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PRINTED: 03-14-2002

ARIZONA DEPARTMENT OF MINES AND MINERAL RESOURCES AZMILS DATA

PRIMARY NAME: WHITECLIFFS

ALTERNATE NAMES:
ARIZITE PRODUCTS
KAOLIN CLAIMS
ARIZONA GYPSUM
NUEZ CLAIMS
OVERSITE CLAIMS
SECRIST PROPERTIES
HERERRAS PROPERTY
ARIMETCO DIATOMITE
ADIT CANYON CORPORATION

PINAL COUNTY MILS NUMBER: 561

LOCATION: TOWNSHIP 9 S RANGE 17 E SECTION 24 QUARTER N2
LATITUDE: N 32DEG 38MIN 30SEC LONGITUDE: W 110DEG 33MIN 38SEC
TOPO MAP NAME: CLARK RANCH - 7.5 MIN

CURRENT STATUS: PAST PRODUCER

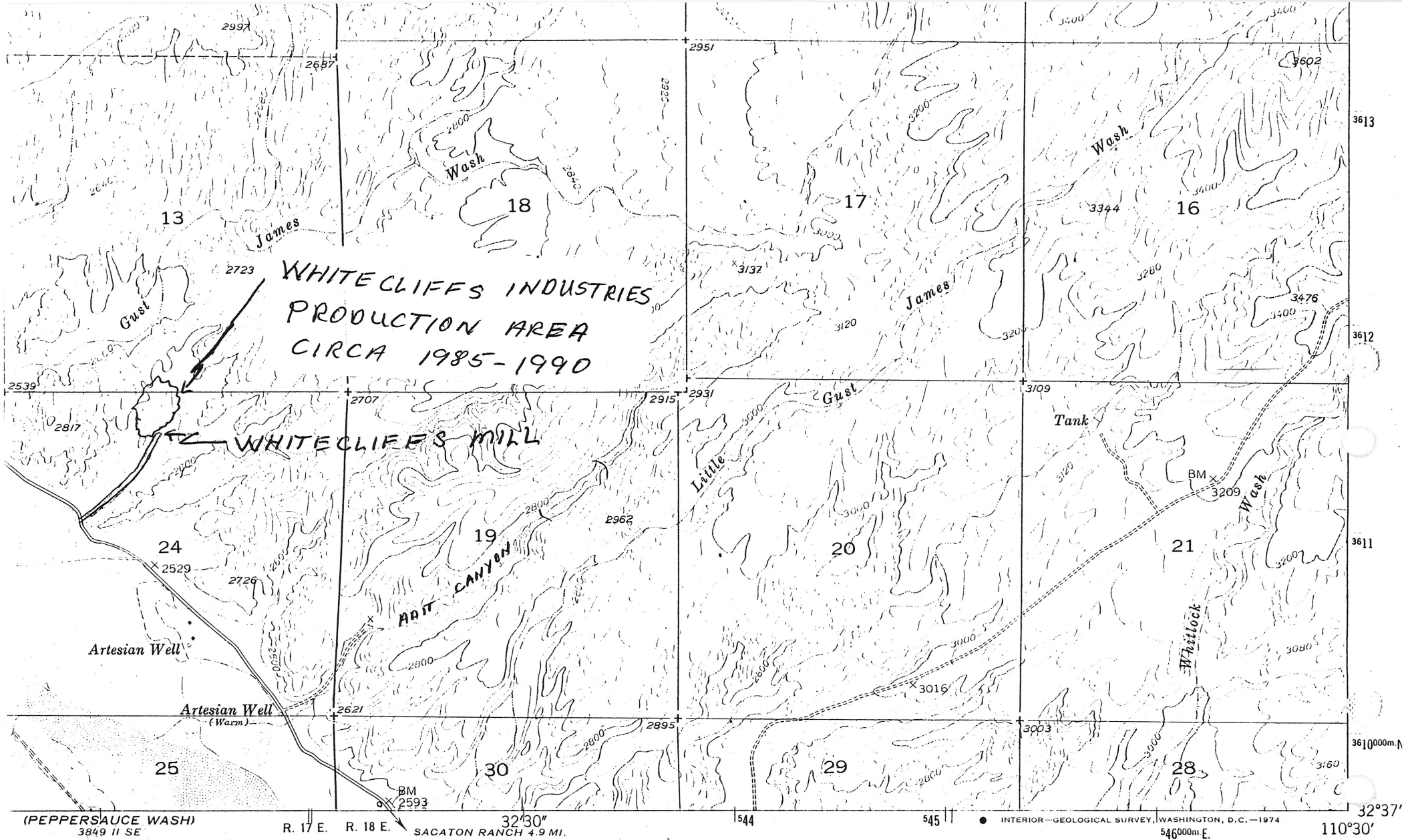
COMMODITY:
DIATOMITE
CLAY
SILICON DIATOMITE
GYPSUM

BIBLIOGRAPHY:
ADMMR WHITECLIFFS MINE FILE
SEE: ADMMR SPENCER CHEMICAL DIATOMITE FILE
PROPERTY EXTEND INTO SEC. 17, 18, 20, 29 & 30
AND SECS. 13 & 24, T9S R17E
PREVIOUS INFO IN ADMMR MAMMOTH PRODUCTS CO.
FILE ADDED TO ADMMR WHITECLIFFS FILE
ADMMR U FILE PINAL DIA-1
WILSON, E.D., AZ NONMETALS AZBM 152, 1944 P18
ELEVATORSKI, E.A., AZ. INDUSTRIAL MINERALS
1980, P. 54
AZBM BULL. 180, 1975, P. 329, 338 & 375
HOUSER, BRENDA; 1992 INDUSTRIAL MINERALS OF
THE TUCSON AREA & SAN PEDRO VALLEY, ARIZONA
GEOLOGICAL SOCIETY FIELD TRIP GUIDE, APRIL 4
& 5, 1992, PP. 17-19.
FROST, MELVIN J.,1976, DIATOMITE DEPOSITS OF

CONTINUED ON NEXT PAGE

CONTINUATION OF WHITECLIFF

ARIZ, IN JOUR. ARIZ ACADEMY OF SCIENCE VOL. 11, PP. 7-9, ADMMR DIATOMITE COMMODITY FILE
FROST, MELVIN J.,1978, DIATOMITE & THE WHITE CLIFFS AT MAMMOTH, IN JOUR. ARIZONA-NEVADA ACADEMY OF VOL. 13, PROCEEDINGS SUPPLEMENT, 4 P, AND ABSTRACT, ADMMR DIATOMITE COMM FILE



INTERIOR—GEOLOGICAL SURVEY, WASHINGTON, D.C.—1974

SCALE 1:24000

0 1 MILE

2000 3000 4000 5000 6000 7000 FEET

0 1 KILOMETER

CONTOUR INTERVAL 40 FEET
DATUM IS MEAN SEA LEVEL

ARIZONA

QUADRANGLE LOCATION

ROAD CLASSIFICATION

HARD-SURFACE ALL WEATHER ROADS		DRY WEATHER ROADS
Heavy-duty	4 LANE 6 LANE	Improved dirt
Medium-duty	4 LANE 6 LANE	Unimproved dirt

Loose-surface, graded, or narrow hard-surface

(1) U. S. Route (1) State Route

CLARK RANCH, ARIZ.

IMC Global acquires Freeport's sulfur transportation assets

Whitecliffs (file) Pinal County

Press Release Monday June 17, 8:07 am Eastern Time

SOURCE: Atlas Minerals Inc.
Atlas Acquires Operational Industrial Minerals Property
DENVER--(BUSINESS WIRE)--June 17, 2002-- Atlas Minerals Inc. (OTC Bulletin Board:ATMR - News; the "Company") announced today it has acquired the White Cliffs Diatomite Mine and processing facilities located approximately 30 miles north of Tucson, Arizona. The property consists of approximately 3,200 acres of unpatented placer claims, a fully permitted mine and an operational processing plant with a nominal annual capacity of 100,000 tons of finished product. It is located adjacent to the Copper Basin Railroad that accesses the Southern Pacific Line and within five miles of Highway 77.

It is estimated from previous drilling, face sampling, and testing that there are approximately 2,500,000 tons of diatomite mineralization on the property. Based on internal and third party analyses, it appears that the known diatomite material should be able to meet specifications for essentially any end product.

White Cliffs initially commenced operations in 1987 before being temporarily idled in 1999. As part of the Company's due diligence evaluations of the operation, the mill and associated equipment were restarted and a small tonnage of final product produced and stored for later sales. All of the requisite staff to operate on a commercial basis has been identified. The White Cliffs assets were purchased from Arimetco, Inc. of which Mr. H. R. Shipes, Atlas' Chairman and Chief Executive Officer is President.

According to Gary E. Davis, Atlas' President and Chief Financial Officer, "The most important aspect of any industrial minerals property, next to the quality of the ore, is its location relative to transportation and markets. Given the expected quality of the White Cliffs production, the property's geographic location, and its proximity to both rail transportation and highway access, the Company believes it should have a competitive advantage to much of the southern U.S. and possibly to eastern markets. It is the Company's goal to penetrate 5% of the U.S. market within the next three years."

Diatomaceous earth deposits are the result of the accumulation of diatoms, microscopic single-cell aquatic plants, in ancient ocean and lakebeds. The diatom skeleton typically ranges only 10 to 200 micrometers across. The resulting material is chemically inert (environmentally friendly), chalk-like, very porous and low density, actually able to float on water until it becomes saturated.

The largest current use of diatomaceous earth is in filtering applications. It is also used as an absorbent, in filler applications and in manufacture of insulation. One of the fastest growing uses is as a livestock feed supplement. The majority of U.S. production currently comes from California and Nevada that accounted for 87% of the production in 2000.

Mr. Davis further stated, "Since a new Atlas management team was put in place last year, it has been its intention for Atlas to again become an operating company. The acquisition of the White Cliffs Mine achieves this objective. The Company anticipates that the project will be in production in less than 30 days from the time of acquisition.

The Company is also pleased to announce that effective May 6, 2002, the Company successfully moved from the NQB Pink Sheets back onto the OTC Bulletin Board.

On behalf of Atlas Minerals Inc.
Gary E. Davis, President and Chief Financial Officer

The statements contained in this release that are not historical facts are forward-looking statements under the federal securities law. These forward-looking statements are no guarantee of future performance, and involve certain risks, uncertainties and presumptions that are difficult to predict. Actual outcomes and results may differ materially from what is expressed or implied by such forward-looking statements. The Company takes no obligation to update publicly any forward-looking statements, whether as the result of new information, future events or otherwise. This release is not an offer of securities for sale in the United States; securities may not be offered or sold in the United States without registration or an exemption from registration.

Contact: Atlas Minerals Inc., Gary E. Davis, 303/306-0823

Whitecliffs Mine (4) Pinal County

Jon Shenk, a geology consultant, reported he has been recently contacted regarding the Whitecliffs diatomite mine in Pinal County. He said the property is held by a group of 20 association placer claims, the Diatom 1 thru 20. These claims were located in the Spring of 2000 after the previous claims became void for lack of payment of rental fees. The claims are by an association of locators headed by Ward Seibert of Kantor Oil Company. Mr. Shenk explained that Ward Seibert is the primary individual in Kantor Oil, 15 W. 6th Street, # 2601 Tulsa Oklahoma, phone (918) 583-6412. Kantor Oil was a major investor in Cerad Resources of Tulsa. Cerad Resources assembled Adit Canyon LLC, with Don Wilson to operate the diatomite mine in the late 1990s. He did provide any speculation as to the reasons for the demise of Adit Canyon LLC. Jon Shenk wrote his University of Arizona Master's thesis on the diatomite property. It is Shenk, J. D., circa 1986, *Economic Geology of the White Cliffs Diatomite Deposit, Mammoth, Arizona.* He promised to get us a copy for our files. Jon Shenk explained that he currently does not have a home or office and is best contacted by email. His email address is shenkjd@yahoo.com. (Ken A. Phillips, 03/18/2002)

The ADMMR file "I:\COUNTIES\IMRSRV\IMRSRV.DOC" was updated with three different reserve figures for the Whitecliffs diatomite deposit. The numbers from the table are below: (Ken A. Phillips, 03/18/2002)

Commodity	Tons	Grade	Property/ ADMMR file	County AzMils	Info. date	Comments
Diatomite	>2,000,000		Whitecliffs	Pinal 561	1961	Colorado School of Mines Research Foundation report in ADMMR Arizite {Diatomaceous Earth} (Mieritz file)
Diatomite	>100,000,000		Whitecliffs	Pinal 561	3/10/ 1941	ADMMR Field Engineer's report by Miles Carpenter in ADMMR Whitecliffs mine file.
Diatomite	>300,000,000		Whitecliffs	Pinal 561	UNK	Report in the ADMMR Whitecliffs, Pinal Co. file. No date and No author.

ABSTRACTED FROM ADMMR ACTIVE MINES DIRECTORY, 1989 Whitecliffs Mine file

WHITECLIFFS INDUSTRIES

Whitecliffs Diatomite T9S R17E Sec. 24

7400 N. Oracle Rd., Suite 371, Tucson 85704 - Phone 797-0990 - Employees 20 - Diatomite mine located 10 miles southeast of Mammoth - Surface mining diatomaceous earth - Dry air cyclone plant - 75 TPD - Diatomite for industrial filler products - Marketed throughout the United States.

President ..... Gilbert Mott
Marketing/Sales Director ..... Graham Mott
Mining Engineer ..... Daniel Netz
Research Director ..... Kim Howell
General Manager ..... Peter Forsyth

ABSTRACTED FROM ADMMR ACTIVE MINES DIRECTORY, 1988

WHITECLIFFS INDUSTRIES

Whitecliffs Diatomite T9S R17E Sec. 24

7400 N. Oracle Rd., Suite 371, Tucson 85704 - Phone 797-0990 - Employees 20 - 10 miles southeast of Mammoth - Surface mining diatomaceous earth - Dry air cyclone plant - 75 TPD - Diatomite for industrial filler products - Marketed throughout the United States.

President ..... Gilbert Mott
Marketing/Sales Director ..... Graham Mott
Mining Engineer ..... David Netz
Research Director ..... Otto Kohl

