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AZ

# CAMBIOR USA, INC.

April 26, 1990

Dick Walters  
S. 3412 Lincoln Dr.  
Spokane, WA 99203

Dear Dick:

Thanks for thinking of me regarding the Van Dyke submittal. Unfortunately Cambior is not in the market for a copper property. We, like most companies these days, are after gold and only gold. If you get any other leads on other opportunities keep me in mind.

I was expecting to see you at the GSN convention a few weeks ago. Thought we would at least have a few beers together. Just a few days ago Dawn and I were talking of Spokane and thinking of how beautiful it always is in the spring. We do miss it especially after our stays in Denver and Reno.

You have probably already heard the latest, but if not, Jack and Bill quit Bond. I have not heard where they are going yet, but they are going together wherever it is.

Hope you and the family are doing well. We think of you often.

Sincerely,



Randy Moore

RM:lat  
Enclosures

Reno 3-14-90

Richard R. Walters  
S. 3412 Lincoln Dr.  
Spokane, WA 99203-1650

Tele: Of (509) 624-5831  
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March 13, 1990

Randy Moore  
Cambior USA, Inc.  
230 South Rock Blvd.  
Reno, NV 89502-2345

Dear Randy,

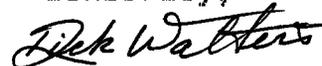
Perhaps Cambior has a possible interest in acquiring copper reserves which can quickly be placed in production at a low capital cost ? If so, then the attached information on the Van Dyke Mine in Arizona may be worthy of their consideration.

As for my part, I am looking for a finder's fee from Cambior if they make a deal on it; 5% of the purchase or 5% of annual lease payments.

Please let me know if there is any interest. I will get you or your management in contact with the appropriate people.

Best personal regards.

Sincerely,



Dick Walters

Encl: 8 page summary report on Van Dyke Mine, Miami, Arizona

**VAN DYKE COPPER MINE  
MIAMI, ARIZONA**

## SUMMARY

### VAN DYKE MINE MIAMI, ARIZONA

LOCATION: The mining operation is located at the Van Dyke Mine Miami, Arizona. Access to the property is through Magma Copper's secured gate, east of downtown Miami.

The Van Dyke Mine lies in the mineral rich Intermountain Region of Central Arizona. Climatic conditions are mild max hi temp. ranges from 104 to 108 degrees F. the low ranges from 11 to 22 degrees F. Average rain fall 17 inches per year.

HISTORY: Mr. Cleve W. Van Dyke formed the Van Dyke Copper Company in 1916. Van Dyke founded the town of Miami, he formed the Miami Townsite Company and sold lots. He retained the mineral rights and sold the lots from the surface to a depth of 40 feet below the surface. An exemption clause protects the Van Dyke Copper Company from damage claims resulting from caving due to mining operations.

Van Dyke drilled two exploration holes between 1916 and 1918 and started sinking the Van Dyke shaft in the spring of 1919. the shaft was completed in 1921. During the period 1929 to 1931 approximately 110,000 tons of 5% copper ore was mined and 8,300 tons of 5.3% copper for a total of 11,850,000 pounds of copper.

The shaft was eventually completed to a depth 1,692 feet.

In the 1940's Anaconda, Inspiration and Miami Copper Company leased the property and drilled four test holes without intersecting the mineralization.

Freeport Sulphur leased the property in 1964 and drilled two holes which missed the mineralization.

