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PRINTED: 10/18/2001

ARIZONA DEPARTMENT OF MINES AND MINERAL RESOURCES AZMILS DATA

PRIMARY NAME: JAQUAYS MILL AND MINE

ALTERNATE NAMES:

GILA COUNTY MILS NUMBER: 111A

LOCATION: TOWNSHIP 1 S RANGE 16 E SECTION 5 QUARTER C
LATITUDE: N 33DEG 22MIN 23SEC LONGITUDE: W 110DEG 43MIN 55SEC
TOPO MAP NAME: CUTTER - 7.5 MIN

CURRENT STATUS: PAST PRODUCER

COMMODITY:
MILL ASB SHORT FI
MILL ASB LONG FIB

BIBLIOGRAPHY:
ADMMR REGAL MINE & MILL FILE
MSHA MINE INFORAMTION SUPP
ADMMR JAQUAYS MILL AND MINE FILE

06/26/91

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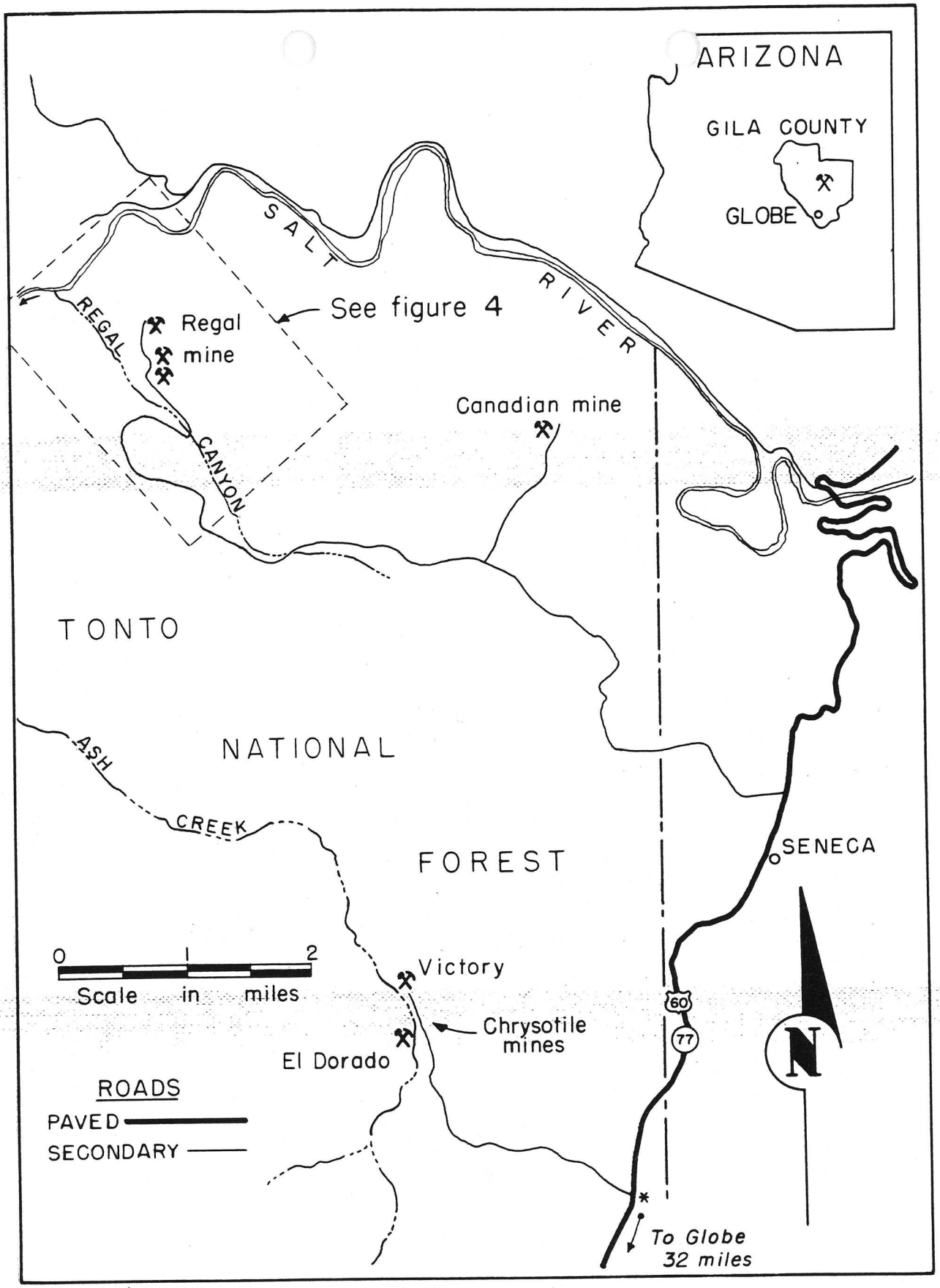


Figure 2. Location map, Jaquays mining corporation properties.

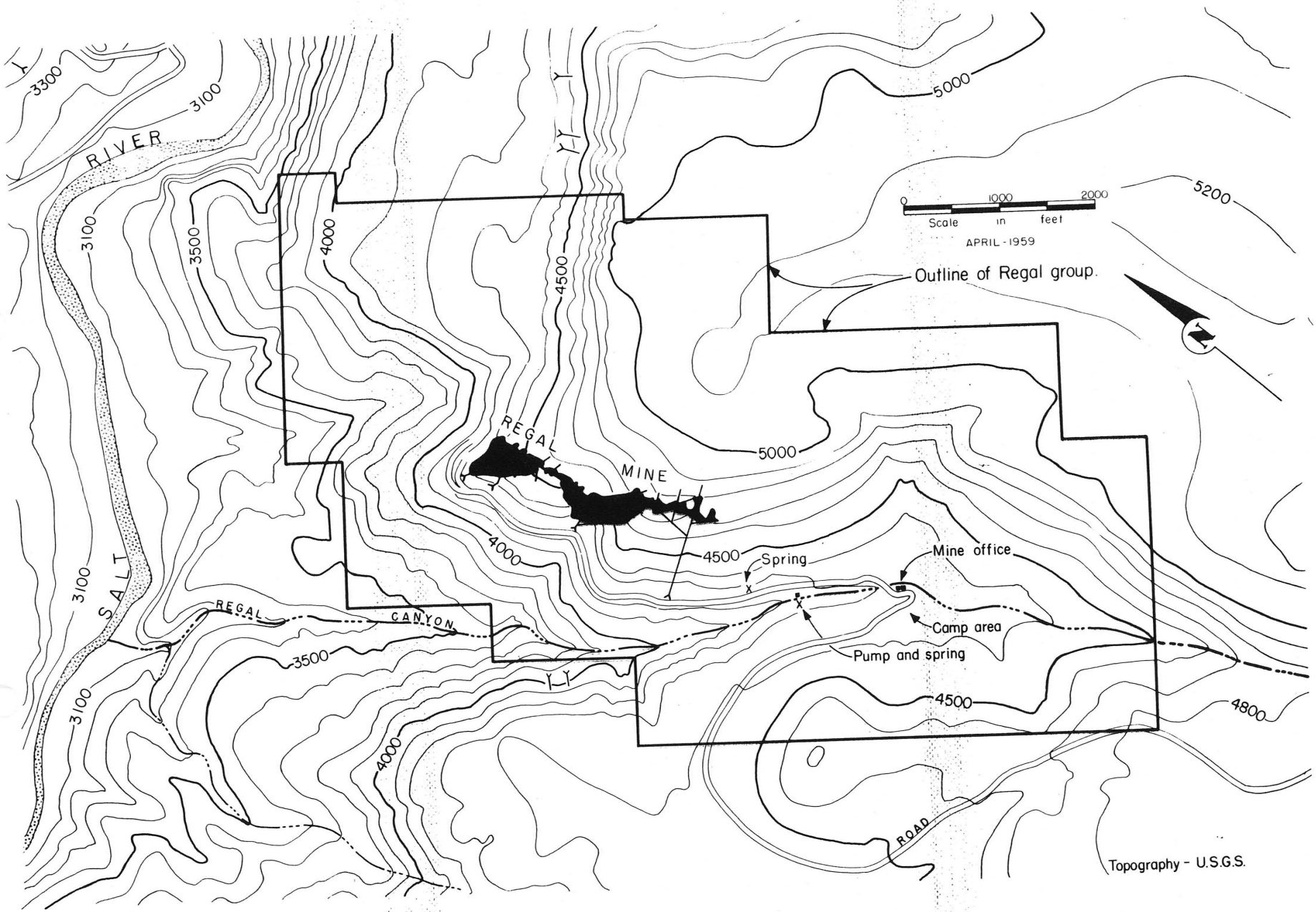
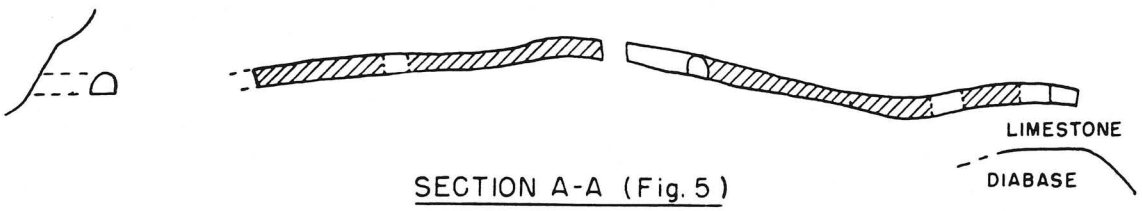
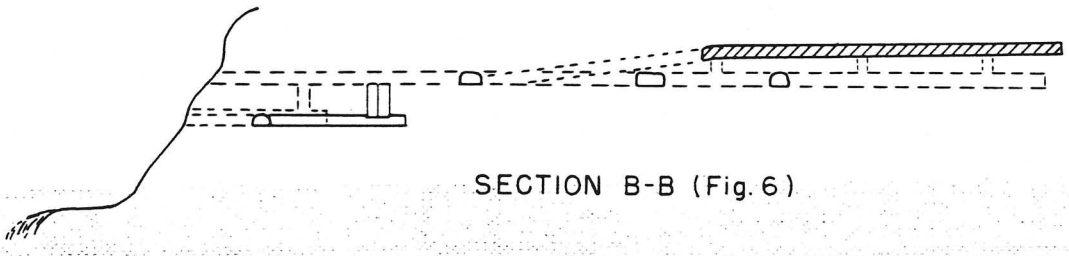