Arizona Department of Mines and Mineral Resources

INFORMATION FROM MINE CARDS IN MUSEUM

ARIZONA

MM 6373 Diatomaceous earth

PINAL COUNTY

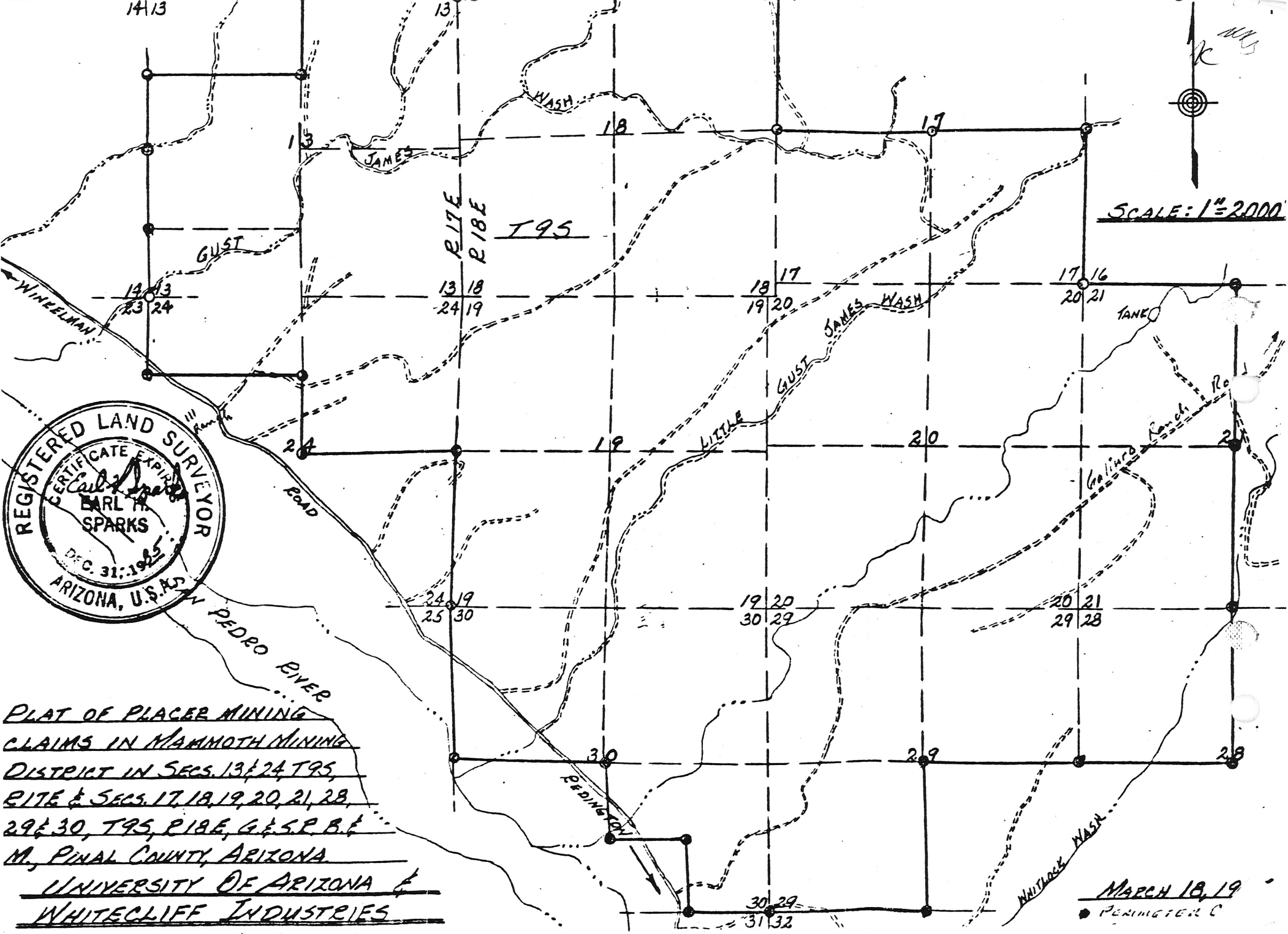
Mammoth

White Cliffs Claims

mils # 561

5. AKA's

Whitecliffs file



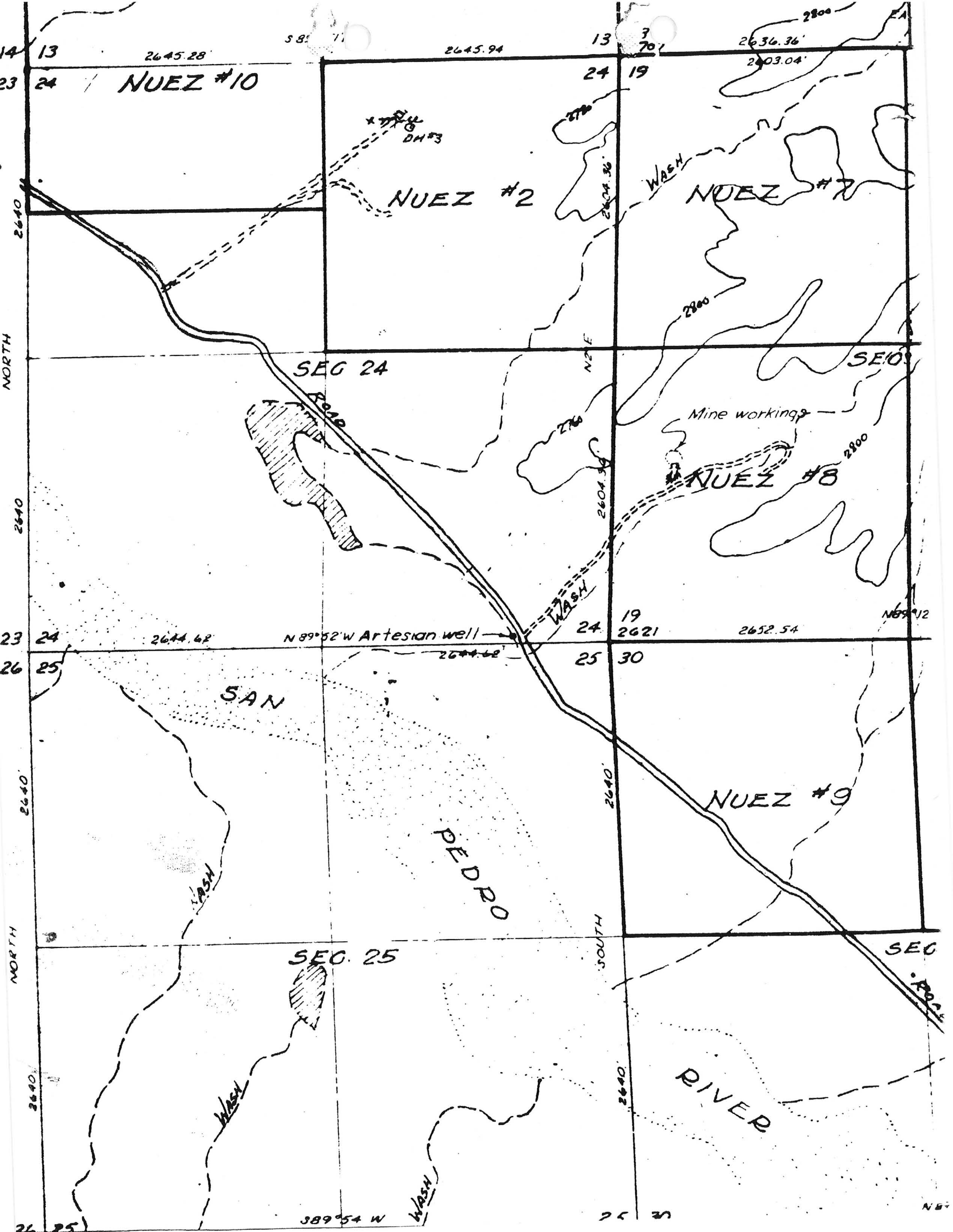
PLAT OF PLACER MINING CLAIMS IN MAMMOTH MINING DISTRICT IN SECS. 13 & 24, T9S, R17E & SECS. 17, 18, 19, 20, 21, 28, 29 & 30, T9S, R18E, G & S.R.B. & M., PINAL COUNTY, ARIZONA

UNIVERSITY OF ARIZONA & WHITECLIFF INDUSTRIES

Whitecliffs mine

MARCH 18, 19

PERIMETER C


NUEZ #10
NUEZ #2
NUEZ #7
NUEZ #8
NUEZ #9
DH#3
SEC 24
SEC 25
ROAD
WASH
Mine workings
N 89°52'W Artesian well
SAN PEDRO RIVER
2645.28
2645.94
2636.36'
2603.04'
2604.36'
2644.62
2621
2652.54
2640
2800
NORTH
SOUTH
S89°54 W
13
14
23
24
19
25
26
30

Date Printed: 10/21/94

ARIZONA DEPARTMENT OF MINES AND MINERAL RESOURCES

VERBAL INFORMATION SUMMARY

Information from: **Dave Rabb**

Company: Tesero Mining

Address: 5213 Oracle
City, State ZIP: Tucson, Arizona 85704
Phone: 602-887-7331

MINE: **Whitecliffs Diatomite**

ADMMR Mine File: Whitecliffs Mine
County: **Pinal**
AzMILS Number: **561**

SUMMARY

Dave Rabb, Professor Emeritus, University of Arizona, School of Mines, is now the mining consultant for the University's mining properties. He reported the University is now receiving production royalties form the Whitecliffs Diatomite mine operated by Arimetco. The University of Arizona owns the mining claims covering the diatomaceous earth deposit. They were willed the claims by Stanley Secrist, former president of the Arizona Small Mine Operators' Association upon his death in the early 1970's.

Ken A. Phillips, Chief Engineer Date: October 21, 1994 ✓

Whitecliffs (file)

Samples here described from the mine listed below are are contained in the AzDMMR collection of reference samples.

Date Taken: 04/05/92
Date Logged: 09/30/93
Sample Number: 04/05/92-017

MINE: South Quarry (Diatomite)
COUNTY: Pinal
LOCATION: South Quarry 800' south of Camel Canyon at the southern end of the White Cliffs diatomite deposit.
DESCRIPTION: Select specimen of diatomite.
MATERIAL: Diatomite, white
COMMENTS: Collected on the Az Geol. Society Industrial Minerals Field Trip

WHITECLIFFS MINE (file)

Samples here described from the mine listed below Pinal are are contained in the AzDMMR collection of reference samples.

Date Taken: 04/05/92
Date Logged: 09/30/93
Sample Numbers: ADMMR Number: D077520 Sample Number: 04/05/92-015

MINE: Spencer Chemical Diatomite
COUNTY: Pinal AzMILS # 762
LOCATION: Overlooking Camel Canyon at the southern end of the White Cliffs diatomite area.
DESCRIPTION: Selected diatomite samples from stockpile on property.
MATERIAL: White diatomite
COMMENTS: Collected on the Az Geol. Society Industrial Minerals Field Trip

WHITECLIFFS MINE (file)

Samples here described from the mine listed below are are contained in the AzDMMR collection of reference samples.

Date Taken: 03/15/91
Date Logged: 10/04/93
Sample Number: 03/15/91-029

MINE: Whitecliffs Diatomite
COUNTY: Pinal
LOCATION: Product from crushing, screening, and bagging operation.
DESCRIPTION: Fine white powder from product bin. Sample from Jon Shenk
MATERIAL: Diatomite; processed.
COMMENTS: Jon Shenk brought in sample of product.

FVIS.3

ARIZONA DEPARTMENT OF MINES AND MINERAL RESOURCES

FIELD VISIT INFORMATION SUMMARY

1. Information from: **Arizona Geological Society Field Trip, April 5, 1992**

2. Mine: **Whitecliffs**

3. ADMMR Mine File: **Whitecliffs**

4. County: **Pinal** MILS Number: **561**

5. Summary of information received, comments, etc.:

A visit was made to the idle or abandoned diatomite plant operated by Whitecliffs Industries in the N½, Sec. 24, T9S, R17E. (Az MILS #561 has been/will be moved from Sec. 19, T9S, R18E to reflect the location of past plants and the majority of the past production).

The plant consists of a grizzly, with grizzly undersize conveyed to an impact mill. The impact mill discharges to a drying furnace. Dried diatomite is blown through three air classifiers and a baghouse. Fine product from the air classifiers and baghouse is blown to a fine product storage bin which can load directly into trucks or feed a bagging plant. Coarse product from the air classifiers (classifier oversize) is fed to a coarse product storage and load out bin. The plant is mostly intact. The drying furnace is completely worn out, but the remainder of the equipment is relatively free of vandalism. A series of six color print photos were taken.

Recent production was taken from immediately northeast of the plant. There the diatomite was stripped of contaminated surface material and dozed down a grade and across a grizzly to feed the plant.

Date: April 5, 1992 Engineer: Ken A Phillips

FVIS.2

ARIZONA DEPARTMENT OF MINES AND MINERAL RESOURCES

FIELD VISIT INFORMATION SUMMARY

1. Information from: Field Visit in Arizona Geological Society, April 5,1992

2. Mine: Adit Canyon Diatomite

3. ADMMR Mine File: Adit Canyon Diatomite

4. County: Pinal MILS Number:

5. Summary of information received, comments, etc.:

The Adit Canyon Diatomite is a portion of the Whitecliffs diatomite deposit which outcrops in many sections in T9S, R17E, and T9S, R18E.

Workings in SW¼ of section 19 likely date back to the 1920's and are probably early pits, quarries, and underground workings first exploited for diatomite. The local name Adit Canyon is named for adits driven in the diatomite.

Approximately .6 mile up Adit Canyon from the old workings and approximately in the center of the NE¼ section 19 an excellent section of diatomite is exposed.

This portion of the Whitecliffs diatomite deposit which is exposed over portions of many square mines has been made a separate AZMils occurences because of its distance from other productionn areas on the deposit. The ADMMR Whitecliffs Mine file contains extensive information on the regional deposit, its history, promotion. production, geology and technology.

Date: April 5, 1992 Engineer: Ken A. Phillips

REFERENCES:

See: T.A.I.M.E., vol. 33, p. 38-45. 1903

"Diatomate and the White Cliffs at Mammoth Arizona" by Melvin J. Frost in diatomaceous earth commodity file

"Diatomate Deposits in Arizona" by Melvin J. Frost, in diatomaceous earth commodity file

White Cliffs mine file

1 lb 10 oz

17.5 x 16.5 x 7

K 136

SPECIMEN Di-1

Cabinet

Section

Shelf

This specimen is now in the ADMR Museum see K number.

Presented by

Collected by Newton Wolcott

Date received January 19, 1940

Class (principal mineral) Diatomite (diatomaceous earth)

Other minerals

Gangue Volcanic ash and obsidian boulders

Depth at which specimen taken

Approximate mineral content (in terms of average per ton)

Quantity

Value $

Name of mine or claim

Group

District Mammoth

County Pinal

Location (distance and direction by highway from what town) 9 miles south of Mammoth

Mine active or inactive Inactive

If inactive, when operated Has not been operated

Owner Arizite Products Corporation

Operator Arizite Products Corporation

Notes: Arizite Products Corporation are constructing a plant at Mammoth for the treatment of this material. Will be in operation within two or three months.

WHITECLIFFS PINAL COUNTY

NJN WR 10/31/86: Talked to Otto Cole, research director and Graham Mott, marketing director of White Cliff Industries, operators of the Whitecliffs (file) Pinal County. They report that Whitecliff currently has 25 employees for the mine and the plant. We also discussed the diatomaceous earth they procude, which is primarily granulata, composed chiefly of the granulata species diatom. It is of value because of its high surface area. They are currently marketing it for use in high temperature insulation products. After processing, about 40% of the material becomes waste. This waste is composed primarily of volcanic ash, silica sand and diatomaceous earth and has a density of about 25 lb per cubic foot. They would welcome inquiries to use this material as filler, extender or other industrial mineral uses. They also welcome inquiries by those interested in use of the overlying gypsite for agricultural uses.

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cjh wr 2/27/87: Phone call: Dave Rabb (c) reported that White Cliffs Industries had been mining diatomite on a patented mill site owned by the Superior Co., Pinal County.

J. D. Shank gave a presentation at the SME annual meeting held in Phoenix January 24-26, entitled Geology and Development of the WhiteCliff Diatomite Deposit, Mammoth, Arizona (file) Pinal County which has become an SME preprint. Mike Greeley will obtain a copy for the Department files.

WHITECLIFFS MINE PINAL COUNTY

The Kaiser consulting engineers did a drilling and evaluation job for someone on the Whitecliffs diatomaceous earth claims.

GWI Quarterly Report June 1968

At the Whitecliffs mine, assessment work has been done. During the year 1968 the Kaiser Company did some drilling and evaluation studies, either for themselves, or for Arizona Diatom Co. GWI Quarterly Report 12/1968

About one truck load a day of diatomaceous earth is being mined near Whitecliffs by Arizona Gypsum Co. on their 40 acre claim. No activity noticed on the Whitecliffs property. GWI Quarterly Report 2/27/70

NO Arizona Gypsum continued mining diatomaceous earth on their claim in the Whitecliffs area. QWI Quarterly Report 6-30-70

RRB WR 9/19/80: Don Hall, 2926 N. 16th Drive, Phoenix, Arizona 85037, 849-9193, called and later came in to check file on White Cliffs Diatomaceous Earth.

CJH WR 5/7/82: Visitor: Dave Rabb reported that he and Bob O'Haire visited an old diatomaceous earth property near Mammoth, Pinal County, Arz. This was the Whitecliffs Mine, Mammoth District, Sec. 20 T9S R17E. The access road is in fair shape, but not good enough for a passenger car. He saw two short adits, a large concrete slab (the mill site), a big loader-scraper and some screening equipment. The property, apparently, has not been worked for some time. Dave said it is now held by the Mammoth Mining and Milling Co.

RRB WR 4/5/84: Paul Mullen (214) 840-6114 reports that he plans to operate the Whitecliffs Diatomite mine in Pinal Co., owned by the University. He had heard that a previous operator shipped a "carload a day" to someone back east and he is trying to find out to whom it was sent. He is looking for markets and asked that we call collect if we have any leads.

CJH WR 11/30/84: Phone call, Graham Mott, Microlite Corp., PO BOx 340, 360 Alden Road, Kearney, ARizona 85237, phone 363-5503. Microlite is starting diatomite mining and processing operations east of the San Pedro River near Mammoth. They will ship by rail to eastern markets for filler material; i.e. paint, paper, ceramics, etc.-- not filtration. Wanted information about our Dept. functions and services. They have, on occasion, reatined Dave Rabb (c) as a consultant. Whitecliffs Mine (f) may be the property involved.

CJH WR 2/15/85: Dave Rabb (c) reported that the Northern Miner has reported that NRD Mining Ltd. of Vancouver, B.C. (c) will participate with Winthrop Investment Co of New York in the development of the diatomaceous earth unpatented claims (U of A is claimant) near Mammoth, Az. allegedly leased to Gil and Graham Mott, Microlite Corp (c) of Kearney. The Motts have an engineneer by the name of Joe Marinelli.

CJH WR 4/12/85: Dave Rabb (c) reported the Microlite Corporation (c) of Kearney, Az. has changed its name to Whitecliffs Industries, because of the many other Microlite companies registered in the U.S.

MG WR 12/27/85: Learned from Dave Rabb (c) the following: Mr. Otto Kohl, General Manager, Whitecliffs Industries, 410 W. Roger Road, Tucson, Arizona 85705, phone 887-0220. The Whitecliffs diatomaceous earth (Pinal Co) is treated at the mine site with dry air in a cyclone. The concentrate reportedly averages +92% silica. The diatoms occur commonly in the ore, before mining, as crushed and broken fragments. The product is apparently being sold to a manufacturer of floor tile in eastern Canada. The diatomaceous earth is blended with felt and bonded to the base of the tile. The company plans to mine 60-80 tons/day and ship by rail approximately 40 tons/day. The University of Arizona, owner of the property, leases to the operator for $6,000/year and $2.00/ton finished (shipped) product.