Occidental Minerals leased the property from 1968 to 1980. During this period they delineated the Van Dyke ore body. Seventy test holes were drilled, 62 were mineralized and 46 were considered ore holes. Oxymin cancelled their lease in October 1980. Also during this period, Oxymin attempted to interest others in the property including Amax and Utah International. Oxymin reportedly spent approximately \$15 million on the

property. In early 1976, Oxymin undertook two pilot In Situ leach tests of the virgin ground located outside of the city limits of Miami. Both tests utilized hydraulic fracturing to increase the permeability of the deposit and high pressure injection of the leach solution. The first test included two 1,000 foot deep holes which were 75 feet apart. The second test consisted of five holes, consisting of one injection hole located in the center of a four hole pattern. The second test produced 100,000 pounds of copper from pregnant liquor assaying 2.5 grams per liter of copper. Oxymin considered the test a success and began planning for a full scale commercial plant. However, dealings with the owners of surface rights and the Town of Miami delayed the project. The combination of Occidental Petroleum's eventual loss of interest in mining, the legal problems with the Town of Miami, and the depressed state of the copper industry led to Oxymin dropping the project in October, 1980.

The property is owned by Van Dyke Copper Company. Van Dyke Copper Company owns the mineral rights on approximately 1,100 acres of patented land, approximately 1,200 acres of unpatented lode mining claims and 640 acres State of Arizona Prospecting Permit. All the proven ore is located on Simple fee land.

GEOLOGY AND MINERALIZATION: The old Van Dyke underground mine workings have been inaccessible for decades. These notes on geology are based on information provided by Kocide. Copper mineralization on the Van Dyke property occurs predominantly in Pre-Cambrian Pinal Schist with major occurrences of mineralization associated with thin, Laramide granite porphyry dikes and sills. The Pinal Schist, in the area of the Van Dyke property is overlain by the Pre-Miami fault, Quaternary Gila conglomerate. The Van Dyke deposit is part of the Miami-Inspiration Mineral Zone that has been faulted into the Globe-Valley and that prior to deposition of the Gila Conglomerate the mineralization outcropped, formed a leach capping, was enriched, then oxidized in place prior to being covered by Gila conglomerate and later displaced by the Miami fault.

Mineralization in the deposit is predominantly azurite and malachite with minor amounts of chrysocolla and cuprite. Minor amounts of chalcopyrite and traces of bornite are localized in areas of incomplete oxidation near the bottom contact of the deposit. Protore below the deposit has a low sulfide content with a high ratio of pyrite to chalcopyrite.

RESERVES: In place Leaching Recoverable Ore Reserve, using Occidental Minerals Corporation data, checked by Floyd J. Ingram (geologist)

OXYMIN RESERVES

Probable Reserve	100,000,000 tons	.53% Cu
Possible Reserve	12,000,000 tons	.52% Cu

INGRAM RESERVES

Probable Reserve	90,589,500	.55% Cu
Possible Reserve	22,471,300	.453% Cu

METALLURGY: Occidental Minerals conducted numerous metallurgical tests at New Mexico Tech Research Foundation at Socorro, New Mexico. Conclusions were projected from column leach tests for a mine model which includes under cutting the ore body and leaching in place using the trickle (gravity) method.

Metallurgical parameters:

Recovery 70%

Acid consumption 2.5 pounds per pound of copper

Solution grade 3.0 grams per liter copper

Acid in solution 40 grams per liter reduced to -5 grams per liter

MINING CONCEPTS: Ore in the Van Dyke deposit, for the most part, is oxides in the form of carbonates and silicates, which will readily leach if a dilute solution of sulfuric acid can be made to contact the mineral.

Several Mining Concepts have been studied; In Situ Solution Mining or In Place Solution Mining would be feasible.

In Situ Solution: Work done to date indicates that In Situ Solution Mining of the Van Dyke Property would be both profitable and feasible.

In Place Solution Mining: Feasibility studies have been made on In Place Solution Mining the Van Dyke deposit. It has been proposed that 10% of the ore body be undercut and removed from drill holes using high pressure jets. This method includes using high pressure jets to inject the leach solutions into the broken column.

It is envisioned that this method would give at least 10% better recovery than the In Situ Method and cost about the same per pound of Copper produced, 10% more recovery makes this method much more attractive economically.