Figure 4 Topography of the Regal mine area.

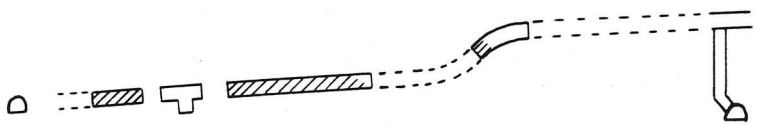


SECTION A-A (Fig. 5)

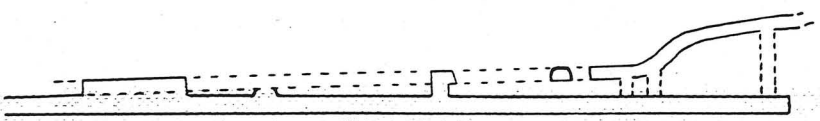


SECTION B-B (Fig. 6)

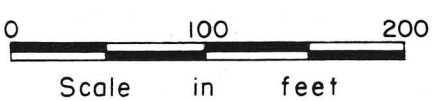
SECTION C-C (Fig. 6)



SECTION D-D (Fig. 6)



SECTION E-E (Fig. 6)



Hatching indicates stope backfill.

Figure 7. Cross sections, Regal mine.

Figure 22. Details of steel-lined chute.

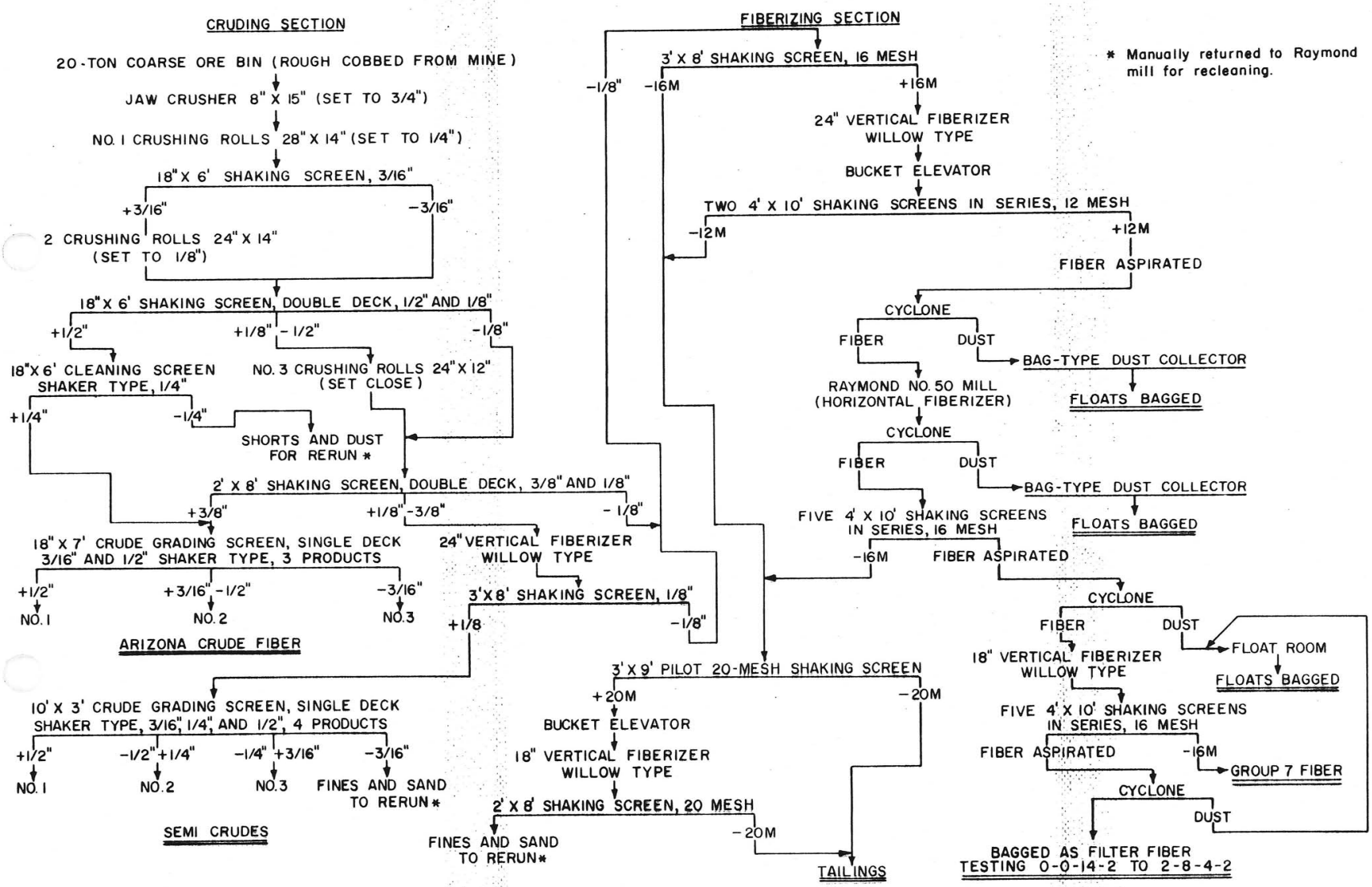


Figure 33. Flowsheet of Globe mill, Jaquays mining corporation.