6-74 lp

Upon Mr. Secrist's death this property was willed to the University of Arizona.

Hollis T. Lucas, Assistant Comptroller, Land Agent,
University of Arizona, Tucson, Arizona 85721 is the proper party to contact.

- - - - - - - - - - - - - - -

Henry Farabee
Azo Mined Products Co (AMPCo)
P. O. Box 4310
Mesa, Arizona 85204

In the office 7-24-75 and reports he has a lease on this property. Paul Cook working with him in the venture.

lp

I drove to the WhiteCliffs diatomite deposits on the east side of the San Pedro River opposite the San Manuel tailing pond. There has been no recent work on these deposits and access roads are generally inaccessible because of washouts. VBD WR 9/3/75

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96 178

A Unique Diatomite Operation in Southern Arizona

Nic Arrieta & Ray Blair
Arimetco, Inc.
Tucson, Arizona

For Presentation at the
1996 SME Annual Meeting and Exhibit
Phoenix, Arizona
March 11, 1996

A Unique Diatomite Operation in Southern Arizona

ABSTRACT

The Arimetco White Cliff Diatomite operation near Tucson, Arizona will be discussed and reviewed across the spectrum of geology, mineralogy, mining, processing and product attributes and market applications.

Unique for the operation are the type, quality and the extent of the reserves and several product characteristics of the diatomite.

HISTORY

The White Cliffs diatomite claims have been mined off and on since early 1900's. The first use was as an insulator by the Mammoth Diatomaceous Earth Company. In the 1940's the Arizite Products Company operated the mine and trucked the material to a plant outside of Mammoth, Arizona. The Diatomite was sold for filter aids, and paint fillers. The Arizona Diatomes Company in the 50's and later the American Diatomes Company, in the 60's operated with plants on site. Their focus was filter aid and filler material. In 1985 White Cliffs Industries erected an air classification plant of 4 tph, and began test work on the diatomite. They operated until 1987 and at that time they found themselves undercapitalized and elected to cease operations. In 1991, Arimetco International leased the property and purchased the plant. Very few records survived the four years the plant was abandoned, all plans, maps, operation and equipment manuals were lost. Arimetco had to create a data base and start from scratch. The plant equipment was upgraded to produce a finer cut of product.

TEST METHODS AND PROCEDURES FOR ORE RESERVE DEVELOPMENT

The information in the Diatomaceous Earth (DE) industry to evaluate a deposit is limited and not openly shared by competitor companies. Literature searches did not yield much information on the required test work. A search of DE consumers provided us with the criteria necessary to arrive at test methods. Next, was a search of the ASTM methods. We soon found out that there were no local laboratories who were set up to do the necessary test. We had to develop the test methods. We found it necessary to set up a laboratory to do physical, wet analysis, and high temperature ignition. These test are fairly specific to the Diatomaceous Earth (DE) industry. The following tests were performed to quantify the DE for the ore reserve determination.

Physical Test:

- Bulk Density
- Scotts Bulk Density (loose density)
- Oil Absorption
- Water Absorption
- Sand Content
- Wet Screen Analysis
- Organic Residue
- Moisture
- Hegman (fineness of grind)
- Loss on Ignition

Wet Analysis:

- Chlorine Ion
- pH determination
- Gelation
- Calcium Content
- Silica Content
- Amorphous
- Crystalline

BASIS FOR BLOCKING OUT ORE

Ore Reserves for bedded Diatomite are calculated using areas of influence. The first order of business was to determine the volume to weight relationship. When ore measurements are done volumetric and converted to weight, a density study gives confidence to the ore reserve reported tonnage figures. Diatomite is a good water absorbent, with water contents of 17% and higher, the moisture content becomes a crucial figure. The volume to weight relationship was established using repeated measurements of the material using a one cubic foot container. Later test were done on a larger scale using a removable loader bucket, taking its tare weight filling the bucket with the one cubic foot container and establishing the moisture. The results were within 98%. These weight relationships were applied to ore reserve calculations.

Because of the exposures in canyon walls, we elected to use channel samples in lieu of drill holes. Correlation between channel samples was established by comparing the physical and chemical characteristics. On physical appearance, the beds are identical to distances of 1200 feet. Criteria such as Chemistry, Scotts Bulk Density, Sand Content, Oil Absorbency, Water Absorption, appear to have a correlation of up to 400 feet in the Quarry 1 area, and at least up to 800 feet in the Quarry 3 area. With this, it could be conservatively concluded that for all beds, the inference value of a Channel, Drill cutting, or Trench Sample could be projected to 400 feet for both chemical and physical assays. Since the Diatomite beds were very continuous in a localized scale of up to 400 feet, the sampling was composited to a single ore column per quarry. A composite of the ore column was therefore made for each Quarry area. Both composites correlated well.

BASIS FOR BLOCKING OUT ORE con't.

Only beds of one foot or greater were logged, beds of less scale were considered as associated waste. These thin beds are recovered, but are not counted in the ore reserve. A volcanic ash bed locally known as 'The Lower Ash Bed' was used as a marker bed, this was a necessity due to difficulty of identifying beds from one area to another. The ash retained its integrity on the section between quarries 1 and 3. Using the composited columns, the area of influence of samples and the bed continuity, we arrived at tons of Diatomite.

MINABLE RESERVES

The minable reserves are derived from ore that has met the economical criteria. The reserve data is backed by channel samples with an area of influence as determined by the correlation data. With density data arrived at previously, the physical ore blocks are calculated as to the value of the ore in terms of marketable diatomite, vs. the cost of over burden, associated waste, ore removal, plant operating and corporate cost. Reserves for this deposit are conservatively placed at 30 years.

MORPHOLOGICAL ADVANTAGES/DISADVANTAGES FOR RESERVE DELINEATION

The morphological state of the deposit is that the beds are exposed in canyons with narrow ridges between canyons. This offers two advantages:

1. The bedding is easy to access, geologically interpret, map, and sample. The information obtained by visual examination cannot be matched by drill cuttings.

2. The fact that you have canyons adjacent to the deposits, means that you can strip the overburden with a bull dozer by fill up the canyons thus saving on hauling and blasting cost. As the mining progresses, the canyon is moved over and is parallel to its original drainage.

The disadvantage is the canyons vary in the drainage collection areas, some contain very small basins, while others are large, and this requires careful planning to avoid flooding.

OPERATIONS

Mining

The mining of thin diatomite beds required development of mining skills for operators and specialized techniques. The diatomite beds lie almost horizontal and are interbedded with associated waste consisting of mudstones, and volcanic ashes. The overburden is similar to the associated waste but will include a blanket of alluvial gravels of much later age. None of these materials are cemented, except for the thin layers of volcanic ash. The overburden is removed by stripping with a bulldozer. Very little waste material is loaded and hauled. Once the beds are exposed, they are then sampled, ripped, and cross ripped. A front end loader with a blade cutting edge is used to pick up the ore. This type of extraction minimizes the dilution and enables us to mine beds as thin as eight inches. The material is then hauled to the stockpile area. Each bed is stockpiled individually. Depending on the amount of contained moisture, the bed may be spread out to air dry.

Grade Control

It is very important that the upper surface of the bed to be mined is established at the natural inclination. In this way the bulldozer operator knows the exact thickness of bed he must remove. There is sufficient color differentiation between waste and ore beds that this can be done visually. The key to an efficient recovery is to establish sound sampling and recording and information communication. Before a bed is mined the area is delineated with markers and cut stakes. If the material is in question we may place a trench to ensure the grade. The crude ore grade delineator is the Scotts Bulk Density. The Scotts Bulk Density is as a method of measuring the loose bulk density and expressing it in pounds per cubic foot. This test is normally used on finished products, but we find that it is a good tool for crude also. A good diatomite varies in loose density from 10 to 15 lbs./cu.ft. A second test for classifying crude DE is by Sand Content. This is a simple wet density test. The two test parallel each other.

AIR CLASSIFICATION PLANT

The DE is beneficiated in an air classification plant. The material is very friable, and over handling and milling can destroy the integrity of the microskeletons. The material flow is as follows: The crude diatomite from the stockpiles ranges from lumps of six inch minus to roughly 30% passing 20 mesh. A Jeffery Impact Mill is used for its first reduction. The material is sized to about 100% minus 7 mesh. The furnace heat is added at this point. The DE passes in to the Hammer mill and then to a milling fan where it is reduced to 90 % minus 325 mesh. DE is very abrasive and can easily pick up color from steel. We elected to use stainless steel hammers and fan blades. The fine material is hot air conveyed to the first cyclone where the first coarse separation takes place, roughly 60 % of the impurities are removed, it then goes to the next cyclone where the majority of remaining impurities are removed. The Coarse material is conveyed to the Tailing Silo. The final separation is between product fines (99.9% -325M) and product (97% -325M). The product fines go to the Bag House and the coarser to the product silo. When the material is to be bagged, it is transferred pneumatically to the bagging hoppers. The bagging machines load the product in 35 or 50 pound kraft paper or plastic bags. The material is palletized and stretch film wrapped. The material can then be loaded in over the highway vans or tarped flat beds.

The following describes the sampling techniques used for grade control and product control

MINE SAMPLES

Channel Type

This type of sample is cut on a vertical exposed bed and is the most reliable method of sampling. The procedure is to scrape off to 0.5 inch of the surface or until fresh material is exposed. The area to be sampled is marked at right angle to the bedding. The length is measured and recorded. Normally we include mudstone beds if less than 2 inches, thus diluting the sample. Should the mudstone be greater than two inches we will call it associated waste and cut separate sample. The channel is then cut with a flat nose soft rock hammer.

Drill Hole Cuttings
The samples consist of cuttings of less than one tenth of an inch. Outside of color and texture no other geological information is obtainable. The results are offer only indications of ore and are not quantifiable. The Drilling samples are collected every 12 inches, bagged and marked.

Trench Sample
A backhoe trencher with a eight foot reach arm is used on quarry floors. The trencher leaves a clean wall to do channel sampling, geology mapping as well as bulk sampling to pilot plant work.

Stockpiles
The stockpiles are laid out in a linear fashion as the truck dumps the material. Using a 'grain thief' sampler, every other truck pile is sample to one half of the pile diameter. The samples agree well with the plant production.

Operating Plant Samples
The material running though the plant is sampled at the feed conveyor, No's 1 and 2 cyclone and the product line. The procedure is to sample once every operating hour unless conditions or feed are changed. The time and location are noted on the bag.

Pallet Samples
This sample is obtained at the product bagging end, the procedure is that at each 5th. bag a cut is made of the material coming out of the bagging machine, and is composited for the whole pallet. The composite sample is marked with the pallet number and is sent to the laboratory. This test is a key to quality control of the product before it leaves the plant.
Tailing and Bag House Samples are each obtained as a composite for the production run and are used as an indicator on the efficiency of the plant.

Correlation of Plant Samples
In most part a good correlation is a function of the sampling technique and the plant optimal settings.

DIATOMITE (DE) AN OVERVIEW

A brief introduction assists in understanding and fully appreciating the unique features and application benefits of Arimetco DE.

DE is in the silica family of products.

SILICA

Industrial Sand	Diatomite	Synthetics
Ground Silica	Marine	Colloidal
Silica Flour	Lacustrine	Fumed
		Precipitated

While these three categories of "silica" may seem to be disparate they do have many common bonds in use.

All three are abrasive materials across the spectrum of scouring powders, silver polish and silicon wafer polishes.

Or the use of sand and diatomite as filtration media.

Or the common use of diatomite and synthetics as highly functional extender/pigments.

DE is further described by mineralogy, processing and use -

Deposition - the formation and deposition of the biogenic frustule (siliceous diatom shell or skeleton) in a "salt water" (marine) or "fresh water" (lacustrine) environment.

Processing - the universal technique of heat treating and classification to give -

Dried/
Calcined/
Flux calcined products -
in granular, coarse, medium and fine particle sizes and particle size distributions.

Uses - the US Bureau of Mines has three use categories defined

Filter Aid - Porous, permeable sized DE from dried product (low flow rate - high clarity) disposable filter media to flux calcined (heated to incipient fusion) product (high flow rate lower clarity) disposable filter media.

Filler - Frustule or frustule fragments either produced directly or as by-product or co-product from filter aid production used as highly functional extender/pigments or as inert passive diluents.

"Other" - Uses such as absorbents, silica source for lime-silica reactions, insulation, catalyst supports and a myriad of "other" uses.

And finally DE as an industry can be described by its producers:

1. Companies whose main focus is filter aid production getting filler (or "other") products as by-products from bag houses or co-products from the process stream or split from the process stream of filter aid production. In addition, such type producers can also specialize as one does with the production of calcium silicate absorbents and another does with the production of granular absorbents.

2. Also within the industry are several companies who specialize in granular absorbents or specialize in the filler/other markets. None of these companies produce filter aid, at least at this time.

Arimetco is a specialty producer with a line of high quality extender/filler type products produced from lacustrine ore in southern Arizona. Drying and air classification are the main processing steps.

THE UNIQUE ATTRIBUTES OF ARIMETCO DE PRODUCTS
(and their unique application benefits)

Unique to Arimetco products are:

1. Mineral Form and Structure

Arimetco products are produced from an ore with a composition of a wide assemblage of DE species very comparable to the industry standards produced from a West Coast marine deposit. This differs markedly from many lacustrine deposits that are primarily one species.

It has been conjectured that the Arimetco deposit was formed in saline lakes or in brackish water. Arimetco products have an extremely low chloride content < 40 ppm (contrasted with 400 ppm for products from the West Coast marine deposit) that may indicate that this was not the case.

In any event, the wide assemblage of species, their diversity and the multiple forms of the frustules and frustule fragments all add to their function in paints, plastics and rubber.

2. Mineral Type

Arimetco products are dried, not calcined, products having a low crystalline silica content contrasted with calcined products or flux calcined products that can have crystalline silica contents of upwards of 20% and 60% respectively.

The lower crystalline silica content means a softer less abrasive product in processing or in use. This would be of special importance in extrusion of polymers or elastomers and in papermaking processes utilizing DE.

3. Bulk Density

The lowest bulk density Arimetco product group is $6lb/ft^3$. This is believed to be one of the lowest, if not the lowest, diatomite bulk densities produced on a commercial basis in the USA.

This gives the formulator or compounder yield - more volume per pound in his formulation that may be a low active content dry powdered product such as a rose dust or a scouring powder.

4. Inertness

Test are now being run on Arimetco products to determine their reactivity. Preliminary tests and review of some physical and chemical attributes as well as accessory mineral content seem to show a very low reactivity of the DE in a variety of systems.

This may turn out to be a benefit where surface chemistry, reactivity or catalytic activity could affect the shelf life of formulated products.

K 12/85

WHITECLIFFS (A) PINAL Co.

MICROLITE INCORPORATED

BUSINESS PROPOSAL

from: ALASKA APOLLO via J. BOGERT

Microlite Incorporated, "the Company", is a newly formed company seeking $500,000 of start-up capital to engage in the mining and marketing of diatomaceous earth. The Company has obtained effectively a 50 year lease in a large deposit of high quality diatomaceous earth (or diatomite) in Mammoth, Arizona near Kearny. The demand for quality diatomite is such that the Company has obtained letters from major users indicating willingness to consider the Company as a major or second source of supply for their needs.

Diatomite is a soft friable rock-like material that consists mainly of skeletons of microscopic single-cell plants of water origin (diatoms). Diatomite is used in a wide variety of applications falling into two broad categories: (1) Filter aids and (2) functional fillers. The Company's initial goal is to penetrate the filler market; filter aid production is longer term objective. Functional filler applications include usage in paints, polishes, concrete, ceramics, insulation, paper, pipe coverings, plasters, glass, rubber, fertilizers, animal feed, drilling mud and many more. The value of diatomite lies in its unique physical structure: high porosity, density and surface area.

Total domestic sales of diatomite in 1981 was 687,000 tons having a rough value of $113 million, according to the U.S. Bureau of Mines statistics. However, it is thought the true volume is significantly higher. The filler market represents about 1/3 of total diatomite sales. In addition, the U.S. exports 150-175 thousand tons to Europe, South America and Canada. Demand and production have been steadily increasing and are expected to continue doing so at about 3% per year.

The Company has obtained a mining lease for all minerals contained in the Mammoth, Arizona deposit for a period of up to fifty years. The deposit is estimated to contain 150 million tons of recoverable diatomite. The Company intends to build an initial processing plant in Kearny, Arizona with an annual production capacity of 37,500 tons/year. Current prices for natural grade diatomite range from $131 to $398 per ton. The Company projects its mining and processing costs to be less than $39 per ton. Many of the Company's costs will be variable and strictly a function of the volume of product sold. This should lead to significant profit margins.

The Company intends to compete on the basis of price, quality, location and service. The Company will price its products at approximately 10% below that of the competition. In addition, its relative proximity to consumers in the midwest and east (as compared to the competition primarily based in California and Nevada) gives the Company an advantage in piggy-back freight costs.

The quality of the product at the Mammoth site is comparable to that of the major competitors and in many ways superior. (The Company has received letters from two large consumers that found unprocessed samples to be of high enough quality to meet their needs. These samples were literally hand-scooped off the ground; proper processing would raise desirable specifications much higher.)

