen. Mgr.
Duncan MacDonald, Dir. of Ind. Rel.
H. Allen, Jr., Gen. Supt. Oper.
H. D. Harper, Asst. Gen. Supt.
John T. Eastlick, Ch. Res. Geol.
Hugh W. Olmstead, Ch. Expl. Geol.
John C. Lorenzen, Rod Plant Supt.
Sherman Quayle, Concentrator Supt.
J. B. Holman, Dir. of Research
B. B. Whitney, Mine Supt.
T. M Anderson, Asst. Mine Supt.
H. M Mellus, Ch. Mine Engr.
W. Huenergardt, Jr., Supt. Leach and Refining
P. M. Musgrove, Conc. Supt.
J. B. White, Jr., Ch. Engr.
T. E. Bilson, Supt. Ox Hide Mine
J. M. Fentress, Purch. Agent
OP Mine Conc. Smelter-Electrolytic Refinery
Smelter Capacity 450,000 T
Electrolytic Refinery Cap. 70,000 T
1971 Prod. (5 mines):
9,492,520 T Ore
11,820,795 T Waste
56,088 T Cu
Empl. 2000

Directory of Active Mines October 1972

Annual Meeting of Stockholders – April 24, 1967
General Counsel: Chadbourne, Parke, Whiteside and Wolff, New York, N.Y.
Western Counsel: G. Henry Ladendorff, Phoenix, Arizona
Transfer Agent: First National City Bank, 55 Wall Street, New York, N.Y.
Registrar: Bankers Trust Company, 16 Wall Street, New York, N.Y.

INSPIRATION CONSOLIDATED COPPER

ANNUAL REPORT 1966

INSPIRATION CONSOLIDATED COPPER COMPANY

OFFICERS

H. Myles Jacob, President
H. Carroll Weed, Vice President
Edward F. Wendt, Secretary and Treasurer
Robert F. Morison, Assistant Secretary and Assistant Treasurer

Operating Staff

At Inspiration, Arizona

H. Carroll Weed, Vice President and General Manager
Abner H. Neal, General Superintendent
Henry Allen, Jr., Assistant General Superintendent

James R. Watts, Mine Superintendent
Bruce B. Whitney, Assistant Mine Superintendent
Charles B. Kettering, Plant Superintendent
H. Daniel Harper, General Foreman - Leaching Plant
Albert J. Turk, General Concentrator Superintendent
W. Harold Foard, Smelter Superintendent
Howard M. Propper, Mechanical Engineer
* Ethbert F. Reed, Chief Geologist
Thomas E. Tizard, Chief Engineer - Power Plant
William A. Mitchell, Chief Research Engineer
Ralph V. Bamerio, Chief Industrial Engineer
Robert F. Morison, Assistant Secretary and Assistant Treasurer

* retired 5-27-66

At Christmas, Arizona

Richard R. Hyde, General Superintendent
Thomas E. Bilson, Mine Superintendent
Paul M. Musgrove, Concentrator Superintendent

March 1, 1966

J.T. Eastlick, Chief Resident Geologist - Inspiration
W. H. Olmstead, Chief Exploration Geologist "

5-27-66

INSPIRATION CONSOLIDATED COPPER CO.
Inspiration, Arizona

1961 -Jacob,H. Myles, Pres., 25 Broadway, New York 4, N. Y.
H. C. Weed, V. P., Director & Gen. Mgr.
Carl G. Stunz, Asst. Gen. Mgr.
Abner H. Neal, Gen. Supt.
G. H. Ladendorff, Suite 716, 34 W. Monroe St., Phoenix 3

Acquired INTERNATIONAL SMELTING & REFINING CO. SMELTER, Miami, Ariz., in 1960.

PROPERTIES

INSPIRATION CONSOLIDATED COPPER MINE & MILL (file)	
CHRISTMAS MINE (file)	Gila
LEVIATHAN MINE (file)	Mohave
CLEOPATRA MINE (file)	"
RED HILL MINE	**Gila**
MOWRY AREA	

5-27-66 H.D. Harper, Supt. of Leaching and Refining
J.T. Eastlick, Chief Resident Geologist
W. H. Olmstead, Chief Exploration Geologist

INSPIRATION CONSOLIDATED COPPER COMPANY

INSPIRATION, ARIZONA

HISTORY

Inspiration, like most mines in Arizona owes its discovery to the old-time prospector and his burro. The beginning o mining operations on the Inspiration property dates back to the turn of the century.

The earli st exploratory working was known as the Woodson Tunnel. This tunnel, driven by hand, went into the hillside for 1000 feet. By 1908, local owners had consolidated claim and groups of claims int a single holding and had induced outsid capital to form the Inspiration Mining Company. This name was later changed to that of Insp.ration Copper Company. Following this, through a long series of events and negotiations, which saw a merger of the Inspiration Copper Company with the Live Oak Development Company, the Inspiration Consolidated Copper Company came into being in the year 1911. Later the Warrior Copper Company and the New Keystone Copper Company, as well as other properties, were acquired by Inspiration.

Plans were soon formulated to engage in a large-scale copper mining operation. The mine was developed and made ready for operations A complete surface plant, railroad and concentrator were constructed. This concentrator was the first large-scale plant of its kind to make use of the Flotation Process to recover the copper minerals from the ground-up rock In all, even at that time, it was necessary to spend close to $20,000,000 before one pound of copper was produced. Construction was completed and Inspiration went into production in 1915.

USES OF COPPER

Copper is one of the oldest known metals. The word copper originated many thousand years ago when half savage tribes living on the island of Cyprus called it "Cyprian Metal". It has kept the name through all the ages. Our tongues have changed it to copper. Copper plays an important part in the industry of the United States. In fact it is the backbone of the electrical industry. Because of this 60% of the annual output of metallic copper in the United States goes into electrical machinery power transmission lines and telegraph, telephone, radio and television communication lines and equipment.

Other typical uses of copper include sheet for roofing, tubing for gas, steam, water and oil lines, extruded shapes for industrial equipment, drawn shapes for molding, and all types of brass. It is also used in the coins of many nations and for jewelry and household articles. One use for copper which is not well known is as an insect-destroyer for which one of its compounds, copper sulphate, is used.

LOCATION

The Inspiration Consolidated Copper Company's operations are entirely in Gila County, Arizona. Inspiration is one of the large copper producers in the state, producing approximately 11% of the State's output. In comparison with the nation's copper production, Inspiration produces approximately 5% of all copper produced in the United States. The State of Arizona, with its many copper producing districts, accounts for close to 50% of all domestic production. The mine, the town of Inspiration with its U. S. Post Office, and the Company's plant and offices are just north of the town of Miami and are reached by turning off U. S. Highways 60-70 about three-fourths of a mile east of Miami and following the paved road for a distance of about three miles. It is approximately eleven miles around the property.

THE ORE BODY

Inspiration is designated as one of the "Porphyry Coppers". Such an ore body is one in which the copper minerals are widely distributed throughout a large rock mass. At Inspiration the distribution is such that one ton of ore contains less than seventeen pounds of copper. Peculiar to Inspiration is the fact that about half of the copper minerals are present in the oxidized form, the other half being sulphide minerals, mainly chalcocite (Cu_2S). It is presence of the oxide minerals which gives the green coloration to much of Inspiration's ore.

MINING UNDERGROUND

From the start of operations in 1915, up until 1948, all of Inspiration's production came from underground mining, in which a mining method, known as "block caving", was utilized for the extraction of the ore.

"Block caving" is a method particularly adapted to the mining of large low-grade ore bodies. The rate of production is high and the cost of breaking and handling ore from the "block" or "stope" can be kept relatively low. Largely, the force of gravity is used, both to break the ore and to deliver it to the ore trains operating on the haulage level under the "block".

Ore trains made up of twelve to twenty-four five-ton cars haul the ore from the "stope" areas to the shaft, where it is hoisted to the surface in twelve-ton skips.

Inspiration's Main Shafts go to a depth of 850 feet and the Live Oak Main Shaft goes to a depth of 1200 feet, with stations at various levels. From the Live Oak Main Shaft bins, ore in the past was hauled in train loads of sixty-ton railroad cars to the Coarse Crushing Plant at the Main Shaft.

OPEN PIT MINING

The rapid development of modern methods and equipment for moving earth, coupled with the steady increase in underground mining costs, made it necessary to investigate the possibility of mining much of Inspiration's remaining ore

tonnage by Open Pit methods. The decision to go to Open Pit mining followed, and stripping of overburden was started in 1947. The first Open Pit ore was mined in March, 1948. The adoption of Open Pit methods required the expenditure of several million dollars to meet the cost of construction and equipment of new plant facilities and stripping of waste rock.

Ore and waste are mined by large electric shovels and transported by 40-ton diesel-powered haulage trucks. Considerable equipment, in the way of bulldozers and carryalls, is also required.

Open Pit ore is delivered to a large 42-inch gyratory crusher, where it is crushed down to five inch size for delivery to the main Coarse Crushing Plant. At this point the Open Pit ore joins the underground ore for final crushing prior to delivery to the treatment plants.

However, not all of the Open Pit ore is so hauled. To deliver ore by truck from the lower benches of the Thornton Pit to the Primary Crusher would involve a long and difficult truck haul. Accordingly, advantage is taken of the fact that the original main haulage way of the Inspiration Division of the mine is practically under the Thornton Pit. A special block was caved into the bottom of the Pit and neighboring ore is moved into the open block by bulldozers, carryalls, and/or trucks. From this transfer block the ore is drawn out into trains of mine cars on the underground haulage level and hauled to the main shaft, where it is hoisted and dumped into storage bins. In this way the long, difficult truck haul over the mountain is avoided by going under the mountain.

ORE TREATMENT

Early in Inspiration's operations it was recognized that large reserves of copper were available in the "oxide forms", which could not be recovered by treatment in a concentrator. Years of experimental and test plant work evolved a leaching process which would successfully treat the major portion of Inspiration's ore. A Leaching Plant was erected at a cost of six million dollars. This plant was put into operation in 1926. From 1926 to 1956, inclusive, this process accounted for all but a minor amount of Inspiration's production.

The Inspiration Leaching Plant during the 1926 through 1956 period was the only one of its kind in the world In this treatment process copper in both the oxide and sulphide form was recovered by leaching, utilizing as a solvent a solution containing both sulphuric acid and ferric (iron) sulphate. This leaching operation was carried on in large leaching vats, each of which holds 10,000 tons of ore. Nine days of contact time was necessary to dissolve the copper in the sulphide portion of the ore.

After leaching the copper dissolved from the ore is recovered from the solution in the electrolytic Tank House In this process an electric current is passed through the solution breaking down and precipitating the copper on thin copper starting sheets suspended in the electrolytic cells. In the course of six days these starting sheets, made at the plant and weighing

thirteen pounds, are built up to a weight of one hundred pounds, then the sheets are withdrawn and shipped as electrolytic copper. Such copper is over 99.9% pure. However, the copper sheets, or cathodes, as they are known, still must be melted and cast into commercial shapes as required by the market. In the electrolytic plant the electric power utilized would supply that needed by a good sized city.

A vital cog in the Leaching Plant operation is the iron launder system. In these iron launders the last trace of dissolved copper picked up in wash solutions, used to wash the ore after leaching, is precipitated out on precipitating material. This iron precipitation material is made up of processed tin cans. The so-called tin can is in reality an iron can coated with a very thin film of tin. Tin cans are cleaned, burned, and shredded and in this process form make an excellent material on which to precipitate dissolved copper from solutions. Most of the tin cans used by Inspiration come from the Pacific Coast areas. Total consumption of processed cans amounts to better than 2,000 tons per month.

To provide sulphuric acid for leaching, Inspiration operates a sulphuric acid plant, which can produce up to 200 tons per day using crude sulphur shipped in from east Texas or Wyoming mines.

PRESENT PROCESS

By 1954 increasing copper values in sulphide minerals, not soluble in the ferric iron solution, were noted. The grade of the remaining ore was dropping and the capacity to produce copper was limited by the nine-day leaching time. These factors brought about a study which resulted in a radical change in the metallurgical treatment of the ore. By 1957 the old concentrator had been completely rehabilitated and new,modern machinery installed. In the leaching process only that copper soluble in sulphuric acid, plus the sulphide dissolved in a low ferric iron solution, continued to be sent to the Tank House for electrolytic precipitation, as previously described. The contact time for leaching was cut to four and one-half days. Sulphide copper remaining in the ore is then sent to the concentrator for recovery by the flotation process.

The concentrate so recovered is sent to the Smelter. The copper is fire refined copper and cast in the form of anodes. These anodes are returned to the Tank House.

Due to the change in process, with less dissolved copper being sent to the Tank House, excess capacity was available. This excess was converted to a Refining Section. Here, copper anodes returned from the Smelter are further refined to electrolytic cathodes. In this process the copper is dissolved from the anode and plated on a starting sheet as electrolytic copper. These cathodes are heavier than the Commercial Section cathodes and weigh as much as 250 pounds.

MOLYBDENUM RECOVERY

With copper concentrate being made in volume under the revised process, it

was found that such concentrate contained a small amount of Molybdenum Sulphide (Moly). A section was added to the concentrator, to recover the Moly. This is a difficult and involved process.

SMELTING DEPARTMENT

The Smelter was built in 1915 to handle concentrates from the District's mines and to treat custom ores and concentrates. It was owned by the International Smelting and Refining Company. This plant was purchased by Inspiration in April of 1960. It continues to handle District concentrates and custom business.

At the Smelter properly mixed concentrates and flux are melted in a reverbatory furnace at a temperature of approximately 2700 degrees. The copper collects in the bottom in the form of "Matte", which is an artificial copper-iron sulphide. Some of the sulphur is burned off. Impurities and waste material float on top and are skimmed off and discarded as slag.

The matte is tapped off at a point below the slag level and is poured in molten form into a converter. Here, air is blown through the molten material and flux is again added. The air oxidizes (burns) the iron in the charge and the sulphur is burned off. Slag is formed and is poured off and returned molten to the reverbatory furnace. The reaction in the converter provides its own heat. Final product from the converter is known as "Blister Copper".

Blister copper may be cast into cakes or poured molten into the anode furnace.

In the anode furnace it is further refined to fire refined copper by blowing with air and "poling" with oak poles.

It is interesting to note the many steps in the processing of copper and the work necessary to produce a final product.

Inspiration Ore	0.80% copper
Concentrates	15.0% to 30.0% copper
Matte	35% to 40% copper
Blister Copper	99.4% copper
Fire Refined Copper	99.6% copper
Electrolytic Copper	99.95% - 99.97% copper.

POWER PLANT

Requirements for electric power at Inspiration are quite large. To meet the original need, a 25,500 KW Power Plant was constructed. In this plant, natural gas piped from New Mexico is burned under boilers to provide the steam to operate the turbo generators. Waste heat steam from the Smelter boilers is also utilized.

The Inspiration power system is tied into that of the Salt River Valley Water Users Association, and most of the power needed is supplied by them. On many occasions the entire Inspiration load has been carried by the Water Users system, which derives much of its power from hydro-electric generating stations along the Salt River.