**EVALUATION SUMMARY:** By; Thomas A. Clary (geologist) James B. Fletcher (engineer) and Floyd J. Ingram (geologist)

100,000,000 tons at .53% Cu.

1,060,000,000 Total pounds of Cu.

742,000,000 pounds of recoverable Cu.

Mining Method: Under ground-hydraulic undercut-in place leach. 10% of the ore mined heap-leached. No surface disturbance within town limits.

**VAN DYKE ORE RESERVE REPORT:** By Clyde R. Caviness 3-1-76

Cut-off	Tons	Total Cu.	Oxide Cu.	% Oxides
.10% Cu.	183,122,164	.374%	.215%	57.5
.15% Cu.	157,266,891	.442%	.270%	61.2
.20% Cu.	119,202,494	.521%	.319%	61.2
.30% Cu.	101,289,936	.595%	.377%	63.4
.40% Cu.	85,025,682	.627%	.391%	62.4

Assay data shows that about 62% of the total copper present is readily soluble. The soluble copper is in the form of carbonates, malachite, azurite and some chrysocolla. These minerals occur as "paint", and thin films in fractures and shist planes in the Pinal Schist and granite porphyry. The bulk of remaining copper value occur primarily as chrysocolla and minor chalcite. These latter minerals are also leachable but of course less soluble than the carbonates. Using In Situ leaching method of mining, rest periods would be required between leach cycles to recover the less soluble copper minerals.

**PRESENT OPERATION:**

Start-up date	November 1988
Mining Method	In Situ Solution
Product	Cement Copper 80 to 82% Cu.
Market	Kocide plant in Casa Grande, Arizona
Ph	2.8 to 3
Iron Consumption	2.7 to 2.8 pounds per pound of copper
Residual time	24 hours
Solution grade	2 grams per liter
Solution pumped	200 gallons per minute
Injection wells	1
Production wells	1
Smelter cost	\$0.13 per pound copper (Cyprus)

Acid cost	\$26.00 per ton delivered (ASARCO)
Iron cost	\$165.00 per ton delivered
Power cost	Approximately \$4,000. per Month
Taxes on leased property	\$3,500. per year
Manpower (13)	4 @ \$7.00 per hour 4 @ \$8.00 per hour 1 @ \$10.00 per hour 1 Secretary 1 General Manager 1 Plant Manager 1 V.P.
Water supply	City of Miami
Water cost	\$3.00 per 1,000 gal.
Pump Head	1,560 feet
Pump HP	200
Major repair cost	Pumps
<u>NEED:</u>	3 injection wells 2 additional monitor wells 1 additional production well SX-EW Plant

**LAND STATUS:** Kocide controls the mineral rights on 2,940 acres via Mining Lease Agreement.

**MINING LEASE AGREEMENT:**

Date: 2-9-87

Party 1: Van Dyke Copper Company

Sho Me Copper Company

Miami Trust Company

Party 2: Kocide Chemical Corporation

Recorded: Short Form Doc. 696 pages 355-389 Gila County, Arizona

Property: Initial Site (7.5 acres) with an option to expand to the remaining subject property.

Term: 15 years and for so long thereafter as copper or other metals or minerals are produced by Lessee, unless Lessee exercises its option to extend the Lease to encompass all the subject premises on or before the date three years from the date hereof, this lease shall terminate at 11:59 PM on the date three years from the date hereof; provided further that in the event

Phase Two operations are extended by the Force Majeure provisions, the three year period for exercise by Lessee of the foregoing option shall be extended for the periods (not to exceed 12 Months) of Force Majeure.

**Operation Phases:**

Phase One: All operations except assessment work, shall be conducted on the Initial Site (7.5 acres). Phase One shall terminate on the earlier of 1. the date 18 months from the date of this lease, 2. such time as lessee has produced 6,000,000 pounds of copper or 3. the date on which Lessee exercises its option to extend to the balance of the Subject Premises.