The Company has been in touch with consumers who buy over 50,000 tons of diatomite per year. Two of these, Owens Corning and Sherwin Williams, which represent 11,000 tons of purchases, have initially approved the Company as a supplier. The demand for quality diatomite is such that the Company anticipates few difficulties in expanding its sales. Based on this, the Company projects revenues and profits as follows:

Fiscal Yr.	First	Second	Third	Fourth	Fifth
Sales Tons	8,770	13,746	20,000	26,250	32,500
Revenues	1,008,550	1,518,850	2,300,000	3,168,750	3,937,500
Net Pretax Earnings	377,470	742,000	1,153,644	1,684,000	2,081,000

These projections indicate a full payback of the $500,000 start-up investment within the second year of operation at which point it is assumed that the plant is running at a modest 40% or less of capacity.

The $500.00 investment is primarily earmarked for plant and equipment. The town of Kearny has granted a 20 acre parcel of land to the Company for 20 years at no payment. This site is close to themain line of the Southern Pacific Railroad, which runs through Kearny. Most of the needed equipment including the metal Butler Building has been lined-up; used or leased equipment has been identified wherever possible to reduce expenditures. The Company will use local contractors for the mining and other work to reduce fixed overhead. Labor costs are expected to be quite low; layoffs at near by Copper Mines have made available a large toll of experienced workers at low costs.

The Company does not anticipate union involvement.

CAPITALIZATION AND INVESTMENT STRUCTURE

The Company will be capitalized at five-hundred thousand dollars ($500,000). It will issue two classes of non-par value stock----500,000 shares of a 10% cumulative preferred and 500,000 shares of common. For each $1,000 invested, the investor will receive 1,000 shares of preferred and 510 shares of common. Investors will, therefore, hold 100% of the preferred and 51% of the common. The balance of the common will be held by management (39%) and Winthrop (10%).

It is the Company's intent to redeem the preferred stock as soon as practicable and that such redemption will be treated as a return of capital to the investors. Until redemption, the preferred will pay a 10% dividend annually.

The common stock will not pay dividends and will not have voting or any other rights until the entire preferred issue is redeemed. The shareholders agreement will provide for the election of the officers and directors indicated above and will subject sales of preferred and common stock to mutual rights of first refusal.

The effect of this structure is to give the investors basically total control and equity of the company until they have received a full return of their investment plus 10% interest. It is only after that point that the carried interests of management and Winthrop become effective.

OFFICERS AND DIRECTORS

The Company will be managed and staffed by people with many years experience in diatomite and related industries. Gilbert Mott, the President and CEO was formerly president of Sil-Flo Inc. and minerals division sales manager for Eagle Picher Industries and U.S. Filter Company. Also involved are Graham Mott, his son, who worked as a manufacturer's representative for Filter Products Corporation and the Lamports Corporation, and Joseph Marinelli, previously in charge of plant production with Dicalites' Nevada mineral filler operation for 26 years.

The Company's auditors will be Ernst & Whinny International, Counsel will be Kaye, Scholer, Fierman, Hays & Handler.

The officers of the Company will be:

Gilbert Mott	President and Chief Executive Officer
Graham Mott	Secretary and Vice President of Marketing
Dan Purjes	Treasurer

The Board of Directors will consist of:

Gilbert Mott	President
Graham Mott	Secretary
Richard Farkas	Chairman, Winthrop
Dan Purjes	Managing Director, Winthrop
Tryggve Angel	Chairman, Granges Exploration
Investor	?

Income Projections-First Year of Operations (Downside)

Functional Filler Revenues	1 Month	2 Month	3 Month	4 Month	5 Month	6 Month	7 Month	8 Month	9 Month	10 Month	11 Month	12 Month	Total
Sales-Tons	10	110	900	400	500	600	700	800	900	1,000	1,000	1,000	7,920
@115.00/Ton	$ 1,150	12,650	103,500	46,000	57,500	69,000	80,500	92,000	103,500	115,000	115,000	115,000	910,800
Selling&Gen. Adm.	13,420	15,270	24,855	18,605	19,755	21,405	22,350	23,705	24,855	26,005	26,005	26,005	262,235
Cost of Goods Mfg.	.390	4,290	35,100	15,600	19,500	23,400	27,300	31,200	35,100	39,000	39,000	39,000	308,880
Royalty	20	220	1,800	800	1,000	1,200	1,400	1,600	1,800	2,000	2,000	2,000	15,840
Net Income (Before Taxes)	12,680	7,130	41,745	10,995	17,245	22,995	29,450	35,495	41,745	47,995	47,995	47,995	323,845

Income Projections Second Year of Operations (Downside)

Functional Filler Revenues	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	Totals
Sales-Tons	3,125	3,125	3,125	3,125	12,500
@115.00/Ton	359,375	359,375	359,375	359,375	1,437,500
Royalty	6,250	6,250	6,250	6,250	25,000
Selling&Gen. Adm.	75,233	75,233	75,233	75,233	300,932
Cost of Goods Mfg.	113,356	113,356	113,356	113,356	453,424
Net Income (Before Taxes)	164,536	164,536	164,536	164,536	658,144

Income Projections-Third Year of Operations (Downside)

Functional Filler Revenues	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	Totals
Sales-Tons	4,375	4,375	4,375	4,375	17,500
$115.00/Ton	503,125	503,125	503,125	503,125	2,012,500
Royalty	8,750	8,750	8,750	8,750	35,000
Selling&Gen. Adm.	94,453	94,453	94,453	94,453	377,812
Cost of Goods Mfg.	151,502	151,502	151,502	151,502	606,008
Net Income (Before Taxes)	248,420	248,420	248,420	248,420	993,680

Income Projections Fourth & Fifth Years of Operations (Downside)

Functional Filler Revenues	Fourth Year	Fifth Year
Sales-Tons	22,500	25,000
@115.00/Ton	2,587,500	2,875,000
Royalties	35,000	25,000
Selling& Gen. Adm.	456,708	505,541
Cost of Goods Mfg.	772,186	881,340
Net Income (Before Taxes)	1,323,606	1,463,119

Income Projections First Year of Operations (Upside)

Functional Filler Revenues	1 Month	2 Month	3 Month	4 Month	5 Month	6 Month	7 Month	8 Month	9 Month	10 Month	11 Month	12 Month	Total
Sales-Tons	10	110	900	600	700	800	800	900	1,100	1,200	1,200	1,300	9,620
@$115.00/Ton	$ 1,150	12,650	103,500	69,000	80,500	92,000	92,000	103,500	126,500	138,000	138,000	149,500	1,106,300
Selling&Gen. Adm.	13,420	15,270	24,355	21,405	22,350	23,705	23,705	24,355	26,655	27,805	27,805	28,955	279,785
Cost of Goods Mfg.	390	4,290	35,100	23,400	27,300	31,200	31,200	35,100	42,900	46,800	46,800	50,700	375,180
Royalty	20	220	1,800	1,200	1,400	1,600	1,600	1,800	2,200	2,400	2,400	2,600	19,240
Net Income Before Taxes)	$12,680	7,130	41,745	22,995	29,450	35,495	35,495	41,745	54,745	60,995	60,995	67,245	431,095

Income Projections- Second Year of Operations (Upside)

'unctional Filler Revenues	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	Totals
;ales-Tons	3,750	3,750	3,750	3,750	15,000
115.00/Ton	431,250	431,250	431,250	431,250	1,725,000
:oyalty	7,500	7,500	7,500	7,500	30,000
elling&Gen. Adm.	84,843	84,843	84,843	84,843	339,372
:ost of Goods Mfg.	132,429	132,429	132,429	132,429	529,716
et Income Before Taxes)	206,478	206,478	206,478	206,478	825,912

Income Projections Third Year of Operations (Upside)

Functional Filler Revenue	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	Totals
Sales-Tons	5,625	5,625	5,625	5,625	22,500
@115.00/Ton	646,875	646,875	646,875	646,875	2,587,500
Royalties	11,250	10,380	5,625	5,625	32,880
Selling/Gen. Adm.	114,177	114,177	114,177	114,177	456,708
Cost of Goods Mfg.	193,046	193,046	193,046	193,046	772,186
Net Income (Before Taxes)	328,402	329,272	334,027	334,027	1,325,726

Income Projections-Fourth & Fifth Years (Upside)

Functional Filler Revenues	4th Year	5th Year
Sales-Tons	30,000	40,000
@125.00/Ton	3,750,000	5,000,000
Royalties	30,000	40,000
Selling&Gen. Adm.	605,000	810,000
Cost of Goods Mfg.	1,070,000	1,450,000
Net Income (Before Taxes)	2,045,000	2,700,000

Income Projections-First Year of Operations (Median)

Functional Filler Revenues	1 Month	2 Month	3 Month	4 Month	5 Month	6 Month	7 Month	8 Month	9 Month	10 Month	11 Month	12 Month	Total
Sales-Tons	10	110	900	500	600	700	750	850	1,000	1,100	1,100	1,150	8,770
@115.00/Ton	$ 1,150	12,650	103,500	57,500	69,000	80,500	86,250	97,750	115,000	126,500	126,500	132,250	1,008,550
Selling & Gen Adm.	$13,420	15,270	24,355	20,054	21,072	22,555	23,027	24,030	25,755	26,905	26,905	27,480	271,010
Cost/Goods Mfg.	$ 390	4,290	35,100	19,500	23,400	27,300	29,250	33,150	39,000	42,900	42,900	44,850	342,030
Royalty	$ 20	220	1,800	1,000	1,200	1,400	1,500	1,700	2,000	2,200	2,200	2,300	17,565
Net Income (Before Taxes)	$12,680	7,130	41,745	16,995	23,347	29,245	32,472	38,620	48,245	54,495	54,495	57,620	377,470

Income Projection-Second Year of Operation (Median)

Functional Filler Revenues	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	Total
Sales-Tons	3,437	3,437	3,437	3,437	13,748
@115.00/Ton	395,312	395,312	395,312	395,312	1,518,248
Royalty	6,875	6,875	6,875	6,875	27,500
S.G. & A	80,038	80,038	80,038	80,038	320,152
Cost of Goods Mfg.	122,892	122,892	122,892	122,892	491,568
Net Income (Before Taxes)	185,507	185,507	185,507	185,507	742,028

Income Projections-Third Year of Operations (Median)

Functional Filler Revenues	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	Total
Sales-Tons	5,000	5,000	5,000	5,000	20,000
@115.00/Ton	575,000	575,000	575,000	575,000	2,300,000
Royalty	10,000	10,000	10,000	10,000	40,0
S.G. & A	104,315	104,315	104,315	104,315	417,260
Cost of Goods Mfg.	172,274	172,274	172,274	172,274	689,096
Net Income (Before Taxes)	288,411	288,411	288,411	288,411	1,153,644

Income Projection-Fourth and Fifth Year of Operation (Median)

Functional Filler Revenues	Fourth Year	Fifth Year
Sales-Tons	26,250	32,500
@115.00/Ton	3,168,750	3,937,500
Royalty	32,500	32,500
S.G. & A	530,854	657,770
Cost of Goods Mfg.	921,093	1,165,670
Net Income (Before Taxes)	1,684,303	2,081,559

SECTION I

PROPOSAL SUMMARY

Purpose of Proposal: To initiate capital for project.

Use of Capital: Start-up capital for lease/purchase of mining equipment, operating capital for marketing the processed minerals. Mining claims in and about Mammoth, Arizona contain estimated recoverable reserves of 150 million tons. Three crudes suitable for marketing and processing have been located and estimated at 3-1/4 million tons.

Capital will be used to lease/purchase mining and processing equipment, with the remaining capital to be used for marketing overhead expenses (salaries, travel expenses, sales literature and aids), purchase of remaining laboratory equipment, and other miscellaneous start-up costs.

The Market: The diatomite market consists of two main uses in industry: (1) Filter Aids, (2) Functional Fillers. Continental Minerals intends to target the Functional Filler market at this time, which in 1980 compromised approximately 234 thousand short tons.

The Competition: Main competitors in the diatomaceous earth market in the U.S. consists of The Mansville Corporation, Eagle Picher Industries, Grefco Inc., and Witco Corporation. Prices among the main four are consistently the same from product to product.

Benefits: The Mammoth, Arizona deposit contains 150 million tons of recoverable diatomite. Current estimates for U.S. demand for diatomite between 1978-2000 is 15 million tons. Estimated world demand during this same time period is 65 million tons.

Processing the diatomite to finished product will take place in Kearny Arizona. Annual production capacity is estimated at 37,500 tons/year. Initially, Continental Minerals will sell natural grade diatomite to users within the Functional filler market. Current prices for natural grade diatomite range from $131.00 to $398.00 per ton, according to the attached Grefco price list. Continental Minerals price structure places its prices approximately 10% below the competition.

Filter Aids; which Continental plans to produce as part of its long term goals sell from $193.00 per ton to $344.00 per ton f.o.b.

The main line of the Southern Pacific railroad runs through Kearny, Arizona. Freight rate discussions with the Southern Pacific have been initiated. Trucking and Piggy-back arrangements with Greater South Traffic Service of El Paso have been completed. The product will be shipped either bagged or in bulk depending on the customers needs.

Mining and processing costs are $39.00 per ton for bagged goods, and $25.00 per ton for bulk.

SECTION II

THE MARKET

Outlook

Continental Minerals plans to market a natural grade diatomite which is used in industry under the broad catagory of "Fillers". U.S. demand patterns for diatomite in the filler catagory has been 2,433,000 tons over an eleven year period, 1969-1980. The average annual use of diatomite as a filler has been 199,910 tons per year. Table I lists tonnage for that eleven year period.

Table I - U.S. Demand Patterns for Diatomite Fillers (thousand short tons)

Year	Tons	Year	Tons
1969	177	1975	200
1970	186	1976	227
1971	160	1977	237
1972	180	1978	213
1973	171	1979	221
1974	227	1980	234

The total value of processed (fillers and filter aids) diatomite sold or used in 1981 established a new record high of $113 million, a 12% increase over the previous year. Production came from four western states: California, Nevada, Oregon, and Washington, with California operations in Lompac accounting for more than half of the 1981 output.

The use of diatomite as a filler accounted for 36% of the domestic market in 1981.

Goals of Continental Minerals

The immediate goal of Continental is to target the principle users in the diatomite filler market. Total domestic sales of diatomite (both fillers and filter aids) in 1981 were 687,000 tons, according to the U.S. Bureau of Mines statistics. From our sources within the industry, we feel that these numbers represent less than real tonnages filed with the U.S. Bureau of Mines by major producers. Our target market represents about 234.26 thousand tons (based on 1980 figures) selling for approximately $130.00 per ton (weighted average).

Intermediate goals of Continental Minerals includes the exploration of the Canadian and Mexican markets, and later the markets of South America and Europe. Long range goals of Continental include the processing of diatomite filter aid. This step will complete our entrance into the diatomite market.

Table 2 Average Annual Value Per Ton of Diatomite

Use	1979	1980	1981
Abrasives	$174.09	$ W	$ W
Fillers	118.22	132.56	153.14
Filtration	136.52	158.88	179.01
Insulation	94.67	103.47	125.02
Misc.	87.81	101.79	110.19
Weighted Ave.	$125.91	$146.02	$164.50

Customers in the filler market (which have been defined as all the above applications except filter Aids)include: manufacturers of paints, fertilizers, insecticides, paper, high temperature insulation, cement additives, oil well drilling mud, and the animal feed ingredient industry.

Marketing Strategy

Initially, Continental has targeted major industrial consumers of diatomite fillers, in the south, midwest, and on the east coast. Within these geographical areas, Continental's sales personal have contacted consumers who use approximately 51,000 tons per year of processed diatomite.

Location of Markets

Geographically, consumers in our markets are principally located in the midwest and eastern states. This affords Continental a "Piggy-back"freight rate advantage over our west coast competition.

Sales representitives from Contitental have contacted diatomite users to determine interest in our products and their prices. Manufacturers from the Paint, and Insulation industries have expressed strong interest (See letters of Interest). Based on these test results, Continental has been initially approved by Owens Corning, and Sherwin Williams which represent a yearly tonnage of 11,000 tons selling at approximately $112.00 per ton.

Product Features

Several features of the product are attractive to potential customers: quality, price, shipping cost, and duplication of competitors product specifications. The quality of the product at the mammoth site is comparable to that of the major competitors, both in chemical and physical characteristics. In many areas, Continentals products are superior in quality to specific industrial applications.

STREICH, LANG, WEEKS, CARDON & FRENCH
A PROFESSIONAL ASSOCIATION
2100 FIRST NATIONAL BANK PLAZA
POST OFFICE BOX 471
PHOENIX, ARIZONA 85001
TELEPHONE 257-0999

Endorsed No. C 335331
Filed: WILSON D. PALMER, Clerk

DEC 9 1976

At 1:30 pm
By: L. LOOSEMORE, Deputy

ATTORNEYS FOR Plaintiff

IN THE SUPERIOR COURT OF THE STATE OF ARIZONA

IN AND FOR THE COUNTY OF MARICOPA

MAMMOTH MINING & MINERALS, INC., an Arizona corporation,

Plaintiff,

vs.