SHOPS AND SERVICE

The Company has its own shops, warehouse, and service departments. The shops are fully equipped and are capable of handling almost everything in the way of repairs and maintenance which may be required.

RAILROAD

The Inspiration Company operates seventeen miles of standard gauge railroad. This railroad delivers ore to the treatment plants and concentrates to the Smelter, as well as handling inbound freight and outbound shipments of copper. The railroad connects with the Southern Pacific at the foot of the hill.

TOWNSITE AND STORE

The Warrior Cooperative Mercantile Company operates a general store at Inspiration. This store is operated to serve the needs of Inspiration employees.

Operations are on a non-profit basis and profits earned are returned twice yearly to employee customers in proportion to their purchases throughout the period.

HOSPITAL AND CLINIC

The Miami-Inspiration Hospital is maintained jointly with other companies in the district. It is a modern fifty-bed hospital, fully approved by the American College of Surgeons. Also jointly maintained is the Miami-Inspiration Clinic, located on the Globe-Miami Highway. These facilities not only serve industrial cases but the employee and his family is provided medical care at exceptionally low rates. In all, the families of some 2,000 mining employees in the district are served by this Hospital.

STATISTICS

Tons of Ore Mined and Treated - 1915 to 1960	165,212,597
Pounds of Copper Produced - 1915 to 1960	3,163,998,000
Tons of Ore and Waste moved from Open Pit in normal 24-hour Work Day	35,000
Wages and Salaries paid in 1959	$ 6,442,160
Supplies purchased in 1959	$ 6,523,625
State, County, and District Property Taxes, 1959 . .	$ 815,000
Number of Employees	1,550
Number of Stockholders	8,343

In 1959, Inspiration produced slightly over 5% of the copper produced in the United States.

CHRISTMAS MINE

Inspiration is actively developing the old Christmas Mine and expects to have it in production by 1960. This mine is located some forty miles from Inspiration. It is one mile west of State Highway 77 between Globe and

Winkelman, Arizona.

A complete surface plant is being constructed. Concentrates from this mine will be sent to our Smelter.

ISSUED JANUARY, 1954

ICCCO.

Revised May, 1954

Revised July, 1960

ARIZONA DEPARTMENT OF HEALTH SERVICES

BRUCE BABBITT, Governor
LLOYD F. NOVICK, M.D., M.P.H., Director

JOINT NOTICE OF PROPOSED ACTION

by the

U. S. Environmental Protection Agency
Region 9 (W-5-1)
215 Fremont Street
San Francisco, CA 94105

Telephone: (415) 974-8105

On Modification of a National Pollutant Discharge Elimination System (NPDES) Permit to Discharge Pollutants to Waters of the United States

State of Arizona
Department of Health Services
2005 North Central Avenue-Room 300
Phoenix, AZ 85004

Telephone: (602) 257-2270

On Request for Certification for Compliance with Applicable Effluent Limitations and Appropriate Requirements of the State of Arizona

Public Notice No. 38-86-AZ

October 6, 1986

The Environmental Protection Agency (EPA), Region 9, San Francisco, California, and the Arizona Department of Health Services (ADHS) are jointly issuing the following notice of proposed action under the Clean Water Act.

On July 23, 1985, the Regional Administrator, Region IX, Environmental Protection Agency, issued a National Pollutant Discharge Elimination System (NPDES) permit to the following discharger:

Inspiration Consolidated Copper Company
Inspiration Area
P. O. Box 4444
Claypool, Arizona 85532
NPDES Permit No. AZ0020508

The applicant operates the Inspiration Mine in Gila County. The existing discharges consist of Storm Water runoff. Discharges No. 001 at latitude 33° 23' 40" N, longitude 110° 52' 49" W; No. 003 at latitude 33° 24' 20" N, longitude 110° 51' 36" W; No. 004 at latitude 33° 24' 50" N, longitude 110° 50' 48" W and No. 005 at 33° 22' 57" N, longitude 110° 53' 38" N are all to Bloody Tanks Wash, tributary to Miami Wash. Miami Wash has protected uses of Aquatic and Wildlife, Agriculture Irrigation and Agriculture Livestock Watering. The permit contains discharge limits for Cadmium, Copper, Lead, Mercury, Zinc and pH. The permit expires June 20, 1990.

The proposed modification consists of adding discharge point No. 006 at latitude 33° 22' 51" N, longitude 110° 54' 23" W and No. 007 at latitude 33° 25' 58" N, longitude 110° 54' 51" W. No. 006 discharges to Bloody Tanks Wash tributary to Miami Wash while No. 007 discharges to Miami Wash. We are also adding a monitoring requirement for total dissolved solids.

Only those conditions which we propose to modify are reopened. All other requirements of the existing permit remain in effect for its duration. Persons wishing to comment upon or object to the proposed modification(s), or request a public hearing pursuant to 40 CFR 124.11 should submit their comments or requests in writing within thirty (30) days from the date of this notice, either in person or by mail to:

U. S. Environmental Protection Agency, Region IX
Grants and Permits Administration Branch, W-5-1
Attn: Andrew Lincoff
215 Fremont Street
San Francisco, California 94105

Telephone: (415) 974-8284

The Administrative Record, which includes the NPDES permit, draft modifications, fact sheet or statement of basis, comments received, and other relevant documents, is available for review and may be obtained by calling or writing to the above address, or:

State of Arizona
Department of Health Services
Attn: Wayne H. Palsma - Room 300
2005 North Central Avenue
Phoenix, Arizona 85004

Telephone: (602) 257-2270

All comments or objections received within thirty (30) days from the date of this notice, will be retained and considered in the formulation of the final determinations regarding the permit modification(s). When public interest warrants, the Regional Administrator may grant an extension of the thirty-(30) day comment period for the submittal of comments or objections. If written comments indicate a significant degree of public interest in a proposed modification, the Regional Administrator shall hold a public hearing in accordance with 40 CFR 124.12. A public notice of such hearing will be issued at least thirty (30) days prior to the hearing date. A request for a public hearing must be in writing and state the nature of the issues proposed to be raised in the hearing.

If no public hearing is held, and the final determinations of the Regional Administrator, after consideration of all comments and objections, are substantially unchanged from the tentative determinations, the Regional Administrator shall forward a notice of the final determination to the permittee and to any person who has submitted written comments regarding the permit modification.

If no public hearing is held, and the final determinations of the Regional Administrator are substantially changed from the tentative determinations, the Regional Administrator will give public notice of such determinations. The Regional Administrator shall forward a copy of the notice and a copy of the final determination to the permittee and to any person who has submitted written comments regarding the permit modification.

The Arizona Department of Health Services is considering a request to certify the discharge as affected by the permit modification described above, pursuant to Section 401 of the Clean Water Act. The certification will set forth any effluent limitations and monitoring requirements necessary, if any, to assure compliance with any applicable effluent limitatons and other limitations, under Sections 301 and 302 of the Clean Water Act, standard of performance under Section 306 of the Act, or prohibition, effluent standard, or pretreatment standard under Section 307 of the Act, and any other appropriate requirement of State law. No permit modification will be issued if certificaton is denied by the State.

Persons wishing to comment upon or object to certification by the Arizona Department of Health Services or request a public hearing should submit their comments or requests in writing within thirty (30) days from the date of this notice, either in person or by mail, to the State agency address shown above. The permit modification(s) will become effective thirty-three (33) days following the date they are mailed, unless a request for an evidentiary hearing is granted. Requests for an evidentiary hearing must be filed within thirty-three (33) days following the receipt of the final determinations and must meet the requirements of 40 CFR 124.74. All written requests for evidentiary hearing should be addressed to the Regional Administrator, Environmental Protection Agency, Region IX, Attn: Permits Record Coordinator (W-5-1), 215 Fremont Street, San Francisco, California 94105.

If the Regional Administrator grants a request for an evidentiary hearing, public notice of such hearing will be given. Any person may submit a request to be admitted as a party within thirty (30) days after the publication date of the public notice of an evidentiary hearing. If no evidentiary hearing is requested, the permit modification will be issued or denied, as appropriate, and this action will be final.

Please bring the foregoing notice to the attention of all persons who you know would be interested in this matter.

File in mine file 1 jw

Inspiration Consolidated Copper Company

Suite 1870, First National Bank Plaza 100 W. Washington St. Phoenix, Arizona 85003 (602) 258-4561

August 27, 1976

Mr. Glenn A. Miller
Mineral Resources Specialist
Department of Mineral Resources
Mineral Building, Fairgrounds
Phoenix, Az. 85007

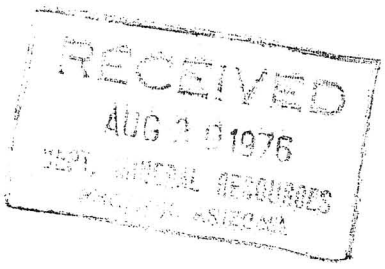
Dear Mr. Miller:

In reply to your request of August 19, I am pleased to advise that the rated capacities of our two concentrators are:

(1) Inspiration - 20,000 TPD, and

(2) Christmas - 5,500 TPD

Yours sincerely,



R. C. Cole
Vice President

RCC:jv

AUTOMATIC LUBRICATION

OF

HAULAGE TRUCKS

By

John J. Theiler

Inspiration Consolidated Copper Company

Inspiration, Arizona

ARIZONA SECTION AIME
OPEN PIT DIVISION

December 7th, 1964

Automatic Lubrication of Haulage Trucks

First, let us consider some of the benefits brought about through the use of a dependable centralized lubrication system. These advantages are:

1. Uninterrupted Production
2. Extended Machinery Life
3. Good Housekeeping
4. Lower Maintenance Costs

Of these, extended component life and lower maintenance costs are the most important to truck maintenance.

Prior to the installation of the automatic lubrication system, all the haulage trucks were serviced by hand every three shifts. This was found to be inadequate.

Early in 1963, Inspiration began a program to automate the lubrication of several critical points on their KW Dart 37SL Haulage Trucks, the first such program of its kind in the southwest. As there were no automatic lubrication systems designed for trucks at that time, an Industrial Unit was adapted for use on the trucks. The system decided upon was a Lincoln Engineering Company System, called a Lincoln Multi-Luber Lubricating System, consisting of a Model #82539 Cycle Timer, Model #83886 Centro-Matic Ram Pump with Series SL-32 Lubricant Injectors. All supply lines are of 1/4" steel tubing or hose and all feeder lines are 1/8" steel tubing or hose. Series SL-32 Injectors have an adjustable delivery from .001 cu. in. Min. to .008 cu. in Max. Lubricant used in the system is Texaco Marfak Multi-purpose grease. The capacity of the reservoir is 17 oz. and needs to be filled only about every five shifts. As all trucks are serviced every four shifts, the reservoir needs only between 10 and 12 ozs. of lubricant to fill it again.

There are twelve points that are lubricated by the system.

They are:

1. Upper and Lower L/H King Pin
2. Upper and Lower R/H King Pin
3. Both ends of the tie rod
4. Both ends of the Primary Drag Link
5. Both ends of the Secondary Drag Link
6. Vickers Anchor Ball
7. Vickers Valve Ball

Upper and lower King Pin bushings are given a maximum of .008 cu. in. of lubricant to insure that all dirt is continually flushed out of the bushings. All other points are given various amounts of lubricant depending on their needs. Injectors can be adjusted by a simple nut adjustment to insure that the bushing is always wet with lubricant. The drive lines, hoist scope bushings, bed hinges, brake cams, hoist and shifting quadrants are lubricated when the truck comes in for service. Some of these points could be lubricated automatically as the automatic system can be easily expanded. The Ram Pump has a capacity of .450 Cu. In. of lubricant per stroke. Therefore, up to 56 injectors at full delivery of .008 cu. in. could be used without having to change the present setup.

Automatic lubrication of all the older trucks was completed in December, 1963. All of the new trucks were automated as they arrived, until the complete fleet, of thirty-one trucks, was automated in August, 1964.

When a multi-luber system is used on a truck, a branch airline from the air brake hose is connected to the piston air inlet of the cycle timer. Every operation of the brake pedal will provide the intermittent flow of air to actuate the Cycle Timer. A restrictor, as a safety device to insure proper brake operation, is installed in this line, should a leak develop in the air supply line to the timer.

The cycle timer consists of two separate mechanisms:

1. A piston mechanism which moves forward and returns with each charge of air (intermittent air supply).

2. A timing mechanism consisting of a timing disc which is rotated by the piston movement.

The intermittent air supply moves the piston to actuate the timing mechanism. The ratio setting determines the amount of movement of the timing disc in relation to the stroke of the piston. The timing disc teeth are engaged by a pawl attached to the piston. Forward movement of the piston turns the timing disc a specific number of teeth, (depending on the ratio setting.) As the timing disc is completing a full revolution, air passage ports in the disc align with the inlet and outlet ports, permitting the constant air supply to pass through to the multi-luber. The cycle timer is adjustable to obtain the following ratios, 6 to 1, 10 to 1, 15 to 1, 20 to 1, 30 to 1, and 60 to 1. The ratio is easily changed to suit any and all conditions. After a test period it was decided that the ratio of six brake applications to one complete turn of the timing disc best suited our conditions.

The Multi-Luber (Ram Pump) must be installed in a vertical position for proper operation, as a grease reservoir is mounted on top of the ram. The air supply enters the bottom of the air cylinder moving the piston upward. As the piston moves upward, the plunger is also moved upward into the bushing. The lubricant in the transparent reservoir flows through the cavity in the bushing. As the plunger moves upward, it moves the charge of lubricant from the bushing cavity into the bushing, through the outlet check to the outlet of the ram pump. The instant the air pressure entering the air cylinder is relieved, the piston spring moves the piston and plunger downward.

In its extreme down poition, the plunger has retracted below the bushing cavity, permitting the cavity to be recharged with lubricant.

From the Ram Pump, the lubricant goes through the supply lines to the injector manifolds. The incoming lubricant from the supply line moves the injector piston forward, forcing precharge of lubricant into bearing. When the piston is fully forward the measuring chamber is filled and the operating indicator moves out. When the system is vented, the piston returns to rest position, transferring lubricant in the measuring chamber to the discharge chamber. On the next cycle, the piston forces the lubricant out of the discharge chamber through outlet check into the feed line to the bearing, while refilling the measuring chamber again.

