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PRINTED: 07-11-2006

ARIZONA DEPARTMENT OF MINES AND MINERAL RESOURCES AZMILS DATA

PRIMARY NAME: MICA MULE

ALTERNATE NAMES:

SILVER MICA
BLACK CANYON MICA
AZCO MICA

YAVAPAI COUNTY MILS NUMBER: 867

LOCATION: TOWNSHIP 8 N RANGE 2 E SECTION 7 QUARTER C
LATITUDE: N 34DEG 03MIN 06SEC LONGITUDE: W 112DEG 11MIN 42SEC
TOPO MAP NAME: BLACK CANYON CITY - 7.5 MIN

CURRENT STATUS: EXP PROSPECT

COMMODITY:

MICA
GOLD

BIBLIOGRAPHY:

ADMMR MICA MULE FILE
BLM AMC FILE 30086
CLAIMS ALSO IN SEC. 18 T8N-R2E & SEC. 12 AND
13 T8N-R1E

Azco Announces Resignations

Monday February 2, 6:22 pm ET

GLENDALE, Ariz.--(BUSINESS WIRE)--Feb. 2, 2004--Azco Mining Inc. (AZMN.PK), a U.S.-based mining and exploration enterprise with an emphasis on industrial minerals, gold and copper, today announced the resignation of two of its officers.

Gary Simmerman, vice president operations, and Ryan Modesto, vice president finance, resigned to accept other positions in the mining industry.

Dr. Pierce Carson, president & CEO, stated that the board wished these former officers well in their future endeavors, and that at the appropriate time the company will seek replacement candidates for the vacated positions.

The information contained herein regarding risks and uncertainties, which may differ materially from those set forth in these statements, in addition to the economic, competitive, governmental, technological and other factors, constitutes a "forward-looking statement" within the meaning of Section 27A of the Securities Act of 1933, as amended, and Section 21E of the Securities Exchange Act of 1934, as amended, the Private Securities Litigation Reform Act of 1995 and is subject to the safe harbors created thereby. While the company believes that the assumptions underlying such forward-looking information are reasonable, any of the assumptions could prove inaccurate and, therefore, there can be no assurance that the forward-looking information will prove to be accurate. Accordingly, there may be differences between the actual results and the predicted results, and actual results may be materially higher or lower than those indicated in the forward-looking information contained herein. Further, the company assumes no obligation to update or otherwise publicly revise the forward-looking information disclosed herein to reflect circumstances existing after the date hereof.

.....
Contact:

Azco Mining Inc., Glendale
Pierce Carson, 623-935-0774
or
Investors Relations
Aurelius Consulting Group Inc.
Dave Gentry, 407-644-4256
Jim Rose, 410-349-1685
www.runonideas.com
Aurelius@cfl.rr.com

.....
Source: Azco Mining Inc.

AZCO Mining Begins Shipment of Feldspathic Sand Products and Prepares for Major Increase in Production

Wednesday September 4, 2002 9:01 am ET

GLENDALE, Ariz.--(BUSINESS WIRE)--Sept. 4, 2002--AZCO Mining, Inc. (AMEX:AZC - News) announced today that it has begun supplying high-quality feldspathic sand products to customers in the Phoenix area. The Company has received preliminary commitments to purchase a substantial portion of its sand products, and it plans to expand its production capacity and to build its customer base as it increases its operational capability. Over the next twelve months, AZCO plans to increase production from its Black Canyon mine to reach the full production rate of 180,000 tons per year.

"Because AZCO products have a major price advantage, are of excellent quality and are available locally, the acceptance by consumers has been extremely positive," said CEO Larry Olson. "Potential customers tell us they would welcome a high quality local source and we expect to be able to offer our products at very competitive prices. Over the coming months, I am confident we will be successful in achieving our targeted sale volumes, as it appears to be totally based on our ability to produce."

AZCO intends to sell its feldspathic sand products into the growing construction and recreation markets in the Phoenix, Ariz., metropolitan area, where demand is estimated to exceed 500,000 tons per year. The main applications include sand used for stucco, plaster and mortar in new construction, and sand used for bunkers on golf courses. Prices range from \$20 to over \$100 per ton, depending on whether the material is shipped in bulk or is bagged, and on its sizing, purity and end use. The location of the Black Canyon mine near Phoenix gives AZCO a substantial transport cost advantage over other sand suppliers that now are bringing material from as far away as Nevada and California.

AZCO's feldspathic sand is produced as a by-product of mica concentration from its wholly owned Black Canyon mica mine located 40 miles north of Phoenix. Processing the sand involves crushing, screening and magnetic separation to yield a wide range of quality products that can be closely controlled as to particle size, purity and other specifications. The products are either bagged for shipment or trucked in bulk to customers.

Mica is the primary product from the Black Canyon mine and the major long-run focus of AZCO's marketing activities. After it is processed at the Glendale plant, the mica is targeted for high-value applications in plastics, coatings and cosmetics. Olson said, "We are pleased with the progress we are continuing to make in the marketing of our mica but always have recognized that building those markets will take time. Meanwhile, as production of feldspathic sand builds up, the corresponding forecasted revenues are projected to increase and eventually cover the majority of the Company's operating costs."

AZCO is aggressively seeking the needed financing to cover the cost of capital required to complete certain upgrades and expansions at its Black Canyon and Glendale processing facilities and to cover ongoing operating expense. Its ability to achieve its goals and objectives, including increasing production of feldspathic sand to reach the planned capacity of 180,000 tons per year, will depend on securing the required financing in a timely manner.

About AZCO Mining, Inc.

OK for
B. J. Ellis

G. M. S. COMPANY, INC.

Scottsdale, Arizona

MUSCOVITE MICA PROJECT

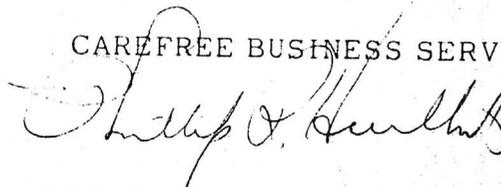
To the officers, management and stockholders
G. M. S. Company, Inc.

We have prepared the past and projected statements of operations and related summary data of G. M. S. Company, Inc. for the past fourteen months for the development period ending September 30, 1978 and for the five years ending September 30, 1983 from information and assumptions provided by the management. We did not audit the information and assumptions provided and accordingly we express no opinion on them nor the resulting projected statements of operations and related summary data. Additionally, the accompanying projections should not be construed as statements of fact. The accuracy of any financial projection is dependent on the occurrence of future events which cannot be assured and therefore, the actual results achieved by G. M. S. Company, Inc. during the five years ending September 30, 1983 may vary from the projections.

This report and the related projected statements of operations have been prepared for the guidance of the stockholders, management and other interested parties. As is customary in assignments of this nature, neither our name, this report, nor the related projected statements of operations may be included in any prospectus, newspaper publicity, or as a part of any printed material, or used in offerings or representations in connection with the sale of securities or participation interests to the public.

The terms of our engagement are such that we have no obligation to update this report or to revise the projected statements of operations because of events and transactions occurring subsequent to the date of this report.

CAREFREE BUSINESS SERVICES



December 2, 1977

G. M. S. COMPANY, INC.

(a Nevada corporation)

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G. M. S. COMPANY, INC.

REPORT SUMMARY

ENGINEERING REPORT

Acquisition, construction and development evaluation will be based upon plans for the proposed mining and milling operation, the preliminary cost estimates for the development, and a cost estimate report. The engineering report was prepared by G. M. S. Company, Inc. and is based upon experienced performance, actual quotations from potential suppliers of plant and equipment, and a market study outlining the demand and price of the finished products.

The engineering report also takes into account other information provided by competent consultants who have appraised the quality and quantity of ore reserves and outlined the overall potential of the property. These reports strongly support the intended project and the placing of the project into operation.

SITE LOCATION

The Mica Mule Mining claims are located in the County of Yavapai, approximately $2\frac{1}{2}$ miles due west of Rock Springs and Black Canyon City, Arizona in the Tip Top mining district.

The mine site is currently accessible by any durable vehicle, except during the rainy season when 4-wheel drive is required. The present access road into the mine area connects with Interstate 17 at the Table Mesa Interchange, 22 miles north of Phoenix. A county maintained road connects the interchange with the Agua Fria River at Gillette, 5.6 miles distant. It is an additional 8.6 miles from the river to the southern boundary of the Mica Mule Claims along the present Tip Top road. However, this can be shortened by 3 miles as shown by the road layout and study which has been prepared.

The claims area is situated in the foothills of the Bradshaw Mountains in gently rolling terrain. Several drainage channels present the only minor topographic obstacles to easy development of the Mica Mule Mine. This portion of the Bradshaw Range is a semi-arid desert which receives some 12 to 14 inches of rainfall annually. Such rainfall should be sufficient to charge a small reservoir to provide water for the mine site. In addition, numerous springs exist at or near the Granite schist contact that could easily be developed to provide a steady water flow.

PROPERTY AND LEGAL STATUS

The Mica Mule claim block consists of 48 continuous unpatented lead mining claims located on federal land administered by U. S. Bureau of Land Management. The claim block is rectangular in outline, 8 claims across and 6 claims long, covering in excess of 960 acres. Each claim is 600 feet wide and 1500 feet long with extra lateral rights. The claims are in good standing and held by virtue of annual assessment work as specified by the Arizona Mining law.

HISTORY

During the late 1960's and early 1970's the Mica Mule Group of claims were staked by Herman Harrison and Associates of Phoenix, Arizona. In 1971 the Harrison Mining and Exploration Company, Inc. was incorporated under the laws of the State of Arizona. The 48 Mica Mule claims were then assigned to this corporation. Following assignment, an intensive program of sampling and trenching was undertaken by the company and an extensive road network was established to provide needed access. As a result of this exploratory effort it was concluded that a large body of high quality muscovite mica of sufficient size to support a moderate mining and milling operation existed on the property. At this time, Harrison Mining and Exploration Incorporated management made plans to establish a mine and mica mill to process the high grade muscovite mica and undertook a series of feasibility studies to establish the optimum mining and milling rate to provide the greatest economic return.

The feasibility report on mill size, milling flowsheet, milling characteristics of the mica, and general milling economics was completed by mica expert, P. S. Hoyt in June 1972. It was concluded that the Mica Mule muscovite will produce a scrap mica product "OF SUPERLATIVE QUALITY AS TO WHITE COLOR, BRIGHTNESS AND INHERENT SHEEN AND BRILLIANCE."

ORE RESERVES

A total ore reserve analysis and projection of the total on all 48 claims projects a maximum tonnage ranging between 6 million tons at 50 foot depth and 61 million tons at 500 foot depth. Assumptions for this purpose have been based upon a 100 foot mining face in an area called the north pit which projects tonnage reserves of 450 thousand tons or adequate to supply 36,000 tons per year for the planned ten year mining program. If at that time or prior to that time the market supports additional tonnage further feasibility and expansion can be initiated. Attached is a graphical analysis prepared by geologists Joe Wilkins which is a representation of the projected geology of the pegmatite deposits containing the muscovite mica.

ORE RESERVES (CONTINUED)

No consideration has been given for the value of the quartz and feldspar that are by-products of the crushing and screening operation to separate the mica. These values could be substantial and could represent a 20% increase over projected income.

MARKET, USAGE AND APPLICATIONS

The principal use of scrap mica is the production of ground mica. The ground mica in various mesh screen sizes, is used extensively as a filler and surface coating for roofing materials, roll roofing and asphalt shingles, as a filler in wall board and joint cements, and as an ingredient in paints, drilling muds, plastics, pipe line enamels, welding rods, tires and other rubber products.

There currently is no source of mica on the west coast of the United States and since the current sources of mica for the west coast industry is the eastern United States, the Mica Mule would enjoy a 60 to 70 dollar/ton advantage on freight rates plus providing a product of higher quality than is currently available. It is anticipated that mica would sell in the neighborhood of \$120.00 to \$150.00 per ton f.o.b. plant site, and based upon our reviews of potential market, 3,000 tons per month capacity is reasonable and practical.

ESTIMATED PLANNING AND CONSTRUCTION

Based upon our construction schedule and plant and equipment acquisition time, the plant could be placed into operation at the end of 6 months after funds are available. The monthly expenses are estimated to be as follows:

First Month	\$418,000.00
Second Month	159,000.00
Third Month	128,100.00
Fourth Month	202,300.00
Fifth Month	102,400.00
Sixth Month	172,100.00
Eighth Month	50,000.00

We would anticipate initial sales at the end of the seventh month of operation.

ESTIMATED PLANNING AND CONSTRUCTION (CONTINUED)

Cost estimates of projected cash flow and net return have been discounted from 3,000 tons per month to a feasibility of 1,500 tons per month and again discounted on a ten month year which reflects an 83% overall plant efficiency. The initial plant investment prior to start up has been depreciated on a ten year program with the assumption that the escalation of operation cost would be absorbed by escalation on the net sale price of the finished product, and this assumption reflects a 20% return on investment. On the basis of 3,000 ton design capacity and a ten month year as indicated above the return on projected investment is indicated to be as high as 80%. These figures do not take into account royalties on the maximum and the minimum calculations. The royalty consideration would effect the net return by as much as 25% in maximum and 10% in minimum.