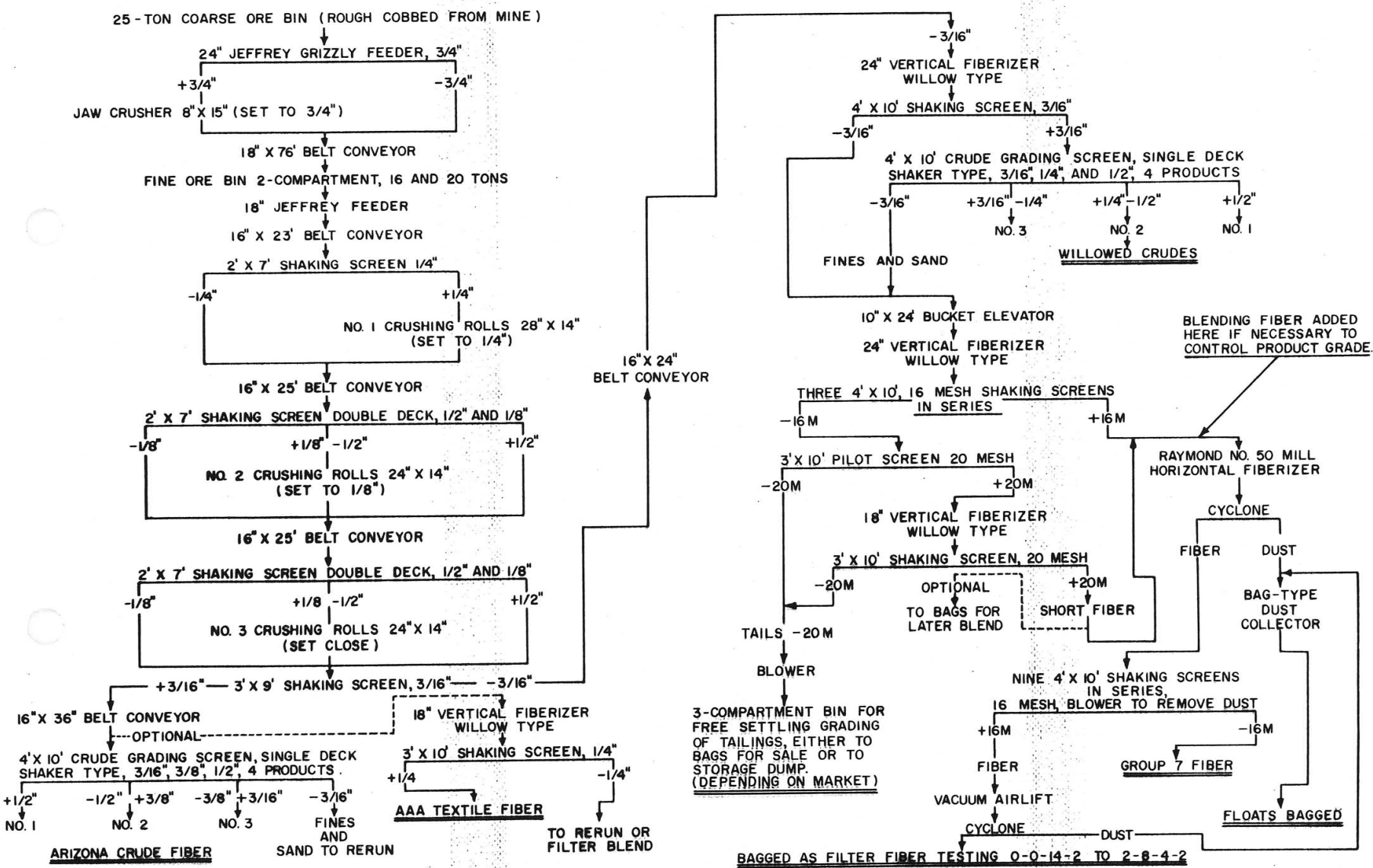


Figure 35. Flowsheet of highway 70 mill, Jaquays mining corporation.

JAQUAYS

Received call from D.W. Jaquays regarding his involvement with asbestos health studies. He said that according to data from the Bureau of Vital Statistics on deaths from lung ailment in Gila County there has not been a single one attributable to asbestos. Further, he said that all of the research done on asbestos health problems has been with amosite and crocidolite and there has not been any evidence to tie cancer to chrysotile. KAP WR 10/23/75

Went to Globe and had a conference with Nelson Muncey, mgr., Jaquays asbestos operation. He spoke mainly of the stringent EPA, MESA & OSHA regulations that are pushing the Arizona asbestos industry out of business. He also stated that due to the poor tensile strength of Arizona chrysotile and its Fe content the only present use for it is as a filter media. Due to the above mentioned regulations, manufacturers of filter media have reduced their asbestos requirement to approximately 1500 tons per year. GW WR 1/13/76

MG WR 4/30/82: Visited the Jaquays Mining Corp. mill at Globe. Although the mine was shut down in January, 1982, the company continues to sell asbestos from the mill stockpile. The mill office also sells or rents mining equipment and sells explosives.

KAP WR 6/18/82: Mr. D. W. Jaquays, in duscussing his El Dorado asbestos mine, said they have been mining the deposit for 25 years, but have never been able to prove much over 6 months reserve. The geology of the occurrence limits the effectiveness of drilling reserves. He felt there is every indication the mine could run another 25 years.

KAP WR 6/15/82: In the company of Nyal Niemuth and guided by Viviano Saucedo, Mill Foreman, a tour was made of the Jaquays Asbestos Company Mill at the east end of the community of Globe in Gila County. The mill flow is essentially the same as shown in the U.S. Bureau of Mines IC 7706, page 23, possibly with the addition of dust collection and control equipment. The mill was shut down in January of 1982. Sales and shipment of product continues from the warehouse stocks. The mill processes up to about 17 tons of hand cobbed and sorted ore daily from which a total of 1500 to 3000 pounds of marketable asbestos fibers of various grades are recovered. The mill tailings contain sand and fine fibers and is an additional marketable product for such uses as asphalt binders.

JAQUAYS ASBESTOS MILL

To Jaquays. Visited with Al Gerhardt and Muncy. Muncy objected to the departments "no assistance" in the counter action regarding asbestosis. I told him we didn't have factual material to use. They had their permit to operate. FTJ WR 12/15/72

To Jaquays mill. Interview with Al Gerhardt, operations as usual. They are making extensive medical examinations of all employees and former employees to try to refute allegations of EPA of damage to lungs, etc., of workers in asbestos. This includes so far tests on 244 Indian workers and 100 others. They are also studying concentrates using water instead of air. FTJ WR 2/16/73

To Jaquays office and plant. Al Gerhardt said they are operating at near capacity. FTJ WR 6/15/73

The asbestos mines and plants were handicapped by various news reports of asbestos causing lung cancer. Jaquays put in extra dust collecting devices and were allowed to continue to operate. FTJ Annual Report 6/28/73

To Jaquay plant and office. There were no changes in operation. FTJ WR 10/12/73

Visited Jaquays asbestos mil and Nelson Muncy who is plant manager. FTJ WR 5-23-74

Went to the Jaquays Asbestos Co. office but Mr. Muncy was out. GW WR 9/3/74

Visited with Messrs. Jacquay and Wright at the Jaquay Asbestos Co. mill office; Mr. Wright is mill supt., and Mr. Jaquay gave a copy of the production figures from his 3 mines since 1952 and quite a long description of the asbestos stockpiling events. He says he has subsequently repurchased something over 3700 tons of the stockpile and that there is about 600 tons remaining. Mr. Neal said he and Mr. Towne had also purchased considerable tonnages from the GSA also. GW WR 9/4/74

Jaquays is presently the only Arizona producer and is operating at full capacity. The asbestos scare of a couple of years back caused only a temporary slowdown in orders plus a great number of headaches. Jaquays spent a great deal of money in providing hospital equipment at Miami for testing possible lung damage from inhalation of asbestos dust and the cost of medical testing for over 300 individuals. I expressed the thought that it was too bad that such an effort had gone unpublicized and expressed our desire to help, if wanted. KAP WR 10/7/75

GILA COUNTY

JAQUAYS ASBESTOS MILL

Jaquays were increasing their mill capacity and were processing ore from their own mine as well as stockpile material. FTJ QR 1-13-71

To Globe - to Jaquays office. Mr. Jaquay was at mine. To Jaquays office. Interview with Gerhardt and Jaquay. They are mining and milling at capacity. Big problem is independability of Indian labor. FTJ WR 1-29-71

To Jaquays in Globe. They have installed drive under storage bins and dust collection devices. FTJ WR 3-31-71

Jaquays was installing dust control devices and drive under bins at their plant. FTJ QR 4-5-71

Jaquay Mining Corp. installed dust control equipment and other additions to their plant near Globe. FTJ Annual Report 8-19-71

Directory of Mining - August 1971 - 34 employees.

