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ARIZONA DEPARTMENT OF MINES AND MINERAL RESOURCES AZMILS DATA

PRIMARY NAME: YELLOW FLOWER

ALTERNATE NAMES:

STAR STONE
BRACKEN CLAIMS

MARICOPA COUNTY MILS NUMBER: 179

LOCATION: TOWNSHIP 5 N RANGE 10 W SECTION 15 QUARTER E2
LATITUDE: N 33DEG 46MIN 28SEC LONGITUDE: W 113DEG 16MIN 54SEC
TOPO MAP NAME: HARQUAHALA MOUNTAIN - 7.5 MIN

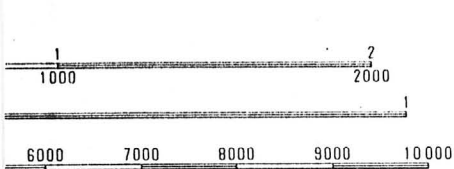
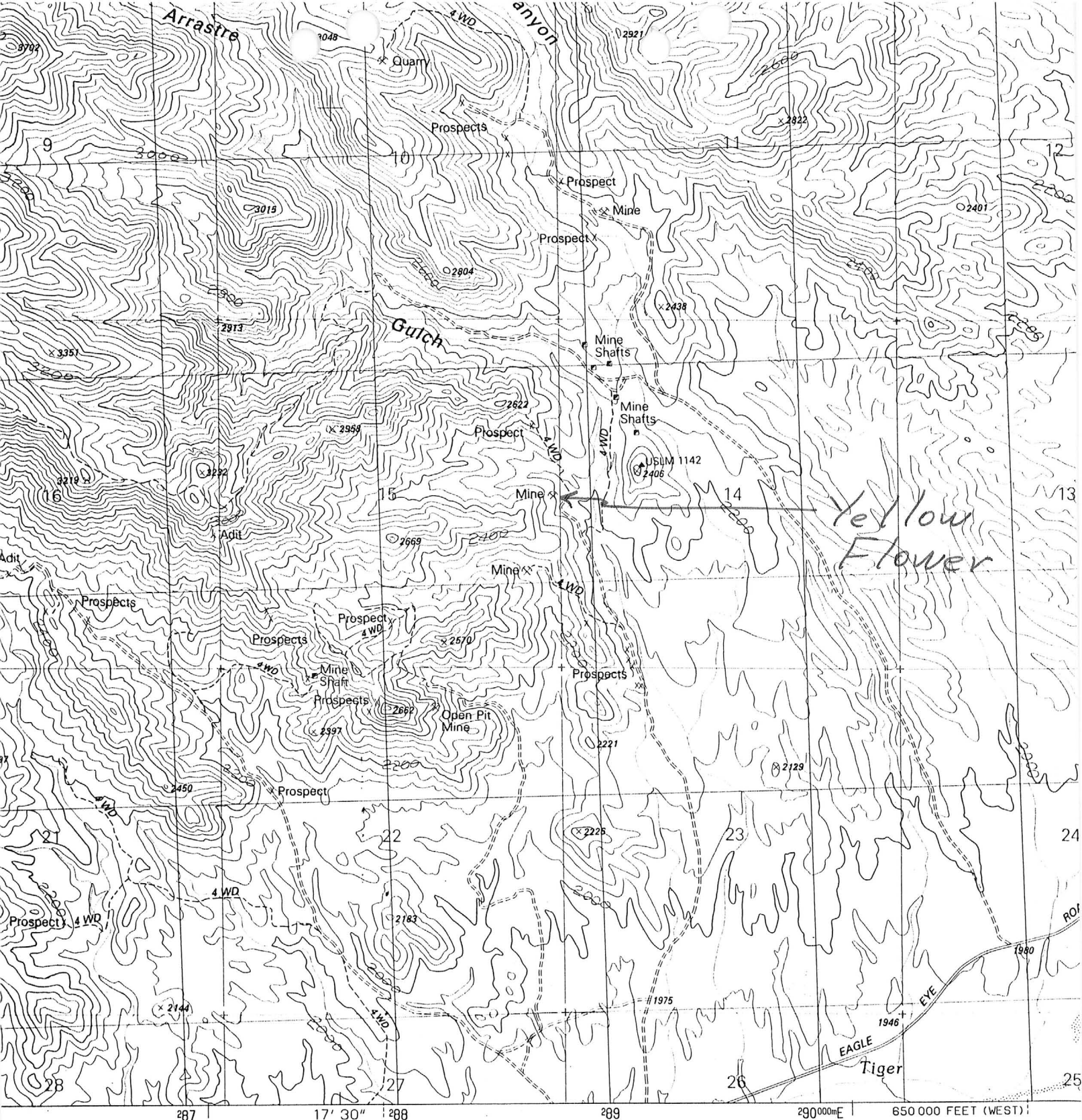
CURRENT STATUS: PAST PRODUCER