THE DEVELOPER

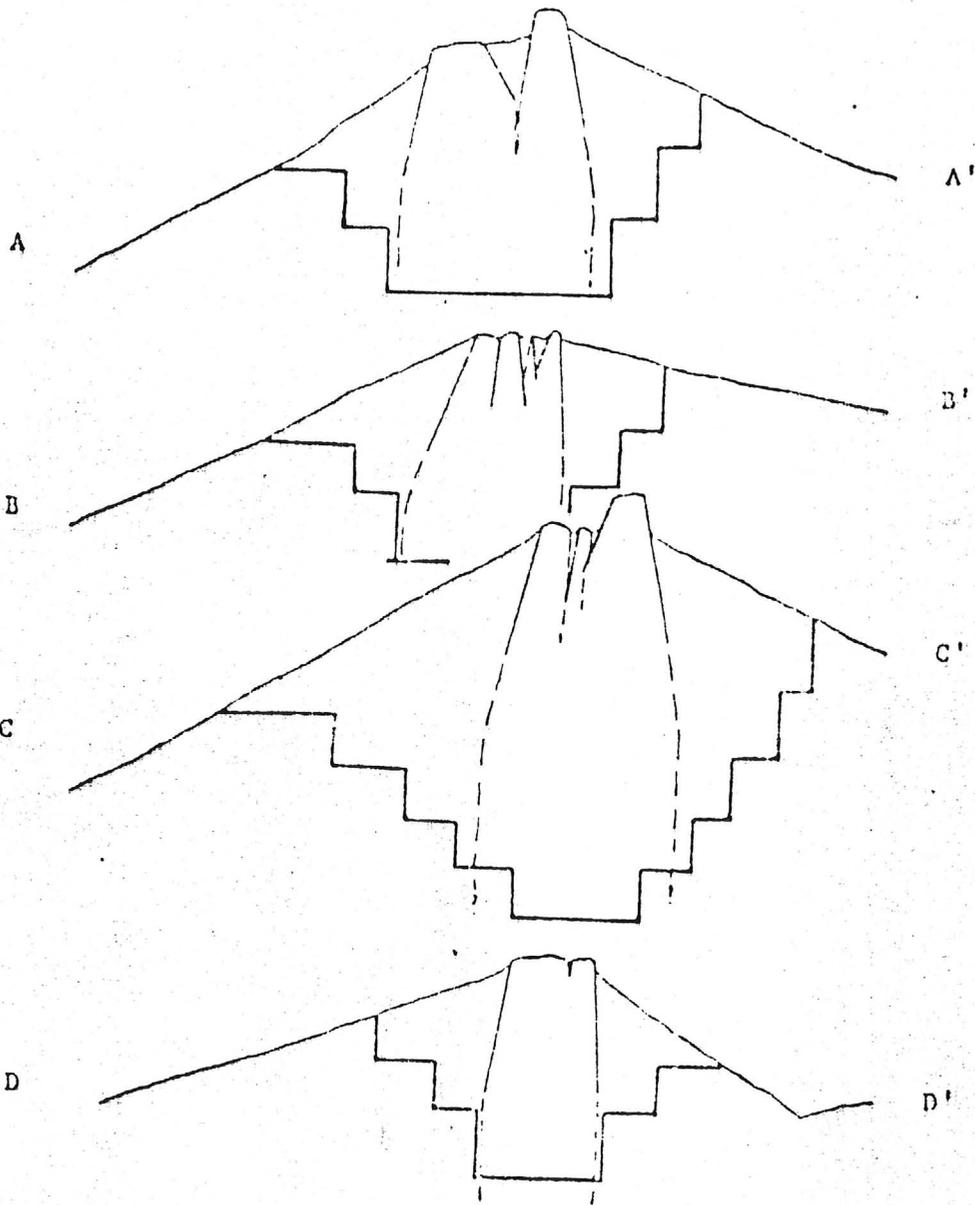
The developer, G. M. S. Company, Inc., is a Nevada Corporation and has carried on construction activities and equipment management business in the state of Arizona for the past three years, and does have twenty five years of practical experience in the heavy construction industry as related to this activity and the proposed production and marketing of material of a similar nature. G. M. S. Company, Inc. will also be performing construction activities in the area on a new dam construction presently started by the Core of Engineers on Cave Creek. The equipment and management available from that source would contribute greatly to the planned project and to contribute to lower cost.

EMPLOYMENT

During the initial plant and startup period of six months, it is expected that employment will reach a peak of fifty with a daily employment after nine months of twenty, yearly peaks during quarry operation would reach 39 for a three month period.

Annual revenue is expected to range between \$1.5 million and \$3.0 million at current prices.

MICA MULE MINE



NORTH PIT

Capacity; 450,000 Tons
grade: 40-60 % Mica
Stripping Ratio: 1 : 1

G. M. S. COMPANY, INC.

BALANCE SHEET
November 30, 1977

ASSETS

Current Assets

Cash	\$	19,690.23
Valley National Savings		48,000.00
Accounts Receivable		314,929.54
Office Supplies		2,443.86
Contracts in Progress Receivable		286,973.51

TOTAL CURRENT ASSETS

\$ 672,037.14

Fixed Assets

Furniture & Fixtures	\$	9,778.78
Allowance for Depreciation	(9,778.78)
Leasehold Improvements		2,291.57
Amortization of Leasehold Impr.	(143.27)
¹ Tacoma Terminal		374,000.00

TOTAL FIXED ASSETS

\$ 376,148.30

Investments and Other Assets

Sun Shade Company	\$	5,000.00
Mica Mule Mine		5,000.00
Other		238.00

TOTAL INVESTMENTS AND OTHER ASSETS

\$ 10,238.00

Equipment, Autos and Trucks

Construction Equipment	\$	86,659.54
Allowance for Depreciation	(86,159.54)
Small Tools		2,703.83
Allowance for Depreciation	(2,703.83)
Office Equipment		11,095.75
Allowance for Depreciation	(6,690.34)
Autos and Trucks		93,717.62
Allowance for Depreciation	(24,853.69)

TOTAL EQUIPMENT, AUTOS AND TRUCKS

\$ 73,769.34

TOTAL ASSETS

\$1,132,192.73

[Signature]

¹ The sale of the Tacoma Terminals to the Port Authority is expected to close in early 1978 and the amount appearing in the Balance Sheet represents that portion of the total value belonging to G.M.S. Company, Inc.

² The total of all fully depreciated fixed assets is \$104,942.90 which can be interpreted as additional net worth not appearing directly in the net worth of G.M.S. Company, Inc.

See accountant's letter attached.

G. M. S. COMPANY, INC.

BALANCE SHEET
November 30, 1977

LIABILITIES AND STOCKHOLDERS' EQUITY

Current Liabilities

Notes Payable:

First Federal Loan	\$121,202.67
Valley National Loan	21,499.23
Escrow Accounts	27,125.00
C. M. Sheeder	13,997.51
G. M. Shupe	176,975.74
Autos and Trucks	63,595.58
Accounts Payable	<u>8,719.13</u>

TOTAL LIABILITIES

\$ 433,114.86

Stockholders' Equity

Capital:

Capital Stock	\$ 10,000.00
Additional Paid-in Capital	378,592.16
Retained Earnings, Prior Period	1,030.86
Retained Earnings, Current	<u>309,454.90</u>

TOTAL STOCKHOLDERS' EQUITY

\$ 639,077.92

TOTAL LIABILITIES AND STOCKHOLDERS' EQUITY

\$1,132,192.78



See accountant's letter attached.

G. M. S. COMPANY, INC.

STATEMENT OF INCOME

For the Two Month Period Ending November 30, 1977

REVENUES

Income

Construction	\$325,000.00	
Rentals	1,599.20	
Joint Venture	8,049.91	
Other	<u>413.28</u>	
TOTAL INCOME		\$335,062.39

EXPENSES

Direct Expense

Cost of Construction including Labor, Equipment and Supplies	\$ 13,970.55	
TOTAL DIRECT EXPENSE		\$ 13,970.55

General & Administrative Expense

Auto Expense	\$ 2,238.07	
Equipment Repairs & Maintenance	120.74	
Consultants, Legal	2,515.64	
Telephone, Radio Communications	886.17	
Utilities	219.63	
Travel & Entertainment	2,548.80	
Insurance	2,303.03	
Miscellaneous	10.00	
Interest	392.67	
Advertising	12.60	
Depreciation	<u>389.59</u>	
TOTAL GENERAL & ADMINISTRATIVE EXPENSE		\$ <u>11,636.94</u>

TOTAL EXPENSES		\$ 25,607.49
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TOTAL INCOME	\$335,062.39	
TOTAL EXPENSES	<u>25,607.49</u>	
NET PROFIT		<u>\$309,454.90</u>

See accountant's letter attached.



DECEMBER 5, 1977

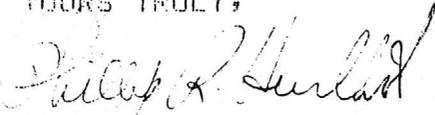
MR. G. M. SHUPE
G.M.S. COMPANY, INC.,
14435 N. 71ST STREET
SCOTTSDALE, ARIZONA

DEAR, MR. SHUPE:

THE ACCOMPANYING STATEMENT OF ASSETS AND LIABILITIES AS OF
NOVEMBER 30, 1977 AND RELATED STATEMENT OF REVENUES AND EXPENSES
FOR THE TWO MONTHS ENDED NOVEMBER 30, 1977 HAVE BEEN
PREPARED WITHOUT AUDIT.

WE HAVE NOT CARRIED OUT ANY AUDITING PROCEDURES WITH RESPECT
TO THESE FINANCIAL STATEMENT, AND THEREFORE WE DO NOT
EXPRESS ANY OPINION WHATEVER CONCERNING THEM. A STATEMENT
OF CHANGES IN FINANCIAL POSITION HAS NOT BEEN INCLUDED
IN THESE INTERIM FINANCIAL STATEMENTS.

YOURS TRULY,



PHILLIP R. HURLBUT
A.S.P.A.
N.S.P.A.

C

START UP PROJECTIONS

- 1978-1 Fixed Plant Installation Costs
- 1978-2 General and Administrative Expenses
- 1978-3 Operating Costs
- 1978-4 Sales and Selling Expense

F

GEOLOGY REPORTS

Professional Background and References for
Joe Wilkins - Professional Geologist/Geophysicist

Feasibility Report - Joe Wilkins

Professional Background and References for
Philip S. Hoyt - Consulting Geologist and Economist

Feasibility Report - Philip S. Hoyt

Appendix 4

PROFESSIONAL BACKGROUND

of

JOE WILKINS

Tucson, Arizona

Joe Wilkins was awarded a B.S. in Geophysics - Geochemistry (with Distinction) and Honors in Geology from the University of Arizona in 1966. Mr. Wilkins was a graduate student at the same university on the Special Masters program 1966-1967 with a teaching assistantship in geology and will be awarded a Master of Science degree in Geology upon completion of thesis.

Since graduation Mr. Wilkins has been employed by Duval Corporation (a subsidiary of Pennzoil Corp.) as a geologist and chief geophysicist. During this period, he has obtained a broad background in mining and mining exploration including exploration, evaluation, and mining of copper, molybdenum, gold, silver, uranium, tungsten, barite, vanadinite, sulfur, potash, and phosphate. Mr. Wilkins was directly involved in exploration and evaluation of deposits in the U.S., Canada, Mexico, and Alaska.

Joe Wilkins is affiliated with the following professional and honorary societies:

- American Institute of Mining Engineers
- American Geophysical Union
- Society of Exploration Geophysicists
- Society of Geoelectricity and Geomagnetism of Japan
- Sigma Gamma Epsilon (Earth Science Honorary)
- Arizona Geological Society

Recently Mr. Wilkins was instrumental in the development of an induced polarization continuous borehole logging unit and new borehole techniques for evaluation of porphyry copper deposits.

Joe Wilkins

June 26, 1973

**Silver King Mines, Inc.**1204 DESERET BLDG., SALT LAKE CITY, UTAH 84111
(801) 521-3027

Mr. Herman Harrison
Harrison Mining and Exploration Inc.
3019 West Wethersfield Rd.
Phoenix, Arizona 85029

Dear Mr. Harrison;

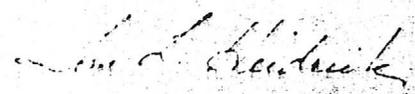
This past weekend I was contacted here in Salt Lake City by Mr. Joe Wilkins concerning his April, 1973 feasibility report on the geology, mining, and milling of the Mica Mule Property, Yavapai County, Arizona. As you know, it was unfortunate that we were unable to examine the property directly due to flooding of the Aqua Fria River. However, I was able to read the entire text concerning the geology, mining, and milling of the Mica Mule ores and can attest that the synthesis presented by Mr. Wilkins appeared quite rigorous, complete, and very well documented.