Jaquays produced at their regular rate. FTJ QR 9/71

To Jaquays-visit with Al Gerhardt. No changes in their operation. FTJ WR 2/10/72

Went to Jaquays office and visited with Al Gerhardt who said he is in need of mill men. The company continues to mill their own ore and GSA stockpile material. FTJ WR 4/13/72

Jaquays Mining Corp. were milling ore from their El Dorado and Victory Mines and made additions to their mill in Globe. They were also milling U.S. Government stockpile material. Their biggest problem has been shortage of miners and absenteeism. FTJ QR 3rd¼ 71-72

Jaquays had installed an office in their plant off Highway 70 and were planning to move shop and supply department from their Globe location. A. N. Muncy is Chief Mining Engineer and A. W. Gerhardt is General Supt. They mill both their own mines material and U. S. Stockpile surplus. FTJ 4 ¼ '72

Mr. Muncy, Jacquays Asbestos Plant in Globe phoned regarding iron ore specifications. He wants hi-grade Fe with less than 10% SiO_2 accessible ro RR. It is to be sold to a cement plant out of state. Copies of the descriptions of 5 deposits mentioned in USBM I.C. 8236 were sent to Mr. Muncy, all are within 20 miles of a RR. GW WR 11/17/72

Active Mine List - October 1972 - Empl. 36

GILA COUNTY

JAQUAYS ASBESTOS MILL

Visited Jaquays Plant. They are installing a dryer and tromel for mine run ore before ore goes through process plant. FTJ WR 12-1-67

Visited Alvin Gerhardt at Jaquays plant. They were making additions to their plant to rework tails. FTJ WR 1-26-68

Visit Jaquays Plant. Gerhardt was at mine. FTJ WR 3-29-68

Visited Jaquays mill. Jaquays in Phoenix - Gerhardt at the mine. FTJ WR 5-31-68

Active April 1968

Visit to Jaquays plant and Alvin Gerhardt - no changes noted. FTJ WR 9-27-68

Interviewed Mr. Jaquays at his office and plant. He said they were still milling some ore from federal stockpile. FTJ WR 1-31-69

Visited Jaquays Mill - They were installing a dust collector. Dust sells for $30-$60/ton. Jaquays has development program going on the Victory Claim. Also Jaquays has bought all the #2 and #3 fibre from the government stockpile. FTJ WR 3-28-69

Active Mine List April 1969 - 30 men - (Regal & Chrysotile & Mill) A.W. Gerhardt, Supt.

Jaquays plant idle - did not visit it. FPK WR 6-4-69

Visited Jaquays office and plant. Production at capacity. FTJ WR 9-26-69

Active Mine List Oct. 1969 - 39 men - (El Dorado, Victory & Mill) A. W. Gerhardt

Visited with Mr. Jaquays - he said he was shy miners. FTJ WR 11-28-69

Interview with Mr. Jaquays at his office. He has trouble keeping miners. FTJ WR 1-30-70

Visited Jaquays office and plant. USBM representatives inspecting plant and mine. FTJ WR 3-27-70

Active Mine List May 1970 - 29 men - (Victory, El Dorado, & Mill) A. W. Gerhardt, Box 328, Glo

Asbestos mining was not as high as last year. Jaquays hampered by shortage of mine labor. FTJ Annual Report 6-30-70

Active Mine List Oct. 1970 - 31 men - (Victory, El Dorado & Mill) A. W. Gerhardt, Globe

GILA COUNTY

JAQUAYS ASBESTOS MILL

Visited Jaquay's office and mill. Development is being stepped up at Chrysotile to increase production when the Regal is finished.

EGW WR 1/29/65

Visited Jaquay Asbestos office and mill, interviewed Mr. Jaquay who stated he is shipping all the filter grade he can mine and process. He is also shipping his tailings to the Arizona Portland Cement Co., in Rillito, it is being used in the cement as a moisture retardent.

EGW WR 3/26/65

Visited Jaquays, both office and asbestos plant. They were in full operation and had installed new bagging equipment.

FTJ WR 5/28/65

In full operation. Having some difficulty with sales and stock pile building up.

FTJ: WR 10/1/65

Visited Jaquays mill and office - Operation constant.

FTJ WR 11/26/65

Visited Jaquays Mill - Operating at full capacity.

FTJ WR 3/25/66

Visited Jaquays Mill, Mr. Gerhardt, Supt., said they were mining and milling at regular rate. Their inventory is high. He also said a group were forming Globe Development Corp. to encourage industries, particularly to the Cutter area. An acid washing plant for asbestos is being considered to supply filter fiber stock. Gerhardt's outlook not encouraging as he considers it to be in direct competition with many of their customers.

FTJ WR 5/27/66

Visit and interview at Jaquays plant; production normal.

FTJ WR 9/30/66

Visited D. W. Jaquays at his office - they are operating at capacity.

FTJ WR 11/25/66

Visited Jaquays Mill - Interview with A. W. Gerhardt - Jaquays is buying asbestos from U. S. Stockpile to supplement mine production. This material is sold by Jaquays to the government for stockpiling.

FTJ WR 3/31/67

Interview with Gerhardt at Jaquays plant. Rex Town was out, but production normal.

FTJ WR 9/29/67

DEPARTMENT OF MINERAL RESOURCES
STATE OF ARIZONA
FIELD ENGINEERS REPORT

Mine: Jaquays Asbestos Mill
Date: May 21, 1962
District: Globe District, Gila County
Engineer: Lewis A. Smith
Subject: Interview with Gerhart, Gen'l. Supt.

The mill is operating at full 8-hour capacity with a considerable back log of orders. The principal products are Filter grade (3-R) and some No. 2 for the Government.

Jaquays feels that the price of Filter should be somewhat higher in order to insure a good profit, sufficient to carry development work. Jake has three large orders for fiber.

The old Jaquays Mill, except for the office and a store house, has been torn down and removed. A new store house is being erected on the west end of the new mill. Sales have held up quite satisfactorily, having held at mill capacity on No. 3 grades. The government stock pile allotment for No. 2 grade has nearly been completed.

Interview with Al Gerhart-Lewis A. Smith-9-26-62.

Active - 10-1962

Jaquays is erecting a new storehouse adjoining the west end of his mill. So far the columns and trusses are in place, and the roof pillars are being placed. The new storeroom will ad 70 per cent to the storage capacity. The old mill storage room is nearly full of sacked fiber. The lean area at the Regal mine has somewhat thickened. Fortunately the Chrysotile Mine has had an excellent ore face and has tided Jaquays over the tough period at Regal. Sales have been good of late and promise to still further increase. Price has improved too. Reserves are believed to be good, as now figured to last at least 2 years.

Memo - Interview with Al Gerhart - 10-30-62 - LAS

Jaquays reports that his crude market is very slow and he had a very large inventory of certain grades. He said that unless he can get markets for certain grade, he may have to curtail his operations shortly, since he cannot afford to carry too much inventory, as is the case now.

Conference with Al Gerhardt and D. W. Jaquays 9/25/63 LAS

Visited Jaquays Mng. Corp, mill, 10 men working.

E G W WR 6/3/64

Jack Neal stated that none of his No. 2 asbestos had been accepted by the Government. Jaquays revealed that he is negotiating with the Japanese to unload some of his No. 2 asbestos, probably at a better price than he bid in the Government contract. Both were of the opinion that neither of them could hold costly inventories of such material forever and not go broke. Both are doing well with filter (No. 3) grade and No. 6 and No. 7 grades. Town is making repairs on his carding machines but hopes to resume shortly.

LEWIS A. SMITH - Weekly Report 1-20-61

This Mill active Feb. 1961

Mr. Jaquays says he now has had 200 tons accepted by the government and his lower grade sales have been very good.

LEWIS A. SMITH, - Weekly Report - 9-15-61

Jaquays Mining Co. is running full blast at Globe and according to Reinhart had more orders for filter grade (No.3) than they could fill. The Regal is now in fiber again after a long prospecting campaign. Meanwhile the Chrysotile mine has come through fine.

LEWIS A. SMITH - Weekly Report - 1-19-62

Work at the plant and mines continued at a constant pace during the past two months. Some Phillips asbestos was treated in addition to the company ores. The liquidation of the partially milled Phillip's ore is under the supervision of L.A. Stewart, formerly with the Bureau of Mines. The Valley Bank of Globe is the receiver for the Phillips Estate. Most of the Phillips fiber contains 15 to 18 per cent of serpertine rock and the rock content is being reduced to under 2 per cent at the Town Mill (formerly La Tourneau Mill). (See Town report.) The fiber ranges from 4 to 2 grades, much being a good four grade.