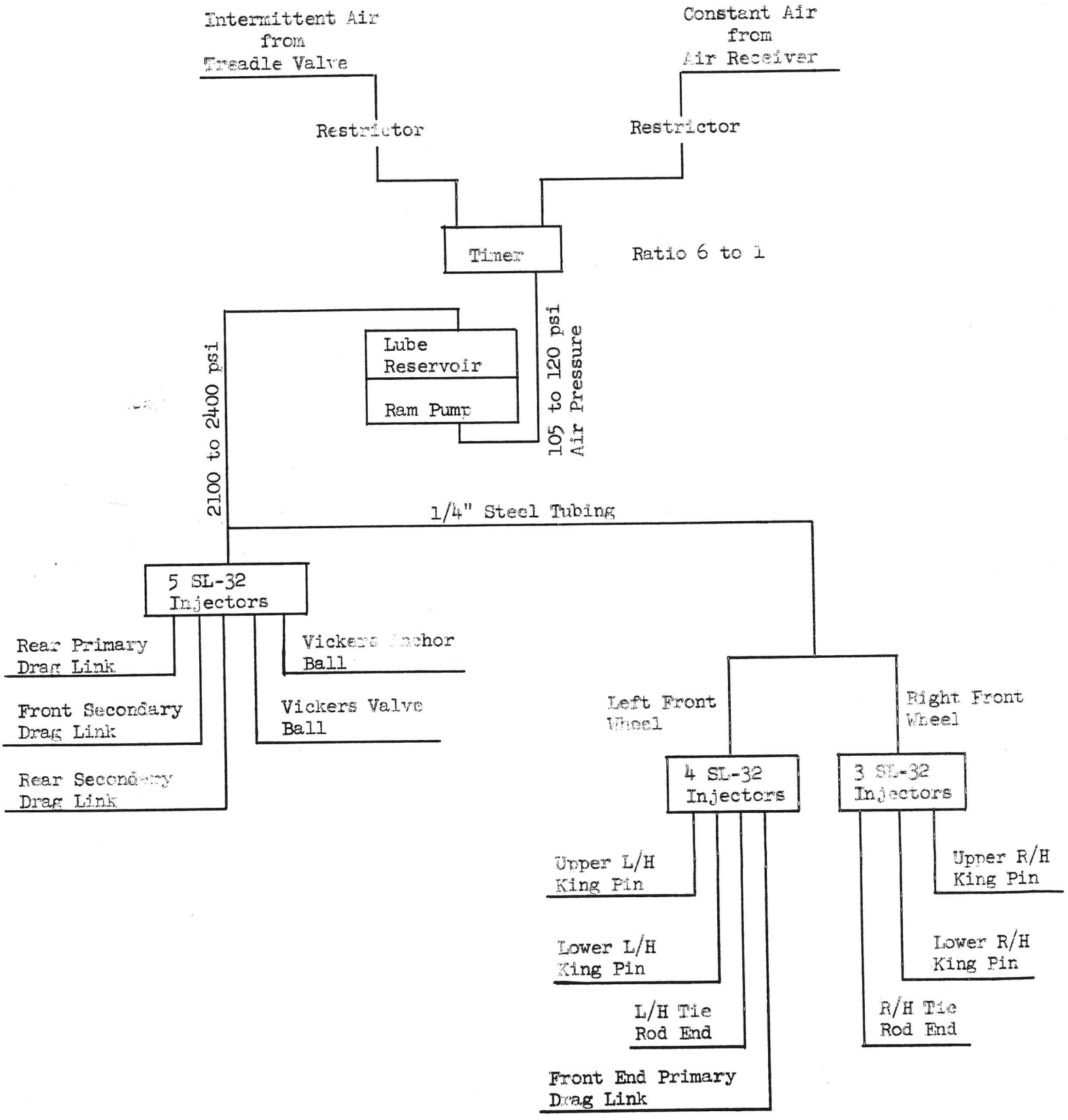
The system is easily checked by visual observation and any pinched lines or inoperative injectors can be seen and repaired. A further safety feature is the 1/8" hose used from the injectors to the bearings. It will blow out if the bearing is plugged. Operating pressure of the system is 105 to 120 PSI to the Ram Pump. The Ram Pump ratio is 20 to 1, therefore the lubricant pressure is 2100 to 2400 PSI.

The cost of installation is low. The Industrial Engineering Department undertook a time study of a complete installation. It takes one man two and one-quarter shifts to install one, and the parts cost slightly over $200.00 for a total cost of $260.00. This system will rapidly pay for itself in reduced maintenance and servicing costs.

Prior to installation of the automatic greasing system we had obtained a maximum of 3000 hours on the left hand King Pin. This King Pin is the one that gets the most wear, due to much right-hand turning. Since the installation of the system, none of the L/H King Pins have failed and only one R/H King Pin failure has occurred, due to some unknown reason. Some of the trucks have in excess of 7500 hours since installation of the lubricant system, without failure of any of the lubricated points.

Due to the installation of the automatic lubrication system, we have been able to extend the service period from 3 to 4 shifts. During this service we refill the grease reservoir for the automatic lubrication system, service the air cleaners, and lubricate all the points that are not automatically lubricated. We feel that these points are not as critical as the others. It also gives us a chance to inspect the truck and make any repairs that are required.

AUTOMATIC LUBRICATION SYSTEM FOR HAULAGE TRUCKS
at
INSPIRATION CONSOLIDATED COPPER COMPANY
Inspiration, Arizona



INSPIRATION CONSOLIDATED COPPER MINE

Interview with Public Relations Department of Inspiration. They made a few changes and suggestions on active mine list. Interview with Dave Johnson, geologist, as Eastlick was out. He supplied more changes on active mine list. Eastlick and Olmstead are in charge of the stripping at the Barney & Red Hills mines. FTJ WR 6/15/72

Active mine list - October 1972 - Empl. 2000 (1971 figures 9,492,520 T Ore, 11,820, 795 T Waste, 56,088 T Cu).

To Inspiration to interview Mr. Hugh Olmstead. He said Barney orebody about worked out but finding more ore on Red Hill which is near office. FTJ WR 12/14/72

Returned to Globe and visited at Inspiration geology office. Exploration continues around present operations by thecompany. FTJ WR 6/14/73

To Inspiration office - visit with Jack Eastlick , geologist. FTJ WR 2/15/73

To Inspiration office where Eastlick and Olmstead were in the field. FTJ WR 10/11/73.

Went on to Inspiration and interview with Duncan MacDonald, Director of Industrial Relations. He corrected personnel of Directory. Interviewed with Dave Johnson, geologist for Inspiration. FTJ WR 10/12/73

A call was made to Joe McDonald, smelter supt., Inspiration, for information on their interest in buying small lots of direct smelting copper ore and concentrates. Joe McDonald will buy copper ores and concentrates at the present time. An Insp. smelter schedule is attached. The present desire for ores and concentrates is expected to last for at least 3 months. Prospective shippers should send a representative 3 pound sample to Inspiration for evaluation. If the 3 pound sample meets with their approval, they will accept a trial carload. KAP WR 11/27/73

Gerry Scott, Southwest Salt Company, said both Inspiration and San Manuel were taking 300 tons/month. GW WR 11/26/76

CJH WR 8/8/80: Elmer Vondriska, Chloride AZ reported that Inspiration Development Corp has "papered" many claims.

CJH WR 11/14/80: Visitor: Richard L. Nichols, VicePresident, The American Appraisal Co., 525 East Michigan Street, Milwaukee, Wisconsin 53201, phone (414) 271-7240. He is retained by Inspiration Copper to write a report supporting their appeal of 1980 property taxes.

INSPIRATION CONSOLIDATED COPPER CO.

Visited Hugh Olmstead and Jack Eastlick at Inspiration. Inspiration is drilling at the Pinnacle which is north of Ox Hide. Also drilling at Troy. FTJ WR 5/31/68

Black Mountain Project. One drill operating. GWI WR 6/31/68

Inspiration Consolidated Copper is still drilling at their Black Mtn. project. (This includes the Hotboy and Ardmore mines). GWI Quarterly Report June, 1968

Visited Inspiration Geology office - interviewed both Hugh Olmstead and Jack Eastlick. Exploration and Development continuing. Olmstead has been in Nevada and expects to return. They continue to study the Black Mtn. area northwest of San Manuel. FTJ WR 1/31/69

Visited Inspiration offices - Olmstead said they were going to examine several properties in Nevada. FTJ WR 3/28/69

Inspiration continued exploration and development at their Barney and Red Hill properties. FTJ 3rd¼ 71-72 (see Porphyry Copper Co. & Barney Copper Co. Holdings file - Gila County)

Inspiration increased their ore production and reported increased earnings. They also are contemplating putting the Barney Mine, near Red Hill, into production. FTJ Annual Report 8/19/71

Returned to Globe and visited at Inspiration geology office. Exploration continued around present operations by the company. FTJ WR 6/14/73

Inspiration Copper Company continued mining at the Ox Hide and Christmas mines. At Inspiration, additions to smelter and changes go on continually. FTJ Annual Report 6/28/73

To Red Hill mine. Charles Nichols, contractor, Globe-Miami Highway is contract mining for flux to Inspiration. They continuedexploration drilling of the Red Hill area we of the office. FTJ WR 10/12/73

A call was made to Joe McDonald, Smelter Superintendent, Inspiration Cons. Copper Co., for information on Inspiration's interest in buying small lots of direct smelting copper ore and concentrates. Joe McDonald will buy copper ores and concentrates at the present time. An Inspiration smelter schedule is attached. The present desire for ores and concentrates is expected to last for at least 3 months. Prospective shippers should send a representative 3 pound sample to Inspiration for evaluation. If the 3 pound sample meets with their approval, they will accept a trial car load. KAP WR 11/27/73

INSPIRATION CONSOLIDATED COPPER MINE

Visited geology office of Inspiration - Jack Eastlick and Hugh Olmstead. Nothing new for them to report. Miami has about 6 drills drilling on Inspiration tailings pile and around smelter. Miami making plans to mine the orebody. Bert Frazier is General Foreman under Fletcher, replacing Bill Sloan, who is Chief Mining Engineer at Copper Cities. FTJ WR 1/30/70

Visited with Hugh Olmstead at the Inspiration geology office. Busy at the Safford project. FTJ WR 3/27/70

Active Mine List May 1970 - 2064 men - Richard C. Cole, Mgr.
Active Mine List Oct. 1970 - 2050 men - Richard C. Cole, Gen. Mgr.

To Inspiration personnel office - interview with Mr. Glidewell, Their personnel office is in public relations office where they have excellent display of minerals, copper art, etc. for public interest. Visited Jack Eastlick and Hugh Olmstead in geology office. There seems to be some concern regarding copper outlook. Cutting down on outside exploration, etc. FTJ WR 1/29/71

To Miami - Inspiration office. Visited with Jack Eastlick - no particular changes. To Inspiration public relations office and talked with Jack Glidewell. He is still using the "Copper" film in training sessions in both Inspiration and Tucson. FTJ WR 3/31/71

Inspiration operated at its regular rate. FTJ WR 4/5/71

Active Mine List August 1971 - 2,000 employees

Inspiration increased their ore production and reported increased earnings. They also are contemplating putting the Barney Mine, near Red Hill, into production. FTJ Annual Report 8/19/71

To Globe. Visited geology offices at Miami Copper and Inspiration. Inspiration will accept siliceous ores, in fact are "hard up" for it. FTJ WR 2/10/72

Went to Inspiration office and visited with Jack Eastlick and Hugh Olmstead. FTJ WR 4/13/72

The Ox Hide and Inspiration mines produced at their regular rate. FTJ 3rd QR 71-72

Inspiration Copper Company were installing new crushing facilities and conveying systems to increase plant capacity, probably by 20%. Also, the company has started its new smelter construction with pollution control equipment. Development and production of the Red Hill Mine continued and Black Copper Mine was producing as was the Ox Hide and Christmas Mine. FTJ 4¼ '72

ATION CONSOLIDATED COPPER CO.

.tions:

sited Inspiration geology department. Jack Eastlick in New York and W.H. Olmstead in field. ıspiration is continuing to drill schulze property; also constructing a pilot plant a few ındred feet north of Miami-Superior highway near their drill site. FTJ WR 1/27/67

Interview with Cannady and Jack Eastlick at Inspiration geology office. Inspiration still has option on the Troy property, inactive at time of visit. FTJ WR 9/29/67

Interview with Jack Eastlick at Inspiration. Geology department has plenty of work apparently. FTJ WR 1/26/68

Interview with Hugh Olmstead at Inspiration office. They are rehabilitating a shaft on the Cruse prospect near Willowsprings Ranch west of San Manuel. FTJ WR 3/29/68

Visited Hugh Olmstead and Jack Eastlick at Inspiration. Inspiration is drillin g at the Pinnacle which is north of Ox Hidé. FTJ WR 5/31/68

Visited Inspiration offices - Olmstead said they were going to examine several properties in Nevada. FTJ WR 3/28/69

INSPIRATION CONSOLIDATED COPPER CO.

Sprague-Henwood are drilling in the dacite about 4 miles south of Pinal Ranch and on the east side of Rawhide Canyon, for Inspiration Copper Company. EGW 4/14/64

Visited Bert Reed and W.H. Olmstead at Inspiration office. It was Bert Reed's last day of work. Some changes in personnel were noted. H.D. Harper is replacing C.B. Kettering as Supt. of Leaching and Refining; J.T. Eastlick is to be Chief Res. Geologist and W.H. Olmstead, Chief Expl. Geol. Bert Reed said that Inspiration is considering application for a subsidy for the Christmas operation for enlargement of mill to treat lower grade ores. He said a huge tonnage of low grade ore is available at Christmas. FTJ WR 5/27/66

Visited Jack Eastlick and W.H. Olmstead of Inspiration.office. They have two core drills and two churn drills drilling the Schulze property. FTJ WR 11/25/66

Visited Inspiration geology department. Jack Eastlick in New York and W.H. Olmstead in field. Inspiration is continuing to drill Schulze property about a mile west of the Blue Bird operation. Inspiration is also constructing a pilot plant a few hundred feet north of Miami-Superior highway near their drill site. FTJ WR 1/27/67

Inspiration reportedly has an option agreement with Kerr-McGee's Madera property, also Dan Williamson's property west of the Blue Bird, and the Ellis property. FTJ WR 3/31/67

Interview with Cannady and Jack Eastlick at Inspiration geology office. Inspiration still has option on the Troy property, inactive at time of visit. FTJ WR 9/29/67

Interview with Jack Eastlick at Inspiration. Geology department have plenty of work apparently. FTJ WR 1/26/68

Inspiration has done a lot of staking in the Bloodsucker district. After the name of the wash north of the Willowsprings ranch. (Oracle Quadrangle). Have no details on this. GWI 2/9/68

Interview with Hugh Olmstead at Inspiration office. They are rehabilitating a shaft on the Cruse prospect near Willowsprings Ranch west of San Manuel. The Ox Hide mine is being developed, but starting date not given. FTJ WR 3/29/68

The Inspiration Consolidated Copper Co. has acquired the Ardmore and Hotboy mines in the Willowsprings Ranch area. This is called the Black Mountain project. The cleaning out of two shallow shafts and the drilling of one deep hole has been in progress. GWI Quarterly Report 4/68

INSPIRATION CONSOLIDATED COPPER MINE GILA COUNTY

RRB WR 9/9/83: Tom Counsins of Inspiration reports that the Joe Bush and the Thornton pits are combined as the T. J. pit and the LIve Oak and Red Hill pits are combined as the L. R. pit.

INSPIRATION CONSOLIDATED COPPER CO.

MG WR 9/24/82: Mr. Dick Wilbur of the Tucson Citizen reports that the Reymert Mine in Pinal County, owned by Plexus Resources of Salt Lake City, Utah, has been optioned to Inspiration Consolidated Copper Co.