As for the geologic setting and nature of your mica deposit, it appears to most closely resemble that of the Dixie Queen which is also associated with pegmatite dikes crosscutting granite-mica schist. The extreme strike continuity of this deposit as well as the Mica Mule as demonstrated by Mr. Wilkins' mapping is certainly a big plus for your deposit and will certainly help reduce mining costs.

Unfortunately, not having examined the property first hand, I have no feel for reasonable mining or milling costs or the variability in color, sheet thickness and size, or nature of structural defects-impurities of your ores; however, this portion of Mr. Wilkins report appeared well documented and actualistic. Having

known Mr. Joe Wilkins personally and professionally for nearly 10 years now, it would be my feeling that his feasibility study of your Mica Mule Property could be taken at face value and planning and development could be initiated according to his recommendations. Best of Luck in placing this property into production.

Sincerely,



Tom L. Heidrick

EXECUTIVE OFFICES
1270 AVENUE OF THE AMERICAS, NEW YORK, N.Y. 10020
PLAZA 2-9700

AMAX EXPLORATION, INC

SUBSIDIARY OF AMERICAN METAL CLIMAX, INC.
2510 N. CAMPBELL AVE., TUCSON, ARIZONA 85719

TELEPHONE
AREA CODE 602
793-4731

To Whom It May Concern:

I have known Joe Wilkins for approximately eight years during his career as a professional geologist-geophysicist. I have always found him to be completely honest and reliable in all my dealings with him both professionally and privately. I, also, have never seen cause to question his judgement on any professional matter which he has always carried out with the highest ethical standards.

I am currently the Southwestern Regional Geophysicist based in Tucson for AMAX Exploration, Inc.


F. P. Fritz

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 100% RECYCLED PAPER
 100% FULLY PRINTED

June 17, 1973

HERMAN S. HARRISON, President
 Harrison Mining & Exploration, Inc.
 3019 W. Wethersfield Road
 Phoenix, Arizona 85029

Dear Sir:

In reference to your recent inquiry concerning Mr. Joe Wilkins, presently geologist-geophysicist for Duval Exploration.

As a mine owner of properties that had once shipped but upon which very little exploration or necessary extensions had been done, I have had occasion to call upon Mr. Wilkins several times, over a period of several years, for consultation and advice and have found the proven results eminently satisfactory. Even to the best care, economy of development and anticipated production.

Mr. Wilkins is knowledgeable, well educated in theory and well advised in practice.

Mining people, all over recognize this and he speaks with the voice of authority, as well as a qualified and capable member of his profession.

Cordially,

E. Alcott
 Earl Alcott

ald

sm

...
 and ad
 ... As shown
 ...
 ... excess of
 ... 50 ft. long
 in good standing

A FEASIBILITY REPORT
on the
GEOLOGY, MINING, MILLING AND MARKETING
of
GROUND MICA PRODUCTS
from
PEGMATITE DEPOSITS
of
YAVAPAI COUNTY
ARIZONA

by
Joe Wilkins
JOE WILKINS
Geologist

SUMMARY

The Mica Mule mining property 25 miles north of Phoenix contains a mineable tonnage of muscovite mica that if mined will yield a superb quality scrap mica. Minimum mineable tonnage on the property is 1,402,710 tons of 40-50% mica that can be mined by open-pit methods at a 1.5 to 1 stripping ratio. This tonnage contains 701,355 tons of high-quality scrap mica.

The mica is contained in a NNE-trending series of pegmatite dikes conformably intruding Pre-Cambrian Yavapai Group schists. The differential weathering of the pegmatites and schists results in ridge-valley topography with bold outcrops of pegmatite forming ridges. The nature of the pegmatite outcrops yields an excellent environment for mining.

The mica will be mined in 8 separate open-pit mines yielding 300 tons/day of mica with removal of 450 tons/day of waste. The ore will be processed in a 300 tons/day capacity mill located near Gillette, Arizona, on the banks of the Agua Fria River.

For 40 year life the Mica Mule Mine will yield a \$27,323,533.00 profit after taxes (based on previous calculations - may be as much as 100% larger).

The total ore reserves at the Mica Mule Mine are estimated at 12,296,000 tons. At 300 tons/day and a 264 day year, this reserve will last for 155 years.

GENERAL

LOCATION

The Mica Mule mining claims are located in Yavapai County, approximately 25 miles due east of Rock Springs-Black Canyon City, Arizona in the Tip Top Mining District. Specifically, the claims are located in Sections 12 and 13, T.8N., R.1E.; Sections 5, 6, 7, and 8, T.8N., R.1E.; and Sections 17 and 18, T.8N., R.2E.

The mine area is currently accessible only by 4-wheel drive vehicle during the rainy seasons, but at other times, by any durable vehicle. The Table Mesa interchange, 22 miles north of Phoenix on Interstate 17 is the present access road into the mine area. From the interchange it is 5.6 miles to Agua Fria River ford at Gillette via county maintained road. It is 8.6 miles from the river along the Tip Top Road to the southern boundary of the Mica Mule claims. With careful grading and a few cuts the road could be shortened to 3.5 to 4 miles.

TOPOGRAPHY - CLIMATE

The claimed area is situated in the foothills of the Bradshaw Mountains in gently rolling terrain. Several sharply incised drainage channels present minor - and the only - topographic obstacles to easy development of the Mica Mule Mine. The elevation ranges from 2000 to 2500 feet A.S.L. in the main area of interest.

This portion of the Bradshaw range is semi-arid desert receiving an estimated 12-14 inches of rainfall per year. Vegetation is typical Upper Sonoran, consisting of various cacti, mesquite, palo verde, desert shrubs, with riparian vegetation along major drainages. The annual rainfall should be sufficient to charge a small strategically placed reservoir to provide water at the mine site. In addition, numerous springs exist at or near the granite-schist contact that could easily be developed providing a steady water flow.

PROPERTY AND LEGAL STATUS

The Mica Mule claim block consists of 48 contiguous, unpatented lode mining claims located on Federal land administered by the U.S. Bureau of Land Management. As shown on Plate II, the claim block is rectangular in outline, 8 claims across and 6 claims long, covering in excess of 960 acres. Each claim is 600 ft. wide and 1500 ft. long with extra lateral rights. The claims are in good standing

and held virtue of annual assessment work as specified by Arizona Mining Law.

HISTORY

Although the Tip Top Mining District is one of the oldest in Arizona -- established in the 1870's -- no significant mineral production has transpired since the closing of the Tip Top Mine near the turn of the century. No known mica production of any sort has been recorded.

The district has however undergone extensive prospecting as witnessed by the abundant abandoned claims. The claims were apparently staked for base metals, precious metals and/or uranium but abandoned when economic amounts of these metals were not found.

During the late 1960's and early 1970's, the Mica Mule group of claims were staked by Herman Harrison and Associates of Phoenix, Arizona. In 1971, the Harrison Mining and Exploration Company, Inc. was incorporated under the laws of the State of Arizona. The 48 Mica Mule claims were then assigned to this corporation. Following assignment, an intensive program of sampling and trenching was undertaken by the company and an extensive road network was established to provide needed access. As a result of this exploratory effort it was concluded that a large body of high quality muscovite mica of sufficient size to support a moderate mining and milling operation existed on the property. At this time, Harrison Mining and Exploration, Inc. management made plans to establish a mine and mica mill to process the high grade muscovite mica and undertook a series of feasibility studies to establish the optimum mining and milling rate to provide the greatest economic return.

A feasibility report on mill size, milling flowsheet, milling characteristics of the mica, and general milling economics was completed by mica expert, P. S. Hoyt in June, 1972. It was concluded that the Mica Mule Muscovite will produce a scrap mica product ". . . OF SUPERLATIVE QUALITY AS TO WHITE COLOR, BRIGHTNESS AND INHERENT SHEEN AND BRILLIANCE."

This report follows and summarizes the favorable results obtained by Mr. P. S. Hoyt.

MICA MULE MINE

MOHAWK MOUNTAINS

NEW RIVER MOUNTAINS

YAVAPAI COUNTY
MANGUPA COUNTY

HIEROGLYPHIC MOUNTAINS

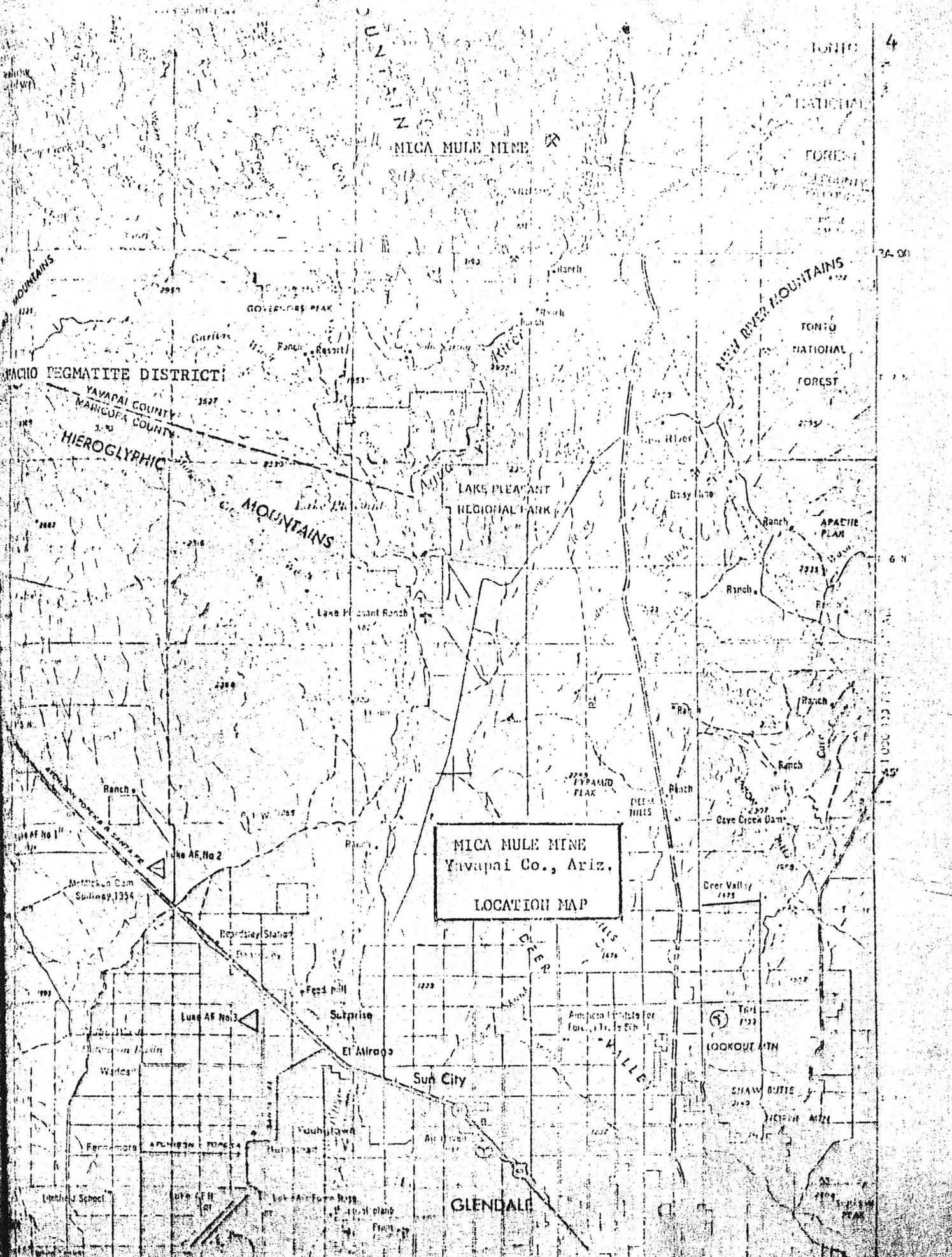
LAKE PLEASANT REGIONAL PARK

TONTO NATIONAL FOREST

APACHE PLATEAU

MICA MULE MINE
Yavapai Co., Ariz.
LOCATION MAP

GLENDALE



GEOLOGY

INTRODUCTION

During portions of January through March, 1973 a program of detailed mapping and sampling was undertaken at the Mica Mule property. Following a general reconnaissance of the claims, a small portion of the center of the claim block was selected for small-scale geologic mapping. The area covered contains an exceptionally large and persistent pegmatite dike swarm approximately 1 mile long and 200 to 1000 ft. wide containing 4 major dikes and innumerable smaller dikes. Each dike contains from 30 to 80% coarse- to medium-grained muscovite.

The dike swarm was mapped at 1 in. = 100 ft. scale with Brunton and chain control. The geologic maps on Plates III and IV are the result of this mapping program. A total of 22,750 feet (4.31 miles) of pegmatite dike was mapped representing an estimated 50% of the existing dikes in the claimed area. During mapping, 19,000 feet of controlled traverses were made beginning at a known point and closing on that or another known point. Accuracy was excellent -- most traverses closing within 10 feet and never exceeding 25 feet.

As shown on the map, the width of each dike was measured at inflection points along with the attitude of each contact and the grade of muscovite estimated.