HENRY FARABEE and WANDA FARABEE, his wife,

Defendants.

No. C 335331

O R D E R

The order to show cause praying for a preliminary injunction in the above referenced matter came on for hearing before the Honorable Morris Rozar on the 7th day of December, 1976; Plaintiff appeared by its counsel, Dan M. Durrant, and Defendants appeared in propria persona.

After hearing evidence, both oral and documentary, the Court finds, concludes and orders as follows:

1. The Court finds that the preincorporation agreement between the parties is in full force and effect and is enforceable according to its terms;

2. The Court finds that the mining lease from the University of Arizona has been assigned by Henry Farabee to Mammoth Mining & Minerals, Inc., an Arizona corporation, and that said assignment is in full force and effect.

STREICH, LANG, WEEKS, CARDON & FRENCH
A PROFESSIONAL ASSOCIATION
2100 FIRST NATIONAL BANK PLAZA
POST OFFICE BOX 471
PHOENIX, ARIZONA 85001
TELEPHONE 257-0999

IT IS, THEREFORE, ORDERED that the Defendants, and each of them, be enjoined from the following activities:

1. Contacting the University of Arizona attempting to avoid the assignment of lease to the Plaintiff;

2. Contacting potential purchasers of products from such mining properties as described in the Complaint, attempting to get such potential purchasers to deal with Defendants directly rather than with the Plaintiff;

3. Contacting potential purchasers of the leasehold estate described in the Complaint, attempting to get such purchasers to deal directly with Defendants rather than with the Plaintiff; and

4. Otherwise attempting to usurp corporate opportunities and to interfere with the business and affairs of the Plaintiff.

IT IS FURTHER ORDERED continuing in effect the bond previously set on September 30, 1976.

DONE IN OPEN COURT this 9 day of December, 1976.

MORRIS ROTH
JUDGE OF THE SUPERIOR COURT

COPY of the foregoing mailed
this 8th day of December,
1976, to:

Henry and Wanda Farabee
1829 East Broadway, Apt. #4
Mesa, Arizona 85201

/S/ DAN M. DURRANT
Dan M. Durrant

The foregoing instrument is a full, true and correct copy of the original on file in this office.
Attest DEC 9 - 1976 19
WILSON D. PALMER, Clerk of the Superior Court of the State of Arizona, in and for the county of Maricopa.
By Deputy

CONSENT TO ASSIGNMENT

The UNIVERSITY OF ARIZONA, lessor, hereby consents to assignment of lessee's interest under Lease dated August 26, 1975, by and between Lessor and HENRY FARABEE, dba AZO MINED PRODUCTS CO., to HENRY FARABEE and WANDA FARABEE, his wife; MELVIN A. PALMER and WANDA RAE PALMER, his wife; MELVIN FROST and DOROTHY FROST, his wife; DAN M. DURRANT and JOYCE DURRANT, his wife, or their nominee corporation.

DATED this 28 day of August, 1975.

The UNIVERSITY OF ARIZONA

By Howard E Cain

STATE OF ARIZONA }
County of Pinal } ssi

I hereby certify that the within instrument was filed and recorded at request of Streich, Lang, Weeks, Cardon & French
NOV 12 1975 at 10:25 A M
In Docket
on page
DOCKET 802 PAGE 455
Witness my hand and official seal the day and year aforesaid.
WILLIAM S. TRUMAN
County Recorder
By Lorraine Moore
Deputy Recorder

INDEXED

When recorded, please return to:

STREICH, LANG, WEEKS, CARDON & FRENCH
Post Office Box 471
Phoenix, Arizona 85001

526397

$5.00

2100 First Nat'l Bank Plaza
Atlanta, Ga.

In the Superior Court

OF THE STATE OF ARIZONA IN AND FOR THE COUNTY OF MARICOPA

MAMMOTH MINING & MINERALS, INC., an Arizona corporation,

Plaintiff,

vs.

HENRY FARRABEE and WANDA FARRABEE, his wife,

Defendants.

No. C 33533

SUMMONS

THE STATE OF ARIZONA to the above named defendant

HENRY and WANDA FARRABEE

YOU ARE HEREBY SUMMONED and required to appear and defend in the above entitled action in the above entitled court, within TWENTY DAYS, exclusive of the day of serivce, after service of this summons upon you if served within the State of Arizona, or within THIRTY DAYS, exclusive of the day of service, if served without the State of Arizona, and you are hereby notified that in case you fail so to do, judgment by default will be rendered against you for the relief demanded in the complaint.

The names and address of plaintiff's attorneys are STREICH, LANG, WEEKS, CARDON & FRENCH, 2100 First National Bank Plaza, Phoenix, Arizona.

GIVEN under my hand and the seal of the Superior Court of the State of Arizona in and for the County of Maricopa, this day of June, 1976

WILSON D. PALMER
Clerk

By
Deputy Clerk

STREICH, LANG, WEEKS, CARDON & FRENCH
2100 FIRST NATIONAL BANK PLAZA
POST OFFICE BOX 471
PHOENIX, ARIZONA 85001
TELEPHONE 258-7292

Attorneys for Plaintiff

IN THE SUPERIOR COURT OF THE STATE OF ARIZONA

IN AND FOR THE COUNTY OF MARICOPA

MAMMOTH MINING & MINERALS, INC., an Arizona corporation, Plaintiff, vs. HENRY FARRABEE and WANDA FARRABEE, his wife, Defendants.	NO. C33533 COMPLAINT (Specific Performance; Declaratory Judgment; and Injunction)

Plaintiff, for its claim for relief against the Defendants, alleges:

ALLEGATIONS COMMON TO ALL CLAIMS

I.

Plaintiff is an Arizona corporation authorized to do business in the State of Arizona. Defendants are residents of Maricopa County, Arizona.

II.

On or before August 26, 1975, Defendants had obtained from the University of Arizona an option to lease certain unpatented placer mining claims located in the Mammoth Mining District, Pinal County, Arizona.

III.

On or about August 26, 1975, Defendants entered into a pre-incorporationg agreement with Melvin A. Palmer and Wanda Rae Palmer, his wife; Melvin Frost and Dorothy Frost, his wife,

STREICH, LANG, WEEKS, CARDON & FRENCH,
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and Dan M. Durrant and Joyce Durrant, his wife. Said pre-incorporation agreement provided in pertinent summary that (1) a corporation should be formed for the purpose of receiving from Defendants an assignment of their lease and option from the University of Arizona; (2) that ownership of the shares of the corporation should be held as follows: 25% by Farrabee, 25% by Palmer, 25% by Frost and 25% by Durrant; (3) that the name of said corporation shall be Mammoth Mining & Minerals, Inc.' (4) that certain cash contributions may be made by Frost, Palmer and Durrant and that (5) Defendant Henry Farrabee should devote his full time and best efforts to the business and affairs of the corporation during the months of September, October and November, 1975, for which labors he would be paid certain sums.

IV.

Plaintiff corporation was formed as a result of said pre-incorporation agreement.

V.

Durrants, Palmers and Frosts made the cash contributions stated in said pre-incorporation agreement, but Henry Farrabee has altogether failed and refused to devote his best efforts to the business and affairs of the corporation. To the contrary, Henry Farrabee has consistently refused to devote any time to the affairs of the corporation, but has attempted to interfere with the business and affairs of the corporation, including informing the University of Arizona that the assignment of the lease was not valid, attempting to discourage potential purchasers of the products from said mine, attempting to deal directly with purchasers of the products of said mine for his own account claiming and asserting that the Plaintiff did not have an interest in said mining claim despite the fact that Defendants had assigned their interest in said claims to the

Plaintiff.

VI.

The sums payable to Defendant Henry Farrabee for his services during 1975 were, and have always been, available to Defendant if Defendant had requested the same or had performed any such services. Plaintiff consistently communicated with Defendant requesting Defendant's cooperation in conducting Plaintiff's business and affairs, all to no avail.

FIRST CLAIM FOR RELIEF - DECLARATORY JUDGMENT

VII.

Plaintiff incorporates by reference, the same as if fully set forth herein, all allegations contained in Paragraphs I through IV above.

VIII.

There is a present and justiciable controversy between Plaintiff and Defendants regarding the enforceability of the assignment to Plaintiff from Defendants of the mining lease from the University of Arizona; Defendants claiming the same is ineffective, Plaintiff claiming that the same is valid and subsisting.

IX.

Plaintiff is entitled to this Court's order in the nature of declaratory judgment declaring that said assignment from Defendants to Plaintiff is a valid and subsisting assignment.

WEHREFORE, Plaintiff respectfully demands judgment against Defendants as follows:

1. That this Court enter its order in the nature of declaratory judgment declaring that the assignment from Defendants to Plaintiff of mining lease from the University of Arizona is valid and subsisting.

2. For Plaintiff's costs incurred herein.

STREICH, LANG, WEEKS, CARDON & FRENCH,
A PROFESSIONAL ASSOCIATION
2100 FIRST NATIONAL BANK PLAZA
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STREICH, LANG, WEEKS, CARDON & FRENCH,
A PROFESSIONAL ASSOCIATION
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3. For such other and further relief as to the Court seems just and proper in the premises.

SECOND CLAIM FOR RELIEF - SPECIFIC PERFORMANCE

X.

Plaintiff incorporates by reference, the same as if fully set forth herein, all allegations contained in Paragraphs I through IV above.

XI.

In the said pre-incorporation agreement, Defendants covenanted and agreed to assign to Plaintiff their interest in the lease from the University of Arizona regarding certain mining claims in Pinal County, Arizona.

XII.

Defendants executed and delivered to Plaintiff a document entitled "Assignment" of said mining claims.

XIII.

Defendants now take the position that said assignment was ineffective and are attempting to avoid the same.

XIV.

If said assignment is ineffective or for some reason is defective, Plaintiff is entitled to a valid assignment of such mining claims from Defendants since such mining claims are of a nature and quality qualifying for this Court's order requiring Defendants to specifically perform their agreement to deliver such an assignment.

WHEREFORE, Plaintiff respectfully demands judgment against Defendants as follows:

1. For this Court's order ordering Defendants to specifically perform their agreement to deliver the assignment of said lease to Plaintiff.

2. For Plaintiff's costs incurred.

3. For such other and further relief as to the Court

seems just and proper in the premises.

THIRD CLAIM FOR RELIEF - INJUNCTION

XV.

Plaintiff incorporates by reference, the same as if fully set forth herein, all allegations contained in Paragraphs I through IV above.

XVI.

Defendants, through their actions in working against the interest and affairs of the Plaintiff, of which Defendants own 25%, are causing serious and irreparable injury to Plaintiff in its efforts to obtain buyers for Plaintiff's products, or to obtain a purchaser of Plaintiff's leasehold interest.

XVII.

Said serious and irreparable injuries to Plaintiff will continue and be compounded unless Defendants are enjoined from the following activities:

(a) Contacting the University of Arizona attempting to avoid the assignment of lease to the Plaintiff;

(b) Contacting potential purchasers of products from such mining properties attempting to get such potential purchasers to deal with Defendants directly rather than with the Plaintiff;

(c) Contacting potential purchasers of the leasehold estate attempting to get such purchasers to deal directly with Defendants rather than with the Plaintiff:

(d) Otherwise attempting to usurp corporate opportunities and to interfere with the business and affairs of the Plaintiff.

WHEREFORE, Plaintiff respectfully demands judgment against Defendants as follows:

1. For this Court's order enjoining Defendants and each of them, from:

STREICH, LANG, WEEKS, CARDON & FRENCH.
A PROFESSIONAL ASSOCIATION
2100 FIRST NATIONAL BANK PLAZA
POST OFFICE BOX 471
PHOENIX, ARIZONA 85001
TELEPHONE 257-0999

(a) Contacting the University of Arizona attempting to avoid the assignment of lease to the Plaintiff;

(b) Contacting potential purchasers of products from such mining properties attempting to get such potential purchasers to deal with Defendants directly rather than with the Plaintiff:

(c) Contacting potential purchasers of the leasehold estate attempting to get such purchasers to deal directly with Defendants rather than with the Plaintiff;

(d) Otherwise attempting to usurp corporate opportunities and to interfere with the business and affairs of the Plaintiff.

2. For Plaintiff's costs incurred herein.

3. For such other and further relief as to the Court seems just and proper in the premises.

DATED this 18th day of June, 1976.

STREICH, LANG, WEEKS, CARDON & FRENCH
a Professional Association
2100 First National Bank Plaza
Post Office Box 471
Phoenix, Arizona 85001
Attorneys for Plaintiff

By Dan M. Durrant
Dan M. Durrant

STREICH, LANG, WEEKS, CARDON & FRENCH,
A PROFESSIONAL ASSOCIATION
2100 FIRST NATIONAL BANK PLAZA
POST OFFICE BOX 471
PHOENIX, ARIZONA 85001
TELEPHONE 257-0999

Affidavit of Labor Performed and Improvements Made

STATE OF ARIZONA,
County of Pinal } ss.

Henry Farabee being duly sworn, deposes and says that he is a citizen of the United States and more than twenty-one years of age, and resides at Mesa in Maricopa County, State of Arizona, and is personally acquainted with the mining claim known as Described in exhibit attached made a part of this total filing "White Cliffs" mining claim, situate in Mamoth Mining District. Mining District, County of Pinal, State of Arizona, the location notice of which is recorded in the office of the County Recorder of said County, in Book 797 of Records of Mines, at page 893; that between the 1st day of January, A. D. 19 77, and the 3rd day of August A. D. 19 77, at least $2,000.00 dollars worth of work and improvements were done and performed upon said claim, not including the location work of said claim. Such work and improvements were made by and at the expense of Henry Farabee P.O. Box 4310, Mesa, Arizona 85201 for University of Arizona, Tucson - Bureau of mines. owners of said claim for the purpose of complying with the laws of the United States pertaining to assessment of annual work, and Propogating developments of mining of Diatomite and/or other Diatomaceous Earth materials. Raymond D. Robinett and employees w/necessary machinery, Mesa, Arizona

were the men employed by said owner and who labored upon said claim, did said work and improvements, the same being as follows, to-wit: Road repair & moving material to clear ingress & egress.

1. Approximately 200 tons road clearing.
2. Road repair oversite 1-2 3/4 mile.
3. Road repair to loading area from Rhodes Rahch Road.
4. Exploration and removal of approximately 12 tons assorted materials, samplings, etc.
5. Machine time w/operator 30 hours at $80.00 per hour.

Henry Farabee

Subscribed and sworn to before me this 12th day of August A. D. 1977

(My commission expires Sept 13 1977) Evelyn J James
Notary Public.

August 8th, 1977

Henry Farabee
Azo Mined Products Co., Inc.
P.O. Box #4310
Mesa, Arizona 85201

Notice of work accomplished with machinery and labor used and expended on overall area. This will serve as qualified work towards completing the requirements of assessment work on your Placer Claims known by many as "White Cliffs" in Pinal County, February 1977.

1. 200 tons moved for road to material site south quarry.
2. Road repair bottom of wash 300 yards.
3. Roads repair from Rhodes Ranch Road to loading area.
4. Removal of 12 tons sampling material.
5. Machine time w/operator 30 hours at $ 80.00 per hour.

Payment made - Debts and obligations satisfied by Henry Farabee Azo Mined Products Co., Inc. - P.O. Box 4310, Mesa, Arizona.

Raymond L. Robinett
Ray Robinett
Ray's Pro Paint
1037 South Center
Mesa, Arizona 85202

Witness [signature]

STATE OF ARIZONA
COUNTY OF PINAL } ss.