NJN WR 5/11/84: With Dick Beard, attanded the Spring AIME open pit mining technical sessions at Inspiration Consolidated Copper Co. A tour of the R.L. (formerly known as the Red Hill and Live Oak Pits) and the T.J. (formerly the Thorton and the Joe Bush) pits was provided. A copy of the technical talks was added to files.

NJN WR 5/18/84: Mason Coggin, Mining Engineer with the exploration firm of Inspiration Mines Inc. P O Box 1559, Claypool, Arizona 85532, ph: 602-473-2473 reported they are actively seeking submittals and acquiring precious metal properties. Of particular interest are those properties with some reserves or a history of past production.

NJN WR 10/10/86: Janice Coggin (c) reports that the Inspiration Consolidated Mine (f) and associated facilities (mills, smelter, etc) have been for sale for over a year now.

NJN WR 5/9/87: Janice Coggin reports that Inspiration Mines Inc (file) Exploration Division is moving their office to Scottsdale at the beginning of June.

RRB WR 6/24/88: Visited Inspiration to gather information for Copper Report. Discussed operation with Howard Bardwell, Mgr. Met Operations and was given a comprehemsive tour of the property including the smelter and the rod plant by Jim Vingst, Senior Process Engineer. Mill is shut down but mining continues at about 93,000 tons per day total, divided into high-grade leach, low grade leach and waste.

INSPIRATION CONSOLIDATED COPPER MINE

Visited Inspiration mine and office. Stripping has been increased at the Thornton Pit and construction continues in preparation for the increased tonnage expected later this year. EGW WR 3/26/65

Visited Bert Reed and W.H. Olmstead at Inspiration office. It was Bert Reed's last day of work. Some changes in personnel were noted. H.D. Harper is replacing C.B. Kettering as Supt. of Leaching and Refining; J.T. Eastlick is to be Chief Res. Geol. and W.H. Olmstead, Chief Expl. Geologist. FTJ WR 5/27/66

Interview with Hugh Olmstead at Inspiration. They are continuing exploratory work but budget has been decreased. FTJ WR 12/1/67

Active Mine List Nov. 1967 - 1510 men
Active Mine List April 1968 - 1680 men

Active Mine List Oct. 1968 - 1680 men
Active Mine List April 1969 - 1529 men

Visited Inspiration Geology office - interviewed both Hugh Olmstead and Jack Eastlick. Exploration and development continuing. Olmstead has been in Nevada and expects to return. They continue to study the Black Mtn. area northwest of San Manuel. FTJ WR 1/ 1/31/69.

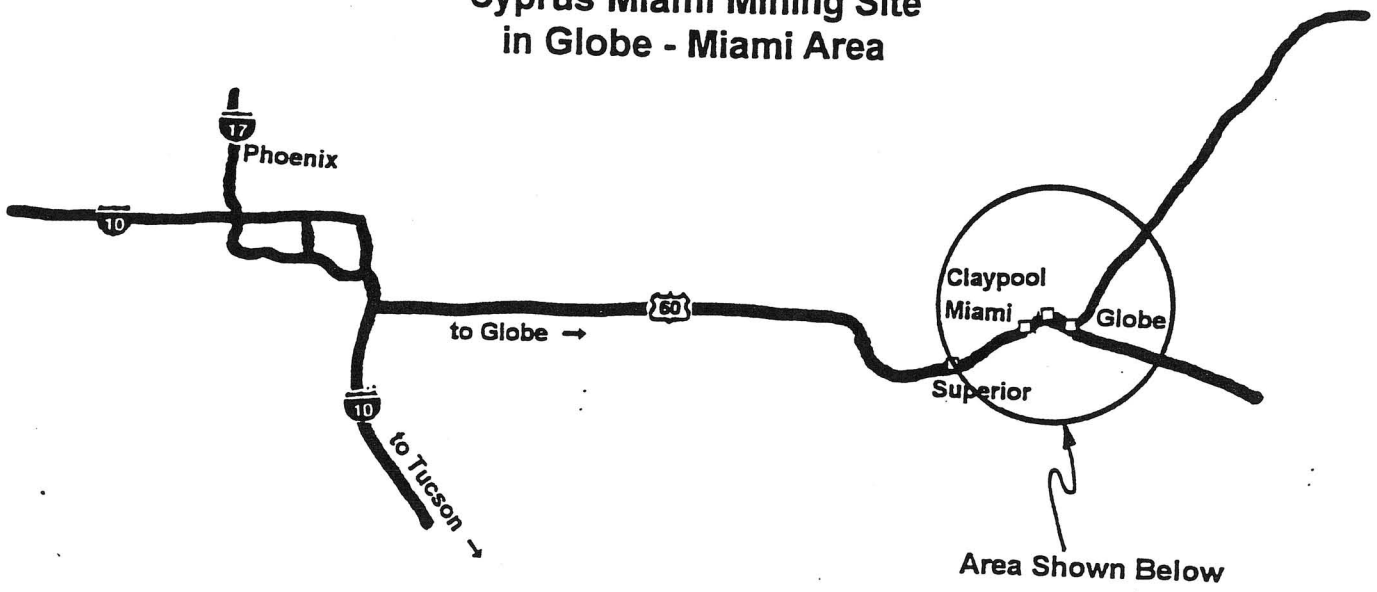
Inspiration has finally announced the start of a long anticipated central laboratory where all analytical work will be done. JHS QR 8/1/69

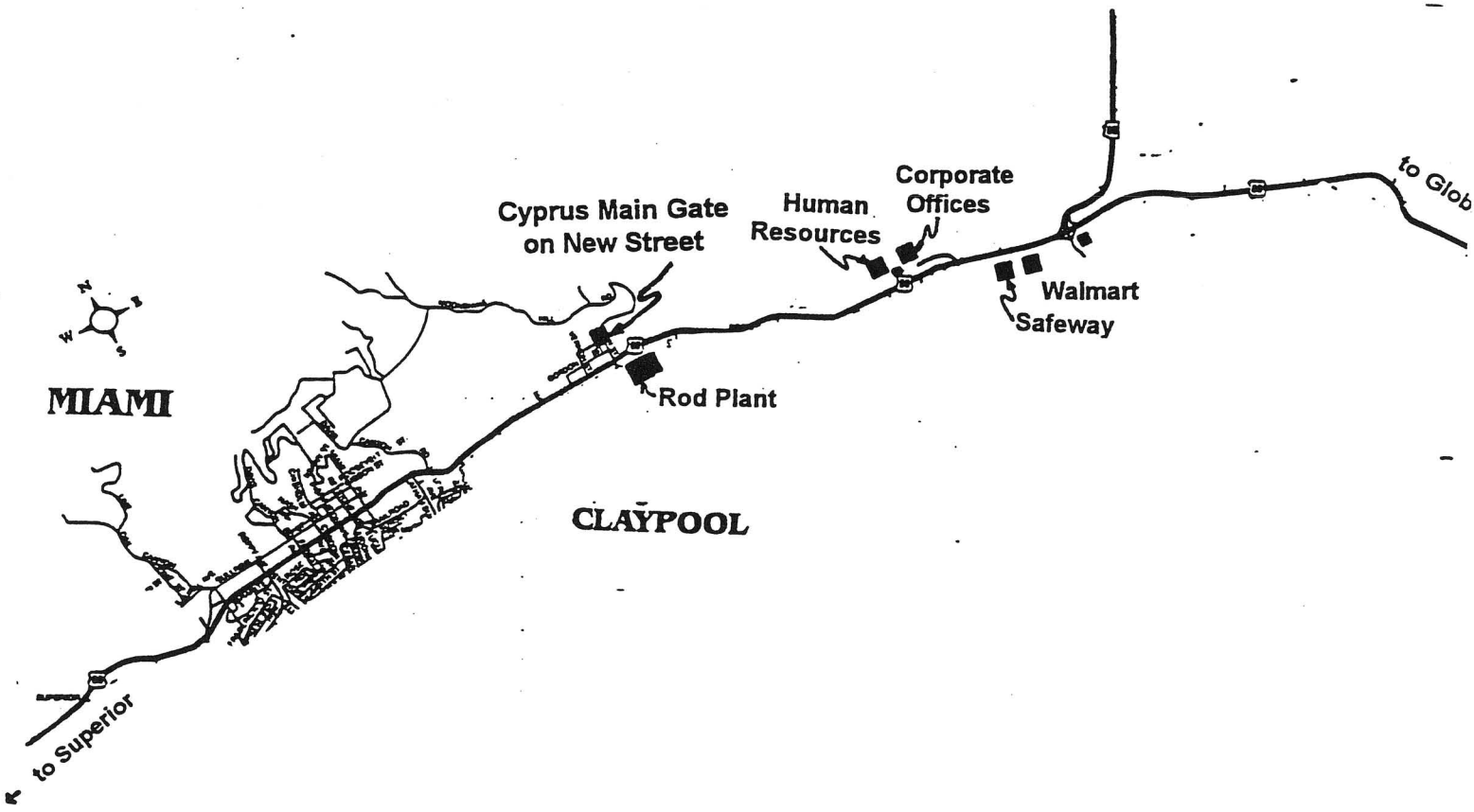
Visited Inspiration geology office. Visited with Jack Eastlick. Hugh Olmstead in Washington State doing examining work. Interviewed Duncan MacDonald who was reluctant to pass out information. FTJ WR 9/26/69

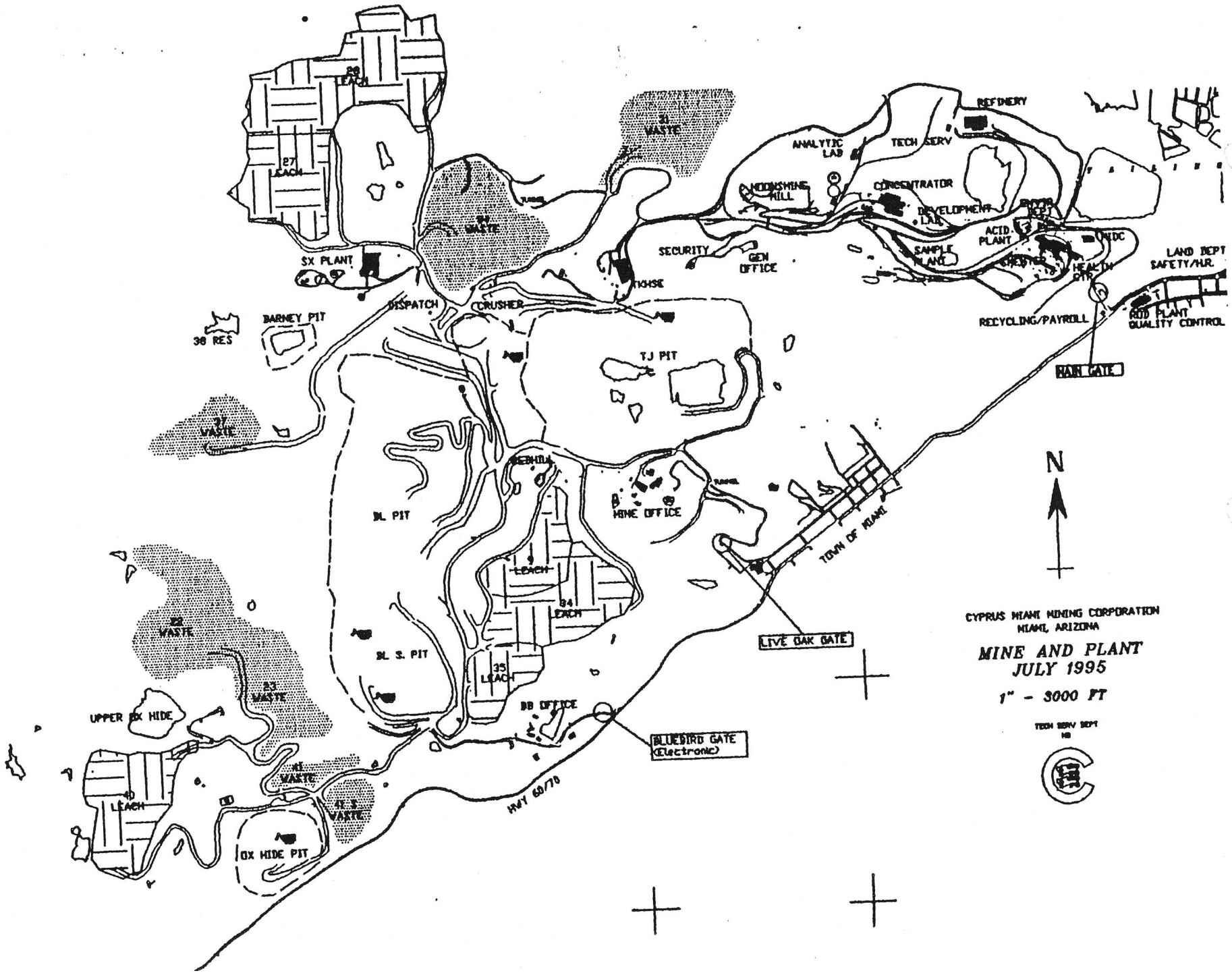
Dan King at ACM Corp. said they no longer have lease option on the 79 Mine. He thought Inspiration had it under option. FTJ WR 10/17/69

Active Mine List Oct. 1969 - 1944 men - Richard C. Cole, Gen. Mgr.