REGIONAL GEOLOGY

The mine area is situated along a major Pre-Cambrian pegmatite belt extending from Cleator, Ariz. in the north to the White Picaeno District near Morrystown, Ariz. in the southwest. The belt is arcuate paralleling the contact between the Yavapai Group schists and a major granitic batholith, both of Pre-Cambrian age. Recent volcanic flows cover a large area south and east of the claims but are not present on the claims.

The deposit consists of a major pegmatite dike swarm trending N.10°E. to N.30°E. about 600 to 1000 feet east of the granite-schist contact. Exposures of the dikes are excellent as they stand out in bold relief forming ridges and walls up to 25 feet in height above the intruded schist.

The pegmatite dikes generally are conformable with the intruded Yavapai Group schists but in a few instances cut

across the schist trend. The rock sequence is as follows:

Pegmatite dikes
Granite
Yavapai Group schists

The oldest rocks are the schists and the youngest the pegmatites -- all of older Pre-Cambrian age.

The Yavapai Group schists form the country rock throughout the claimed area. The schists are sericite-staurolite schists with porphyroblasts of staurolite set in a fine-grained sericite groundmass. The schist is quite soft weathering to topographic lows. It appears to be deeply weathered and should be easily rippable.

In one part of the claimed area, a thin but persistent rhyolite tuff breccia unit occurs with adjacent quartz-tourmaline veining. Several small, isolated occurrences of base metals exist along the margins of the rhyolite. Argentiferous and gold-bearing galena was noted at one prospect pit and oxidized chalcopyrite at several other small pits along the rhyolite-schist contact.

The Granite intrudes the schist along the schistosity but with numerous parallel and transverse granite dikes. Several large pegmatites parallel and cut the contact. The contact is marked by an abundance of these pegmatites. An example of the complex nature of the contact is illustrated in the southwest corner of the mapped area. Several granite dikes grade laterally into coarse grained pegmatites along strike of the dike. The granite-schist contact is highly sericitic, probably from assimilation and remobilization of the intruded sericite schist.

Several granite dikes are present east of the mapped area paralleling the pegmatite dike swarm. Often these sericitic granite dikes grade laterally into pegmatites along strike.

In all instances, the granite is highly sericitic, coarse-grained, and consists essentially of quartz, potassic feldspar, and sericite. A common genesis between the granite and pegmatites is obvious.

The Pegmatite dike swarm consists of numerous NNE-trending dikes that pinch and swell and merge and separate. The pegmatite is simple granitic consisting of very coarse to medium grained, subhedral to euhedral, crystals of milky quartz, potassic feldspars, and muscovite mica. No pronounced zoning of the components was noted except for a tendency in the larger masses for large aggregates of each mineral to occur together in an almost random fashion. In general, the larger the dike the larger the grain size.

Few accessory minerals were noted in the dikes. Noted were garnet, lithiophilite, and schorl tourmaline. The tourmaline occurs in the schist along the dike margins in irregular and inconsistent masses. Garnet and the manganese-bearing lithiophilite occur only on the northern and southern extremes of the deposit. Total accessory mineral content of the deposit will NOT exceed 0.1%.

The width of the dikes vary from 6 inches to 60 feet pinching and swelling along strike and probably with depth. In numerous instances several smaller dikes will merge along strike to form a single large dike and conversely. When visible along washes several dikes were seen to merge vertically forming a single unit. The Southern group of dikes is an excellent example of dikes merging along strike and with depth. Despite the pinching and swelling of the dikes, most are remarkably consistent along strike if an average width is considered. Most major dikes will maintain an average width for several hundred feet along strike. Along-strike characteristics of the dikes can be considered an excellent approximation of their depth characteristics.

Dips ranging from 45° to vertical were measured along the dikes. However, most of the dikes are essentially vertical. The shallow dips seems to represent an offshoot of a major dike and generally indicate merging of dikes with depth. The depth extent of the dike system is unknown but probably exceeds 500 feet -- this is the amount of relief between the North and South ends of the dike swarm.

Numerous NW to WNW fault zones cut and offset the dike swarm yielding an apparent echelon series. The faults are probably normal faults with a small strike-slip component. A large portion of the dikes have undergone extensive shearing perpendicular to strike yielding a crumbly shattered rock. This shattered rock is not quite as resistant to weathering and generally forms low (3-5 ft.) walls but should provide excellent, easily crushable mill feed. An estimated 50% of the dike rock has undergone shattering.

THE ORE MINERALS

The primary ore minerals is muscovite mica, of exceptional quality and purity. Both gangue minerals quartz and potassic feldspars are potential by-products. In most of the areas to be mined the rock will average 40-50% mica with equal amounts of quartz and feldspar (25-30% each). Thus 10 tons of ore will theoretically yield:

- 4-5 tons of mica
- 2.5-3 tons of quartz
- 2.5-3 tons of potash feldspar

If markets can be found for both by-products there will be no waste from the milling operation.

Muscovite mica occurs in the pegmatite as unusually clean subhedral books with very few - if any - visible impurities. The books range in size from 12 in. across to less than 1/16 in. across. Average sizes throughout the area are 1/4 in. to 1 in. diameter books. The following size classification is used, in this report:

- Fine - Less than 1/4 in.
- Medium - 1/4-1/2 in.
- Coarse - 1/2-1 in.
- Very Coarse - Greater than 1 in.

The average size of the mica in the main areas of interest is medium to coarse grained.

The average grade (as estimated) throughout the area is 35 to 45% with areas ranging up to 80% mica. The Geologic map on Plate IV shows the estimated mica content throughout the area mapped.

The muscovite is pale-green to yellow-green on fresh surface and occurs as aggregates of books. Often the aggregates constitute 80% of the rock in a pegmatite that averages 40% mica. The yield from these areas should be excellent as many aggregates are several feet in length and width. In the lower grade pegmatites the mica occurs as individual, non-oriented, discrete books. Owing to the nature of the muscovite as aggregates and fairly large discrete books, mill recovery should be excellent.

The muscovite at the Mica Mule Mine will provide an excellent high-purity product. Although the possibilities of sheet mica of good quality exist the primary product is scrap mica which will provide an excellent product for reconstituted mica, for paints, rubber filler, plastics, and wallpaper in addition to uses in the oil drilling industry, lubricants, welding rods, etc.

The byproduct feldspar and quartz are of sufficient quality and quantity to consider additional market research. The feldspars are microcline and orthoclase and suitable for the glass, ceramic, and pottery industries. The feldspar and quartz occur as discrete subhedral crystals and aggregates of crystals throughout the deposit. In general, feldspar exceeds quartz but quartz often forms veins or veinlike masses of pure quartz within the pegmatite. The individual crystal sizes are quite large in comparison with the micas with feldspars up to 2 ft. across noted.

All minerals in the deposit occur as separate, non-interlocking crystals so segregation should be quite simple.

ORE RESERVES

METHOD OF CALCULATION

Ore reserves were calculated by measurement of surface area of each dike and dike segment. The surface area was converted to tons per vertical foot by division by a tonnage factor of 12.5 cubic feet/ton. Then tonnages were calculated for walls above surface and for assumed vertical wall depths of 50, 100, 150, 200, and 500 feet.

Open pit tonnages were calculated by sectional data across the dike. Sections were constructed and a asymmetrical pit designed, with 45° and 60° slopes, then the tonnage for each pit calculated.

ORE RESERVES

For a total dike length of 22,750 feet covering an area of 150,370 square feet, the potential tonnage is 122,960 tons per vertical foot. Assuming vertical contacts for the dikes, the tonnage for various depths can be calculated:

<u>Depth</u>	<u>Tonnage</u>
50 ft.	6,148,000 tons
100 ft.	12,296,000 tons
150 ft.	18,444,000 tons
200 ft.	24,592,000 tons
500 ft.	61,480,000 tons

Although the vertical contact assumption is not valid it will yield a good approximation of the tonnage for shallow depths (up to 100 ft.). Contacts that dip inward should be balanced by the number of contacts dipping outward yielding an average of vertical.

WALL TONNAGE

Walls of pegmatite above ground on the property are numerous ranging up to 25 ft. in height. Variations in wall heights are shown color-coded on Plate III. Only walls greater than 5 ft. height were included in the wall tonnage, although each dike forms a bold outcrop above the enclosing schist and always mineable.

Wall tonnage = 66,310 tons

In addition to the walls there is a large tonnage of boulders adjacent to the dikes that can and should be mined. The boulder tonnage is estimate at approximately 1/3 of the

wall tonnage:

Boulder tonnage = 20,000 tons

Thus the boulder and wall tonnage will yield approximately 85,000 tons of easily mineable material, enough to operate a 300 t/d mill for 1 year.

OPEN PIT TONNAGE

A total of 3 areas was selected as open-pit mine areas. This is by no means all inclusive and many other areas are present that will provide a substantial tonnage of open-pit mineable ore. Each pit is shown on Plate III and individual sections on Figures 1 through 6. Each pit was selected by size of outcrop, grade, location, and topographic relief. In three instances small pits with larger stripping ratios were included because of their very high mica content.

The pit name, tonnage, grade, and stripping ratio are as follows:

<u>Pit</u>	<u>Tonnage</u>	<u>Grade</u>	<u>Stripping Ratio</u>
North	450,000	40-60%	1:1
North #2	14,000	60-70%	2:1
Central	52,000	50-60%	1.5:1
Central #2	90,000	35-45%	1.5:1
North Central	18,200	50-60%	2:1
N.C. #1	7,200	60-70%	2:1
N.C. #2	5,000	70-80%	2:1
South pit complex	680,000	35-50%	1:1
Total Tonnage	1,316,400	40-50%	1.5-1

This is an open-pit tonnage of 1,316,400 tons grading 40-50% mica at a stripping ratio of 1.5 tons waste to 1 ton of ore exist on the Mica Mule property.

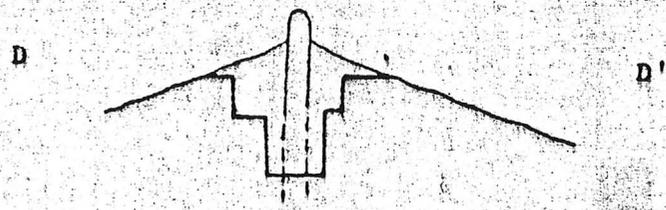
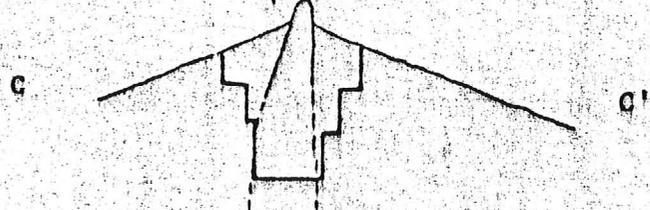
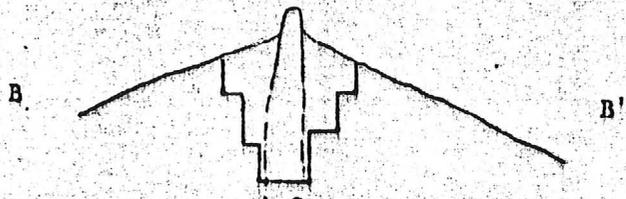
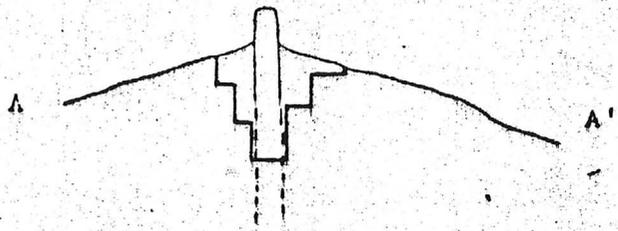
TOTAL MINEABLE TONNAGE

If the open-pit tonnages are combined with the wall and boulder tonnages, the total easily mineable tonnage available is:

Open-pit tonnage:	1,316,400 tons
Wall tonnage :	66,310 tons
Boulder tonnage :	20,000 tons
Total :	1,402,710 tons

If the ore is mined and processed at a rate of 300 tons per day and a 264 day year, this reserve will last for 4675 days or 13 years of operation.