I hereby certify that the within instrument was filed for record in Pinal County, State of Arizona.
Witness my hand and official seal.
WILLIAM S. TRUMAN
Pinal County Recorder

Blotted	Paged	Indexed
✓	✓	INDEXED

By: Linda Curran .... Deputy

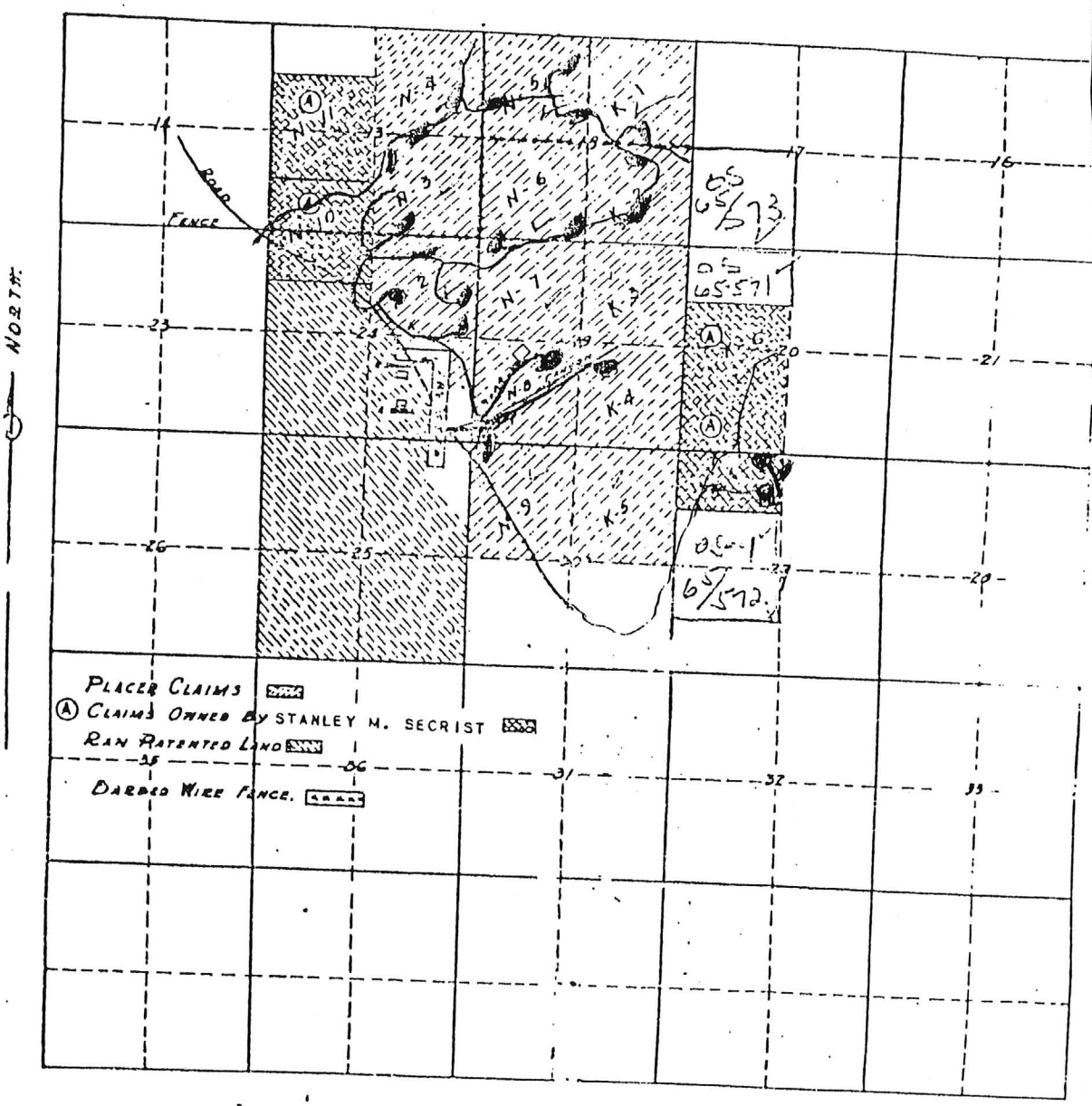
No.: 571660
Date: 12 AUG 1977 1 31 C
Docket and Page 878 PAGE 231
Request of: Ret. to Henry Farabee 3.00 cash
Azo Mined Prod. Co., Inc.

PLACER CLAIMS BELONGING TO STANLEY M. SECRIST

RANGE 17 E. TOWNSHIP 9 S.

RANGE 18 E. TOWNSHIP 9 S.

GILA & S.R.B.&M.



52-637

office of the County Recorder of Pinal County, Arizona, and said E/-3
property consists of the following mining claims:

	BOOK OF MINES	PAGE
NUEZ No. 2	49	163
NUEZ No. 3	49	164
NUEZ No. 4	49	165
NUEZ No. 5	49	166
NUEZ No. 6	49	167
NUEZ No. 7	49	168
NUEZ No. 8	49	169
Amended	51	18
NUEZ No. 9	49	170
KAOLIN No. 1	49	171
KAOLIN No. 2	49	172
KAOLIN No. 3	49	173
KAOLIN No. 4	49	174
KAOLIN No. 5	49	175
	DOCKET	
NUEZ No. 10	16	86
NUEZ No. 11	16	87
KAOLIN No. 6	16	92
KAOLIN No. 7	16	91
OVERSITE	65	571
OVERSITE No. 1	65	572
OVERSITE No. 2	65	573

on the following terms and conditions as hereinafter set forth

1. TERM. The term of this Lease shall be for five (5) years unless sooner forfeited or terminated in accordance with the

3120 Acres – Placer Claims –

DKT 880 PAGE 400

STATE OF ARIZONA) I hereb ertify that the within instrum was filed and
County of Pinal recorded 31 AUG 1977 1 2 50, 19__, at ____ M. In Docket No. DKT 880 PAGE 460, Page ____, at the request of Mammoth Mining & Minerals Inc

Witness my hand and official seal.

WILLIAM S. TRUMAN
County Recorder
By Anne Jo Raber
Deputy Recorder

Fee No.:
Indexed:
573010
Compared:
Photostated:
Fee:$ 3.00
I.R.F. $

When Recorded, Mail to:
MAMMOTH MINING & MINERALS, INC.
222 West 8th Street
Mesa, Arizona 85201

AFFIDAVID OF LABOR PERFORMED AND IMPROVEMENTS MADE AND DECLARATION OF OWNERSHIP AND LEASE OF MINING CLAIMS

STATE OF ARIZONA)
)ss.
County of Maricopa)

HENRY FARABEE, *being duly sworn, deposes and says that he is a citizen of the United States and more than twenty-one years of age, and resides as* 961 East 10th Drive, Mesa, Arizona, 85204 *in* Maricopa *County, State of Arizona, and is personally acquainted with the mining claims known as* and described in Exhibit "A", attached hereto and made a part hereof *mining claims situate in* Mammoth Mining District, *County of* PINAL, *State of Arizona and further,* Henry Farabee recorded Affidavits of Labor Performed and Improvements Made as follows:

1. September 25, 1975 in Docket 797, Pages 892, 893 and 894.
2. August 26, 1976, in Docket 835, Pages 31, 32, 33, and 34.
3. August 12, 1977 in Docket 878; Pages 231, 232, 233 and 234.

THEREFORE, it is hereby declared and acknowledged by Henry Farabee that the Board of Regents of the State of Arizona in and for the University of Arizona was and is the Owner and Lessor of said claims and Mammoth Mining & Minerals, Inc., an Arizona Corporation, is the Lessee with full possessory rights of these subject claims as listed in each of the Affidavits referred to in Nos. 1, 2, and 3 above and on Exhibit "A" attached hereto and by reference made a part hereof.

It is further declared by Henry Farabee that all labor performed and improvements made as set forth in the three Affidavits referred to above were for the sole benefit of the Board of Regents of the University of Arizona as Owner and Lessor and for Mammoth Mining & Minerals, Inc., Lessee with full possessory rights.

Further, it is acknowledged that the labor performed and improvements made in the three Affidavits referred to above were not for any personal benefits or rights of Henry Farabee and/or AZO Mined Products Co., Inc.

Dated this 29th *day of* August, 1977.

AZO MINED PRODUCTS CO., INC.

BY: Henry Farabee Pres.
Henry Farabee, Authorized Agent

BY: Henry Farabee
Henry Farabee, Individual

STATE OF ARIZONA SEAL
OFFICIAL SEAL
PINAL COUNTY RECORDER
FLORENCE ARIZONA

STATE OF ARIZONA)
) ss.
County of Maricopa)

This instrument was acknowledged this 29th day of August, 1977 by: Henry Farabee, Individual.

My Commission will expire: November 18, 1980

Notary Public

STATE OF ARIZONA)
) ss.
County of Maricopa)

This instrument was acknowledged this 29th day of August, 1977 by: Henry Farabee, Authorized Agent of AZO Mined Products, Co., Inc.

My Commission will Expire:
November 18, 1980

Notary Public

NOTARY PUBLIC MARICOPA CO., ARIZ.

EXHIBIT "A"

Mining Claims Owned By
The BOARD OF REGENTS OF THE STATE OF ARIZONA
in and For the
UNIVERSITY OF ARIZONA
and Leased to
MAMMOTH MINING & MINERALS, INC.
an Arizona Corporation

The following-described unpatented placer mining claims are situated in Township 9 South, Ranges 17 and 18 Ease, G&SRM, in the Mammoth Mining District, Pinal County, Arizona, the location notices of which claims are of record in the Office of the Recorder of Pinal County, Arizona as follows:

NAME OF CLAIM	BOOK OF MINES	PAGE
NUEZ No. 2	49	163
NUEZ No. 3	49	164
NUEZ No. 4	49	165
NUEZ No. 5	49	166
NUEZ No. 6	49	167
NUEZ No. 7	49	168
NUEZ No. 8	49	169
Amended	51	18
NUEZ No. 9	49	170
KAOLIN No. 1	49	171
KAOLIN No. 2	49	172
KAOLIN No. 3	49	173
KAOLIN No. 4	49	174
KAOLIN No. 5	49	175
	Docket	
NUEZ No. 10	16	86
NUEZ No. 11	16	87
KAOLIN No. 6	16	92
KAOLIN No. 7	16	91
OVERSITE	65	571
OVERSITE No. 1	65	572
OVERSITE No. 2	65	573

NOTE: All of the above 20 placer claims cover 3,120 acres, more or less. These claims are sometimes referred to as WHITE CLIFFS CLAIMS.

AFFIDAVIT OF LABOR PERFORMED AND

IMPROVEMENTS MADE

STATE OF ARIZONA)
) ss.
County of PINAL)

Melvin A. Palmer, President, MAMMOTH MINING & MINERALS, Inc., an Arizona Corporation, *being duly sworn, deposes and says that he is a citizen of the United States and more than twenty-one years of age, and reaides at* Mesa *in* Maricopa *County, State of Arizona, and is personally acquainted with the mining claim known as* Those described in Exhibit "A" and Exhibit "B" attached hereto and by reference made a part hereof. Those claims are also sometimes known as "WHITE CLIFFS" *mining claims, situate in* MAMMOTH *Mining District, County of* Pinal, *State of Arizona, the location notice of which is recorded in the office of the County Recorder of said County, in Book* 752 *of Records of Mines, at page* 639; *that between the* first day of January, A.D., 1977 *and the* 22nd day of August, A.D., 1977, *at least* ($5,010.00) FIVE-THOUSAND--TEN-AND NO/100 *dollars worth of work and improvements were done and performed upon said claims, not including the location work of said claims. Such work and improvements were made by and at the expense of* Mammoth Mining & Minerals, Inc., an Arizona Corporation, Lessee, 222 West 8th Street, Mesa, Arizona 85201 for the Board of Regents of the State of Arizona, Owner, in and for the University of Arizona, *owner of said claims for the purpose of complying with the laws of the United States pertaining to assessment of annual work and* development and excavation of Diatomaceous Earth materials for sampling, testing and experimental work preparatory to continued production.

THE AFOREMENTIONED WORK was performed by Lee W. Hammons, Geologist, Dr. Melvin J. Frost,* Phd, Consultant, Raymond D. Robinett and his employees and machinery as detailed in Exhibit "C" attached hereto and by reference made a part hereof, and Melvin A. Palmer,* Contractor and Henry Farabee* *These men were employed by said Owner and who labored upon said claims, did said work and improvements, the same being as follows, to-wit:*

1. Approximately 200-ton moved for the construction of road to material stockpile on the site on south quarry.
2. Road repaired at bottom of wash - approximately 300 yards.
3. Roads repaired from Rhodes Ranch Road to loading area.
4. Removal of 12-ton of material for sampling and testing and experimental work.
5. Loader/dozer machine time with operator - 30 hours.
6. Made geological studies to evaluate material for various different uses for production and other determinations as made by Lee W. Hammons, Geologist, and Melvin J. Frost, Consultant.

*All of these individuals are Stockholders in Mammoth Mining & Minerals, Inc.

Exhibit "D" - Map - is also a part of this Affidavit.

ATTEST:
Melvin J. Frost
Melvin J. Frost,
Secretary/Treasurer

MAMMOTH MINING & MINERALS, INC.
an Arizona Corporation

BY Melvin A. Palmer
Melvin A. Palmer, President

Subscribed and sworn to before me this 31st *day of* August, 19 77.

My Commission Expires: November 18, 1980

Irene Christensen
Notary Public

NOTARY PUBLIC MARICOPA COUNTY IRENE CHRISTENSEN

UNIVERSITY OF ARIZONA, LESSOR

BY: Sherwood E. Carr
Sherwood E. Carr on behalf of the University of Arizona and the Arizona Board of Regents

EXHIBIT "A"

Mining Claims Owned By
The BOARD OF REGENTS OF THE STATE OF ARIZONA
in and For the
UNIVERSITY OF ARIZONA
and Leased to
MAMMOTH MINING & MINERALS, INC.
an Arizona Corporation

The following-described unpatented placer mining claims are situated in Township 9 South, Ranges 17 and 18 Ease, G&SRM, in the Mammoth Mining District, Pinal County, Arizona, the location notices of which claims are of record in the Office of the Recorder of Pinal County, Arizona as follows:

NAME OF CLAIM	BOOK OF MINES	PAGE
NUEZ No. 2	49	163
NUEZ No. 3	49	164
NUEZ No. 4	49	165
NUEZ No. 5	49	166
NUEZ No. 6	49	167
NUEZ No. 7	49	168
NUEZ No. 8	49	169
Amended	51	18
NUEZ No. 9	49	170
KAOLIN No. 1	49	171
KAOLIN No. 2	49	172
KAOLIN No. 3	49	173
KAOLIN No. 4	49	174
KAOLIN No. 5	49	175
	Docket	
NUEZ No. 10	16	86
NUEZ No. 11	16	87
KAOLIN No. 6	16	92
KAOLIN No. 7	16	91
OVERSITE	65	571
OVERSITE No. 1	65	572
OVERSITE No. 2	65	573

NOTE: All of the above 20 placer claims cover 3,120 acres, more or less. These claims are sometimes referred to as WHITE CLIFFS CLAIMS.

EXHIBIT "B"

Mining Claims Owned By
The BOARD OF REGENTS OF THE STATE OF ARIZONA
in and for the
UNIVERSITY OF ARIZONA
and Leased to
MAMMOTH MINING & MINERALS, INC.
an Arizona Corporation

The following-described unpatented placer mining claims are situated in Township 9 South, Ranges 17 and 18 East, G&SRB&M, in the Mammoth Mining District, Pinal County, Arizona, the location notices of which claims are of record in the Office of the Recorder of Pinal County, Arizona as follows:

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NUEZ No. 6 " " "	880	466
NUEZ No. 7 " " "	880	467
NUEZ No. 8 " " "	880	468
NUEZ No. 9 " " "	880	469
NUEZ No. 10 " " "	880	470
NUEZ No. 11 " " "	880	471
KAOLIN No. 1 " " "	880	472
KAOLIN No. 2 " " "	880	473
KAOLIN No. 3 " " "	880	474
KAOLIN No. 4 " " "	880	475
KAOLIN No. 5 " " "	880	476
KAOLIN No. 6 " " "	880	477
KAOLIN No. 7 " " "	880	478
OVERSITE " " "	880	479
OVERSITE No. 1 " " "	880	480
OVERSITE No. 2 " " "	880	481

NOTE: All of the above 20 placer claims cover 3,120 acres, more or less. These claims are sometimes referred to as WHITE CLIFFS CLAIMS.

EXHIBIT "C"

This is a corrected letter which supersedes a previous letter dated August 9, 1977,

RAY'S PRO PAINT

1037 South Center, Mesa, Arizona 85202
964-4758

Mammoth Mining & Minerals, Inc.
222 West 8th Street
Mesa, Arizona 85201

Attention: Melvin A. Palmer, President

Dear Sir: August 22, 1977

In compliance with your request and the completion of assessment work performed on those certain unpatented mining claims sometimes referred to as "WHITE CLIFFS" claims which are actually recorded as NUEZ 2-9, KAOLIN 1-5, NUEZ 10-11, KAOLIN 6-7, OVERSITE, OVERSITE No. 1 and OVERSITE No. 2 and as detailed in Exhibit "A" attached hereto and by reference made a part hereof, and which are situated in the Mammoth Mining District, Pinal County, Arizona, which we understand are owned by the Board of REgents of the State of Arizona in and for the University of Arizona who have, in turn, leased all of their right, title and interest to MAMMOTH MINING & MINERALS, INC., an Arizona Corporation, for whom the following work has been performed and is fully paid:

1. Approximately 200-ton moved for the construction of road to material stockpile on the site on south quarry.

2. Road repaired at bottom of wash - approximately 300 yards.

3. Roads repaired from Rhodes Ranch Road to loading area.

4. Removal of 12-ton of material for sampling and testing and experimental work.

5. Loader/dozer machine time with operator - 30 hours at $80.00 per hour.

All of the above items amount to $4,360.00 and are fully paid and satisfied by MAMMOTH MINING & MINERALS, INC., an Arizona Corporation, leaseholder of the above claims. If we can be of any further assistance to you in the development of your mining claims, please give us a call.