Map Showing Route to Cyprus Miami Mining Site in Globe - Miami Area



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ANALYTIC LAB
TECH SERV
MOONSHINE HILL
CONCENTRATOR
DEVELOPMENT LAB
ACID PLANT
SAMPLE PLANT
SECURITY
GEN OFFICE
SX PLANT
DISPATCH
CRUSHER
BARNEY PIT
30 RES
TJ PIT
RECYCLING/PAYROLL
MAIN GATE
LAND DEPT SAFETY/HUR.
ROD PLANT QUALITY CONTROL
TOWN OF MIAMI
MINE OFFICE
BL PIT
BL S. PIT
LIVE OAK GATE
BB OFFICE
BLUEBIRD GATE (Electronic)
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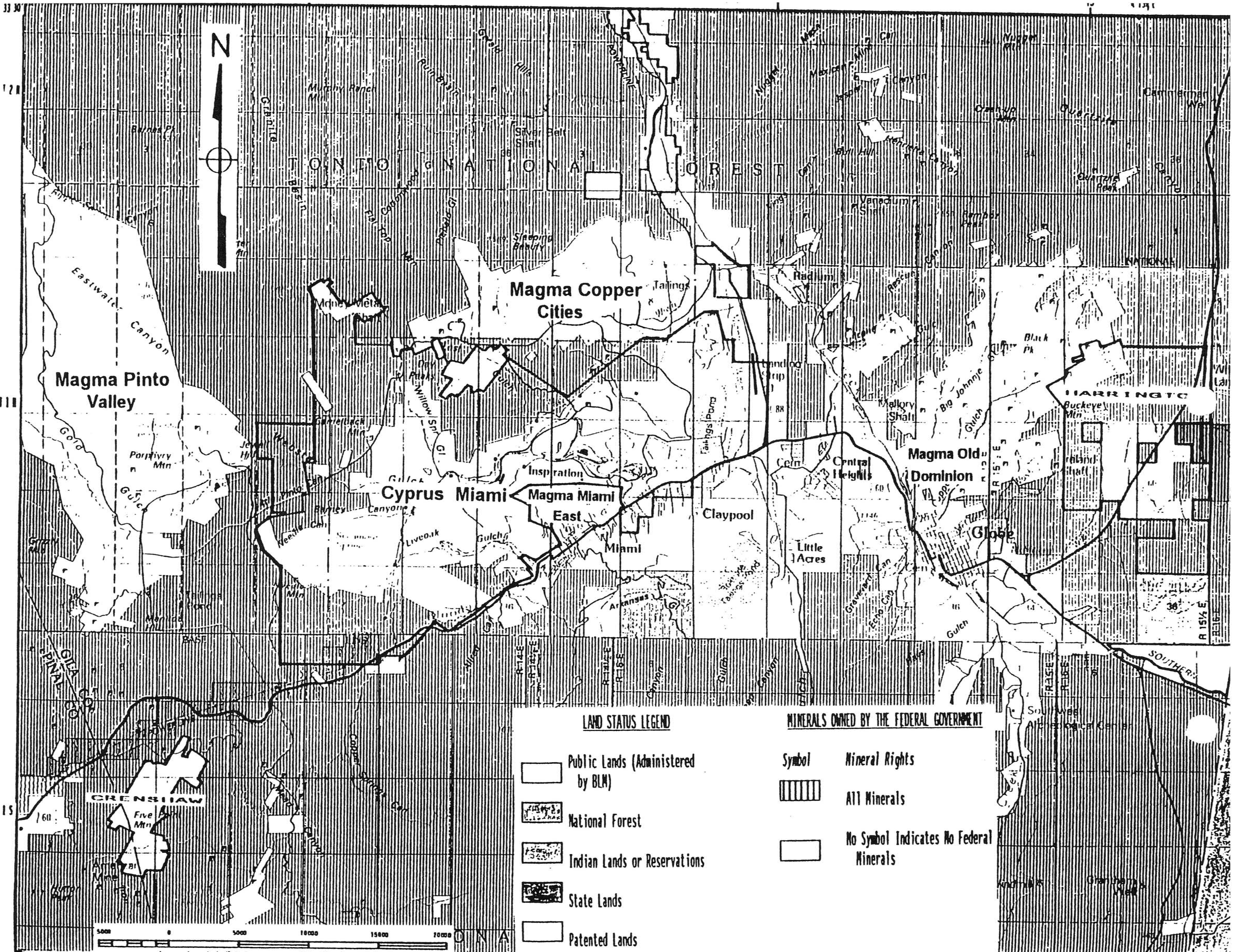
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TONTO NATIONAL FOREST
Magma Copper Cities
Magma Pinto Valley
Cyprus Miami
Magma Miami East
Magma Old Dominion
Tailings
Radium
Inspiration
Claypool
Miami
Globe
Little Acres
Central Heights
Eastwater Canyon
Porphyry Mtn
CRENSHAW
Five Point Mtn
LAND STATUS LEGEND
Public Lands (Administered by BLM)
National Forest
Indian Lands or Reservations
State Lands
Patented Lands
MINERALS OWNED BY THE FEDERAL GOVERNMENT
Symbol
Mineral Rights
All Minerals
No Symbol Indicates No Federal Minerals
5000 0 5000 10000 15000 20000

Revised - May 4, 1995

CYPRUS MIAMI MINING CORPORATION

History

1880 Mineralization discovered.
1888 First exploration tunnel driven.
1911 Inspiration Consolidated Copper Company formed.
1915 Full scale underground production began.
1948 First open pit ore mined along with underground.
1954 All ore now mined from open pits (18 square miles in area).
1986 Shut down sulfide ore mining and closed concentrator. Began mining and leaching oxide ore from Bluebird pit.
1988 Assets of Inspiration Consolidated Copper Company acquired by Cyprus Minerals Co.

Employees (Approximately at year end).

610 Hourly
238 Salaried
948 Total

2,366,208 1994 Employees hours worked.

Payroll & Benefits (Annual)

$39,280,000 Payroll + $14,437,000 fringe benefits.
$14.85 Average Hourly Wage
42% Employee Benefit Rate

Major Taxes (Annual)

$3.5 Million - Property Tax
$1.6 Million - Severance Tax
$ 350,000 Sales Tax
$ 310,000 Use Tax

Major Purchases (Annual)

$49 Million - Operations & Repair Supplies
$18.8 Million - Services
$3.6 Million - Natural Gas
$29.5 Million - Electricity
$2.9 Million - Freight

$65,600.00 Local Contributions

Mine
75,000 Tons Per Day Oxide Leach Ore - 184,000 Waste
0.40% Copper Leach Ore Grade (Average Grade)
5 - Shovels - 1 - 32 Cubic Yard Capacity
2 - 23 Cubic Yard Capacity
2 - 53 Cubic Yard Capacity
26 - 240 Ton Capacity Trucks
1 - Bucket Loader - 20 yards & 1 - 994 20 Yard Loader

Leaching
Approximately 500 Acres Under Leach (9 acres with collection ponds).
365,000 Pounds Copper Leached Per Day

Solvent Extraction
2 Solvent Extraction Plants
8,600 Gallons Per Minute Total Feed Solution Containing 3.37 Grams of Copper Per Liter of Solution.
365,000 Pounds Per Day of Copper.
2,200 Gallons Per Minute of Extract With Copper Pumped to Tankhouse Electrowinning Circuit.

Tankhouse
220 Electrowinning Cells - 133,333,000 Million Pounds Per Year Copper

Electrorefinery
18 Sections - 380,000,000 Million Pounds Per Year Capacity

Smelter
Feed - 650,000 Tons Concentrate Per Year Plus Cement Copper Capacity
Production - 450 Million Pounds Per Year of Anodes (99.8% Purity)
Sulfuric Acid Production - 1,620 Tons Per Day
No Ambient Air Violations Since August, 1985

Rod Plant
Production - 270 Million Pounds of 5/16" Copper Rod Per Year
Treats Electrowon and Electrofined Cathodes
Equipment - Southwire/Morgan Continuous Cast Rod Mill

CYPRUS MIAMI MINING CORPORATION
COPPER PRODUCTION PROCESSES

Modern copper production is a complicated and highly technical process. Cyprus Miami Mining Corporation currently produces approximately 133,000,000 pounds of domestic copper cathodes in the leaching and solvent extraction process, and 380,000,000 pounds of electrorefined cathodes annually. The operation's production process is comprised of six basic units: (1) Mining and Leaching, (2) Solvent Extraction, (3) Tankhouse (electrowinning), (4) Smelting, (5) the Refinery (electrorefining), (6) the Rod Plant. Briefly described, the basic steps of copper production at Cyprus Miami are as follows:

MINING AND LEACHING

The open pit operation produces approximately 80,000 tons of ore per day containing 0.45% copper. First, overburden material is stripped and hauled to overburden deposition areas. The material is loaded with electric shovels, ranging from 23 to 53 cubic yards in capacity, and is transported in 240 ton haul trucks. The ore is then drilled, blasted, loaded and transported to leach pads which are constructed in 15 foot lifts. Once in place on the leach pads, the ore is sprinkled with a dilute solution of sulfuric acid. As the solution percolates downward through the ore, it dissolves the copper. Water containing the copper then flows down gradient from the base of the leach pad, and the solution is captured in solution collection reservoirs. The leach solutions are then pumped through pipelines to the solvent extraction plants. Cyprus Miami operates approximately 500 acres of leach pads and produces 365,000 pounds of contained copper in solution per day.

SOLVENT EXTRACTION PLANTS

Cyprus Miami operates two solvent extraction plants that process 9,500 gallons per minute of leach solutions. The solution contains about 4 grams of copper per liter, and through the use of an organic extractant, it is further concentrated to approximately 46 grams of copper per liter. The upgraded solution, known as electrolyte, is then pumped at a volume of 2,200 gallons per minute to the Tankhouse for electrowinning.

TANKHOUSE

The Tankhouse contains 220 electrowinning cells that process the electrolyte solution pumped in from the Solvent Extraction plants. In the electrowinning process, the electrolyte is circulated through the cells which are subjected to an electrical current. Ultra pure copper is thereby plated out of the solution onto starter sheets to a purity of 99.99% copper. This copper, now in cathode form, is then sent to the Rod Plant for production of copper rod. Cyprus Miami produces 133,000,000 pounds of copper per year through the electrowinning process.

SMELTER

In the smelting operation copper concentrates, provided by toll customers and running about 30% copper, are fed into a tall cylindrical furnace while blowing oxygen enriched air through a vertical lance into the furnace's slag bath. The molten material is periodically tapped and fed to an electric furnace for matte/slag separation. The furnace charge is kept at about 2300° F. The heavier copper bearing material, known as matte, settles to the bottom of the furnace, and the lighter waste material, known as slag, floats to the top. The valueless slag is skimmed and removed from the matte. The matte is then tapped from the furnace and transported to converters where air is forced into the bath to oxidize the sulfur and iron in the matte. The oxidized iron (FeO) is returned to the electric furnace as slag, and the oxidized sulfur (SO_2) exits the converter in the gas stream. The remaining copper in the converters is then transferred to the anode plant where it is cast into anode shapes on an anode casting wheel. The copper anodes are then allowed to cool before being shipped to the Refinery for electrorefining into copper cathodes.

The off gas containing SO_2 from the electric furnace and converters is routed through an electrostatic precipitator which removes any small dust particles. The gas proceeds through the system to a sulfuric acid plant where the gas is scrubbed, cooled, dried and converted to sulfuric acid (H_2SO_4). The sulfuric acid is consumed in the leaching process described above. The present smelter capacity is 650,000 tons per year of concentrates which allows for the production of 398,000,000 pounds of copper anodes annually. At the present time, none of the smelter's concentrate feed is produced by Cyprus Miami's mining operation.

REFINERY

The Refinery contains 504 electrorefining cells that process copper anodes produced by the smelter. Smelter anodes are 99.80% pure copper. The anodes are placed in cells and the copper is electrochemically dissolved from the anodes into solution. From there the copper migrates to the cathode, where it is plated onto stainless steel starter sheets to a purity of 99.99% pure copper. This copper, now in cathode form, is then sent to the rod plant for production of copper rod. Cyprus Miami produces 380,000,000 pounds of copper per year through the electrorefining process.

ROD PLANT

The Rod Plant is a continuous melting, casting and rod rolling operation. Cathode copper is melted in a vertical shaft furnace and then is sent through a skim basin and a holding furnace which remove any possible slag or gases. The holding furnace temperature is maintained at approximately 2040° F, and molten copper exits the furnace into a pour pot where it is cast into a square 5 inch bar. This continuously produced bar is then fed into grooved rolls that decrease in size until the feed bar finally emerges as 5/16 inch copper rod. This rod is coiled in 5,900-15,500 pound coils for shipping. Annual production of copper rod is approximately 274,000,000 pounds.

THE CYPRUS MIAMI ELECTROREFINERY

The Cyprus Miami Electrorefinery, a department of Cyprus Miami's Copper Products Division, began electrorefining copper cathode in mid October of 1994. The electrorefinery's main supplier of copper anodes is the Cyprus Miami smelter. The 875 pound anodes containing an average copper grade of 99.60% are received at the refinery dock by rail. Copper cathode, anode scrap, and anode slime products are shipped out both by rail and commercial trucking.

Copper anodes are off loaded from rail cars onto the dock or into the AISCO anode preparation machine. The anode preparation machine is a highly technical and unique system as it has the ability to prepare or reject anodes based on parameters entered into its programmable logical control network. Anodes are first checked by the AISCO system for weight tolerances and then enter the body press station where the anode body and lugs are horizontally pressed. The anode then goes through a vertical lug press and a lug milling station. The lugs are milled with 5^{0} offsets to ensure highly efficient contact points and a vertical plumb hanging position in the cells. After the milling station of the anode preparation system, the anodes are elevated via an incline chain conveyer to the cell floor where they are spaced 3-29/32 inches or 99 mm center to center. Anodes may be spaced in lots of 60 or 61 pieces awaiting installation into the cells.

The two isle cell layout consist of 504 polymer concrete cells. The 504 cells are divided into 18 sections of 28 cells each or 36 half sections of groups of 14 cells each. The cell pattern layout is a very unique design as the sections take on a horse shoe appearance optimizing short crane traveling patterns. The 36,300 amps of direct current power is delivered by two AB rectifiers through a bus system to each section. Sections are energized by the use of pneumatic shorting switches controlled either by the control room plc data highway system or remotely in the field. Current travels from cell to cell by the utilization of a dogbone inner cell bus bar system.

The anodes are transported and installed into the cells in lots of 60 or 61 pieces by either of two Noell overhead cranes. The 27 ton Noell cranes are a highly sophisticated pieces of equipment. The overhead cranes may either be operated through the Allen Bradley plc data highway system originating in the electrorefinery control room or by one step computer input functions by the crane operator in the cab. In unique situations the crane operator may operate the cranes in manual mode. The Noell cranes locate their target locations through a computer grid program loaded into their plcs. Strong back hooks are closed and spaced for both cathodes and blanks through a preprogramed hydraulic system.

Stainless steel mother blanks are loaded between the anodes into the cells with the overhead cranes in lots of 60. The mother blanks were designed by CRL, in Queensland Australia, and afford a place for copper ions to plate in an area of 3100 square inches or 2.0 square meters. The mother blanks are equipped with two Quadna CPVC or ABS edge strips secured by one top pin and two five pin inserts each. The bottom of the mother blank is double dipped in hot wax to provide insulation and prevent enveloping between the two cathodes. This process of utilizing

stainless steel mother blanks wi... edge strips and bottom wax to pl... cathode copper is referred to as the ISA process.

Cathodes are harvested every seven days while the anode life cycle is 21 days. The mother blanks are harvested in lots of 60 and contain two 123 pound cathodes of 99.99% copper each. The laden mother blanks are loaded onto the TM stripping machine transfer system and enter a high pressured hot water wash cycle. The washing serves three purposes. The hot wash water melts the bottom wax so that it may be reused again, washes any electrolyte and slimes off of the cathode and ensures clean contact points on the mother blank hanger bar for reinstallation into the cell.

After the washing process, the copper laden mother blank is introduced into the flexing station where hydraulic flexing arms flex the copper loose from the mother blank. Large wedge shaped knives then separate the cathodes from the blanks. The cathodes are then packaged to meet customers' needs, weighed, and bar code labeled with pertinent data in regards to quality and origin as required by the customer.

The mother blanks are then transported along the automatic stripping machine conveyer at which time the operator may reject a defective blank for reconditioning or allow the mother blanks to be rewaxed. After the double waxing the mother blanks are accumulated, spaced in lots of 60 and transported to the appropriate refinery bay for reinstallation into the cells.