LEWIS A. SMITH - Memo - 3-28-62

JAQUAYS MILL (New)

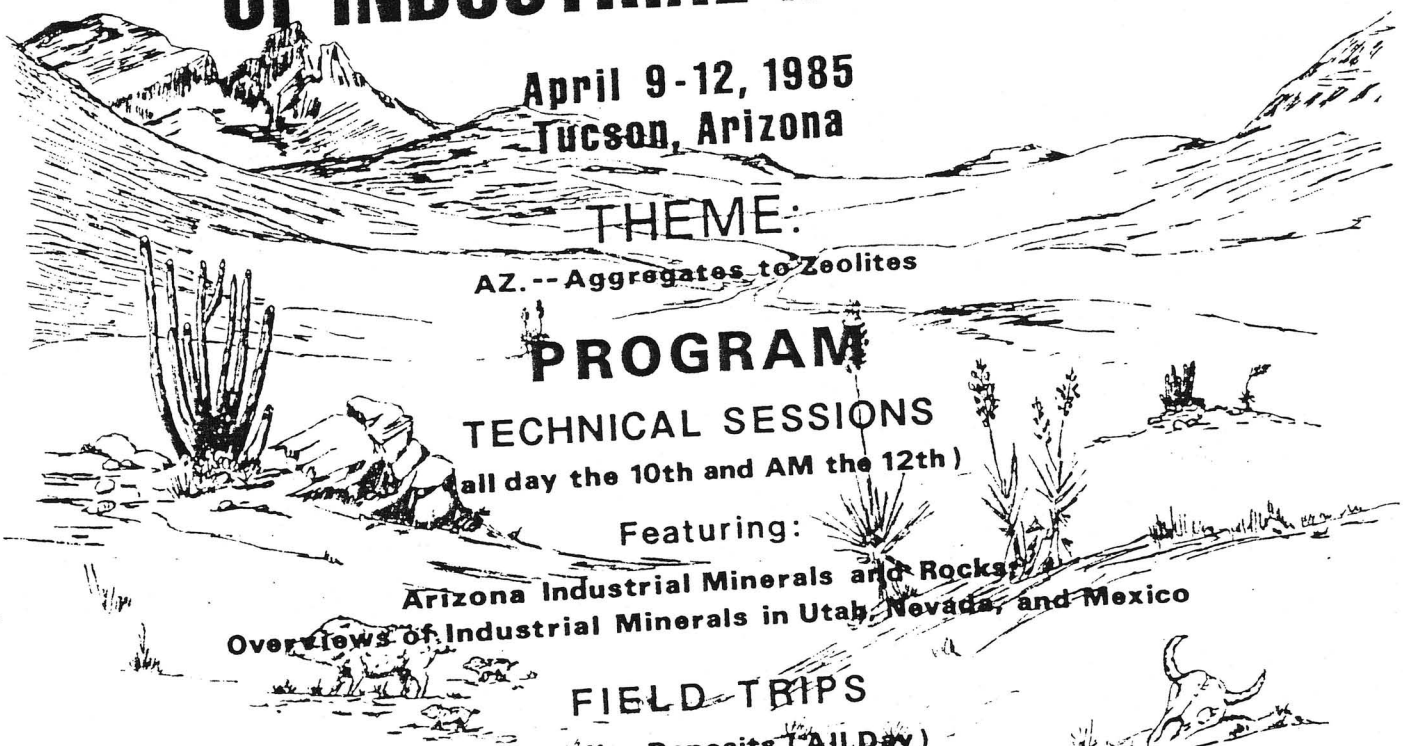
GILA COUNTY
GLOBE, ARIZ.

Jaquays Mining Corp. of Globe, Ariz, plans to build a hydrochloric acid treating plant to clean two to four tons of asbestos fibre a day. Construction is expected to start shortly at the company's present mill site, three miles east of Globe. Cleaning asbestos with acid dissolves impurities of lime, dust, etc. and doubles the market price of the fibre.

Taken from MINING WORLD, June, 1960, p 60

See: MINING WORLD, September, 1960, p 44. "ARIZONA ASBESTOS INDUSTRY"

21st ANNUAL FORUM ON GEOLOGY OF INDUSTRIAL MINERALS



April 9-12, 1985
Tucson, Arizona

THEME:

AZ.--Aggregates to Zeolites

PROGRAM

TECHNICAL SESSIONS

(all day the 10th and AM the 12th)

Featuring:

Arizona Industrial Minerals and Rocks
Overviews of Industrial Minerals in Utah, Nevada, and Mexico

FIELD TRIPS

April 9 -- 1. Bowie Zeolite Deposits (All Day)
2. Visit to large copper mine - mill complex (Half Day)

April 11 -- All day trip by bus to view Spectacular Geology of the Basin and Range Province, some associated Industrial Minerals and Rocks, and some classic copper mining areas

SPOUSES ACTIVITIES

Fabulous Southwestern Adventures - you'll have to see to believe!

BANQUET

April 11th

GENERAL CHAIRMAN

H. Wesley Peirce, Principal Geologist
Arizona Bureau of Geology and Mineral Technology
University of Arizona
845 N. Park Ave.
Tucson, AZ 85719
(602) 621-7906

REMEMBER TO BRING YOUR SPOUSES

PLAN NOW!

East of the Fence

By Earl Jackson

"Don't go into the property east of the fence," said a guard on the ill-fated Mountain View Mobile Home Estates. "That is private land, and they might shoot you!" He was referring to the Jaquays Asbestos Mill Site in Globe, Arizona.

This advice, given to me in March 1984, contrasted with April 12 of 1985, at which time I was cordially invited by D.W. Jaquays, owner of the inactive asbestos mill, to join 112 attendees at the 21st annual Forum on Geology of Industrial Minerals for a guide tour of the plant. Additionally, several other Globe people were guests.

Members of this 21st Forum visit were from 30 states, Washington D.C., and the Canadian provinces of Ontario, British Columbia and Nova Scotia.

Mr. Jaquays and his wife, long-time employee Frank Stevenson and his wife, Mr. and Mrs. Mike Wood and Alvin Gerhardt hosted the group, answered questions, and participated in guiding them through the plant. Introductory comments by Mr. Jaquays were followed by comments from Dr. Malcolm Ross, internationally known for his scientific studies of asbestos.

Amont the professional people attending were Wes Peirce, principal geologist at the University of Arizona, doing geology work with the Arizona Department of Mines and Mineral Resources (and chairman for this group visit), Ken Phillips, Mineral Resources engineer for the Department, and Larry Fellows, Arizona State Industrial Mineral Geologist.

over

Jaquays outlined the history of his now closed asbestos corporation mill, and gave out informational sheets descriptive of chrysotile asbestos. He pointed out how the governor of Arizona and the E.P.A. (Environmental Protection Agency of the federal government) had indicted chrysotile asbestos along with all other asbestos forms, had forced the closure of Jack Neal's Mobile Home Estates, and frightened away former asbestos customers of the Jaquays asbestos corporation so that it has gone out of business with over 20,000 tons of sacked and salable tailings on hand!

It was interesting to see the various professional geology and mining people and to hear their comments. The general view was that E.P.A. and others who fight against chrysotile seem to know virtually nothing about its alleged harmfulness! And it was very impressive to see the Arizona Department of Health Services Air Pollution Control Operating Permit No. 84005-84 issued to Jaquays Mining Corporation for operation of Asbestos Mill Tailings Piles and Associated Equipment dated March 11, 1983. Also of interest were Safety Award in "Recognition of your Outstanding Contribution to Safety Achievement" from the State Compensation Fund for the years April 1976 - March 1977 and April 1980 to March 1981. Somehow I do not equate such recognition with operation and milling of a dangerous mineral!

The sum total of many comments made by the professional men and women at this conference were to the effect that they could not see the "dangers" of association with the one proven innocent member of the asbestos community. Everything I heard supported the studies by Wood and Gerhardt, to the effect that chrysotile asbestos is so nearly completely harmless to humans, except under

the most intense industrial conditions, that this whole indictment by E.P.A. is a gross and extremely expensive miscarriage of justice.

In an Arizona Silver Belt article of July 21, 1983 I condensed field notes from the Arizona Bureau of Geology and Mineral Technology (Spring 1983) and cited the following:

In the Thetford Mines in Quebec (where over 30 million tons of chrysotile asbestos have been mined and milled) the wives and children of employees lived in houses built on tailings dumps, and drank water and breathed air containing significant amounts of chrysotile fiber. Asbestos caused diseases are "practically unknown among non-occupational residents of chrysotile mining localities in Quebec."

I asked Dr. Ross a few questions about chrysotile asbestos, and pointed at the tailings dump outside the Jaquays Mill building on the east side, He then said that in the Thetford Mines area referred to above, the homes of those miners were surrounded by tailings dump piles as high as those hills," and he pointed to the high and rugged hills which lie just north of the Jaquays mill.

It is so evident, after reading reams of study material ferreted out by Jaquays, Wood and Gerhardt and many responsible scientists world wide, that the scare which was thrown into the people who lived in the Mountain View Mobile Home Estates was one of the grossest violations of truth ever uttered!