RAY'S PRO PAINTS

BY: Raymond D. Robinett
Ray Robinet, Owner and/or
Authorized Agent

Attachment: Exhibit "A"

EXHIBIT "D"

Mining Claims Owned By

The BOARD OF REGENTS OF THE STATE OF ARIZONA

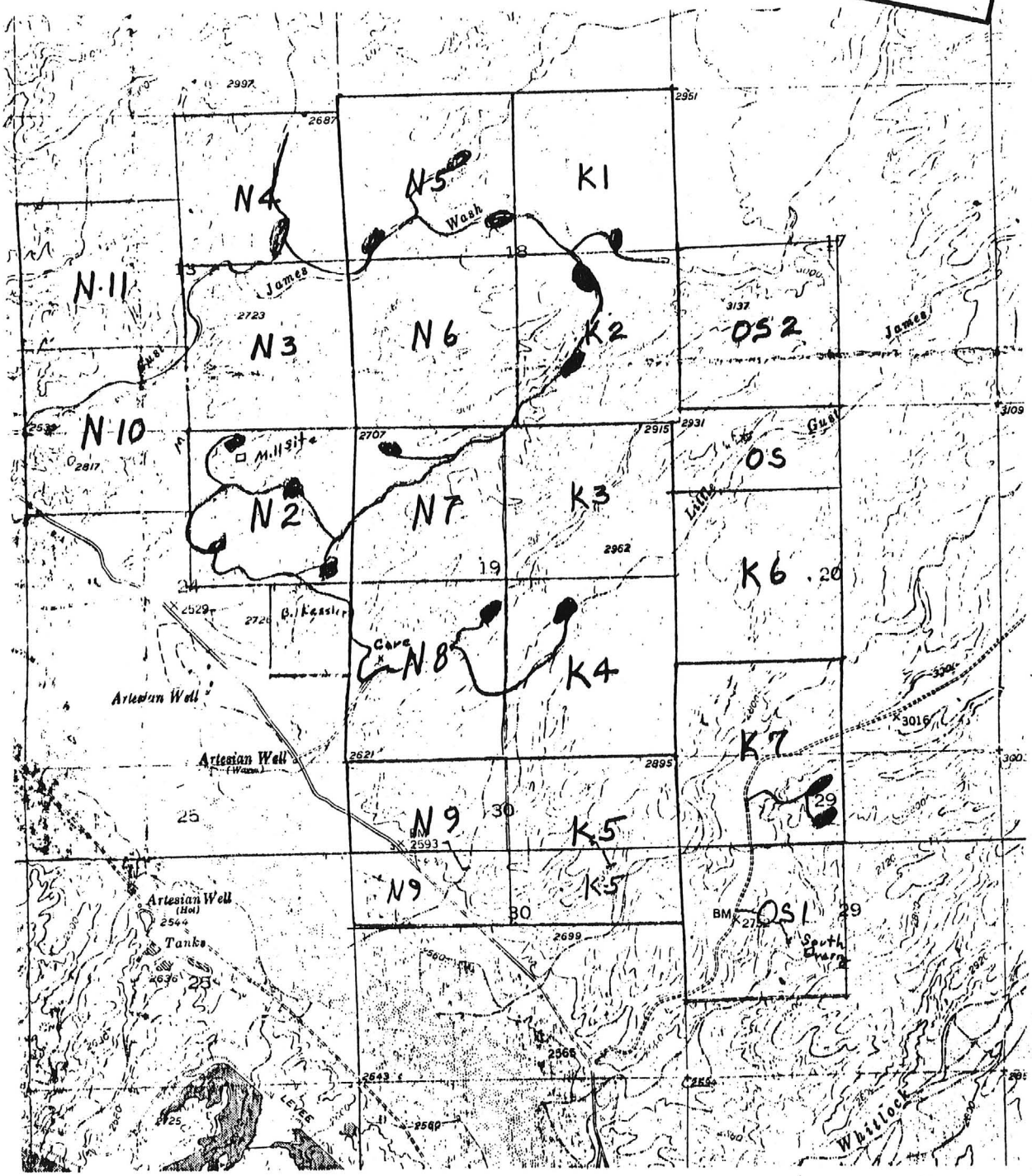
in and For the

UNIVERSITY OF ARIZONA

and Leased to

MAMMOTH MINING & MINERALS, INC.,

an Arizona Corporation



NOTE: All of the above 20 placer claims cover 3,120 acres, more or less. These claims are sometimes referred to as WHITE CLIFFS CLAIMS.

STATE OF ARIZONA
COUNTY OF PINAL } ss.

I hereby certify that the within instrument was filed for record in Pinal County, State of Arizona.

No.: 573061

Date: 31 AUG 1977 1250

Notice of Mining Location
PLACER CLAIM

TO ALL WHOM IT MAY CONCERN:

This Placer Mining Claim, the name of which is the NUEZ #2

Place Mining Claim, situate on lands belonging to the United State of America, and being a form of valuable mineral deposit other than in veins or lodes of quartz or other rock in place, was entered upon and located for the purpose of exploration and purchase by THE ARIZONA BOARD OF REGENTS FOR THE benefit of the UNIVERSITY OF ARIZONA

(Locator must insert either "a citizen of the United States" or "who has declared his intention to become a citizen of the United States")

the undersigned, on the 30th day of August, 19 77

claim 160 acres thereof, and have marked the same on the ground as follows: THAT PART OF SECTION 24, TOWNSHIP 9 SOUTH, RANGE 17 EAST of the G.S.R.B.&M.,

BEGINNING at a monument of stone at the ¼ section corner on the East side line of Section 24, where this notice is posted, which is the true point of beginning; thence West 2,640 feet, more or less, along the ¼ section line to a marker at the center of Section 24; thence North 2,640 feet, more or less, along the ¼ section line to a marker at the ¼ section corner; thence East 2,640 feet, more or less, along the section line to a marker at the NE corner of Section 24; thence South 2,640 feet, more or less, along the section line to the true point of beginning, enclosing approximately 160 acres, more or less, and being the NE ¼ of Section 24.

STATE OF ARIZONA — COUNTY OF PINAL — OFFICIAL SEAL — PINAL COUNTY RECORDER — FLORENCE ARIZONA

all in MAMMOTH MINING DISTRICT, in the County of Pinal, in the State of Arizona.

This is a corrected and/or amended location notice of the NUEZ #2 placer mining claim previously recorded which is now made and posted to correct and/ or amend any and all errors that might exist or have existed. All of the undersigned signers are authorized agents of the University of Arizona.

All done under the provisions of Chapter Six of Title XXXII, of the Revised Statutes of the United States [30 U.S.C.A. §21 et. seq.] and the laws of the State of Arizona.

Dated and posted on the ground this 30th day of August, 19 77

/Sherwood E. Carr — /Jerry Dean Reeves
/Roger W. Murphy — /Harry A. Rutherford
/Hollis T. Lucas — /Edward J. Mihalik
/Floyd A. Swenson — /Charles D. Adams

STATE OF ARIZONA, County of Pinal — ss.

I hereby certify that the within instrument was filed and recorded 31 AUG 1977 1250 19 at M.

In Docket No. DKT 880 PAGE 462, at the request of Mammoth Mining & Minerals, Inc.

Witness my hand and official seal.

WILLIAM S. TRUMAN
County Recorder

By Anne S. Mabery
Deputy Recorder

Fee No.: 573041 INDEXED

Indexed:

Compared:

Photostated:

Fee: $ 2.00

I. R. S.: $

When recorded mail to:

EXHIBIT "A"

Mining Claims Owned By
The BOARD OF REGENTS OF THE STATE OF ARIZONA
in and For the
UNIVERSITY OF ARIZONA
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EXHIBIT "B"

Mining Claims Owned By
The BOARD OF REGENTS OF THE STATE OF ARIZONA
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OVERSITE " " "	880	479
OVERSITE No. 1 " " "	880	480
OVERSITE No. 2 " " "	880	481

NOTE: All of the above 20 placer claims cover 3,120 acres, more or less. These claims are sometimes referred to as WHITE CLIFFS CLAIMS.

STOCK SALE AND PURCHASE AGREEMENT
AND
COLLECTION INSTRUCTIONS

THIS AGREEMENT made and entered into this ~~XXXXX~~ 29th day of ~~XXXXXXXXX~~ August, 19 ~~XX~~, by and between HENRY FARABEE and WANDA FARABEE, Husband and Wife, hereinafter referred to as SELLERS; and

and , Husband and Wife, hereinafter referred to as BUYERS;

WHEREAS, BUYERS are desirious of purchasing stock in Mammoth Mining & Minerals, Inc., an Arizona Corporation, from SELLERS, and

WHEREAS, SELLERS are desirious of selling the number of shares of stock in Mammoth Mining & Minerals, Inc., to BUYERS under the terms and conditions set forth in this Agreement, and

WHEREAS, BUYERS are of legal age and BUYERS represent that they have knowledge and experience in financial business matters and that they are able to evaluate the risk of the sale and purchase of these shares and that they are persons who are able to bear the risk of such an investment,

BUYERS further represent that they are qualified to make such an investment or have consulted with "qualified representatives" of their choice,

NOW, THEREFORE, in consideration of the mutual covenants, agreements and warranties contained herein, it is agreed as follows:

REPRESENTATIONS AND WARRANTIES

A. SELLERS represent and warrant that the Board of Regents of the State of Arizona in and for the University of Arizona (hereinafter referred to as U. of A.) is the Owner and Lessor and Mammoth Mining & Minerals, Inc., an Arizona Corporation (hereinafter referred to as MMM) is the Lessee with full possessory rights of those mining claims listed in Exhibits "A" and "B" attached hereto and by reference made a part hereof which is the major assot of MMM which substantiates the value of the common capital voting stock of MMM being sold by SELLERS to BUYERS herein under this Agreement.

B. SELLERS further represent and warrant that there are no liens, encumbrances or adverse claims to any of the claims listed in Exhibits "A" and "B" that said claims have been properly located, perfected and recorded according to the laws of the State of Arizona and the United

(Continued - Page No. 2)

B. (Continued); States of America and that all assessment work has been done by the SELLERS for the benefit of the Owner of the claims and the Lessee of the claims which is MMM.

C. SELLERS further represent and warrant that one of the SELLERS, Henry Farabee and/or Henry Farabee (dba) AZO Mined Products Co., Inc., performed annual assessment work and recorded as follows:

1. September 25, 1975 in Docket 797, Pages 892, 893 and 894.
2. August 26, 1976 in Docket 835, Pages 31, 32, 33, and 34.
3. August 12, 1977 in Docket 378, Pages 231, 232, 233, and 234.

and said assessment work and/or labor performed and improvements made as set forth above were for the sole benefit of the U. of A. as Owner and Lessor and MMM as Lessee with full possessory rights.

D. SELLERS further represent and warrant that the shares of stock being sold are free and clear of any and all liens, either directly or indirectly.

E. SELLERS further represent and warrant that the stock certificates as dated are in error and should be corrected to read "December 7, 1975" in accordance with the Minutes of the Board of Directors of MMM and agreements relating thereto.

F. SELLERS further represent and warrant that they have obtained the shares of stock in MMM being purchased herein, plus other shares of stock, by executing an Assignment to MMM of their rights in that certain Mining Lease with the U. of A. dated August 26, 1975 and recorded in Docket 801, Pages 522 through 527 covering the mining claims listed in the attached Exhibits "A" and "B" in exchange for common capital voting stock of MMM as evidenced by the stock certificates and one, certificate No. 31, in the amount of 10,000 shares, is being sold to the BUYERS, herein.

Whitecliffs Mine Pinal County

Jon Shenk, a geology consultant, reported he has been recently contacted regarding the Whitecliffs diatomite mine in Pinal County. He said the property is held by a group of 20 association placer claims, the Diatom 1 thru 20. These claims were located in the Spring of 2000 after the previous claims became void for lack of payment of rental fees. The claims are by an association of locators headed by Ward Seibert of Kantor Oil Company. Mr. Shenk explained that Ward Seibert is the primary individual in Kantor Oil, 15 W. 6th Street, # 2601 Tulsa Oklahoma, phone (918) 583-6412. Kantor Oil was a major investor in Cerad Resources of Tulsa. Cerad Resources assembled Adit Canyon LLC, with Don Wilson to operate the diatomite mine in the late 1990s. He did provide any speculation as to the reasons for the demise of Adit Canyon LLC. Jon Shenk wrote his University of Arizona Master's thesis on the diatomite property. It is Shenk, J. D., circa 1986, *Economic Geology of the White Cliffs Diatomite Deposit, Mammoth, Arizona.* He promised to get us a copy for our files. Jon Shenk explained that he currently does not have a home or office and is best contacted by email. His email address is shenkjd@yahoo.com. (Ken A. Phillips, 03/18/2002)

The ADMMR file "I:\COUNTIES\IMRSRV\IMRSRV.DOC" was updated with three different reserve figures for the Whitecliffs diatomite deposit. The numbers from the table are below: (Ken A. Phillips, 03/18/2002)

Commodity	Tons	Grade	Property/ ADMMR file	County Azmils	Info. date	Comments
Diatomite	>2,000,000		Whitecliffs	Pinal 561	1961	Colorado School of Mines Research Foundation report in ADMMR Arizite {Diatomaceous Earth} (Mieritz file)
Diatomite	>100,000,000		Whitecliffs	Pinal 561	3/10/ 1941	ADMMR Field Engineer's report by Miles Carpenter in ADMMR Whitecliffs mine file.
Diatomite	>300,000,000		Whitecliffs	Pinal 561	UNK	Report in the ADMMR Whitecliffs, Pinal Co. file. No date and No author.

RU

Whitecliff Mine file

7400 N. Oracle Road, Suite 371
Tucson, Arizona 85704
(602) 797-0990
FAX (602) 297-6394

October 12, 1989

Mr. Ken Phillips
AZ Department of Mine & Mineral Resources
Mineral Building Fairgrounds
Phoenix, AZ 85077

Dear Ken:

As per your request, brochures and technical data sheets regarding Whitecliff diatomaceous earth are enclosed.

If you have any questions concerning the above information or if you need additional material, please feel free to contact me.

Thank you for your time and consideration.

Sincerely,
WHITECLIFF INDUSTRIES, INC.

Peter Forsyth
General Manager

djm

enc.

WHITECLIFF

DIATOMACEOUS EARTH PRODUCTS

diatom (di'a tam, -tom'), n. any of numerous microscopic unicellular marine or freshwater algae having siliceous cell walls. [<NL Diatom (a) name of the genus< GK diatom (os) cut in two. See DIA-, -TOME]

di'atoma'ceous earth', a fine siliceous earth composed chiefly of the cell walls of diatoms: used in filtration, as an abrasive, etc. Also called di-at-o-mite (di at' a mit'), Kieselguhr

Quarry Preparation: Whitecliff selectively mines the Whitecliff Diatomite deposit, offering some of the purest Diatomite products on the market today.

Processing: Through Whitecliff's efficient air separation process, all products are guaranteed to meet your particular physical property analysis.

Packaging: Whitecliff can fill your diatomaceous earth packaging needs by offering either bulk or bag shipments.

Shipping: Our Diatomite can be shipped by over the road trucks, piggy-back, bulk box car, pressure differential rail cars, or gravity feed hoppers. Whitecliff also offers containerized shipments overseas.

General Physical Analysis: Milled, Dried, Air Classified, Natural Freshwater Diatomaceous Earth. Amorphous form of silica, essentially Silicon Dioxide.

Moisture: Maximum - 5.0% Wet Screen Analysis: 5.0% on 325 Mesh Screen
Color: Off White/Cream Brightness: Minimum 70 (G.E.)

Typical Particle Size Distribution (ASTM-422-63)%	μ	0-2	2-6	6-10	10-20	20-40	+40
Typical Mediam Particle Diameter 3.2 μ	%	39	39	11	7	3	1

Refractive Index: 1.46 Apparent Density: (lbs./cu.ft) Loose Weight: 8.0 pH 10% Slurry 7.5-9.5

Some of the many applications of Whitecliff Diatomite Fillers:

- Acetylene Tank Filler
- Acids, Sulfuric/Phosphoric
- Ammonium Nitrate Prills
- Anti-Caking Agent
- Artificial Stone
- Asphalt Surfacing
- Ceramics
- Crayons
- Concrete
- Dental Impressions
- Drilling Mud
- Felt Backing In Vinyl Floors
- Glass
- Insecticide Carriers
- Insulation
- Match Heads
- Paints
- Paper
- Plastics
- Polishes
- Pozzolan
- Putty
- Rubber
- Welding Rod Coatings

Come join us and be one of the growing number of companies who have turned to Whitecliff to supply their diatomaceous earth needs.

Whitecliff Industries, Inc. • 7400 N Oracle, Suite 371 • Tucson, AZ 85704 • (602) 797-0990 • Fax (602) 297-6394

WHITECLIFF

INDUSTRIES INC.

TECHNICAL DATA

W H I T E C L I F F D I A T O M I T E F I L L E R

F - 1 0

Moisture %	± 5
Color	Off-White
Tristimulus Reflectance (MgO=100)	70
Specific Gravity	1.96 - 2.09
Refractive Index	1.44
Bulking Value (lbs./gal.)	16.8
Apparent Density, average (loose wt. lbs./cu.ft)	8 - 10
Wet Screen Analysis, maximum (325 mesh)	5 - 10%
pH (10% slurry)	6.5 - 8.5
Gardner Coleman Oil Absorption	100 - 120
Typical Median Particle Diameter (in microns)	3.5

All the above specifications are designed to give you approximate information about our natural diatomite. If you should require specific test procedures on coded material, please contact our customer service representatives at (602) 797-0990.