COMMODITY:

TALC DIOPSIDE
TALC TREMOLITE
MAGNESIUM DIOPSIDE
CALCIUM CALCITE

BIBLIOGRAPHY:

ADMMR YELLOW FLOWER FILE



by 3048
by 32808

ACCURACY STANDARDS
DENVER, COLORADO 80225
22092



QUADRANGLE LOCATION

1	2	3	1 Webber Canyon
			2 Gladden
			3 Aguila
4		5	4 Socorro Peak
			5 Tiger Well
			6 Socorro Mine
6	7	8	7 Weldon Hill
			8 Little Horn Peak

ROAD LEGEND

Improved Road
Unimproved Road
Trail
○ Interstate Route ○ U.S. Route ○ State Route

YARQUAHALA MOUNTAIN,
PROVISIONAL EDITION 19

VIS9.YEL

ARIZONA DEPARTMENT OF MINES AND MINERAL RESOURCES

VERBAL INFORMATION SUMMARY

1. Information from: Ted Eyde, GSA Resources
2. Address: P. O. Box 509, Cortaro, Arizona 85652
3. Phone: 297-4330
4. Mine or property name: Yellow Flower Diopside Mine
5. ADMMR Mine file: Yellow Flower
6. County: Maricopa
7. MILS number: 179
8. Operational Status:
9. Summary of information received, comments, etc.:

Ted Eyde reports he and his son Dan own the claims covering the above property. They are investigating use of the diopside in ceramics.

At one time they held the property together with Harrison E. Matson. As the claim had lapsed, the Eydes relocated the ground. Mr. Matson was working for the ADMMR and couldn't participate.

Date: July 10, 1990

Ken A. Phillips 



QUADRANGLE LOCATION

ROAD LEGEND

Improved Road
Unimproved Road
Trail

○ Interstate Route ○ U.S. Route ○ St.

1	2	3	1 Webber Canyon
			2 Gladden
			3 Aguila
4		5	4 Socorro Peak
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Date: July 10, 1990

Ken A. Phillips 

DEPARTMENT OF MINERAL RESOURCES

STATE OF ARIZONA
FIELD ENGINEERS REPORT

Mine YELLOW FLOWER MINE
Bracken Marble Claims

Date January 5, 1962

District Harquahala District, Yuma Co.

Engineer LEWIS A. SMITH

Subject: Interview with Mrs. Flip Evans.

Mrs. Evans stated that Mr. Bracken owned several marble claims on the south slope of the Harquahala mountains.

Owner: Mr. J.R. Bracken, 518 S. Grandview, Apt. 18A, Los Angeles, California.

Letter 1-10-62 fos.

Mrs. Robert J. Bracken, Box 11, Aguila and 3518 N. 2nd Ave., Phoenix 13, states they ship through the U. S. Marble Corporation but operate their own property, now called Yellow Flower (formerly called Star Stone). Property is located in ~~Maricopa~~ ^{Copé} County not far from the Snowball fluorspar property. At present shipping 600 tons of marble per month. 4 to 5 men working this and adjoining claims. 2-18-63 LPare from office interview with Mrs. Bracken.

Interview with Harry Mick 4-11-63

Mr. Mick said that Bracken recently had shipped several carloads of white material that was being used to glaze pottery. He did not know the character of the material. Of late, the demand had slackened somewhat. Hans Christofferson of ~~Wenden~~ ^{Aguila} has been doing the mining.

MEMO LEWIS A. SMITH 4-11-63

Interview with Andrew Anderson, General Work Foreman for U. S. Marble Co., Mill.