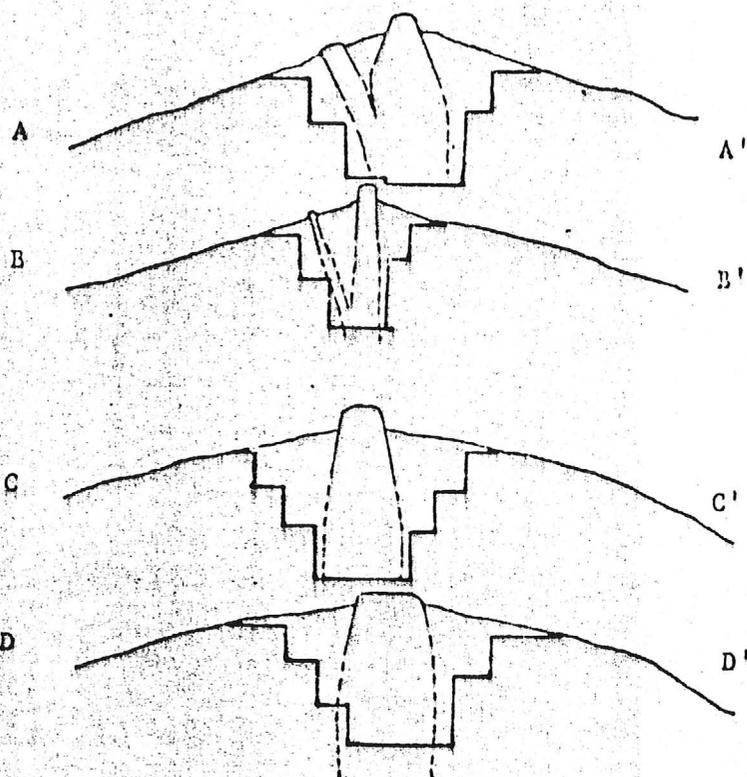
NICA MULE MINE



NORTH CENTRAL PIT

Tonnage: 18,200 Tons
Grade: 50-60 % Mica
Stripping Ratio: 2 : 1

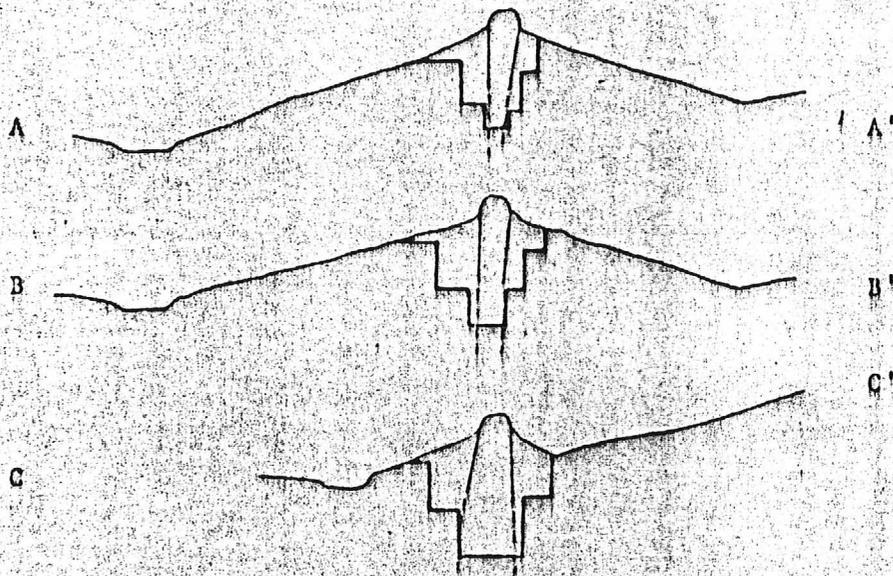
MICA MULE MINE



CENTRAL PIT

Tonnage: 49,000 Tons
Grade: 50-60 % Mica
Stripping Ratio: 1.5 : 1

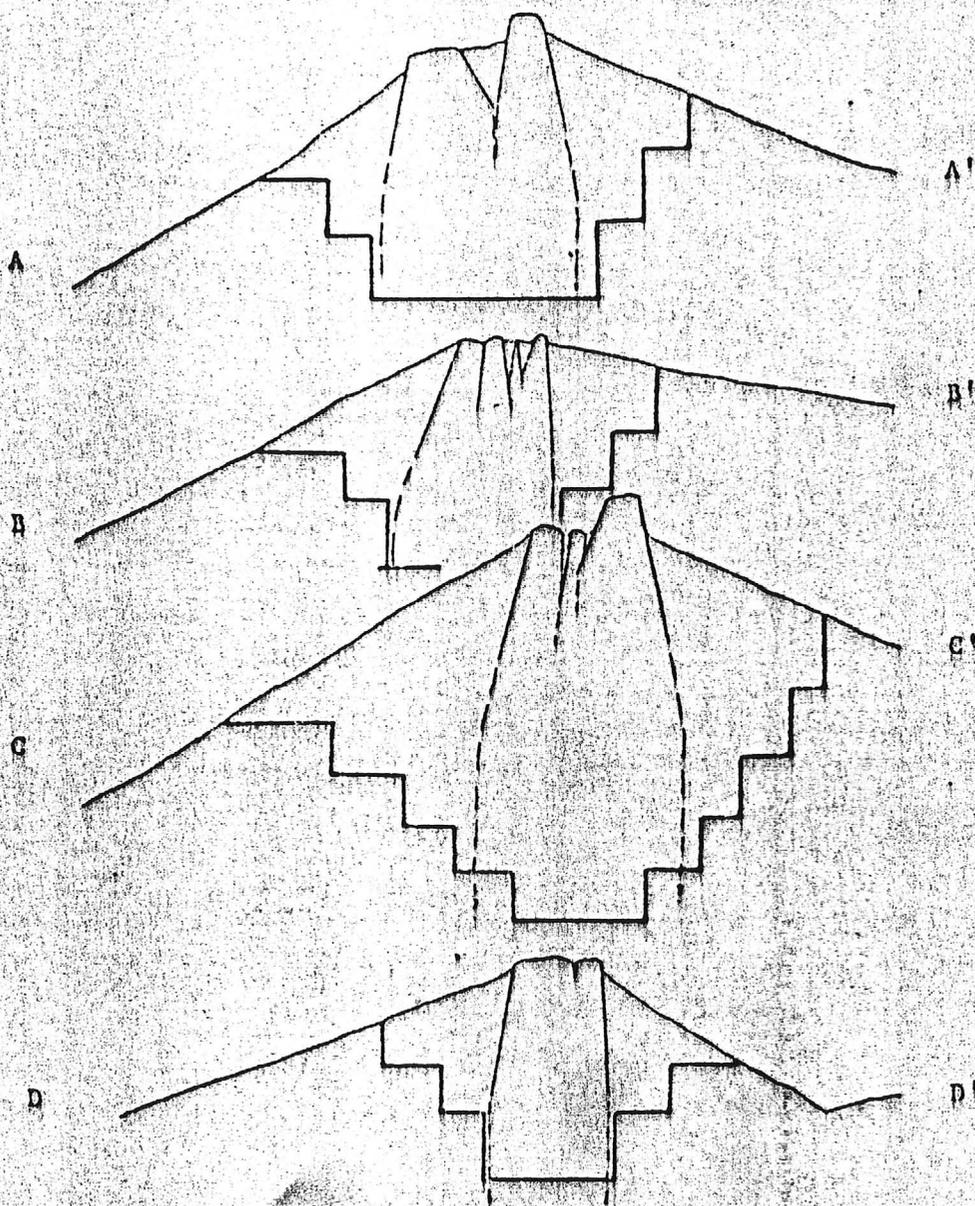
MICA MULE MINE



NORTH PIT # 2

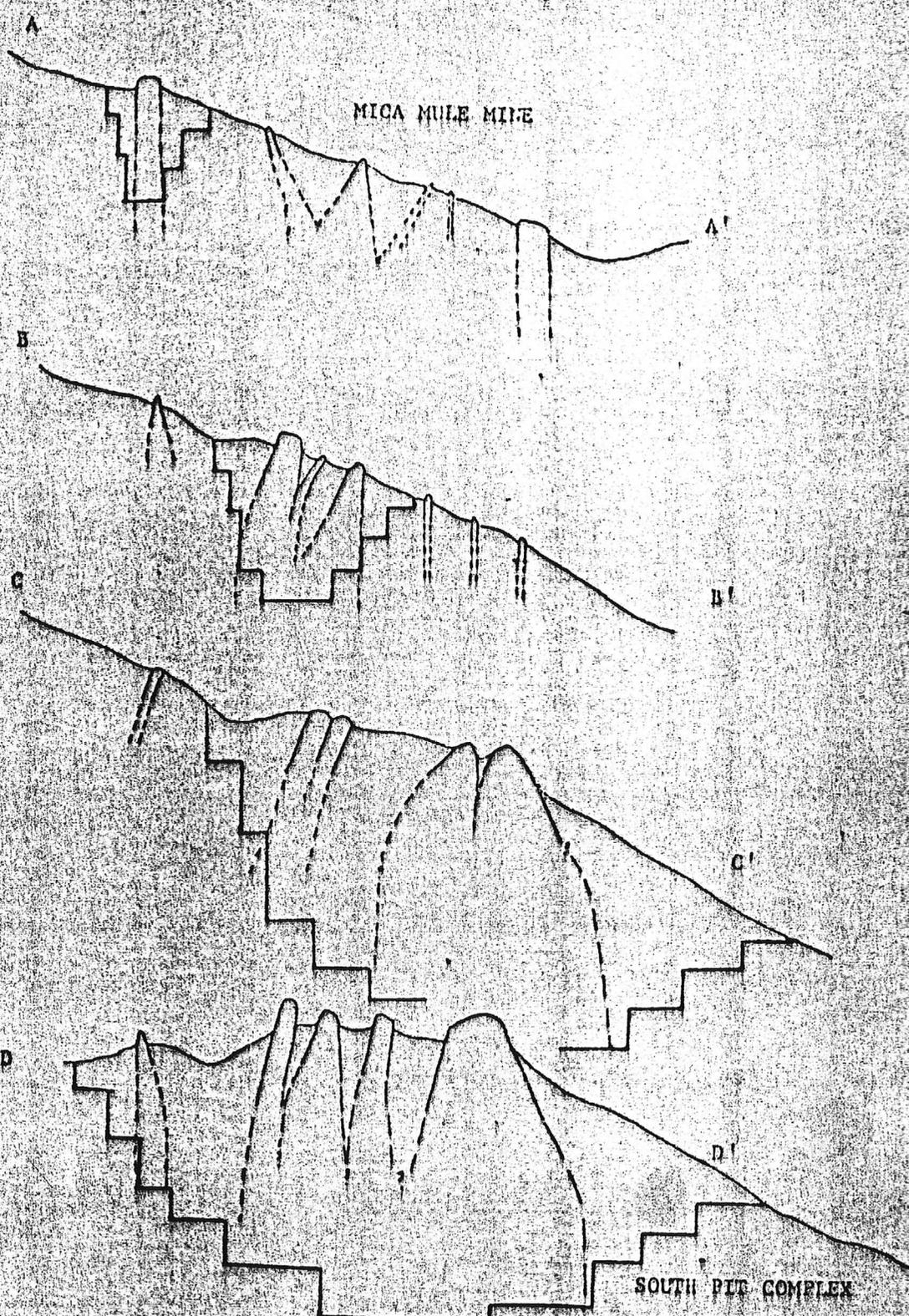
Tonnage: 16,800 tons
Grade: 60-70 % Mica
Stripping Ratio: 2 : 1