From the Wood-Gerhardt studies emerge the following interesting facts about chrysotile asbestos in Gila County:

1. It has been mined in this county since 1914, with 75 mines in Gila County in 1956.

2. The Salt River and its tributaries, which supply the Salt

over

River Valley with much of its water, flow through 150 miles of canyons with many outcroppings of chrysotile asbestos.

3. Gila County, after 68 years of mining and milling chrysotile asbestos, has a lower incidence of all cancers than the average for the entire state of Arizona!

4. Not one case of lung cancer from chrysotile asbestos has been reported in Gila County, Arizona.

JAQUAYS MILL AND MINE

Skillings Mining Review, January 12, 1974, p. 35

E/MJ, March, 1974, p. 187

Mining Congress Journal, March, 1974, p. 17

Mining Engineering, March, 1975, p. 40-45 (gen. info., pictures, etc.)

MAP - underground workings of all areas of patented ground - upstairs in the rolled alphabetical file

BLM Mining District sheet 186

USBM IC 7706 p. 28

Directory of Active Mines in Arizona THRU 83

MSHA Yellow Sheets (Active Mines Visited)

MILS Sheet sequence number 0040070111 (p. 1805)

Maps - Upstairs in the Flat Storage Area - Drawer 7

GLOBE AND ASBESTOS

Point of Personal Privilege--
Arnold Jeffers-Rep. Dist. 14, AR12 House of Rep
January 24, 1980 (Tucson)

This week approximately 145 Arizonans are being moved out of their homes. They are unfortunate residents of Mountain View Park, a mobile home subdivision built up around an old asbestos mill near Globe, Arizona. We've all heard about asbestos, and it's proven ability to cause lung cancer in humans who inhale it. So when it came to the attention of our State health authorities that these people were living in and around the leavings of an old asbestos mine, a great furor blew up. No less a personage than our Governor took personal command of the situation and determined that these people had to move. Its become a sort of mass hysteria, but in the midst of all the fear, out of the hub-bub of frantic accusation, came a calm and quiet voice that everyone chose to ignore. Is it possible that there is more than one kind of asbestos? And is it possible that some kinds of asbestos are not carcinogenic? Is it possible that all this frantic activity in Globe is absolutely unnecessary? The answer to all three questions is yes!

Dr. Malcolm Ross, a research mineralogist with the U.S. Geological Survey pointed out that the substance we are dealing with in Globe is called Chrysotile Asbestos. The stuff that causes the cancer is a heavy iron-content asbestos commonly referred to as blue asbestos, or brown asbestos. The substances being used for our studies in the United States is the blue asbestos, mostly out of New Jersey. Dr. Ross reported that the most extensive studies on chrysotile asbestos have been done through McGill University in Canada. Altogether more than 65 studies involving 11,000 subjects have been performed in an asbestos mining town of 30,000 people. The result has always been -- "there's

no significant health danger in being exposed to chrysotile asbestos". None! But by the time this fact came to light the trailers were rolling. Nobody dared check it out -- because the actions of our Governor have caused these 145 people to lose every cent of equity they've ever invested or accrued in their homes. So we give them a place to live-- what do we do to make up for their loss? And what if that loss was caused by an absolutely unnecessary fear reaction caused by our Governor? This is one of those instances where a little Second Thought ahead of time could have saved a lot of time, money, and trouble for everyone. Again, on Second Thought, wouldn't you think that Globe might have become known as the Cancer Capitol of the world?...if everything the Governor has told us was true? It hasn't. Infact, Globe residents have been working that mine since before the beginning of this century. And their cancer rate is not above average.

Regal Mine

Globe Mill

Chrysotile Mine

JAQUAYS MINING CORP.

Producers of Fine Arizona Asbestos

1219 South 19th Avenue

PHOENIX, ARIZONA

Phoenix 254-6494

Globe 425-2621

April 24, 1985

Dear Fellow Engineer:

Thank you for taking the time to visit our asbestos plant in Globe, AZ on April 11th.

I trust I did not bore you with our troubles with various Government agencies. If you agree with me and most of the rest of the people in Globe that Arizona Chrysotile poses no great health hazard, please write your Congress-persons and have them demand that E.P.A. prove Arizona Chrysotile is as hazardous as they say it is; that their research (rat-studies) warrants the senseless actions they are taking at the Mountain View Mobile Home Site, by the removal of asbestos from schools and public buildings and by the burial of our mill tailings.

Enclosed is some additional information on the asbestos situation which you may have possibly missed at Globe.

Your assistance in trying to bring sanity, if possible, to the E.P.A.'s actions concerning asbestos will be appreciated not only by the people of Globe but by the entire nation.

Sincerely,

D.W. Jaquays, Pres.

UNITED STATES

DEPARTMENT OF THE INTERIOR

BUREAU OF MINES

HEALTH AND SAFETY TECHNICAL SUPPORT

HEALTH STUDY (ASBESTOS DUST)
EL DORADO MINE
VICTORY MINE

JAQUAYS MINING CORPORATION
GLOBE, GILA COUNTY, ARIZONA

October 3, 1972

BY

Amin N. Alameddin
George W. Weems
James G. Inderberg

DENVER TECHNICAL SUPPORT CENTER

Glen W. Sutton
Chief

Originating Office
U.S. Bureau of Mines, Health and Safety
Denver Technical Support Center
Denver Federal Center, Building 55
Denver, Colorado 80225

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

Mine: El Dorado & Victory **I.D. No:** 40004-0-02-004

Company: Jaquays Mining Corp. **Underground** X **Open Cut** __

Operated by: Jaquays Mining Corp.

Survey by: Bureau of Mines, Denver Technical Support Center

Location: Chrysotile, Gila County, Arizona

Survey dates: October 3, 1972

DISTRIBUTION:

Company officials:
D. W. Jaquays, President and General Manager

Assistant Director--Health and Safety Technical Support (2)
Chief--Pittsburgh Technical Support Center (1)
Assistant Director--Metal and Nonmetal Mine Health and Safety (2)
Chief, Health Div.--Metal and Nonmetal Mine Health and Safety (1)
Originating office: Technical Support Center, Denver, Co. (2)

State agencies:
Verne C. McCutchan, Arizona State Mine Inspector,
Phoenix, Arizona

District Manager: Allen D. Look, Alameda, CA
E. A. Morgan, Phoenix, AR

Other:

Bureau of Mines Liaison Officer: Floyd D. Everett
NIOSH Regional Administrator -- Douglas Johnson

Union: None

State Plan Coordinator: John Franz

INTRODUCTION

This report is based on a health hazard evaluation of El Dorado (asbestos) and Victory (asbestos) mines, Globe, Arizona. It is one of a series of health investigations of asbestos mining and milling operations.

GENERAL INFORMATION

General and descriptive material included in the report is based on information secured at the time of the survey and does not reflect subsequent changes that may have occurred.

Both the underground Victory and El Dorado asbestos mines are at the site of an old mining town, Chrysotile, Arizona in the MacMillian mining district. The mines are reached by travelling about 33 miles on U. S. highway 60 from Globe, Arizona to a dirt road turning 0.7 miles on milepost 283. The mines are owned and operated by Jaquays Mining Corporation, Box 328, Globe, Arizona 85501. D. W. Jaquays is the president and general manager; J. L. Kleiner, Mine Superintendent. A total of 11 men 10 underground, worked one 8-hour shift a day, 6 days a week at El Dorado. The same number of men worked at the Victory mine.

The day of the survey, 11 men were working at El Dorado mine, and only 2 men were doing development work at the Victory mine.

El Dorado mine is opened by 5 interconnected adits. One is used as a main entry and the others are kept open for ventilation and additional exits.

The Victory mine has several openings; one adit was used for production and the others were used for ventilation and emergency exits.

A random room-and-pillar system of mining was used in both mines. The ore, chrysotile asbestos in serpentine, occurred as irregular lenses in competent horizontal beds of limestone. The ore was recovered by the resuing process.

Waste was blasted and slushed into worked-out areas, where it was dryed, walled, and gobbed. Exposed ore was blasted and hand sorted into a steel stone boat. A slusher was used to pull the stone boat to an ore pass. Ore was loaded into 20-cubic-foot cars and moved by battery-power Mancha locomotives and dumped on the grizzly in the sorting room over the ore bin. The ore was then hauled from the mine to the mill in Globe, Arizona by a contract trucker.

Natural ventilation constituted the main source of air throughout the mine.

DESCRIPTION OF STUDY

The exposure of workers to asbestos containing airborne dust has been demonstrated to cause a pneumoconiosis called asbestosis, and asbestos-induced neoplasms. All control measures applicable to mineral dust control can be used for airborne asbestos, but to achieve safe levels of exposure requires stringent control practices.