7400 N. Oracle Road, Suite 371
Tucson, Arizona 85704

WHITECLIFF

INDUSTRIES INC.

TECHNICAL DATA

W H I T E C L I F F D I A T O M I T E F I L L E R

P - 8 0

Moisture %	± 5
Tristimulus Reflectance (MgO=100)	80
Specific Gravity	2.0
Refractive Index	1.44
Bulking Value (lbs./gal.)	16.8
Median Particle Diameter	1.5 - 2.5
Average Gardner Coleman Oil Absorption (ASTM-D-281-84)	120
Average Loose Weight Density (lbs./cu.ft.)	6.5
Retained on 325 mesh sieve % (maximum)	2
pH 10% Water Slurry	7.5 - 8.5
Hegman Grind	1 - 2
Crystalline Silica (Cristobalite %)	0.13
(Tridymite %)	0.1

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Tucson, Arizona 85704

WHITECLIFF

INDUSTRIES INC.

TECHNICAL DATA

W H I T E C L I F F D I A T O M I T E F I L L E R

F - 8

Moisture %	± 5
Color	Off-White
Tristimulus Reflectance (MgO=100)	75
Specific Gravity	1.96 - 2.09
Refractive Index	1.44
Bulking Value (lbs./gal.)	16.8
Apparent Density, average (loose wt. lbs./cu.ft.)	7.0
Wet Screen Analysis, maximum (325 mesh)	4%
pH (10% slurry)	6.5 - 8.5
Oil Absorption (Gardner Coleman Method)	100 - 120
Typical Median Particle Diameter (in microns)	2.0

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7400 N. Oracle Road, Suite 371
Tucson, Arizona 85704

ADITE PROVEN PRODUCTS

DRY WALL SPRAY TEXTURE PAINT . . .
CONCRETE BLOCK PRIMER-FILLER . . .

QUALITY AT LOWEST COST FOR MOST PROFIT!

DEALERS ONLY: **$1.49** PER BAG (25 LBS.)*

GREATER COVERAGE!

LONG POT LIFE!

NO FUMES!

NO ODORS!

DRIES WHITE!

PAINT GOES FARTHER!

HOLDS OUT ENAMELS!

ADITE Spray Texture Paint

THE PROVEN DRY WALL SPRAY TEXTURE PAINT . MIXES EASY, APPLY WITH SPRAY, BRUSH OR ROLLER.

DELIVERED* . . . $5.96 PER 100 LBS. PACKED 25 LB. BAGS

ADITE Blok-Fill

THE TESTED CONCRETE BLOCK FILLER AND PRIMER. EXCELLENT PAINT BASE. TREMENDOUS COVERAGE!

DELIVERED* . . . $5.96 PER 100 LBS. PACKED 25 LB. BAGS

*PHOENIX . . . TUCSON . . . YUMA AREAS. 5 TON LOTS. DEALERS ONLY

ADITE CHEMICAL PRODUCTS

2600 EAST THOMAS RD. CRestwood 9-9221 PHOENIX, ARIZONA

AMERICAN DIATOMES, INC.

ENGINEERING DATA
Price Sheet No. 104
August 1, 1961
Supersedes sheet dated 6/19/61

PRODUCT: DIATOMITE	PER TON CAR LOTS F.O.B. Hayden, Ariz.	PER TON TRUCK LOTS F.O.B. * Refinery	PER TON LCL-LTL F.O.B. * Refinery
"ARI-LITE 98" 50# bag 98% minus 325 mesh	22.90	20.90	57.00
"ARI-LITE 75" 50# bag 75% minus 325 mesh	20.90	18.90	48.00
"ARI-LUMP" 50# bag minus 1" mesh	18.90	16.90	20.10
"ARI-GRAN" 50# bag 1/4"granular	20.90	18.90	48.00
"ARI-POZ" 50# bag Pozzolan grade Diatomite 75% minus 325 mesh	20.90	18.90	48.00
"ARI-POZ" bulk Pozzolan grade Diatomite 75% minus 325 mesh	-	13.30	-

Terms: Net 10 days
* Refinery located 8 miles South of Mammoth, Arizona, on River Road

Delivery bagged trucklots,
Phoenix, Tucson areas: Add $8.00 per ton to Refinery price

December 23, 1942

H.

Mr. James M. Layman
Gates Hotel
Los Angeles, California

Dear Mr. Layman:

During my absence from the office I understand that you made an inquiry from Mr. Charles F. Willis regarding the Arizite Products Corporation. There has been certain changes in this organization which have not come to the attention of Mr. Willis. I am writing this to advise you that you can get full information by writing to Mrs. Mary S. Moore, Secretary-Treasurer, P. O. Box 2148, Tucson, Arizona.

Very truly yours,

J. S. Coupal
Director

JSC:kk

cc - Mrs. Mary S. Moore
P. O. Box 2148
Tucson, Arizona

Telephone 6054

ARIZITE PRODUCTS CORPORATION

~~Valley National Building~~
TUCSON - ARIZONA
P. O. Box 2148.
Producers and Refiners of Diatomaceous Products

DEPT. MINERAL RESOURCES
RECEIVED
DEC 14 1942
PHOENIX, ARIZONA

Dec. 12, 1942.

Mr. J. S. Coupal, Director,
Department of Mineral Resources,
413 Home Builders Building,
Phoenix, Arizona.

Dear Mr. Coupal:-

Thanks very much for your letter of December 5th, enclosing the report from Mr. Broadgate in Washington, which of course, we will only use in a confidential manner.

As soon as we are able to prepare the samples, we will follow his suggestion and forward them to the proper party.

Thanking you for your assistance and interest, we are,

Yours very truly,

Mary S. Moore

(Mrs.) Mary S. Moore,
Secy-Treas.

Ref.
James M. Layman
Grates Hill
La

December 5,1942.

Mrs. Mary S. Moore
P O Box 2148
Tucson.

SUBJECT: Arizite Products Co. Diatomaceous Earth.

Dear Mrs. Moore:-

I am enclosing a memorandum received from our Washington man on the subject of diatomaceous earth.

This memo is of a confidential nature but due to your investment and interest I feel as though you are entitled to the memo as received and that you will use it as a confidential ~~xxx~~ statement and as a guide to you in your plans. If such information as this is not used with considerable discretion you can see where our souce of such information might possibly be closed.

I am returning the analyses you submitted.

If samples could be submitted as suggested and agreements or contracts made to supply some of the demands it might then be possible to consider submitting an application for a loan. I agree with Mr. Broadgate that it is a problem. To justify the granting or considering a loan you must first show the RFC that you have a market.

I hope this information will be of value to you. We will gladly assist in any way we can but it seems as though you must first establish a firm market and then apply for a loan so as to supply that market. This may be rather difficult under the conditions Mr. Broadgate has mentioned but I think he has outlined for you a starting point.

With best wishes and kindest regards,

Very truly yours,

J. S. Coupal.

Washington, D.C.
Dec. 3, 1942

SUBJECT: Diatomaceous earth

I am returning herewith the reports on the Arizite deposit.

Unfortunately, the situation is this; production and consumption are nearly balancing, with Johns Manville producing about 100% of this material now in use.

Even the WPB does not know the prices on this material as it is so much a monopoly that the Bureau of Mines beleives that if it made the figures available it would be violating one of its strictest rules... not giving out figures for individual operations.

There is one condition under which such a property might get into production, and the reports do not indicate if this is possible ~~here~~, although it looks feasible.

The important product is a compact material which can be sawed into fire-brick-sized blocks, which as I remember it are something like 2½" x 5 or 7" by 9". The blocks are sawed on the property and packed in individual containers of cardboard or paper to preserve the edges and shipped to the consumer that way. The scrap is ground and sold as fines, the blocks carrying the operation.

Johns Manville is several months behind on block deliveries and the WPB would be interested in having another property as a back-log if this fire-brick could be produced. With such a condition, it might be possible to get a recommendation to the RFC for help. I am sure that no application would be acceptable without WPB OK, and perhaps not even then as the materials are not strategic or critical, and the situation is not tight.

If it looks as though they could produce such blocks (which require a mill) they might try and cut some out with a saw and send one or two well packed to A.F.Greaves-Walker, Room 1225, Tempo R, Miscellaneous Minerals Branch, War Production Board, and ask him if the quality is OK and tell him what they could produce in quantity. Most known deposits are good only for fines.

Arizite could write to the Army Procurement, Navy Procurement and Treasury Procurement Divisions in Washington and ask them which of their sub-contractors use this material. Oil refineries are a market, as is the DuPont Company. The Mining Division of the Los Angeles Chamber of Commerce would be the best source of information as to outlets on the Coast.

I believe the reason for the small amount of available information on diatomite is the Johns-Manville monopoly.

If there is any further information I might try and get for you, let me know.... this is all the WPB seems to know.

Bill Broadgate

December 1, 1942

H.

MEMORANDUM

DIATOMACEOUS EARTH
MISCELLANEOUS MINERALS BRANCH
WAR PRODUCTION BOARD

TO: W. C. Broadgate

FROM: J. S. Coupal

I have just had a call from Mr. F. P. Dabolt and Mrs. Mary S. Moore of the Arizite Products Corporation, which corporation owns the Diatomaceous Earth deposit in the Old Hat mining district, Pinal County, Arizona, and also the mill at Mammoth for treating this material.

They have asked the Department to find out from Washington just what the conditions are regarding the market for diatomaceous earth and what steps should be taken to make application for an RFC loan to get this property into production. I am enclosing a report by our former field engineer, Miles Carpenter, together with photographs of the property and reports by the California Testing Laboratories and a report on the Thermal Conductivity.

You may not need all of this information but I thought that it might be advisable for you to look it over before going to the Miscellaneous Minerals Branch so as to be informed as to just what the property consisted of.

The Arizite Products Corporation would like to know what minerals are available, the prices paid for the various products, specifications of the products required and what steps should be taken to make application for RFC help.

Please return the enclosed information as soon as you are through with it.

Arizona

December 1, 1942

H

Mrs. Mary S. Moore
P. O. Box 2148
Tucson, Arizona

My dear Mrs. Moore:

I wish to acknowledge your letter of November 29 with the reports by the California Testing Laboratories and the report on Thermal Conductivity.

I am forwarding this information together with the engineer's report and the photographs to W. C. Broadgate in Washington, and will advise you as soon as we hear from him.

With best wishes, I am

Very truly yours

J. S. Coupal, Director

JSC:BA

Telephone 6054

ARIZITE PRODUCTS CORPORATION

Valley National Building
TUCSON - ARIZONA
P. O. Box 2148.

Producers and Refiners of Diatomaceous Products

November 29, 1942.

Mr. J. S. Coupal,
Dept. of Mineral Resources,
128 North First Avenue,
Phoenix, Arizona.

Dear Mr. Coupal:-

Mr. Dabolt and I want to thank you for your courtesy and friendly interest during our interview yesterday.

We are enclosing herewith copy of the reports of the California Testing Laboratories on the crude material and the two grades of milled product, AX-10 and AX20, both of which are 200 mesh minus. The Bag House product is 325 mesh minus, but we have not produced a sufficient quantity of that for sales, and have not has an analysis made of it.

We are also enclosing copy of a report on Thermal Conductivity made by Frank B. Rowley of the University of Minnesota.

Trusting that this information will be of value in establishing a use for our material, we are,

Yours very truly,

Mary S. Moore

Mary S. Moore, Secy-Treas.

Telephone 6054

ARIZITE PRODUCTS CORPORATION

Valley National Building
TUCSON - ARIZONA
P. O. Box 2148.

Producers and Refiners of Diatomaceous Products

November 25, 1942.

Mr. Coupal,
Dept. of Mineral Resources,
Phoenix, Arizona.

Dear Mr. Coupal:-

In talking with Mr. Bascom of the W.P.B. in Tucson, relative to financial assistance for the production of diatomaceous earth, he suggested that we take the matter up with you, as such matters were handled through you and your office.

If it is not an unreasonable request, realizing that you are necessarily absent from your office a great deal, we would greatly appreciate your advising us when you again expect to be in Tucson. We are most desirous of doing all we can in this Defense Work and since we understand diatomaceous earth is being used in great quantities by the government, we would like to talk to you relative to the proper methods to pursue.

Thanking you in advance for your consideration of this matter, and awaiting your reply, we are,

Yours very truly,

F. P. Dabolt, Pres.

616 East Speedway,
Phone 5958.

May 26, 1942

MEMORANDUM

ARIZITE MINE

CONFIDENTIAL

To:- Director, Dept. Mineral Resources

From:- George A. Ballam

The Arizite mine, 10 miles south of Mammoth, together with the mill in Mammoth, have been purchased by a company, two of the members of which are H. Weir Hess and Roy N. Baird of Oracle. This deal has just been made, and power was connected at the mill this week, the old transformers having been wrecked by lightning.

The utmost secrecy surrounds this transaction at present. The company is preparing to market a diatomaceous earth, but request strict confidence regarding the meager information given.

George A Ballam

18 March 1941

Mr. Marion G. Staley,
Oracle,
Arizona.

My dear Mr. Staley:

I am enclosing herewith a copy of Field Engineers Report on the ARIZITE DEPOSIT in the Old Hat Mining District, Pinal County, Arizona, as prepared by our field engineer, Mr. Miles M. Carpenter.

I trust that this report will be of assistance to you.

With best wishes, I am

Yours very truly,

J. S. Coupal
Director

JSC-jrf
encl.

COPY CONFIDENTIAL MEMO[illegible]DI

March 13, 1941.

TO: The Director
FROM: Field Engineer, Southern District
SUBJECT: Arizite Products Corporation

With reference to the enclosed report of three pages let me explain that this was prepared under a constant stream of interruptions and is not as complete as I should like it to be. Particularly, I did not include list of the equipment at the mill except as named in the flow sheet.

The following appraisals were furnished by the Tucson office:

Mill Site 10 acres of highway	$ 2,500
Mill Building	10,400
Machinery	30,000
Office and equipment	466
Mining equipment and bin	1,500
Automobile Nash '40 and Pickup, Chevrolet '39	1,500

I was not furnished any detailed plans for putting the material on the market and as stated in my report that is the essential feature of this undertaking.

I was furnished a list of uses which is enclosed and in addition I understand that the material can be waterproofed and used as a heat insulating roofing. It has sound proofing qualities and was used by the Tucson Gas & Electric Company to muffle the exhaust of their 3500 HP Diesel engine. Undoubtedly there is an almost unlimited field for expansion.

However, I simply do not know what the trouble is. They have raised much more money than originally intended and still are not going. I must tell you that I have talked with one man who is in the diatomaceous earth business in California who has seen this project and he told me frankly that they would never make a dollar on the plan they are following. I gathered that the equipment they have installed is not right to make marketable material. This information may or may not be accurate and unbiased but I feel that it should be checked.

My original information on this matter from Mr. Staley was to the effect that the report was wanted to close a bulk sale of stock to a group of three men in the east. Later on I have heard remarks that indicate a public offering is to be made and it is likely that the reports of this Department will be the chief ammunition. Hence, I am loathe to make statements of any points on which I am uninformed or doubtful.

I presume that the Corporation Commission will look into the records of people applying for permits to sell stock, and will use their findings in considering the merits of the offering. I know nothing of any of the parties concerned except Mr. Staley, and his promotion of the Dragoon Tungsten Corporation could not be considered a favorable recommendation.

Miles M. Carpenter.

P.S. This same property was incorporated as the "ARIZONA KAOLIN COMPANY" back about 1905 by Charlie Udall and taken to New York for flotation. I doubt is any stock was sold.

MMC

Phoenix, Arizona

March 4, 1941

M E M O R A N D U M

TO: Miles M. Carpenter

FROM: J. S. Coupal

SUBJECT: Report on Arizite Mine.

I am enclosing a copy of a letter just received from the Corporation Commission.

Please arrange to see Mr. Staley at your earliest convenience and go to the property, and with Staley's assistance prepare a report along the lines suggested by Mr. Peterson's letter.

J. S. Coupal

Enc.

Tucson, Arizona 4 March, 1941

M E M O R A N D U M

TO: J. S. Coupal, Director

FROM: Field Engineer, Southern District

SUBJECT: Arizite Appraisal

Last week Mr. M. G. Staley of the Arizite Company told me of his plans for financing and stated that he wanted an estimate of tonnage and value of the diatomaceous earth deposit. I told him that I had never made this type of report as field engineer for the Dept. of Mineral Resources and did not know what your reaction would be to his request.

He stated that he would go to Phoenix and contact you. Upon his return he asked me if I had received instructions from you that you were going to send me to do the job. I had told him that I could not move in the matter without instructions from you.

This morning Mr. Dabolt called to inquire if I had received instructions and previously Mrs. Moore called by with the same question. Will you kindly give me instructions in this matter. I understand Mr. Staley has already gone back east and they are waiting for this report.

I have had no experience with diatomaceous earth and do not feel much like an "expert", but if you wish me to undertake the job and give me instructions as to how you want the job done, I will do my best to comply.

Miles M. Carpenter

DIATOMACEOUS EARTH

ARIZITE
Pinal Co.

F. P. Dabolt
P. O. Box 2148
Tucson, Arizona

Eng. report by M.M. Carpenter 3-10-41