MICA NULE MINE



NORTH PIT

Tonnage: 450,000 Tons
grade: 40-60 % Mica
Stripping Ratio: 1 : 1



Tonnage: 680,000 Tons
 Grade: 35-50 % Mica
 Stripping Ratio: 1 : 1

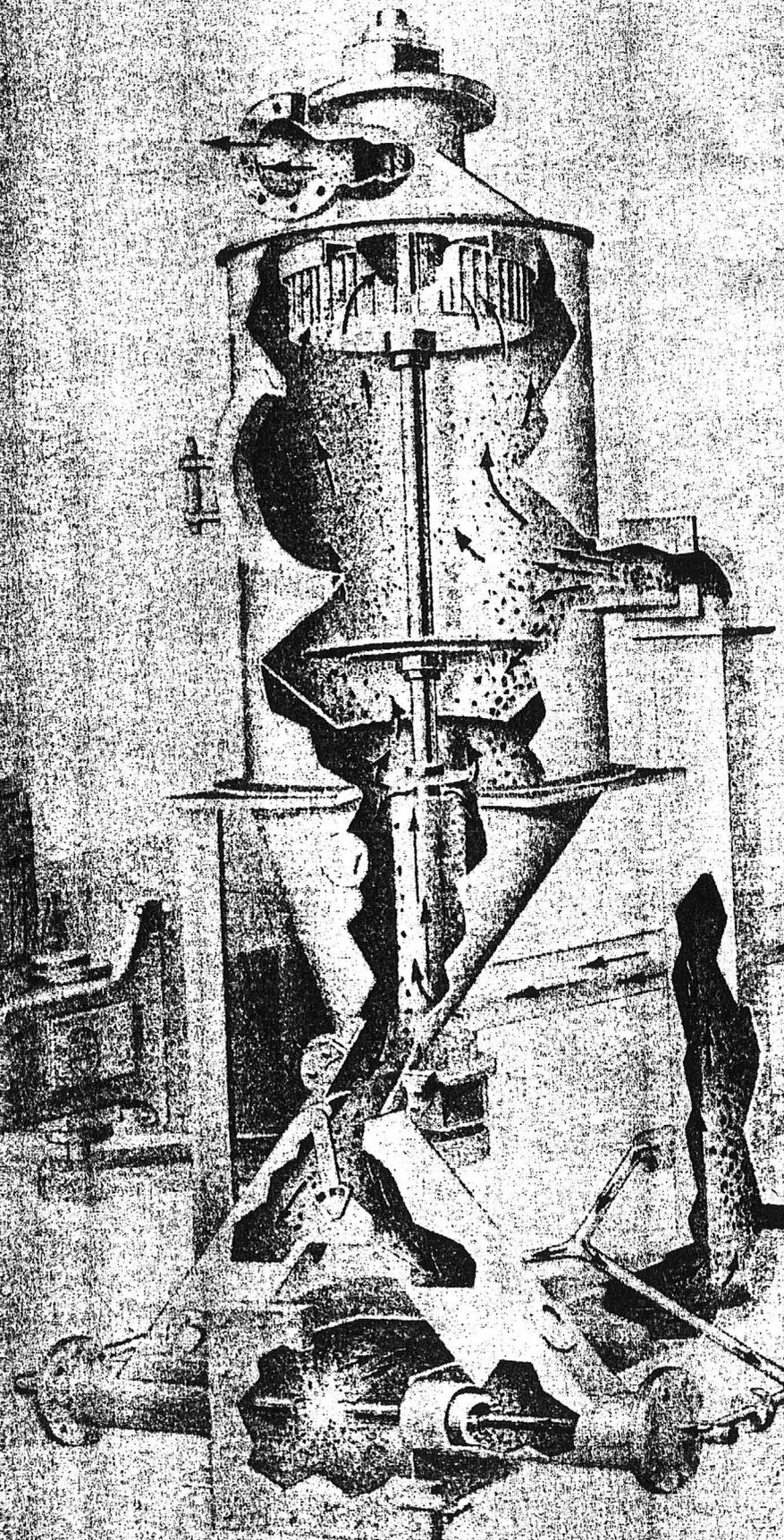
**MICA MULE PROJECT
PHOENIX, ARIZONA**

MAJOR EQUIPMENT LIST

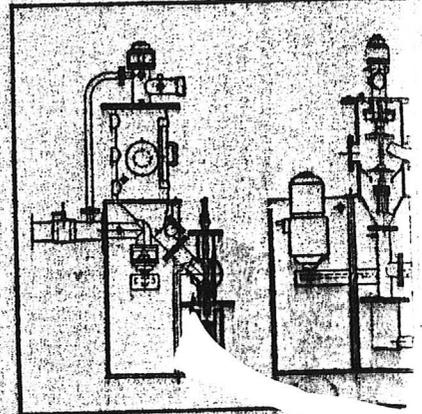
NEW OR
USED

ACTUAL OR
ESTIMATED COST

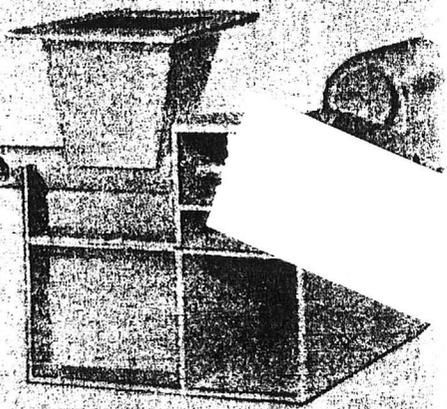
1 Cat D-9G 66A Series Ripper, Dozer ✓	Used	40,000 ✓
1 Cat D-9G 66A Series Ripper, Dozer ✓	Used	40,000 ✓
1 Cat #12F Motor Grader ✓	Used	18,000 ✓
1 Cat 988 5 CY Loader w/Rock Bucket <i>Handwritten: 100,000</i>	Used	44,000 (Checked)
1 Cat 966 B 3 1/2 CY Wheel Loader	Used	17,000
1 Michigan 175 2 CY Wheel Loader ✓	Used	10,000
3 R32 Euclid Trucks End Dump	Used	40,000
1 Cat DW21 Water Wagon Smith Tank	Used	14,000
1 R T3 Drill w/600 CFM Compr	New	30,000
1 MC 414 Lorain Truck Crane 100' Boom ✓	Used	30,000 ✓
1 Service Truck w/Lincoln WBEetc	Used	10,500
1 Kenworth Tractor and Lowboy	Used	20,000
3 Pickups 3/4T	New	15,000 ✓
1 200A Lincoln Welder	Used	1,500
1 Jenny Steamcleaner ✓	Used	1,000 ✓
1 Radio Equip. -6-100w w/Base Station ✓	Used	10,000 ✓
3 pumps 20HP Water	Used	1,500
1 Crushing Plant Consisting of Portable Wheeling 15x38 Jaw Crusher, D8800		
1 Cat Power Plant, 3'x12' Apron Feeder 3'		
1 Telesmith Cone, 4x12-2 Deck Screen, Generator 8V71		
4 - 40' x 24" Conveyors with Drives Complete	Used <i>100,000</i>	64,500
1 Path 10" Transit w/Tripod (1976)	Used	1,500 ✓
1 Lietz Transit w/Tripod (1976)	Used	1,500 ✓
1 300' Survey Chain	Used	100 ✓
1 Office Trailer	Used	15,000 ✓
1 40' Van Trailer	Used	1,500 ✓
1 Linkbelt 6x16 2 deck Screen	New	7,500
1 Majac Pulveriser Plant with Baghouse and Classifier	New	148,900 <i>177,000</i>
1 Storage & Loadout Bins	Used	25,000 <i>150</i>
		<hr/> 620,000



MAJAC.
products vary
to extremely



PILOT PLANT MODEL—Pilot
as jet pulverizer or as separate air class

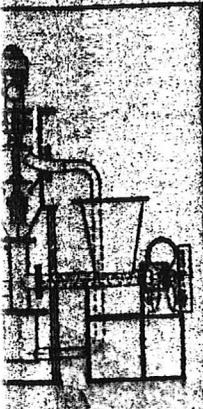


... for high purity pulverizing of varying from low melting point compounds by hard and abrasive materials

TYPICAL CAPACITIES

MATERIAL	FINISHED PARTICLE SIZE	MILL SIZE	LSB/HR	GRINDING FLUID USED (compressed air SCFM) or (steam—lbs/hr)
Alumina	—325 mesh, 3 micron average	15	12,000	6300 lbs/hr steam @ 100 psig, 700°F
Coal, Bituminous	90%—325 mesh	20	8,000	3000 SCFM @ 100 psig, 70°F
Diphenylphthalate	—325 mesh, 20-30 micron max, 4.2 micron average	2-6	435	300 SCFM @ 100 psig, 70°F
Feldspar & Silica	99%—200 mesh	15	8,500	1350 SCFM @ 100 psig, 800°F
Graphite	90%—10 microns	5.5-2.5	50	75 SCFM @ 100 psig, 70°F
Mica	95%—325 mesh	8	1,600	720 SCFM @ 100 psig, 800°F
Rare Earth Ore	60%—1 micron	8-15	400	720 SCFM @ 100 psig, 800°F

Materials illustrated in this chart are shown because of their wide range and type. Alumina represents a very hard and abrasive material, whereas diphenylphthalate represents a material with a melting point of approximately 140°F. While the Jet Pulverizer is normally used for quite fine grinds, feldspar, silica, and coal indicate common materials which are ordinarily processed to fairly coarse particle sizes. Mica demonstrates a material which is difficult to handle because of its very flaky structure. Graphite and rare earth illustrate fairly fine pulverization.

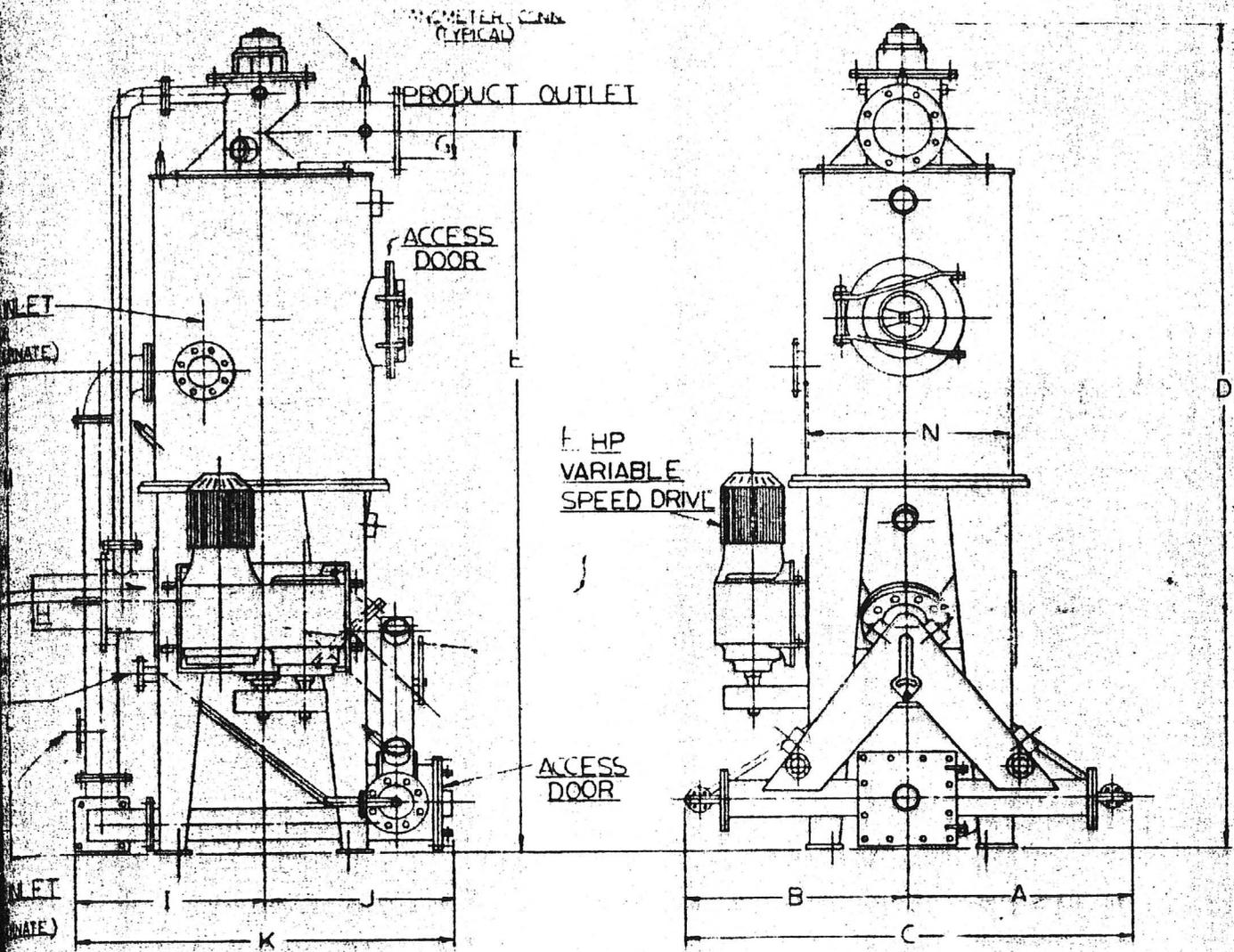


not model functions classifier.

For laboratory, pilot plant and production facilities

Majac Jet Pulverizers are available in a variety of sizes and capacities for pilot plants, laboratories, and production facilities. The units are designed to deliver maximum efficiency with a minimum number of moving parts. They provide precise control of particle size distribution. Majac Jet Pulverization usually fits economically in the production of particle sizes ranging from 200 mesh down to particle size distributions in the low and sub-micron range. Hard and abrasive materials and low-melting-point compounds are pulverized equally well. The units are capable of handling materials with low-melting points which cannot be handled by other means and of maintaining lowest possible temperatures when processing materials with temperature sensitivities.

OPERATION—The Majac Jet Pulverizer consists of a pulverizing zone and a classifier connected by properly sized ducts. The pulverizing zone contains two opposing nozzles from which gas or vapor is discharged at high velocity into larger cylindrical sections where particles are accelerated. The opposing streams impact head-on at a high kinetic energy level. The collision is particle against particle. Therefore, grinding is accomplished with very little mill wear and with consequent high purity of product. By selecting the vapor or gas and the conditions used, it is possible to promote or inhibit chemical reactions. Humidity control, blending and other functions also can be accomplished while the unit is performing its pulverizing operation.



HP	A	B	C	D	E	F	G	H	I	J	K	L	M	N
4	42	42	84	151	132	10	10	10	34	31½	45½	46½	42½	38
8	53	53	106	231	206	30	18	18	57	48	105	78	66½	54
10	58	58	116	255	231	30	18	18	61	52	113	87	75	61
12	63½	63½	127	276	251	40	18	18	65	56	121	94	82	66
15	69½	69½	139	281	258½	50	18	18	72	63	135	94	86	74

HORSEPOWER

ALL DIMENSIONS (INCHES) NOT FOR CONSTRUCTION

REVISIONS		
NO.	DESCRIPTION	DATE

These drawings and the dimensions of conditions are the property of MAJAC INC. It is not to be used or copied, used or for information to be used in any way detrimental to the interests of this company.