According to Andrew Anderson, Alton Powell is mining diopside for the Brackens for shipment to a glass company in San Diego, California. This material is used to produce opalescent glass, that is quite expensive. 120 tons were shipped recently, after a slow-down for a month. Diopside is $\text{Ca Mg} (\text{SiO}_3)_2$, (a calcium-magnesium-pyroxene) and it contains, when pure, 55.6 percent silican, 25.9 percent lime, and 18.5 percent magnesia. This diopside material is off-white-colored and massive.

Anderson said that he occasionally mines some buff marble from one of the Bracken claims for terrazzo to compliment his colors.

J. (Jake) Canion, of Wenden contracts the haul to Aguila, where the material is placed in R.R. cars. The freight is about \$5.25, by rail, to San Diego.

MEMO LEWIS A. SMITH 6/7/63

Active 10/63 - 3 three men.

YELLOW FLOWER

(BRACKEN CLAIMS)

YUMA COUNTY
ELLSWORTH DIST.

Mr. Peterson said that Wm. Jackson, trucking contractor for U. S. Marble Corp., had taken over the diopside mining for Bracken. 4 cars shipped during December and January by Alton Powell proved dirty and while they were accepted, a protest was lodged. Jackson will ship two cars during February and will continue if the two cars prove satisfactory. Peterson stated that 200 tons of "buff" marble had been mined since January 1st from the Bracken claim. This when sized for terrazzo yields only 115 tons of chips. The royalty is 25 cents per ton.

Interview with Del Peterson, at U. S. Marble Corp. 2/7/64.

Mrs. Bracken says Robert Bracken no longer connected with property. (L.P. 4/65)

SUMMARY REPORT

YELLOW FLOWER DIOPSIDE MINE

(file)

MARICOPA COUNTY, ARIZONA

Introduction

Coarsely crystalline diopside occurs in the Harquahala Mountains, Maricopa County, Arizona, as a thick limestone replacement, the rock of which, when ground, yields a fibrous product of relatively high brightness and low iron content. The diopside may be of economic value as a wollastonite type product, in consideration of its proximity to a railroad shipping point for the West Coast markets of ceramics, plastics, and paint production. The deposit is relatively undeveloped but the area has potential for the discovery of additional replacements including wollastonite in other limestone horizons.

Location & Access

The Yellow Flower Diopside Property is located about sixty miles NW of Phoenix, AZ, in the $W\frac{1}{2}$ section 14 and $E\frac{1}{2}$ section 15 T5N, R10W, G&SR B&M, Maricopa County, Arizona. The mine is near Sunset Canyon on the southeast flank of the Harquahala Mountains and about 18 miles southeast of Aguila, a railhead on the Santa Fe Railroad. Eagle Eye Road, which is a good county graded road, leads to jeep trail access within $1\frac{1}{4}$ miles of the property.

Land Status

The property is currently held by association placer claims located in 1955 as building stone placers by J.R.Bracken et al, and mined by Sunset South Mining Co. of Aguila, AZ. The claims are on land administered by the Bureau of Land Management. This type of deposit would, today, be properly located with lode claims.

Geology

The diopside of the deposit selectively replaces to varying degrees individual beds of gently dipping Paleozoic (undifferentiated) limestone which is overlain by and interbedded with, a sequence of quartzites. These quartzites are several hundred feet thick to the north, but are only a few tens of feet thick on the claim block just above the open cut with the diopside exposures. The total thickness of the limestones is unmeasured as they are terminated at uncertain depth by an undulating decollement (?) fault below which lies Precambrian gneiss.

This rock sequence is in turn intruded by a NNW trending granitic dike which may have contributed to the metamorphism of the limestones. The

dike is exposed approximately 800 feet west of the Yellow Flower open cut and may be traced on the surface for over 3000 feet cutting the quartzites north of the claims.

The diopside replacements at the open cut consist of (1) an upper zone +12 feet thick of very pale greenish white, coarse bladed masses and fine crystalline diopside with tremolite and quartz gangue along with lesser amounts of calcite. The maximum amount of diopside developed in the replacement is about 60%. This upper zone lies immediately beneath a massive channel fill quartzite. (2) a middle, brown, near one foot thick, partially replaced marble bed with acicular tremolite rosettes, and (3) a quarry floor bed of unknown thickness consisting of medium-fine grained tremolitic dolomite with some diopside. No iron silicates were observed at any exposure. The replaced beds strike roughly E-W and dip to the north about 20°.