On the third cathode harvest or at the end of the anode life cycle, the anode scrap averaging 12 to 15% of its original weight is removed with the overhead cranes from the cells. The anode scrap is placed onto the AISCO scrap machine conveyor where it is washed to remove any loose slime material. The scrap is then packaged in a horizontal fashion running in either two or four directions depending on customer needs. The scrap is then weighed and banded ready for shipment.

The electrolyte circulation is stopped in the cells during an anode change allowing the cell technicians the opportunity to decant all but 10 inches of electrolyte in each cell for reuse in the system. The remaining 10 inches of electrolyte contains the anode slimes consisting of valuable insoluble metals such as some copper, gold, silver, platinum, and others. The slimes are washed from the bottom of the cells and pumped to the slimes treatment area for further processing. Copper is leached from the slimes by means of an autoclave. The slime material is then dried in a filter press and further dried by two screw dryers to meet customer requirements. Slimes are packaged in 55 gallon barrels for shipment.

The electrolyte is gravity flowed back into the cells from one of two head tanks depending in which of the two circulation systems the section being worked on belongs. The electrolyte, consisting of 44 - 46 grams per liter (gpl) of copper and 180 - 200 gpl of sulfuric acid, is further cleaned of slime material through the use of Schriver filters. The electrolyte is heated to 149°F by the use of steam heated water passing through plate and frame heat exchangers. Individual cell flow valves allow the cell attendants to maintain a flow rate of 7 - 10 g.p.m. as conditions require.

Employee development and ownership are stressed at the Cyprus Miami electrorefinery. Employees are divided into self starting work teams. Team work and

process problem skills are mandatory work ethics instilled into all electrorefinery team members. The combination of team problem solving skills and a very rigorous skill base cross training program results in a highly trained and an exceptionally flexible work team at the Cyprus Miami electrorefinery.

The Cyprus Miami electrorefinery places a strong emphasis on safety with the active participation of the Dupont STOP program, along with monthly OSHA topic safety meetings at all levels. Safety is emphasized further through such programs as weekly safety tailgate meetings, weekly safety audits, a safety suggestion program, and daily equipment and area checklist. Safe and productive team members are recognized as a group through such things as a luncheon or barbeque to a quarterly bonus system.

A highly motivated and trained work force is the key to success at the Cyprus Miami electrorefinery. An industrial culture with an emphasis on safety, skill base cross training, and in depth communication not only enables the Cyprus Miami electrorefinery to produce 190,000 stpy of quality copper cathode but provides for a world wide competitive edge in the copper industry.

INSPIRATION (F) GILA

ARIZONA DEPARTMENT OF ENVIRONMENTAL QUALITY

Governor Jane Dee Hull Russell F. Rhoades, Director

NOTICE OF THE PRELIMINARY DECISION TO ISSUE AN INDIVIDUAL AQUIFER PROTECTION PERMIT

Pursuant to Arizona Administrative Code (A.A.C.), Title 18, Chapter 9, Article 1, the Director of the Arizona Department of Environmental Quality intends to issue an individual Aquifer Protection Permit (APP) to the following applicant:

Public Notice No. 76-97 AZAP
Cyprus Miami BL Heap Leach Expansion

On or about
November 26, 1997
Arizona Silver Belt

Jay Spehar
Cyprus Miami Mining Corporation
P.O. Box 4444
4342 E. U.S. Highway 60
Claypool, Arizona 85532

Aquifer Protection Permit No. P-103201

The BL Heap Leach Expansion facility is located in the Globe-Miami mining district, 60 miles east of Phoenix, in Gila County, Arizona, over groundwater of the Upper Salt River groundwater basin. The leaching operation will occupy all or a portion of Sections 21, 22, 27, 28 in Township 1 North, Range 14 East, Gila and Salt River Baseline and Meridian.

The Cyprus Miami Mining Corporation intends to operate the BL heap leach expansion facility which will consist of a heap leach pad with a foundation underdrain and sump system, a leach solution collection reservoir, a surface water storage and diversion system and ancillary maintenance facilities. Specific facilities to be constructed, operated and closed under the Aquifer Protection Permit will include: the BL heap leach pad, and the leach solution collection reservoir.

The design , construction, and operational activities conducted under the Aquifer Protection Permit specifically addresses these discharging facilities. Specific information regarding design, construction, and closure activities for each facility can be found in PART II of the permit.

The permit and related file are available for public review Monday through Friday, 8:00 a.m. to 5:00 p.m., at the Arizona Department of Environmental Quality, Water Permits Section, Mining APP Unit, 3033 N. Central Avenue, 4th Floor, Phoenix , Arizona; at the Miami Memorial Library, 1052 Adonis, Miami, Arizona; and the Cyprus Miami Mining Company Land Office at 4342 E. U.S. Highway 60, Claypool, Arizona. If you would like additional information, please contact Jack Kepper at (602) 207- 4621 or the Mining Unit secretary at 207- 4692.

INSPIRATION (F) GILA CO.

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
Phoenix District Office
2015 West Deer Valley Road
Phoenix, Arizona 85027

IN REPLY REFER TO

3809
AZ-28631

October 25, 1994

Dear Interested Party:

The Bureau of Land Management (BLM), Phoenix District, and the U.S. Forest Service (USFS), Tonto National Forest, are preparing an environmental impact statement (EIS) for the proposed expansion of leach facilities at the copper mining operation owned by Cyprus Miami Copper Corporation (CMMC) at Miami, Arizona.

You are invited to attend the public scoping meetings in relation to this project as identified in the Scoping Statement and to submit any additional concerns or project alternatives that you feel are appropriate for further discussion. To be most helpful, please send your written comments by December 17, 1994, to either Mary Johnson of BLM, or Paul Stewart of the Forest Service, at the addresses shown in the Scoping Statement. Please feel free to call either of these individuals if you have any questions.

The proposed expansion includes development of three additional leach facility areas, an overburden deposition area, and associated facilities. The leach facilities and overburden area would be constructed partially on federal lands managed by the USFS and BLM, and partially on lands owned by CMMC. Ore placed on the leach pads would be mined from lands owned by CMMC. It would be treated with sulfuric acid leach solution to extract the copper. The copper-bearing solution captured from the leach pads would be processed in existing solvent extraction and electrowinning plant located on lands owned by CMMC. It is expected that the proposed leach and ancillary facilities would operate for the remainder of the life of the mining operations, which is estimated to be 16 to 20 years.

An important part of the environmental analysis process is the identification of public concerns related to the proposed use of public lands. Thus, you are invited to identify your concerns and participate in the analysis process. The enclosed Scoping Statement describes the project in more detail and identifies the issues we currently know about or expect in relation to this project.

Sincerely,

David J Miller

for G. L. Cheniae
District Manager

Enclosure

CYPRUS MIAMI LEACH FACILITY EXPANSION
ENVIRONMENTAL IMPACT STATEMENT
SCOPING STATEMENT

Introduction

Cyprus Miami Mining Corporation (CMMC) is proposing the expansion of their Miami Mining Operation in Gila County, Arizona. The purpose of this scoping statement is to provide information on the project and to solicit comments and concerns that need to be evaluated in an Environmental Impact Statement (EIS) that is being prepared for the project. Enclosed is a package of information describing the project history, CMMC's proposal, alternatives to be considered, and preliminary issues to be evaluated.

Project History

CMMC owns and operates a large mine and copper production operation in the Globe-Miami Mining District. The CMMC complex in Miami includes open pit mining, leaching, copper processing by means of solvent extraction-electrowinning (SX/EW), smelting and refining. The complex also includes a rod plant. Approximately 950 people are employed at the Cyprus Miami facility which produces high quality copper cathodes. The mine is located near the towns of Globe and Miami, Arizona, approximately 65 miles east of Phoenix, on U.S. Highway 60 (see **Figure 1**).

Proposed Leach Facilities Expansion Project Description

CMMC submitted an Operating Plan for the project to the Bureau of Land Management (BLM) and Forest Service in April, 1994. This plan will be processed by the BLM as a Mining Plan of Operation (MPO) and by the Forest Service as a Plan of Operations (POO). The MPO/POO contains a description of the proposed plans to expand leaching operations directly adjacent to existing operations for the purpose of continuing copper production. Additional surface area is needed for leach pads and associated facilities to ensure uninterrupted production of copper and to maintain current employment levels.

Planned activities would include the development of three leach pad areas (Oxide, BL, and GMC pads) and associated facilities and one new overburden site (Barney). Figure 2 shows the relative size and location of these project features. They would be located on a combination of public and private lands. The public lands include lands managed both by the Tonto National Forest and Phoenix District of the BLM. Total new disturbance for the Oxhide Pad would be 386 acres (with 329 acres managed by the Forest Service and 5 acres managed by the BLM). Total new disturbance for the BL Pad would be 470 acres (with 184 acres managed by the BLM and 203 acres managed by the Forest Service). Total new disturbance for the GMC Pad would be 236 acres (114 acres managed by the BLM). Total new disturbance for the Barney OB site would be 216 acres (52 acres managed by the BLM and 32 acres managed by the Forest Service). Two stormwater impoundments would be created upstream of the BL Pad site in Little

Pinto Canyon and Webster Gulch. Total acres of disturbance by all facilities would be 1,308 acres. Acres of public land disturbed by all sites would be 919 (564 acres managed by the Forest Service and 355 acres managed by the BLM).

Nature of Decisions to be Made

The EIS will disclose impacts and make recommendations on alternatives and mitigation. Based on the analyses in the EIS, a determination of how best to implement the proposed expansion of the Cyprus Miami mine will be made and documented in separate Records of Decisions by the BLM and Forest Service. The use of the subject federal lands for mineral operations is in conformance with the Tonto National Forest Plan and the Phoenix District Resource Management Plan. The decision to be made is whether to implement the proposed expansion plan, continue with the currently approved plan, or implement some alternative to the proposed expansion.

In making this decision, the following determinations must be made:

1. Determine if the proposed actions are in conformance with existing laws and the existing Forest Service and BLM policies, regulations, and approved land management direction, including the requirements of the Federal Land Policy and Management Act (FLPMA).

2. Determine if any additional mitigation, management restrictions, or monitoring requirements are needed if the proposed expansion or some alternative is implemented.

Preliminary Issues

A number of environmental issues have been preliminarily identified for the proposed expansion of the mine. The issues shown here were derived from the interdisciplinary team of resource specialists who have reviewed the proposal and have monitored the current mining operations. The main issues are summarized below.

- **Surface and Groundwater Quality**: Because of the nature of large-scale leaching operations, groundwater quality protection is a major concern. Surface water quality protection is also a concern because proposed facilities would be constructed in tributaries to Miami Wash.

- **Air Quality**: Atmospheric releases of fugitive dust and vehicular emissions during construction and operations are of concern. The potential drift of acid mist from the leach pads may be a concern.

- **Cultural Resources**: The concern is to determine future and cumulative effects of mining activities. This effort would be based on the surveys and literature generated from the local area.

- **Biological Resources**: The proposed project could affect vegetation, wildlife use of the site, threatened or endangered species, and use of the site for livestock grazing.

- **Visual Resource**: Visual impacts could result from the proximity of the project to residential areas, highways, and public lands. The visual effects of the project would be assessed for compliance with the visual management systems of both the Forest Service and BLM.

- **Socioeconomics:** The proposed project could have positive or negative effects to the local economy including employment, taxes, and services.

- **Riparian areas**: Effects on wetlands and riparian areas would result from construction of the proposed facilities.

- **Mine Reclamation/Closure**: Because of the arid environment, the reclamation potential of the disturbed portions of the site may be a concern due to aridity, limited soils, and other factors. The potential would be compared with existing vegetative communities on adjacent lands. The possible long-term effects from the heap leach after reclamation and closure have been completed may be an issue.

Preliminary Alternatives

Alternatives to the MPO/POO for the proposed expansion are somewhat limited. CMMC is currently mining on patented land under the needed federal, state, and local approvals. Locations of the proposed expansion project components are tied to their proximity to the known ore reserves that can be mined and the existing processing facilities.

Alternative roads, an alternative overburden site, alternative leach pad sites, and the No Action alternative have been identified as potential alternatives to be considered for analysis at this time. These alternatives would address associated issues and evaluate the needed levels of mitigation.

Permits and Licenses Required

It is anticipated that several additional permits and approvals may be required prior to the start-up of operations. These may include, but not be limited to, the following:

- Arizona Aquifer Protection Permit (APP) from Arizona Department of Environmental Quality (ADEQ).

- Section 404 of the Clean Water Act Permit from the US Army Corps of Engineers and Section 401 certification from ADEQ.

- Modifications to the National Pollutant Discharge Elimination System (NPDES) Permit under Section 402 of the Clean Water Act from the Environmental Protection Agency (EPA).
- Dam Safety Permit from Arizona Department of Water Resources.
- Well installation permits from Arizona Department of Water Resources.
- Approval of modifications to the Air Quality Permit to Operate from ADEQ.
- Approval of modifications to the Stormwater Discharge Permit from EPA/ADEQ.

Public Involvement

An EIS will be prepared pursuant to the National Environmental Policy Act (NEPA) and in accordance with provisions agreed upon in a Memorandum of Agreement (MOA) between the BLM and CMMC and a Memorandum of Understanding (MOU) between CMMC and the Forest Service. A third-party contractor will assist the BLM and Forest Service with the development of the EIS. An interdisciplinary team of personnel from both agencies has been formed to guide preparation of the EIS. The BLM and Forest Service have the joint responsibility for content of the final EIS.

Complete records of all phases of the environmental documentation process will be available for public review at the Bureau of Land Management, Phoenix District Office, and at the Tonto National Forest Supervisor's Office at the addresses presented below.

This Scoping Statement was prepared for mailing to all interested persons, agencies, and organizations. A master mailing list was developed from both the BLM and Forest Service mailing lists. A press release also was issued in the local papers to describe the proposal and invite the public to comment. Also, a Notice of Intent (NOI) was published in the Federal Register announcing the beginning of the EIS process and soliciting comments.

You are invited to attend either or both of two public meetings to submit any comments or alternatives you wish to have considered in the analysis of the proposed project. The public meetings are scheduled to be held:

7:00 - 9:00 PM, Thursday, November 16
Miami High School Cafeteria
U.S. Highway 60 and Ragus Road
Claypool, Arizona

7:00 - 9:00 PM, Wednesday, November 17
Mesa Community and Conference Center
Pomeroy Room
201 Center Street
Mesa, Arizona

Please submit any additional written comments you may have concerning the scope of the analysis, issues and alternatives associated with CMMC's proposed expansion project. For your comments to be best utilized in the analysis for this project, they should be submitted by December 17, 1994.

Responsible Officials

Mr. Charles R. Bazan, Forest Supervisor, Tonto National Forest, and Mr. Gordon Cheniae, District Manager, Phoenix District, Bureau of Land Management, are the responsible officials for this EIS. The Forest Service and BLM are joint lead agencies for preparation of the draft and final EIS. Each agency will issue a separate Record of Decision for this project. Comments should be sent to Mr. Paul Stewart of the Tonto National Forest or Ms. Mary Johnson of the Phoenix District, BLM, at the addresses below:

Ms. Mary Johnson, Joint Project Manager
Bureau of Land Management, Phoenix District Office
2015 W. Deer Valley Road
Phoenix, Arizona 85027
(Phone 602 / 780-8090).