At the El Dorado mine, the following conditions and practices were noted:

1. Holes were collared and drilled wet with pneumatic jackleg drills.

2. Water for drilling purposes were the main dust-control measures used at the mine.

3. Hard hats and safety footwear were worn by all employees. Eye protection was provided where needed.

4. It was reported that USBM approved respirators were provided, but no miners were observed wearing respirators at the time of the survey.

5. No change house was provided for the men.

6. An annual chest X-ray is being monitored by the Public Health Service.

7. The weather was cloudy, and it was drizzling all day.

Seventeen airborne asbestos dust samples were collected on membrane filters, using pumps calibrated on site prior to use to pull 1.4 liters of air per minute; these samples were counted in the Technical Support Center's Denver laboratory at approximately 460 magnification with phase contrast illumination according to the method established by the U. S. Public Health Service. Full-shift exposures were determined for three selected workers in El Dorado mine and one worker in the Victory mine. One general atmosphere sample was collected at the dump area. All airborne samples were collected in the breathing zones of the workers.

DISCUSSION AND RESULTS

In 1967, the published TLV 1/ was 5 mmppcf (million particles per cubic foot of air) for asbestos-containing dusts when collected conventionally with the impinger or midget impinger and counted conventionally with the standardized light-field counting method. The number concentration represented the visible fragments (small) of asbestos fibers, plus the many associated mineral dust particles.

In 1968, the published "Notice of Intended Changes" proposed that (1) the 5 mppcf be reduced to 2 mppcf; and (2) an alternative figure of 12 fibers/ml (fibers per milliliter) greater than 5 microns in length be adopted - this figure was to be based on the membrane filter method at 430X phase contrast magnification.

The aforementioned two proposed changes were retained in 1969; in 1970, the published proposed changes (1) dispensed entirely with the impinger sampling method and its number concentration figure; and (2) recommended that the alternative value be changed from 12 fibers/ml greater than 5 microns in length to 5 fibers/ml greater than 5 microns in length.

In 1971, the "Notice of Intended changes" retained the 1970 proposal, and specified the membrane filter method at 400-450X magnification phase contrast illumination. Also, an excursion limit not to exceed 10 fibers/ml may be permitted for 15-minute periods each hour up to five times daily.

For purposes of this health study, it is believed that the 1972 proposed TLV figure and sampling method provides the best indication of the asbestos dust health hazard. This value has also been accepted by the U.S. Department of Labor, and on December 7, 1971, an emergency standard of 5 fibers/ml was published in the Federal Register. Therefore, the proposed 5 fibers/ml (on a time-weighted basis) is used as the threshold limit value.

1/ Threshold Limit Values for 1967, Recommended and Intended Changes; American Conference of Governmental Industrial Hygienists, 1967.

Fiber concentration and pertinent data for the individual airborne dust samples with the time-weighted average exposure for each individual are listed in Appendix I.

CONCLUSIONS AND RECOMMENDATIONS

The fiber concentrations in various areas are shown to be, for practical purposes, below the threshold limit of 5 fibers/ml. Recent information indicates that a value of 2 fibers/ml may be adopted in the future to assure adequate protection of the health of workers exposed to asbestos; therefore, control measures adopted should recognize such potential reduction.

No other hazardous dust conditions were observed directly. From the observations, the following recommendations are pertinent:

a. No change house was available. To minimize contamination of an employee's home with asbestos carried in on work-clothing and footwear, it is recommended that suitable lockers and shower facilities be provided.

ACKNOWLEDGMENT

The authors appreciate the cooperation of company officials and employees.

APPENDIX I

Date Collected: October 3, 1972

Sample No.	Sampling Time Start	Stop	JOB TITLE Location and Operation	Calculated Conc. Fibers/ml >5 Microns
El Dorado Mine				
J-1	7:21	8:21	Trammer: At main level - Tramming Loading - Dumping ore at ore bin	0.04
J-2	8:21	10:40	Same	0.14
J-3	10:40	11:52	Same	0.00
J-4	11:52	15:13	Same	0.04
	Trammer Time Weighted Average (TWA) = 0.06 Fibers/ml			
A-1	7:15	8:25	Miner: At bottom drift 15E- Mucking and Loading Cars	0.11
A-2	8:25	11:10	Same	0.12
A-3	11:10	11:45	Same	0.35
A-4	11:45	13:44	Same	0.16
A-5	13:44	15:18	Same	0.08
			Miner TWA = 0.14 Fibers/ml	
G-1	7:12	8:07	Driller: Drilling at the ore stope	0.58
G-2	8:07	11:55	Same	0.14
G-6	11:55	14:20	Same	0.00
G-8	14:20	15:20	Same	0.20
			Driller TWA = 0.16 Fibers/ml	
G-3	8:54	11:43	Area Sample: At ore bin	0.22
G-5	11:43	14:54	Same	0.06
			Area Sample TWA = 0.14 Fibers/ml	

APPENDIX I

Date Collected: October 3, 1972

Sample No.	Sampling Time Start	Stop	JOB TITLE Location and Operation	Calculated Conc. Fibers/ml 5 Microns
Victory Mine				
G-4	10:22	12:00	Driller: Developing 500 stope	0.32
G-7	12:00	15:15	Same	0.35
			Driller TWA = 0.34 Fibers/ml	

RIZONA DEPARTMENT OF MIN. AL RESOURCES
Mineral Building, Fairgrounds
Phoenix, Arizona

1. Information from: Mike Sawyer

   Address: U.S.B.M. Intermountain Field Operation Center, Denver

2. Mine: El Dorado 3. No. of Claims - Patented ____

   Unpatented ____

4. Location: ____

5. Sec ____ Tp ____ Range ____ 6. Mining District Chrysotile

7. Owner: Jacquay's Asbestos

8. Address: ____

9. Operating Co.: same

10. Address: ____

11. President: D. W. Jacquay 12. Gen. Mgr.: ____

13. Principal Metals: asbestos 14. No. Employed: ____

15. Mill, Type & Capacity: ____

16. Present Operations: (a) Down ☒ (b) Assessment work ☐ (c) Exploration ☐
    (d) Production ☐ (e) Rate ____ tpd.

17. New Work Planned: If a buyer is not found - the pillars will be mined and the mine allowed to cave.

18. Miscl. Notes: Mr. Sawyer reported meeting with Mr. Jacquay and visiting the mine with his mine superintendent. The mine is idle, but maintained and is for sale along with the mill in Globe. Mr. Jacquay's estimates there are reserves of 5,000 tons of fiber of which approximately 1% might be longer than 3". The current stopping area is now 100' above the haulage level and will rise as stopping progresses up the gentle dipping beds. The mine was shut down in January.

Date: June 2, 1982

Ken A. Phillips
(Signature)

Ken A. Phillips
(Field Engineer)

STATE OF ARIZONA
DEPARTMENT OF MINERAL RESOURCES
MINERAL BUILDING, FAIRGROUNDS
PHOENIX, ARIZONA 85007
602/255-3791

June 2, 1982

TO: John H. Jett, Director
FROM: Ken A. Phillips, Mineral Resources Engineer
SUBJECT: Asbestos - Rumored Need of plus 3" Fiber for Defense Program

We had received verbal information that there was a special need for 100 tons of low iron long fiber asbestos in a military hardware item. Fiber length of over 3" was mentioned. Further, such material was rare and that a detailed search and evaluation program for a source in Arizona might be justified.

The subject was discussed with Mike Sawyer of the Minerals Availability group of the U. S. Bureau of Mines in Denver. He explained the current situation and that his information is from a Mike Pfetsch of the Federal Emergency Management Administration. Sawyer's first information was that 100 tons of plus three inch low iron asbestos fiber was needed for a military hardware program, but later conversations were that the fiber length requirement was for 0.7 inches and longer. Further, it is reasonably certain that D. W. Jacquay could produce the necessary fiber. (See related report on the current status of Jacquay's Asbestos Company.)

According to Mike Swayer, a project to search for and evaluate Arizona asbestos occurrences for a source of special long fiber material is probably premature. First, Jacquay's can probably produce the fiber necessary for immediate needs. Second, before the Bureau of Mines could have any official active interest in the subject, a formal request would have to be made by the Federal Emergency Management Administration to Dr. John Morgan, Senior Staff Officer of the U.S.B.M. in Washington. Third, since the Federal Emergency Management Administration was even concerned about who could afford to pay for the analysis of a bulk sample from Jacquay's (they tried to make Jacquay pay according to Sawyer), it appears they have no money to make even a cursory examination.