Testing

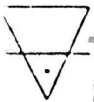
GSA Resources of Tucson, AZ. collected samples from the deposit, the analytical results of which are appended. Sample No.1 is a selected sample of the coarsely crystalline diopside rock of the upper zone in the open cut. This sample could probably be considered the best grade of diopside attained in the exposed replacement. Samples #4 & 5, more representative of the upper 12' zone, were collected across the thickness of the replacement. A blend of 4 & 5 was prepared and evaluated by X-ray diffraction analysis. Those results are appended. A GE brightness test was also performed, with the green filter in a photovolt reflectance meter and reported as 74% of the MgO standard. This compares with 92-98% for wollastonite. When crushed to pass 200 mesh (U.S.), a sample similar to No.5 was observed under the microscope to retain a needle-like acicular form, similar to wollastonite, in perhaps 50% of the material.

Testing of the diopside as a filler in plastic was verbally reported to have had generally negative results. The diopside apparently caused some discoloration. Additional data on these tests was not supplied.

Conclusions & Recommendations

- (1) If the granite dike was a contributing factor in the metasomatism, then mineralization could be expected to continue and possibly improve westward toward the dike for a distance of about 800 feet. The northern down dip extension of the replacements is unknown. If the replacements extend to the dike for 800 feet and are mineralized equally down dip for 800 feet, then roughly 700,000 short tons of diopside bearing rock might exist.
- (2) Laboratory tests indicate that the diopside may be suitable as a substitute for wollastonite in certain applications but not in others. Additional testing will be necessary to determine the qualities of the product adequately and outline a potential market.
- (3) Wide spread marble deposits where carbonate rocks are present indicate the role regional metamorphism has played in the Harquahala Mountains. Regional and probably local metamorphism has acted to form the replacements in a dolomite interbedded with quartzites at the Yellow Flower deposit. If the reactant bed had been a pure calcium limestone, wollastonite would have formed instead of the diopside. These factors combine to make the region a favorable one for wollastonite exploration.

Harrison Matson Harrison Matson
6/30/85



MILES INDUSTRIAL MINERAL RESEARCH

12940 West 16th Drive
Golden, Colorado 80401

(303) 233-4794
TWX 910 320 0766

June 10, 1985

EMISSION SPECTROGRAPHIC ANALYSIS SEMI-QUANTITATIVE



Job No.	Film No.	Client P.O. No.	Our P.O. No.	Date Received	Date Reported			
Sample I.D.		Fe % (0.05)	Mg % (0.02)	Ca % (0.05)	Ti % (0.002)	Mn ppm (10)	Ag ppm (10)	As ppm (200)
	1	0.7%	10%	20%	0.05%	700 ppm	less	N
	2							
	3							
	4							
		Au ppm (10)	B ppm (10)	Ba ppm (20)	Be ppm (1)	Bi ppm (10)	Cd ppm (20)	Co ppm (5)
	1	N	10 ppm	300 ppm	1.5 ppm	N	N	7 ppm
	2							
	3							
	4							
		Cr ppm (10)	Cu ppm (5)	La ppm (20)	Mo ppm (5)	Nb ppm (20)	Ni ppm (5)	Pb ppm (10)
	1	30 ppm	less	N	15 ppm	N	70 ppm	less
	2							
	3							
	4							
		Sb ppm (100)	Sc ppm (5)	Sn ppm (10)	Sr ppm (100)	V ppm (10)	W ppm (50)	Y ppm (10)
	1	N	less	N	100 ppm	50 ppm	N	10 ppm
	2							
	3							
	4							
		Zn ppm (200)	Zr ppm (10)	Th ppm (100)	Al % (0.1)	Si % (0.1)	Na % (0.02)	K % (0.02)
	1	N	150 ppm	N	less	10%	0.3%	3%
	2							
	3							
	4							

Results are in the series: 1, 1.5, 2, 3, 5, 7, 10, etc. Lower limits of determination are in parenthesis.
C = Greater than value shown, N = Not detected at limit of detection, or at value shown.
L = Detected but below limit of determination, or below value shown.