Mr. Paul Stewart, Joint Project Manager
Tonto National Forest
2324 E. McDowell Road
Phoenix, Arizona 85006
(Phone 602 / 225-5200).

John Can you pass this info to your small miners group - Rusty

Inspiration Consolidated Copper Company

December 4, 1979

Mr. Jim Richardson, President
Arizona Mining Association
100 W. Clarendon, Suite 1720
Phoenix, AZ 85013

Dear Jim:

Federal legislation, which I consider extremely important, has seemingly gone unnoticed by ours and, in fact, most mining organizations.

The oversight, if there is one, is understandable. For very seldom does Senator Ted Kennedy propose legislation interesting to our Western efforts. This time, however, he proposed and pushed through the Senate, Senate Bill S1477 entitled the "Federal Courts Improvement Act of 1979." Now, if that doesn't turn you on ... I don't blame you. But this bill in committee was burdened by an amendment by Senator Bumpers of Arkansas that according to one of its opponents, Senator Muskie, "could stop the Federal Government in its tracks. The amendment is overwhelming in its sweep. It says that Federal Regulations are not worth the paper they are written on." (Congressional Record, page S 12155). Now that is something to catch your attention.

There was a long debate and a motion in the committee to strike the Bumpers Amendment from the bill. The attempt was defeated 51 to 27. The judicial bill with the amendment securely attached passed the Senate and is now in the House awaiting companion legislation.

Jim, I know that you and I have shared the experience of participating in hearings that arrive at the same conclusions ... the regulations exceed the intent of the Act as passed by Congress. In spite of the conclusions, nothing was done because the regulations were written by so called experts.

The Bumpers Amendment would, in effect, overturn the entire concept of Federal legislation as involked by Federal officials. Under existing law, a court presumes that a Federal regulation is valid. The citizen, whether he is an experienced professional or not, is considered a lesser expert. He cannot challenge the regulation for being right or wrong, but only if the agency acted arbitrarily or capriciously in issuing a rule. As Bumpers himself explains it, "the way the law now stands, we are giving a presumption of expertise where there is none. If there is an expertise, it will be reflected in the record, and the court will so find. If there is not any expertise, then the citizen should have a fighting equal chance." (Congressional Record, page S 12165)

100 West Washington, Suite 1120, Phoenix, Arizona 85003, (602) 258-4561, TLX 165-074

Mr. Jim Richardson (Page 2.)

Senate Bill S 1477, with the Bumpers' Amendment attached, has passed the full Senate. It was held up for several weeks pending its consolidation with a judicial tenure bill, which has now passed the Judiciary Committee. The total package (the judicial tenure bill and S 1477 with the Bumpers Amendment passed the Senate together and has been sent to the House of Representatives. According to Becky Strandberg, in the Senator's Washington office, whom I contacted today, the Amendment is still very much alive and will undergo hearings before the House Court's Subcommittee, of the House Judiciary Committee tomorrow. Because of the timing, there will be no definite action until the first of the year. Becky advised that there has been a great deal of interest in the amendment and suggested we contact our House delegation to make them aware of our interest.

Jim, of all the Regulatory Reform I have studied, this amendment is by far the most positive legislation proposed. I would suggest that the Association and each individual member contact our Congressional delegation and other representatives and pass on our support of this amendment.

The Congressional Record, pages S 12145 through S 12171 dated September 7, 1979 is enclosed with this letter. The Record explains the amendment in detail.

Respectfully,

R.J. Pursley
Public Affairs Coordinator

RJP:jdh

Enclosure

R.J. Pursley
Public Affairs Co-ordinator

Inspiration Consolidated Copper Company
100 W. Washington, Suite 1120, Phoenix, Ariz. 85003
(602) 258-4561, TLX 165-074

Inspiration Consolidated Copper Company

Suite 1870, First National Bank Plaza 100 W. Washington St. Phoenix, Arizona 85003 (602) 258-4561

April 3, 1978

Representative Peter Kay
Arizona House of Representatives
1700 West Washington Street
Phoenix, Az. 85007

Dear Mr. Kay:

Senate Bill 1237 will soon be in your Judiciary Committee for review. As you are aware, this bill has already unanimously passed the Senate and, for the benefit of the State of Arizona and the mining industry (including miners classed large and small), should receive the same acceptance in the House.

The concepts of Senate Bill 1237 are not new. The mandates of staking, recording and validating mining claims as proposed in this bill have been successfully proven in many of the western states for the last twenty years. Originally the bill was conceived to provide equity between the well-financed mining company and the individual miner or prospector. Previously in other states, and currently in Arizona, validating a claim requires disturbing the surface of the ground with a pit-excavation or drilling 50 feet of hole. In most cases the drilling requires access to the sight for the drill, the water truck or compressor, and service vehicles. Not only does this access create unnecessary disturbance to the surface of the ground, but also adds considerable cost to the process of validating a claim. Therein lies the inequity between the large and small miner, as well as the conflict between the mining industry and the conservationist. Senate Bill 1237 will resolve both of these conflicts.

Enclosed as "Exhibit A" is an actual copy of a valid mining claim filed and recorded in the courthouse of Montrose County, Colorado. You will notice that the same document is also recorded in the local BLM office as required under the Federal Land Management Planning Act of 1976. I wish to make clear that the miner, prospector or claim staker must, even in states where legislation like S.B. 1237 is not in effect, file a location certificate and a map with the federal BLM office. In other words, since preparing a map is necessary, why not file (for an approximate cost of $3.00) the same document in the state agency and federal agency and save the cost of drilling, and the unnecessary disturbance of the land surface.

Mr. Kay, we in the mining profession recognize that there have been abuses to the land and to the rights of others. We ask that you recognize that S.B. 1237 is an effort by the reasonable element of our profession to put our house in order.

Sincerely yours,

R. J. Pursley
Public Affairs Coordinator

RJP:jv
Enc.
bcc: John Jett(w/enc)

CERTIFICATE OF LOCATION OF LODE MINING CLAIM

EXHIBIT A

NOTICE IS HEREBY GIVE, that INSPIRATION DEVELOPMENT COMPANY has discovered a vein, lode, or ledge or rock in place bearing valuable mineral deposits; that the same is hereby located and claimed under the provisions of the laws of the United States and the State of Colorado, that said discovery is where this certificate of location is posted.

That the name of the Claim is AS *129*, and is situated in the County of Montrose, State of Colorado; that the approximate dimensions of area of the Claim hereby intended to be appropriated are as follows to-wit: 750 feet in a EAST direction and 750 feet in a WEST direction along the course of the vein, lode, or ledge from the point of discovery at which this notice is posted, lengthwise of the claim, together with 300 feet in width on each side of the center of the claim. The general course of the lode deposit and premises is from EAST to WEST.

The point of discovery is approximately *2,100* feet in a *S. 1° 30' E.* direction, to southeast corner of Section 36 T47N R14W.

The Claim is located in the *SE 1/4* Sec. *36* T.47N., R.14W., *& SW 1/4, Sec. 31., T.47 N., R.13W.,* New Mexico Principal Meridian, Colorado.

This Claim and its relation to adjoining claims is shown in the sketch below:

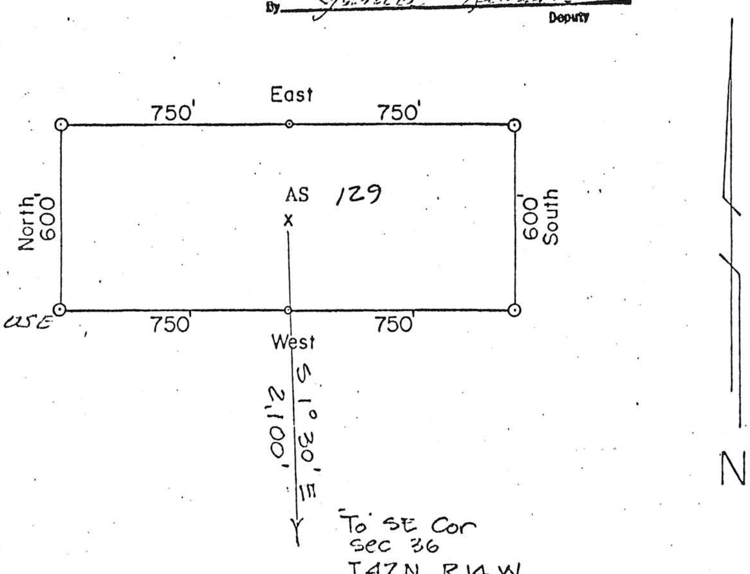
BOOK 645 PAGE 635

462784

STATE OF COLORADO) (County of Montrose) ss
I hereby certify that this instrument was filed for record in my office at *10* o'clock *P* M
SEP 2 1977 and is duly filed.
David S. Rowan
Recorder
By *[signature]* Deputy

DEPT OF INTERIOR
BUR LAND MANAGEMENT
COLO STATE OFFICE
1977 SEP 27 AM 10:10

NOTE!
THIS DOCUMENT FILED AND RECORDED IN COUNTY COURTHOUSE AND BLM OFFICE



Scale: 1"=500'

The monumentation and marking of the corners was completed by the *12* day of *June*, 1977.

The location work consisted of making a map as provided in 92-22-6, CRS 1963.

This Certificate of Location is dated and posted on the ground at the point of discovery this *12* day of *June*, 1977.

WITNESS

____

____

LOCATORS SIGNATURE
INSPIRATION DEVELOPMENT COMPANY
By: *[signature]*

NEWS RELEASE

phelps dodge Corporation

2600 N. Central Avenue, Phoenix, AZ 85004-3014 (602) 234-8100

For Immediate Release
Contact: Rodney A. Prokop
(602) 234-8121

PHELPS DODGE EXPECTS SECOND QUARTER AND FULL-YEAR 2000 RESULTS TO BE REDUCED BY OPERATIONAL ISSUES AND RESTRUCTURING CHARGES

PHOENIX, Ariz., June 27, 2000 – Phelps Dodge Corporation today announced that it will report lower-than-expected earnings for the second quarter and full-year 2000 as a result of operational issues in its mining and manufacturing units and related restructuring charges. The company expects to report earnings before non-recurring items of $0.02 to $0.05 per share for the second quarter, and $0.60 to $0.75 for the full year (based on copper prices averaging $0.80 per pound during the second half of the year). Earnings before non-recurring items for the second quarter and full-year 1999 were $0.02 per share and $0.35 per share, respectively. Actual second quarter results will be announced on July 20.

Phelps Dodge is taking a wide range of actions to reduce costs and increase operating efficiencies (see attached table). The combined effect of these operational issues and restructuring charges, offset by certain tax refunds for prior periods, will reduce second quarter results by approximately $59.8 million ($48.0 million, or $0.60 per share, after taxes).

The company is reducing mining activities at its Miami, Arizona, copper mine, and is faced with increased energy and fuel costs throughout its mining operations. It also is anticipating a shortfall in its share of production at the El Abra mine in Chile and is planning a change in its concentrate smelting schedule to better balance concentrate availability and smelter capacity. In its manufacturing division, Phelps Dodge has halted production at two wire and cable plants in Venezuela, will cease production at its telephone cable plant in El Salvador by the end of the 2000 third quarter, and will recognize impairment charges for its wire and cable operations in Austria and the Philippines.

"We are deeply disappointed that a number of adverse internal and external factors have combined to impact our second quarter and full-year financial performance," said J. Steven Whisler,

chairman, president and chief executive officer of Phelps Dodge Corporation. "We remain committed to creating shareholder value and we are taking strong actions to further reduce costs and address those issues within our control."

"The restructuring of our wire and cable operations will not affect our delivery to customers in the markets we serve, and the actions at our mining operations will contribute to improved production cost performance. The Cyprus Amax acquisition has given us a larger resource base from which we can be flexible in our operating decisions. We remain on track to achieve the $135 million in annual cost savings associated with the acquisition by the end of 2001."

Phelps Dodge Mining Company (PDMC)

The curtailment at Miami and the various operational issues affecting Phelps Dodge Mining Company will reduce second quarter after-tax earnings by approximately $0.13 per share.

"Our focus is to maximize the value of our assets, manage costs, and address current business conditions," said Timothy R. Snider, senior vice president of Phelps Dodge Corporation and president of PDMC. "Consistent with our track record, we continue to review our entire mining business for opportunities to improve our production and cost structure and will take appropriate and timely action."

In May, Phelps Dodge announced a curtailment in molybdenum production at its Henderson mine in Colorado, and a corresponding non-recurring charge of $4.3 million (or $2.7 million, $0.03 per share, after taxes). Additional restructuring activities and operational issues impacting PDMC in the second quarter include:

- Miami Curtailment

  Phelps Dodge has revised the mine plan at its Miami, Arizona, copper mine and will temporarily suspend stripping. This action will result in the elimination of approximately 65 positions, about 20 of which are temporary and contract positions. Total non-recurring charges of approximately $0.9 million ($0.6 million, or $0.01 per share, after taxes) will be recorded in the second quarter for the severance costs associated with the workforce reduction. An additional charge of approximately $0.8 million ($0.5 million, or $0.01 per share, after taxes) is expected to be incurred in the second half of 2000 for equipment relocation. The other facilities at Miami, which include the smelter, refinery and rod mill, will be unaffected by this change.

  While copper production at Miami during the second half of 2000 will be virtually unaffected by the reduced mining rate, production in 2001 and 2002 will decrease by

approximately 75 million pounds and 85 million pounds respectively. The resulting impact on PDMC's unit production costs is an expected decrease of approximately 0.3 cents per pound in 2000 and approximately 1.3 cents per pound in 2001, with an estimated favorable earnings impact of $8.7 million ($5.4 million, or $0.07 per share, after taxes) in 2000 and approximately $25.0 million ($15.5 million, or $0.20 per share, after taxes) in 2001. Phelps Dodge will reposition a variety of mining equipment, including shovels and haul trucks, at other mining operations to reduce overall capital expenditures.

- Electric Power Costs

During the second quarter, the combination of seasonal, scheduled maintenance by the electric power industry and unusually warm weather in the western United States resulted in both higher market electric rates and spot power shortages. As a result of the higher costs associated with buying power at market rates, copper production costs will be approximately 1.1 cent per pound higher than expected in the quarter, and when coupled with the lost gross margin from a 3.5 million pound reduction in copper production caused by power interruptions, the total earnings impact due to power market conditions will be approximately $8.0 million ($5.0 million, or $0.06 per share, after taxes).

While Phelps Dodge expects power interruptions to become less frequent in the third quarter, there is concern that market power rates will remain unusually high. Although the company expects such costs to decrease somewhat in the fourth quarter as cooler temperatures return, its current estimate is that power costs will negatively impact second half 2000 earnings by approximately $12.4 million ($7.7 million, or $0.10 per share, after taxes). Despite the anticipated construction of a number of new power generation plants in the southwestern United States during the next several years, the impact of power costs in 2001 and beyond remains uncertain.