Phase Two: Phases Two shall commence on expiration of Phase One and all operations except assessment work shall continue to be conducted only on the Initial Site and shall consist of additional development and production operations. Phase Two shall terminate on the earlier of 1. the date three years from the date of this lease plus period of time if any, but not to exceed a cumulative period of 12 months of Force Majeure

**Advanced royalty Payments:**

Phase One: No advanced royalty

Phase Two: \$6,000. per month, Force Majeure \$3,000.

Phase Three: \$12,000. per month, force Majeure \$6,000. per month

All payments are a credit to Production Royalty

Production Royalty Payments: Until Lessee has paid production royalty on 6,000,000 pounds of contained copper produced \$0.015 per pound of contained copper produced.

Thereafter royalty shall be based on the producer price for cathode copper.

Production royalty rates for contained copper produced shall be: published price \$0.60 per pound. \$0.03 per pound copper, \$0.60 to \$1.00 for each 1/2 cent increase over and above \$0.60 per pound the royalty shall increase 1/20 of \$0.01 for \$1.00 per pound copper price \$0.07 per pound copper. \$1.00 to \$1.40 \$0.07 per pound copper, \$1.40 + 5% of published price.

Assignment: Agreement is assignable on written permission of Lessor.

DEAL: Kocide will sell Kocide Mining Company, no override.

\$2,500,000. selling price was quoted to me.

Property is now in Force Majeure.

## TAXES ARIZONA:

Production Sales Tax; (transaction privilege taxes) 2.5% gross sales  
Income Tax; 4.5% of the State taxable income.

Property Taxes; In Arizona after a mine goes into production, is  
subject to negotiations. These taxes for existing mines  
varies from \$0.01 per pound copper to \$0.04 per  
pound copper.

Production Property taxes; are calculated by taking 10% to 27% of the  
investment. However, this tax can also be  
negotiated. It's likely that this tax would be  
insignificant in calculating DCF-ROI.

Percentage Depletion Allowance: Copper 15%.

## ENVIRONMENTAL MATTERS:

Kocide has obtained the necessary permit for In Situ mining of the  
underground workings. This permit allows the drilling of five holes into the  
underground workings.

The operating permit mandates routine sampling by outside  
laboratories and by the Arizona Department of Environmental Quality.

At the termination of leaching the acid solution must be removed from  
the mine, the copper removed, the precipitator barren solution neutralized  
and returned to the mine.

Sampling of the monitoring wells prior to start-up of Kocide's  
operation indicates that copper bearing solutions may have migrated in the  
vicinity of the Van Dyke Mine prior to start-up of Kocide's operation.

Miami Copper the nearest In Situ operation has been injecting leach  
solution into old block-caved areas and recovers the solution in the  
underground workings. The Miami In Situ leach began operation in 1942.

It is well known that the Arizona Department of Environmental  
Quality (ADEQ) has expressed concern that mining operations in the Globe-  
Miami district have released acid into the ground water systems and that a  
plume of contaminated water is migrating toward Roosevelt Lake which  
supplies drinking water to Phoenix. The Globe-Miami district has been  
named a number one priority area for 1989 by the ADEQ. At this time it is  
not known what action the ADEQ will take, but it is likely that at least a  
study of the problem, paid for by parties named as principal responsible  
parties, will be required in 1989. It is not known if the ADEQ will name

Kocide as one of the principal responsible parties. In view of Kocide's short history in the district it seems unlikely, but regulatory agencies in the environmental area may involve all parties a a district until an issue is finally resolved. In any event, it seems doubtful that Koside has any substantial exposure.

MISC. INFORMATION:

One of Kocide's problems is that they are pumping iron back into the mining area.

Operations ceased the end of September 1989.

EQUIPMENT AND CONSTRUCTION COSTS: \$595,552.

Leasing: 1 1/2 yard loader \$2,000. per month

Crane to load iron \$680. per month

Office furniture and equipment

Two house trailers are on site to house the office and lab