In a related event, Jack Neal submitted a sample to Mike Sawyer which he in turn submitted to the Feveral Emergency Management Administration. The sample has useable fibers, averages 0.9" long but contains significiant amounts of very short fibers. Sawyer said the sample was from an undisclosed location.

Rec'd From MR JAQUAYS Oct-25-72

For non-smokers

incidence of lung cancer not upped by asbestos work

EDITOR'S NOTE: The following story was dispatched by the Associated Press out of New York. The Arizona Record , in dealing with both sides of a thriving asbestos-related lung disease controversy, continues its efforts to inform Globe-Miami residents on the subject.)

NEW YORK — Two researchers say they have confirmed the theory that occupational exposure to asbestos enhances the cancer-causing effects of cigarette smoke. Asbestos exposure by itself, they reported (recently) does not appear to increase the incidence of lung cancer among workers who do not smoke.

THESE FINDINGS THE RESEARCHERS SAID, COME FROM WHAT THEY DESCRIBE AS THE FIRST STUDY THEY ARE AWARE OF BASED ON ACTUAL LUNG CANCER SPECIMENS.

The report in the journal Cancer , a publication of the American Cancer Society, was written by two pathologists, Dr. Milton Kannerstein, of the Barnert Memorial Hospital Center in Patterson, N.J., and Dr. Jacob Churg, of the Mount Sinai School of Medicine in New York.

The pathologists said they compared 50 lung cancer cases in patients occupationally exposed to asbestos with 50 matched control cases in persons not exposed to asbestos.

THE MAJOR features of the cancers in both groups were essentially the same, Kannerstein and Churg reported, indicating that the documented increased incidence of lung cancer among asbestos workers cannot be attributed to asbestos alone.

This correlates with a finding by a leading asbestos researcher, Dr. Irving J. Celikoff of Mount Sinai that occupational exposure does not appear to cause cancer among non-cigarette smokers.

The incidence of lung cancer among cigarette smoking asbestos workers was 92 times as high as it is for nonsmokers not exposed to asbestos.

A SIMILAR situation has been suggested for lung cancer among uranium miners, they said.

The authors said they were forced to assume that cigarette smokers existed with the same frequency in their two study groups as they do in those groups as large because smoking histories were not available for all of them.

Dear Dr. Selikoff:

In reference to your recent press releases on the possible health hazards to persons coming in contact with Asbestos, you are doing the Arizona Chrysotile Asbestos Producers a serious injustice in not naming the actual Minerals involved in the hazards. It is indicated that Amosite, Crocidolite and high iron Chrysotile may be involved in creating the health hazards you mention, but not low iron Arizona Chrysotile Asbestos.

In the fifty or more years Arizona Chrysotile Asbestos has been mined, milled and used there has not been a single case of lung cancer reported. Some of the reasons for the low hazards involved with Arizona Chrysotile Asbestos are that it is very low in total Iron (0.5%) and occurs with pure Serpentine in thick Dolomite Beds. All other Asbestos type minerals used mainly for Thermal Insulation occur associated with high free Silica Rocks and contain up to 40% total Iron.

I have personally been associated with the Arizona Chrysotile Asbestos industry for the last 23 years and prior to that I worked 10 years underground in high Silica Gold nad Copper Mines. I am still in good health. We have several employees who have worked in Arizona Chrysotile Asbestos Mills for over 25 years and in dust concentrations of 40-50 mppcf, they are still in good health and show no signs of lung cancer or any of the other numerous ailments attributed to Asbestos.

In all fairness to our industry I feel that you should name the Asbestos Minerals involved in your research and not brand the whole Asbestos group of Minerals as hazardous.

Arizona Chrysotile Asbestos has for years due to it's high purity and low Iron content been used in the filtration of beer and wines and many pharmaceutical products, and these products have been of better quality because of its use. So far there has been no suitable subsit-ute found for Arizona Chrysotile Asbestos in the above applications

Table 2-1. PHYSICAL, CHEMICAL AND MINERALOGICAL PROPERTIES OF VARIETIES OF ASBESTOS.[8]

Variety / Property	Chrysotile	Crocidolite	Amosite	Anthophyllite	Tremolite	Actinolit
Chemical formula	$3MgO2SiO_22H_2O$	$Na_2OFe_2O_33FeO_3$-$8SiO_2H_2O$	$1.5MgO5.5FeO$-$8SiO_2H_2O$	$7MgO8SiO_2H_2O$	$2CaO5MgO$-$8SiO_2H_2O$	$2CaO4MgOFeO$-$8SiO_2H_2O$
Essential composition	Hydrous silicate of magnesia	Silicate of Na and Fe with some water	Silicate of Fe and Mg; higher iron than anthophyllite	Mg silicate with iron	Ca and Mg silicate with some water	Ca Mg Fe silicate; water up to 5%
Percentage chemical composition						
SiO_2, %	37 -44	49 -53	49 -53	56 -58	51 -62	—
MgO, %	39 -44	0 - 3	1 - 7	28 -34	0 -30	—
FeO, %	0.0 - 6.0 (Ave 0.5)	13 -20	34 -44	3 -12	1.5- 5.0	—
Fe_2O_3, %	0.1 - 5.0	17 -20	—	—	—	—
Al_2O_3, %	0.2 - 1.5	—	2 - 9	0.5- 1.5	1.0- 4.0	—
H_2O, %	12.0 -15.0	2.5- 4.5	2 - 5	1.0- 6.0	0 - 5.0	—
CaO, %	Tr. - 5.0	—	—	—	0 -18	—
Na_2O, %	—	4.0- 8.5	—	—	0 - 9	—
CaO + Na_2O, %	—	—	0.5- 2.5	—	—	—
pH	9.2-9.8	—	—	Neutral	—	—
Resistance to acids and alkalies	Poor	Good	Good	Very good	Good	Fair

MEMORANDUM

July 21, 1960

D.W. Jaquays Mill, Globe, Arizona.

During a visit to the D. W. Jaquays Mill, Jaquays stated that he had delivered 120 tons of grade 2 asbestos to the government stockpile out of an allotted quota of 450 tons. He is rushing work to obtain the other 330 tons, which he said would come from the Chrysotile and Regal properties. He showed a detailed map of the Regal mine and apparently there is a good reserve of fiber against a persistent fault. The fault appears to have controlled the location of the deposits. Extensive stope areas were evident.

Jaquays is now making 6 grades but No. 3 is his best seller. These grades include Numbers 1, 2, 3R, 3Z and 2 No. 7 classes. Jake said that he may have to rustle hard to make the full quota of Grade 2.

LEWIS A. SMITH
Field Engineer

DEPARTMENT OF MINERAL RESOURCES

STATE OF ARIZONA

FIELD ENGINEERS REPORT

Mine Jaquays Mill (New) Date November 20, 1959

District Globe, Gila County Engineer Lewis A. Smith

Subject: Mill visit

Location: 3 miles east of Globe Courthouse.

Owner: D. W. Jaquays Co., 1219 S 19th Ave., Phoenix.

The mill consists of 3 main units:

(a) Crusher, intermediate coarse screening plant, rolls.

(b) Multiple screening plant with hammer mill in the middle. (Coarse Section) All shaking types.) ~~-- Hammer Mill~~.

(c) Multiple screening (Fine Section) (All shaking types.)

(d) Sacking by stalls (Stalls represent separate grades 1 to 7.)

The multiple coarse screens range from 3/4 inch to 1/4 inch while the multiple fine screen ranges from 1/4 inch down to 32 mesh. The intervening hammer mill splits fiber from gangue and loosens up the fiber somewhat like the fibefizers in the Metate Mill. The various products move by suction blowers to their respective stalls. The crushing plant is interconnected by belt conveyers and hoppers. Each hopper is covered by a coarse screen. Two bays of segregatin g screens (b & c) are all interconnected by conveyers or blowers. The mill capacity will be 100 tons of raw material per day. The other half of the mill consists of sacking devices and storage. The finished products discharge into long canvas bags (10' long and 10" in diameter). A weighing device is used to insure proper loading of the shipping bags. The major product will be 3 grade used almost exclusively for filters. This product is sold at the rate of $ 350.00 - $400.00 per ton. Lower grade filter fibers sell for as little as $200.00 especially if they consist of harsh fibers. Some German users mix soft and harsh to give more filterability. (Metate is shipping harsh filter fiber to West Germany at a present rate of 40 tons per month.)

The Jaquays Mill will be in operation two weeks.