In response to these developments in the electric power market, the company has initiated a wide-ranging action program. The company restarted the power plant at the Hidalgo smelter, where smelting operations were suspended last year. This increase in internal power generation capability will reduce dependence on power purchased at market rates. The company also has shifted activities with a high demand for power to less costly time periods, and is now idling equipment during those periods when power costs exceed the value of operating the equipment. Finally, the company is developing a program to shed non-essential power load during peak hours to minimize power costs.

INSPIRATION CONSOLIDATED COPPER COMPANY

OFFICERS

H. Myles Jacob, President
H. Carroll Weed, Vice President
Edward F. Wendt, Secretary and Treasurer
Robert F. Morison, Assistant Secretary and Assistant Treasurer

Operating Staff

At Inspiration, Arizona

H. Carroll Weed, Vice President and General Manager
Abner H. Neal, General Superintendent
Henry Allen, Jr., Assistant General Superintendent

James R. Watts, Mine Superintendent
Bruce B. Whitney, Assistant Mine Superintendent
Charles B. Kettering, Plant Superintendent
H. Daniel Harper, General Foreman - Leaching Plant
Albert J. Turk, General Concentrator Superintendent
W. Harold Foard, Smelter Superintendent
Howard M. Propper, Mechanical Engineer
* Ethbert F. Reed, Chief Geologist
Thomas E. Tizard, Chief Engineer - Power Plant
William A. Mitchell, Chief Research Engineer
Ralph V. Bamerio, Chief Industrial Engineer
Robert F. Morison, Assistant Secretary and Assistant Treasurer
* retired 5-27-66

At Christmas, Arizona

Richard R. Hyde, General Superintendent
Thomas E. Bilson, Mine Superintendent
Paul M. Musgrove, Concentrator Superintendent

March 1, 1966

J.T. Eastlick, Chief Resident Geologist - Inspiration
W. H. Olmstead, Chief Exploration Geologist "

5-27-66

Date Printed: 01/05/93

ARIZONA DEPARTMENT OF MINES AND MINERAL RESOURCES

VERBAL INFORMATION SUMMARY

Information from: **Rex Henderson**

Company: Cyprus Copper - Inspiration Smelter

Address:
City, State ZIP:
Phone: 602-473-7375

MINE: **Inspiration Smelter**

ADMMR Mine File: Inspiration Smelter
County: **Gila**
AzMILS Number: **161F**

SUMMARY

As part of the Arizona Department of Mines and Mineral Resources' project to survey and quantify consumption of industrial minerals in Arizona's market area Mr. Henderson at the Cyprus smelter at Miami was contacted for information on limestone usage as smelter flux.

Mr. Henderson reported that the smelter uses about 25,000 tons of limestone annually for flux. The limestone is mined locally by Kesson and Kesson from the Magma Limestone mine aest of Superior. Specifications for the limestone are that it be free of alumina, fluorine, chlorine, and penalty metals. There is no problem with silica content as the smelter needs silica for flux anyway.

Ken A. Phillips, Chief Engineer Date: December 11, 1992

INSPIRATION CONSOLIDATED COPPER CO.

Inspiration returned the Blue Nose and adjacent claims to the owner Virginia Hay. GWI AR 73-74

Walt Statler said that Inspiration had recently acquired considerable ground near the old Henrietta mine on Big Bug Creek. GW WR 8/28/74

Chuck McQueen of BLM said Inspiration had started small leaching operation at Willow Springs, north of Oracle. FTJ WR 9/26/74

Late addition: Development and production of the Red Hill Mine continued and Black Copper Mine was producing as was the Ox Hide and Christmas mine. FTJ 4½ '72

Eastlick and Olmstead are in charge of the stripping at the Barney & Red Hills mines. FTJ WR 6/15/72

The Red Rover mine had irregularly shipped to the Inspiration smelter which is not now accepting custom material from small producers. KAP WR 5/20/75

The Grasmoen Brothers (Brick Mine file) have delivered samples to the Inspiration smelter. VBD WR 9/9/75

Copper prices are increased by Asarco, Inspiration, Anaconda, Cities Service. Wall Street Journal.

AMM-2-25-77--5 smelters given deadline to meet Arizona's air standards.

Paydirt - 3-28-77 - Raise in copper prices

Met with Mr. E. E. Groff, smelter superintendent, to discuss siliceous flux and custom smelting for small miners. KP WR June 14, 1977

KAP WR 5/29/80: In the company of Richard Beard, visited Talco Inc. on 8th Avenue in Safford. The sign on the building indicates that it is an assay office. In avisit with their manager, it was explained that the firm is solely owned by Inspiration Development Company (Inspiration Consolidated Copper Company) for their exclusive use. They had at one time offered custom assaying service as a method of trying to acquire leads on mineral properties but the problems encountered with dealing with the neophyte prospector prevented continuing the service.

DS 04

INSPIRATION FI GILA

PUBLIC NOTICE OF THE PRELIMINARY DECISION TO TRANSFER AN AQUIFER PROTECTION PERMIT

Public Notice No. 125-00 Published on or about Wednesday, November 22, 2000, in the "Arizona Silver Belt".

Pursuant to Arizona Administrative Code (A.A.C.), Title 18, Chapter 9, Article 1, the Director of the Arizona Department of Environmental Quality (ADEQ) intends to transfer an individual Aquifer Protection Permit to the following applicant:

Phelps Dodge Miami Incorporation
P.O. Box 4444
4342 E. U. S. Highway 60
Claypool, Arizona 85532

Facility: Phelps Dodge Miami Incorporation - BL Heap Leach Expansion

Aquifer Protection Permit : 103201

The BL Heap Expansion facility is located in the Globe-Miami mining district, in Gila County, Arizona. The facility is located over groundwaters of the Upper Salt River groundwater basin as described below using the Gila and Salt River Base Line and Meridian:

Township 1 North, Range 14 East, portions of Sections 21, 22, 27 and 28.

The facility has requested a transfer of the Aquifer Protection Permit (APP) from "Cyprus Miami BL Heap Leach Expansion " to "Phelps Dodge Miami BL Heap Leach Expansion". Phelps Dodge Miami Inc. has submitted the necessary information to meet the technical and financial capability requirements in accordance A.A.C. R18-9-108(B)(7) and (8), and R18-9-117(A). The technical staff who are responsible for maintaining the terms and conditions of the permit will remain the same after permit transfer. In addition, minor administrative modifications have been incorporated to update the permit.

The permit which includes ownership change is available for public review with a 24 hour notice, Monday through Friday 8:00 a.m. to 5:00 p.m. at the Arizona Department of Environmental Quality, Records Management Center, Lower Level, 3033 N. Central Avenue, Phoenix, AZ 85012.

Persons may submit comments or request a public hearing on the proposed action, in writing, to Julie Riemenschneider, ADEQ, Water Permits Section, Mail Code M0401A, 3033 N. Central, Phoenix, AZ 85012 within ten (5) days from the Data of this notice. Any request for public hearing request must include the reason for such request.

Arizona Department of Mines and Mineral Resources
Verbal Information Summary

Date: October 20, 1995 Engineer: Nyal Niemuth

Notes from talk by Jeff Clevenger President, Cyprus Climax Metals Co. to Maricopa Section SME on 10/19/1995.

The talk reviewed Cyprus' copper and molybdenum operations worldwide during the last couple of years, with a focus on cost cutting activities and modernization projects. Below are some comments on the Arizona operations.

General Comments: Cyprus company goal: to significantly increase productivity, reduce the number of employees. How? eliminate unproductive tasks, institute a bonus system for every employee, share cost/price information. At Sierrita the first year of this system resulted in a 20% bonus.

Other goals: 1) invest and modernize the mines. Replace the truck/shovel fleet with 240 ton trucks and 50 cubic yard shovels, 2) increase reserves, 3) produce copper at a cost of 60 cents per pound (at $3 LB molybdenum credit.) Through the end of 1994 73% of the company's truck fleet has been replaced. 11 more trucks replaced since then. The company has achieved a 50% increase in tons milled per man shift and a 50% increase in copper produced per employee. Reserves were increased by raising the copper price used in 1992 from $.65 to $.90 per pound. and the purchase of El Abra in 1994. When the grade turned out to be lower at El Abra Chile, they got the Chilean government to triple the area of the concession (future exploration potential) and grant a huge water allotment to the mine. In moly they were able to cut out $30 MM, mainly through the AMAX merger.

Comments on individual Arizona mines:

Bagdad (f) Yavapai Co. A 1 billion ton resource of 0.38 Cu and 0.028 Mo exists. A new technology, a water flush crusher was installed that takes 20% of oversize for autogenous mill, water flushes fines to floatation circuit. This increased capacity from 75,000 to 80,000 ton per day.

Sierrita (f) Pima Co. CRU International rates Sierrita as the most efficient copper mine in the world and it operates at the lowest grade for a milling operation, 0.28%. A current experiment at Sierrita is a 50-50 joint venture between Cyprus and the vendor. It involves one set of high pressure rolls used for crushing. With it a higher percentage of fines go directly to float cells without grinding. It appears 40% of product may bypass the ball mills. The cost of maintenance on the rolls is still unknown and will be a deciding factor in their success.

Cyprus received $9 per pound for moly in the 2nd quarter of 95, resulting in a cash cost of producing copper of $.07 per pound. Sierrita has both an moly roaster as well as a leach circuit to remove copper from off specification concentrates.

Twin Buttes (f) Pima Co. Cyprus is studying Twin Buttes as underground mine but its iffy as it is high cost even with the high 1.75% Cu grades. Part of the problem is that the ore isn't compatible with the ore at Sierrita so it requires a separate circuit or its own mill.

Lakeshore (f) Pinal Co. Cyprus bought the property to get the roaster due to a worldwide shortage of smelting capacity at the time, now the roaster is shutdown. The property has a 600 MM ton leach resource at 0.5% Cu, but it has a high acid consumption. As an open pit heap leach it can produce 40 to 50 MM lb. per year but at a high cost. A feasibility study is underway to see if it remains a permanent producer.

Inspiration [aka Miami (f)] Gila Co. Cyprus bought the property to acquire the smelter and refinery. When first operated SRP was able to provide cheap electric rates for the electric furnace. When the electric went up Cyprus installed a ISA melt furnace that initially had problems with the off gases hood. A redesign of the hood making it vertical (less heat build up) and increasing the temperature and pressure of the cooling tubes was completed in February of 95 and there have been no further problems. A $280 MM was invested in ISA technology for the electrolytic refinery (annual capacity of 150 MM lb). It uses stainless steel starter sheets. The new technology results in a savings $.02 per pound at the refinery and overall the refinery is now about $.05 per pound cheaper than a custom facility.

Mineral Park (f) Mohave Co. Installed a portable SX-EW plant. In situ leach research project is underway.

Expiration (F)

CYPRUS MIAMI PRODUCTION

Supported by improved copper prices, along with the benefits of lowered production costs and cross-training of employees, Cyprus Miami continues to contribute financially to the State, local governments and it's employees and their families.

Employing approximately 1,000 people, the mining complex has an annual payroll of $34,500,000. The average hourly wage is $13.40 which is the highest of all major business categories in the State. The company also pays an additional 28% to provide excellent medical, dental and other benefits for it's employees and their families.

As a major contributor to the tax base of both State and local governmental entities, Cyprus Miami paid $2,500,000 in payroll taxes, $1,556,000 in property taxes, $1,221,000 severance tax on metals sold, (no other industry in the State is taxed in this manner) $313,000 sales tax, $61,000 use tax and $22,000 precious metals tax. This adds up to a whopping tax bill of $5,673,000 annually.

Cyprus Miami also spent an additional $45,000,000 for goods and services, $13,000,000 for power, $4,000,000 for freight costs and $3,000,000 for natural gas for a grand total of $105,000,000.

How does the company generate these huge amounts of money to meet the payroll, pay the bills, pay the taxes, provide benefits and

still return a profit to the shareholders who invested their cash in the company? Basically, the complex is divided into six departments - Mining, Leaching, Solvent Extraction, Smelting, Tankhouse and Rod Plant. The complicated process that takes place, explained simply, is as follows:

In the Mine, 50,000 tons per day of rock containing 0.50% copper is drilled, blasted and loaded in trucks that can carry up to 190 tons per load and transported to leaching pads. There, the ore is sprinkled with a dilute solution of sulfuric acid and water. As this solution percolates downward through the ore, it dissolves the copper. Water containing the copper comes out at the bottom of each leach pad. About 500 acres of leach pads produce 342,000 pounds of contained copper per day. This solution, containing copper, is then sent to the Solvent Extraction Plant.

Two Solvent Extraction Plants process 8,000 gallons per minute of leach solutions. At this point, the leach solution contains about 4 grams of copper per liter and is further concentrated by the use of organic extractant to approximately 46 grams of copper per liter. This upgraded material is sent at a volume of 2200 gallons per minute to the Tankhouse.

The Tankhouse consists of 80 electrorefining cells to process copper in anode form for the smelter and 140 electrowinning cells to process the copper solution coming from the Solvent Extraction Plants. Smelter anodes (99.8% pure copper) is precipitated on

copper starter sheets to a purity of 99.99% copper. The sludge that results from this process contains trace amounts of precious metals which are processed at another facility. In the electrowinning process, copper is plated out of solution also on copper starter sheets and is also of the same purity. These products, now in cathode form are sent to the Rod Plant.

In the Smelter, copper concentrates (about 30% copper) from Cyprus Bagdad and other toll customers are fed into an electric furnace and heated to 2300°F. As it melts, the heavier copper bearing matte settles to the bottom of the furnace. The waste material (slag), being lighter, rises to the surface and is drawn off the top and the copper is drawn off the bottom. Slag is hauled to the dump. The molten copper then goes to a converter where oxygen is blown through the copper matte. The oxygen combines with the sulfur to make sulfur dioxide (SO_2). The SO_2 then goes through an electrostatic precipitator to cool the gases and remove small particles. The resulting gas is scrubbed, dried, cooled and converted to sulfuric acid (H_2SO_4) which is used in the leaching process. The molten copper from the converter is sent to the anode casting wheel and after cooling, is sent to the Tankhouse to be electrorefined. Present capacity of the Smelter is 420,000 tons per year of concentrates and converts this to 240,000,000 pounds of anodes. By-product sulfuric acid amounts to about 1150 tons per day. Incidentally, the smelter has had no ambient air violations since August, 1985.

In the Rod Plant, cathode copper is melted in a vertical shaft furnace and then goes to skim basin and a holding furnace to rid the material of any possible slag and gases. In the holding furnace, the temperature of the copper is maintained at approximately 2040°F. This aids in quality control. From this point, the molten copper goes into the pour pot and is cast in bar shape. This continuously produced bar is then fed into grooved rollers that decrease in size until it emerges at the coiling machine and is made into 5900 pound coils of 5/16" copper rod. Annual production of copper rod is approximately 260 million pounds or 150,000 miles, which if joined together would circle the earth six times.