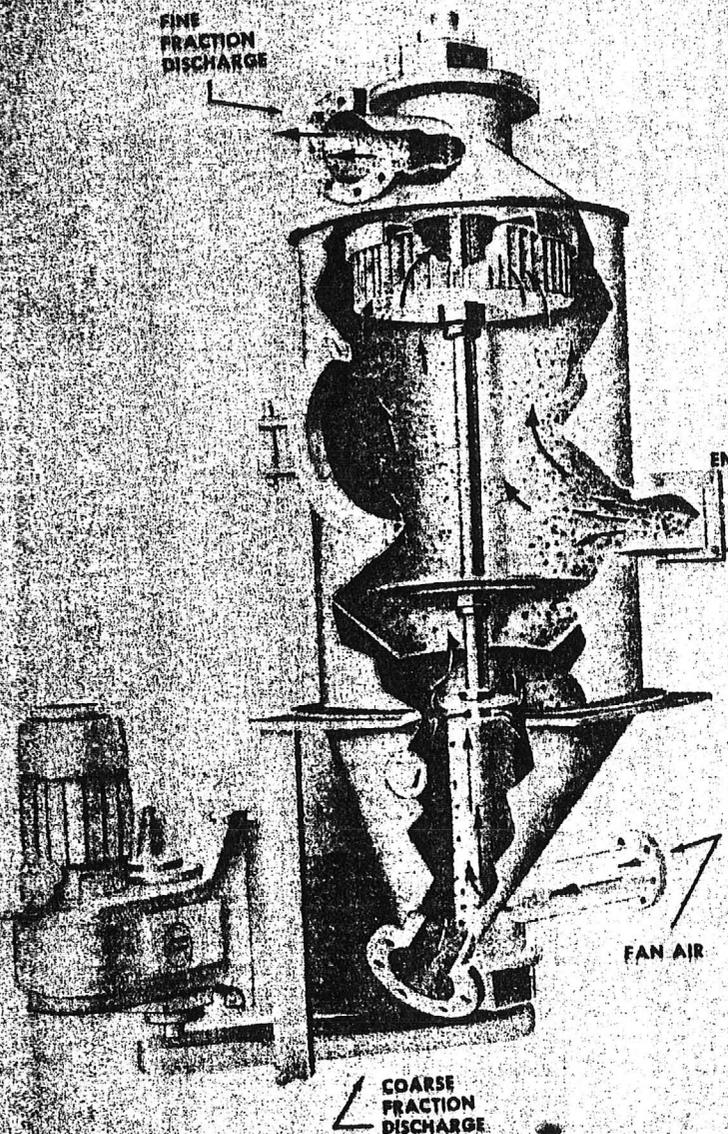
MAJAC INC.
PITTSBURGH, PA.
A SUBSIDIARY OF BLACKSTONE CORPORATION

JET PULVERIZER
TYPICAL DIMENSIONS

DESIGNED BY: [Signature]
DRAWN BY: [Signature]
CHECKED BY: [Signature]
DATE: [Signature]

CONTRACT

DRAWING NO. A-0-226



The type of air classifier which is an integral part of the Majac Jet Pulverizer is also used separately, either to produce two desired sharply-cut fractions, or in conjunction with other processes or methods of particle size reduction. The first classification control is the fluid velocity through the classifier. This depends on the amount of low-pressure fluid (normally fan air) delivered to the inlet at the bottom of the classifier. At the selected velocity, only the finer particles can be carried upward. These particles enter the top rotor, which is essentially an air centrifuge. The second operating control is the speed of the rotor which is driven by a variable speed drive.

Particles must flow radially inward through the top rotor to be discharged from the mill as acceptable product. Opposing forces are the centrifugal force outward on the particle, fixed by the speed of the rotor, and the inward drag on the particle, which is controlled by the amount of fluid flowing through the rotor and out of the mill.

Only particles of sufficient fineness will be accepted. These will flow from the mill to a dust collector for recovery as fine fraction. The coarse fraction is discharged as underflow in bulk, non-air-entrained.

Majac Inc
Blairstone
412-

Majac, Inc. designs and manufactures separately-fired air and steam superheaters for use in conjunction with the firm's pulverizing machinery. The units are designed to minimize pressure drop.

The standard range of temperatures and capacities of superheaters is shown at the right. However, all superheater equipment is designed to conform to customer requirements.

300 to 9,000 pounds per hour of steam up to 150 psig and outlet temperatures of 800°F.

90 to 2,700 standard CFM at pressures up to 150 psig and outlet temperatures of 800°F.

majac

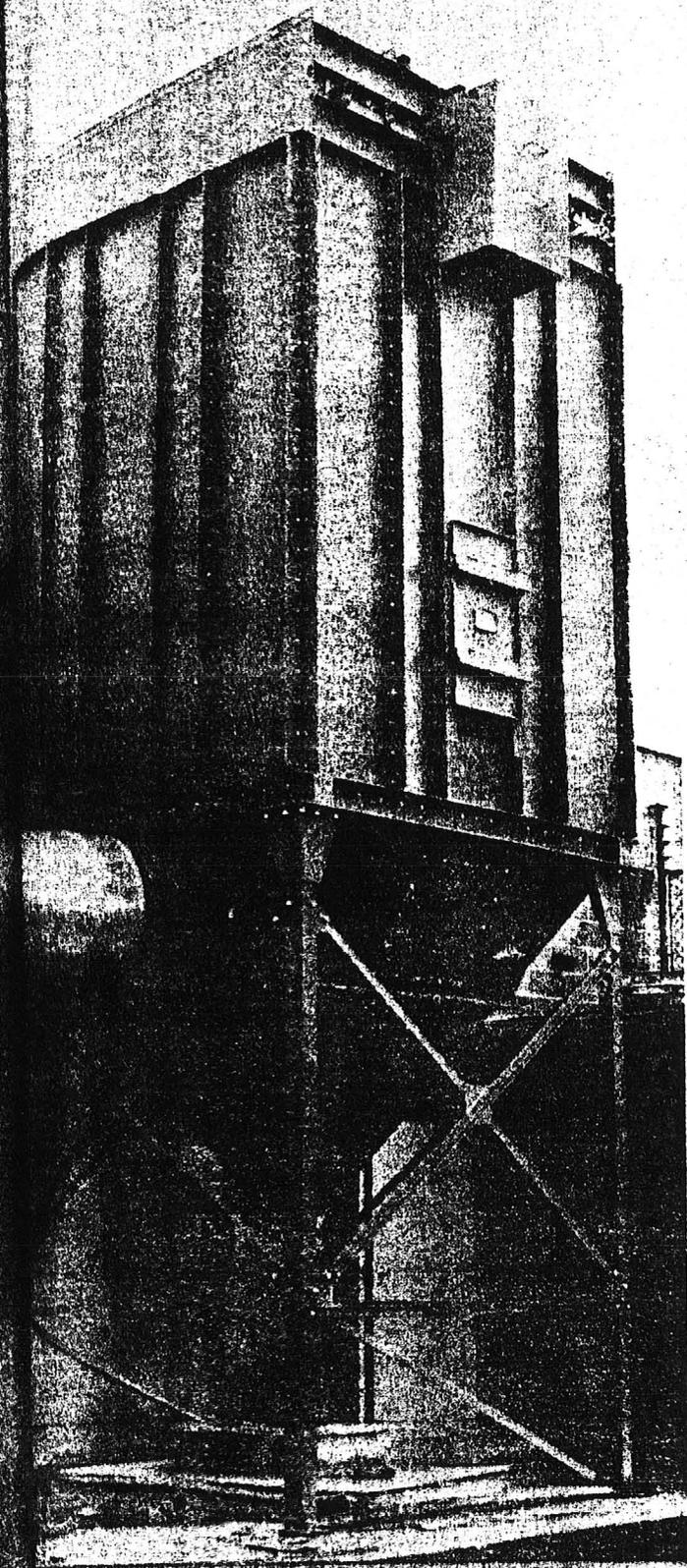


Donaldson Company Inc.
Majac Division
23rd Street, Sharpsburg
Pittsburgh, Pennsylvania 15215

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MT-2

MT Fabric Shaker Collectors



MikroPul.
The
clean air
innovator.



Subsidiary of

MikroPul
CORPORATION

UNITED STATES FILTER CORPORATION
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MikroPul's Economical MT

ADVANTAGES...

Efficiency ... A wide choice of Filter Fabrics Insures a 99.9%+ Down to 1/2 Micron Filtering Efficiency

Simplicity ... In Operation, Inspection, Installation and Maintenance is Assured By Simplified and Proven Design

Economical ... Offers Low Operating and Maintenance Cost Along With A Minimum of Initial Investment.

Construction ... Industrial Quality Construction For Trouble Free Performance

Complete Range of Filter Sizes ... Are Available to Handle Virtually Any Air Volume

Accepts a Wide Range of Dry Dust ... In various Particle Sizes and Concentrations.

Minimum Space Requirement ... Requires a Small Amount of Space For Installation

RUGGED CONSTRUCTION...

OVERALL WIDTH ... 8' 10"

BAG FABRIC ... MikroPul offers a wide range of standard and specialty fabrics.

TUBE SHEET ... Reinforced 12 ga. carbon steel standard construction with 20+\" walkway, 6 bags on either side of walkway.

SHAKING SYSTEM ... Motor 1 1/2 hp TERC double V-belt shaker, shaft bearings

(front end) 1 1/4\" ball bearing flange mounted, eccentric bearing 2 1/8\" ball bearing, shaker back end bearings frictionless self cleaning V-block and knife edge. On high temp units bearings are mounted away from the housing.

MAIN FRAMEWORK ... 12\" channel fabricated 3/16\" thick.

HOUSING CONSTRUCTION ... Standard panels all 14 gauge carbon steel with 3 1/2\" high double flanges. Bolts are spaced on 6\" centers. All joints are assembled with double bead plastic sealant and are airtight and weather proof. Roof slightly pitched.

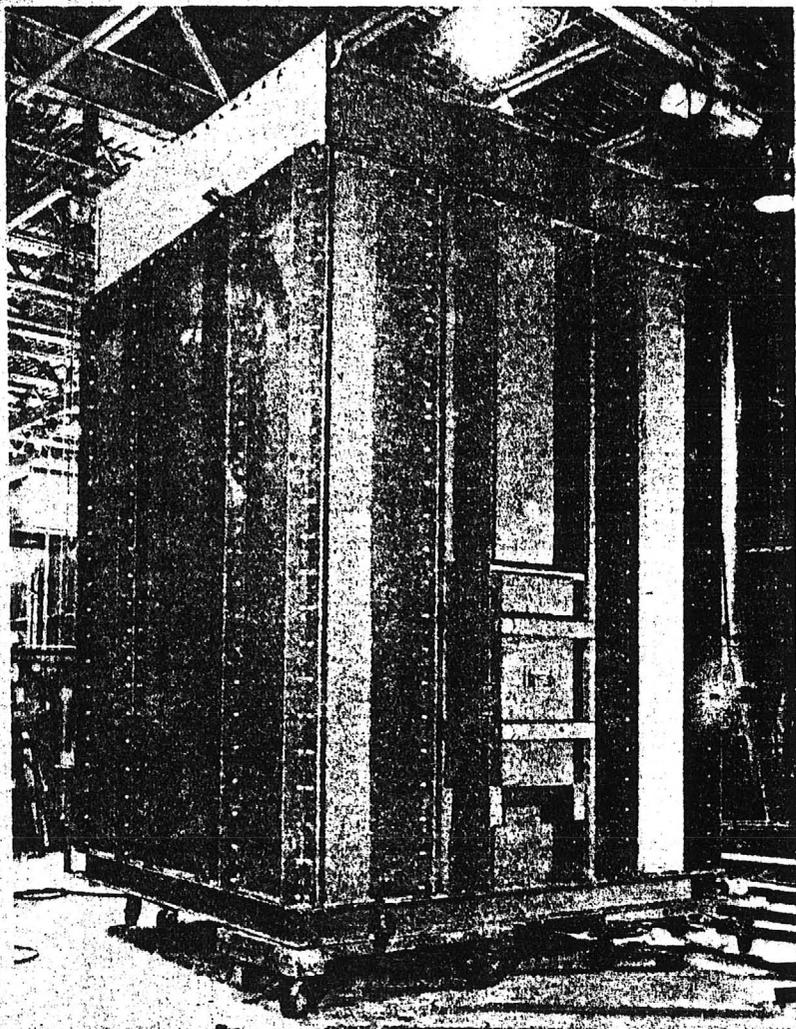
HOPPER CONSTRUCTION ... 14 gauge carbon steel reinforced supplied in either pyramid or trough type. Minimum side slope 60. All hoppers are supplied with bolted inspection doors and required baffled inlets (inlets are field located.) Standard 10\" hopper discharge opening provided.

SUPPORTS ... Supports are provided to meet any customer requirement.

AUXILIARIES ... MikroPul offers a full range of auxiliary equipment necessary for a complete and operational system.

VERSATILITY ... The MikroPul MT shaker collector can be compartmentalized or used in modular form for continuous automatic operation. To handle nearly all dust and fume control jobs.