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X-RAY DIFFRACTION ANALYSIS



Sample:	1	2	3	4	5
Wollastonite	-	--	-	-	-
Calcite	7.4%	7.4%	37.8%	-	-
Dolomite	trace	trace	20%	3.2%	3.2%
Tremolite	25%	40%	40%	30%	45%
Diopside	65%	50%	-	60%	50%
Kyanite	?				
K feldspar	trace	trace			

Although wollastonite has many X-ray reflections coincident with calcite dolomite, tremolite and diopside, distinct reflections for wollastonite were not detected. Carbon dioxide analysis confirmed the presence of carbonates. Distinct reflections for the amphibole, tremolite, and diopside were found.

The fibrous crystal habit of tremolite is quite similar to that of wollastonite.

40/6



5015



STATE OF ARIZONA
DEPARTMENT OF MINERAL RESOURCES
MINERAL BUILDING, FAIRGROUNDS
PHOENIX, ARIZONA



YELLOW FLOWER MINE

MINE: SUNSET SOUTH Company

February 18, 1963

LOCATION: Approx 23 miles SW of Aguila,
Maricopa County

L.Pare from office interview
with Mrs. Bracken.

OWNER: Mr. and Mrs. Robert J. Bracken, et al.
Brackens' address at Box 11, Aguila, Arizona and 3518 N. 2nd Ave., Phoenix 13

Property was visited by Lee Hammons February 14, 1963.

Property contains: diopside, actinolite, tremolite, wollastonite and marble.

Diopside is being shipped at the present time 3 to 4 carloads per month to Anchor Luher Minerals at Victorville, California. They have 4 to 5 men working at this property and the Yellow Flower (their marble claims) adjoining. They also have a watchman.

Mrs. Bracken apparently does the managing of the mining operations as Mr. Bracken is quite busy in the construction field in Phoenix. She also is an agent for U. S. Marble Corporation.

A PRELIMINARY ESTIMATE OF ORE RESERVES-

SUNSET SOUTH MINING CORPORATION

March 20, 1964

The Sunset South Mining Corporation's claims are located in Sections 14 and 15, Township 5 North, Range 10 West, Maricopa County, Arizona.

The subject of the following brief report is the amount of reserves mineable economically by surface methods within the area contiguous to the present open pit and including the present camp site.

The "ore" in question here is a raw material used in the ceramics industry in California. It is a mineralized zone contained in metamorphosed sedimentary rocks. It is confined, at least in this locality, to a definite stratigraphic horizon. A bed of quartzite forms the top and a dense, crystalline limestone or marble is the bottom.

Because of the stratigraphic uniformity of the mineral zone, and the uniformity of metamorphism which is the cause of mineralization, it is safe to project the zone between relatively widespread exposures. Some variation in mineral content is allowable without penalty.

The mineral material is commonly referred to as diopside, as a term of convenience, but is actually a mixture of minerals. Diopside, wollastonite, actinolite-tremolite, calcite, and quartz are easily identifiable. The material is mined without selection and, except for some sizing, the mine-run material is shipped.

Using visible outcrops and prospect holes as a guide, the probable area of mineable reserves was mapped by Brunton compass and steel tape. Every effort was made to exclude material of doubtful value or thickness. No material was included if the overburden appeared to be as much as 20 feet in thickness. By far the major portion of the overburden is alluvium that would be inexpensive to strip.

From measurements taken in the pit and the walls of a steep-sided dry wash, it is probable that an average thickness of 20 feet can be conservatively assigned to the mineral zone. The material weighs slightly over 200 pounds per cubic foot, so 10 cubic feet to the ton is conservative.

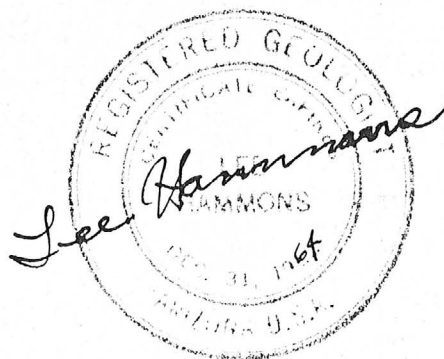
A Preliminary Estimate Of Ore Reserves-
Sunset South Mining Corporation, Page 2