Fabric Shaker Collectors ...



MT SHAKER IN MIKROPUL'S SHOP READY FOR SHIPMENT

LONGER BAG LIFE...

Longer bag life is assured through the use of 4" high tube sheet thimbles. Bags do not come into intimate contact with the tube sheet thereby eliminating a possible source of wear.

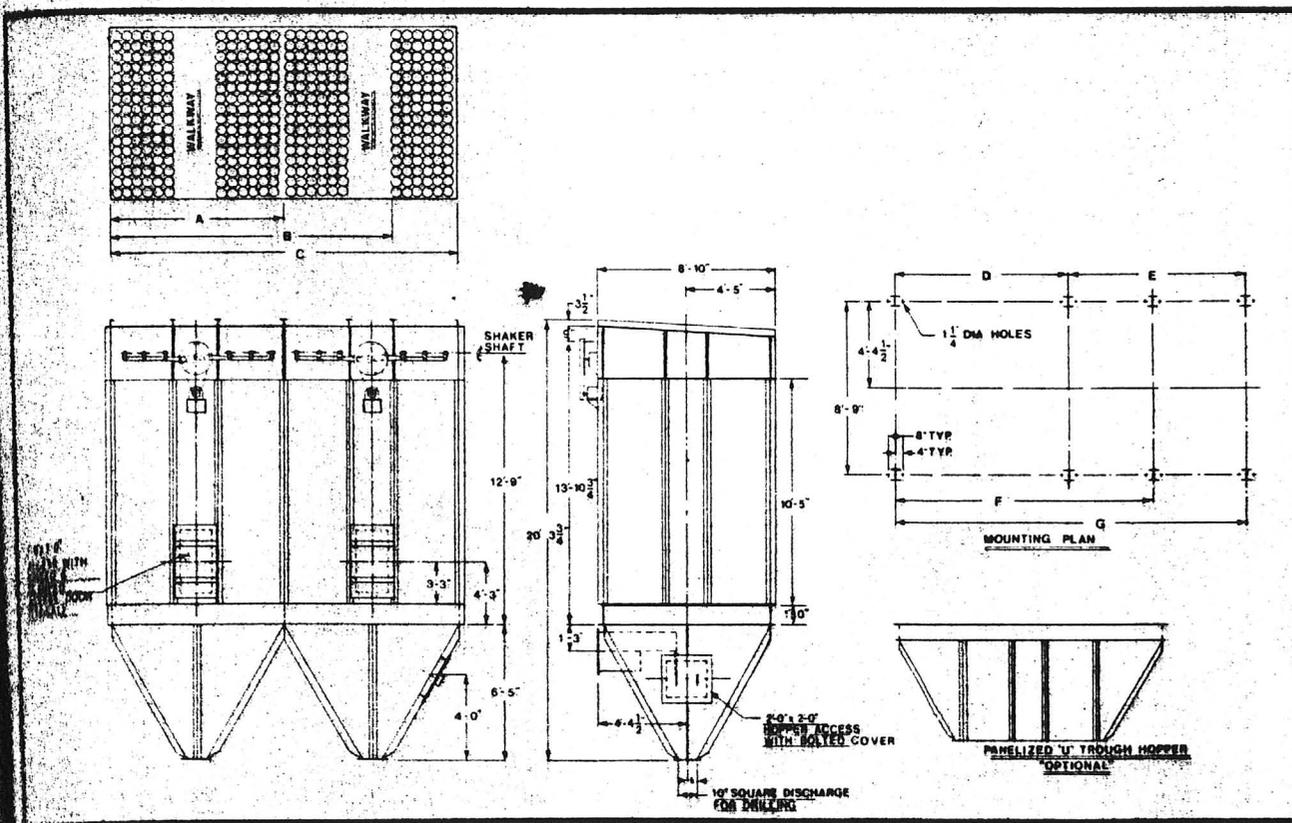
Wider Internal Walkways ... 20+" wide internal walkways eliminate possible accidental bag damage by maintenance personnel's feet.

Baffled Inlet ... The inlet stub incorporates its own baffle deflecting the air downward into the hopper which acts as a settling chamber for the heavier particles. The baffle assures even flow distribution to the bags with only the fines reaching the bags.



MT FABRIC SHAKER SPECIFICATIONS

MODEL	No. of Filter	Filter Area Square Ft.	Estimated unit wt. lbs.	A	B	C	D	E	F	G
MT 192	192	2809	4700	8'7"	—	—	8'7"	—	—	—
MT 288	288	4213	7050	—	13'11½"	—	—	—	13'11½"	—
MT 384	384	5618	9400	—	—	17'1"	8'3"	8'3"	—	17'1"
MT 480	480	7022	11,750	—	—	22'8½"	8'3"	—	13'11½"	22'8"
MT 576	576	8427	14,100	—	—	25'4"	13'11½"	—	13'11½"	25'4"
MT 672	672	9831	16,450	—	—	30'5½"	—	—	—	30'5½"
MT 768	768	11,236	18,800	—	—	33'7"	—	—	—	33'7"
MT 864	864	12,640	21,150	—	—	38'8½"	—	—	—	38'8½"
MT 960	960	14,045	23,500	—	—	41'11"	—	—	—	41'11"
MT 1056	1056	15,449	25,850	—	—	46'11½"	—	—	—	46'11½"



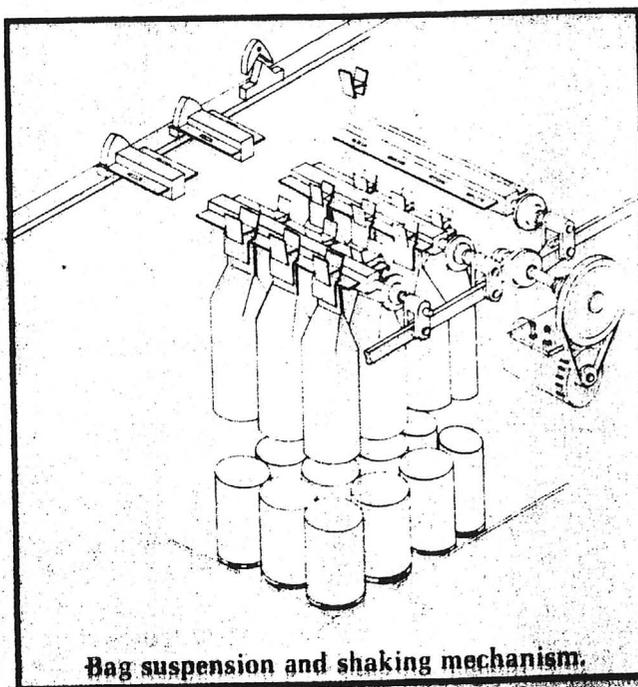
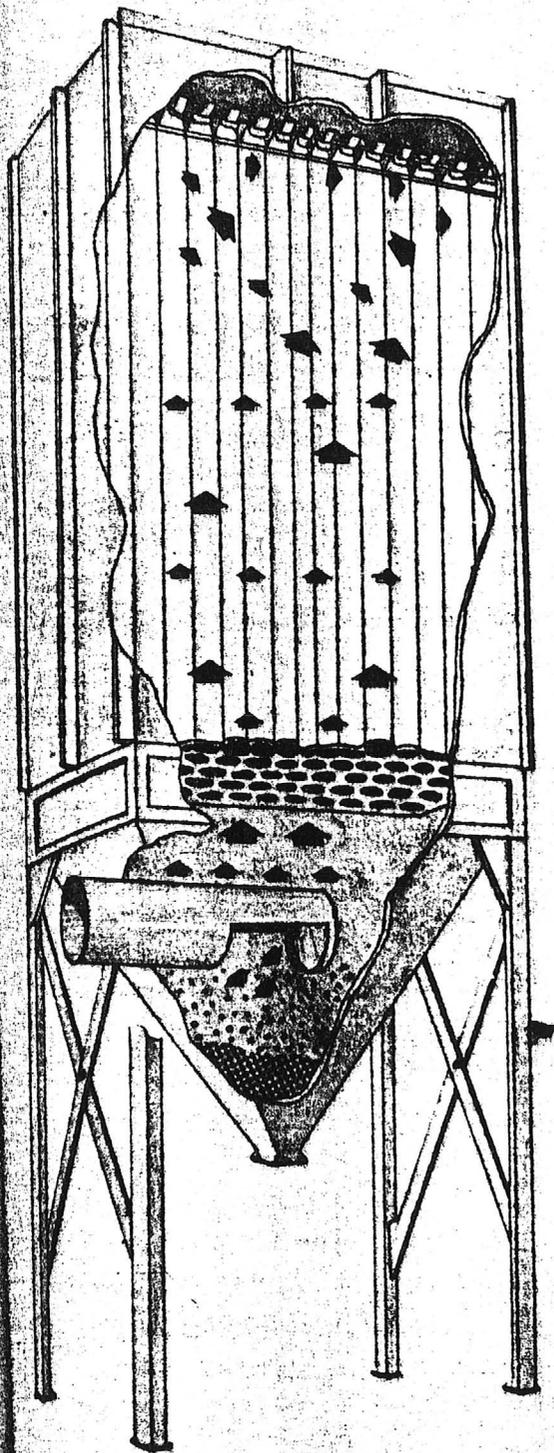
Fabric Shaker Collectors...

GENERAL INFORMATION...

Dust laden air, trapped at its source, is moved through the duct by the exhaust fan.

As dusty air enters the hopper, the baffle, plus reduction in velocity, forces much of the dust to the hopper bottom. Fine dust moves slowly up into the filter bags and is retained on their inner surfaces. Clean, dust-free air which has passed through the filter cloth is exhausted. It may be discharged to the atmosphere or returned to the plant.

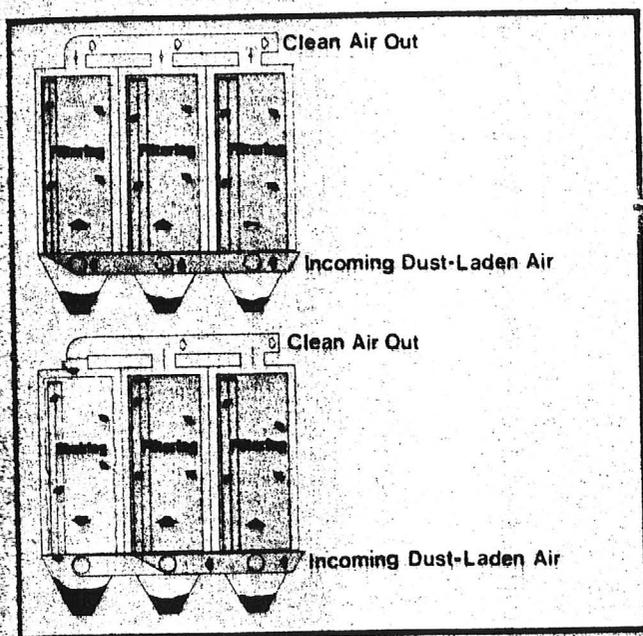
The bags are shaken periodically to remove accumulated dust before build-up of excessive back pressure. Frequency of shaking depends upon the dust load and type of dust. During the brief shaking period the filter compartment is restored to atmospheric pressure by stopping the fans for intermittent operation or closing the compartment valve during continuous operation. This collapses the bags and facilitates the cleaning action which drops the dust into the hopper.



Bag suspension and shaking mechanism.

INTERMITTENT OPERATION...

Where the dust-causing operation does not occur continuously or where the filter can be shut-down occasionally for shaking. Bags are cleaned when dust is not being produced or during shift changes. For intermittent operation the fan is shut off and the shaking mechanism started. It is recommended that users prevent simultaneous operation of fan and shaker by wiring the filter to guard against this or by using the MikroPul timer.



CONTINUOUS OPERATION...

Where dust must be collected continuously, multiple-compartment fabric collectors are used. These are required where round-the-clock dust control is needed or type and concentration of dust requires frequent bag cleaning.

Continuous, automatic MikroPul fabric collectors consist of two or more compartments, each with its own shaking mechanism and air valve. Uninterrupted collection is achieved by shutting down one compartment at a time for cleaning while the remaining compartments continue filtering. Constant-pressure operation may be accomplished by adding additional compartments to the system so that a compartment is off-line continuously.

Collector compartments are shut down and shaken individually in sequence, and in continuous cycle. A timer automatically regulates all functions and the frequency with which they occur.

The timing sequence functions as follows:

1. Air valve on first compartment is closed.
2. Shaker motor is started and operates for predetermined cleaning period.
3. Shaker motor is stopped.
4. After a short dwell, air valve is re-opened.

MINIMUM MAINTENANCE...

- Easy access to motors, drives and bearings outside the gas stream assures access without shutdown
- No compressed air required
- Filter bags are in parallel rows for rapid visual inspection
- Heavy duty construction of shaking mechanism assures long trouble free life
- Large internal walkways
- All maintenance is performed on the clean air side of collector... inspection can be performed in many cases while unit is operating



Subsidiary of

MikroPul
CORPORATION

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MEMBER
A.S.T.M.