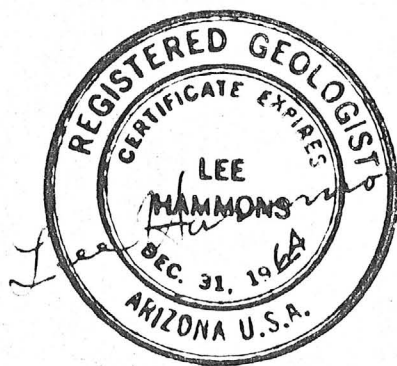
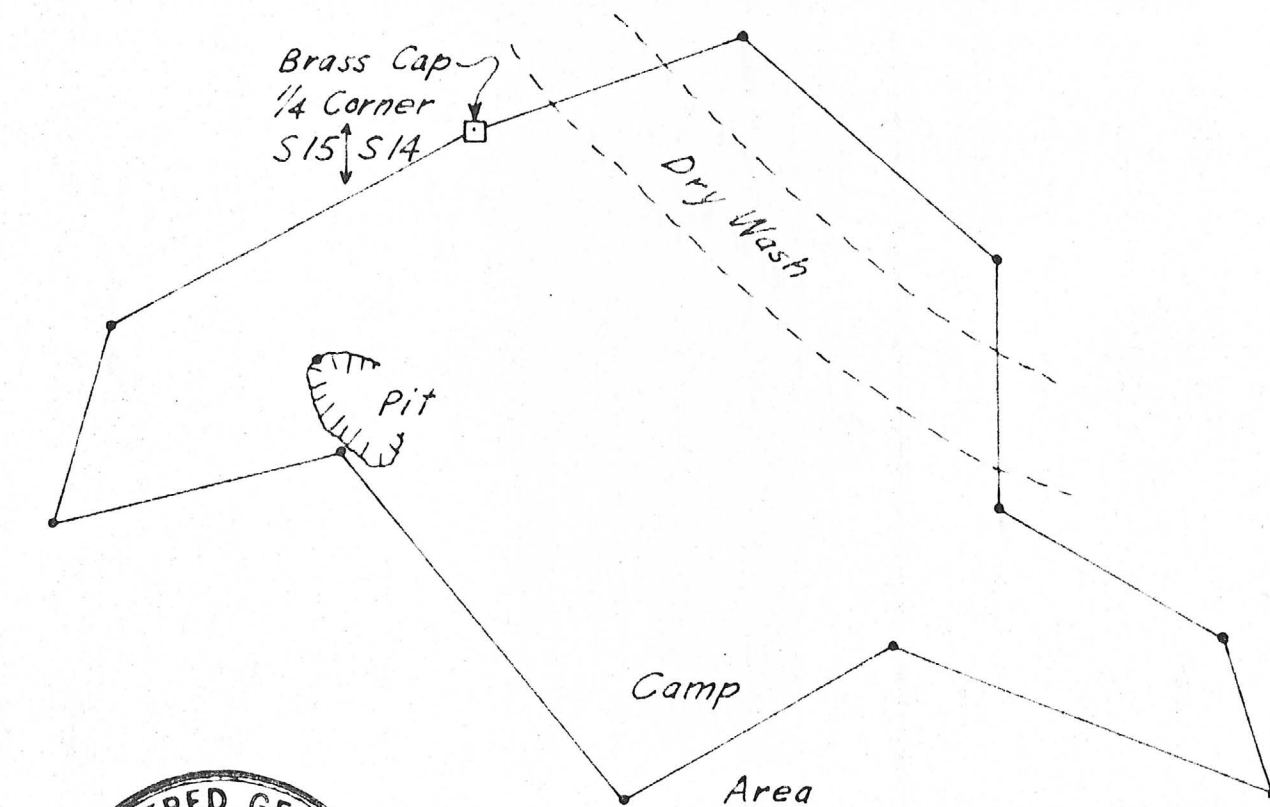
The area mapped contains 123,700 square feet. An area of 16,200 square feet is the amount removed by the wash eroding down thru the mineral zone. Subtracting, the difference is 107,500 square feet. This area, multiplied by 20 feet average thickness and divided by 10 cubic feet to the ton, equals 215,000 tons total reserves.

The general area is complex geologically. It has been affected by at least 2 stages of igneous intrusion; by faulting, metamorphism, and erosion. An intensive geological study based on detailed mapping will pay for itself many times over if it becomes necessary to prove a large tonnage of reserves.

It is, to be emphasized that the area mapped is but a small part of the total mineralized area of this property.

Respectfully submitted,





SUNSET SOUTH MINING COMPANY, INC.
 OUTLINE OF AREA OF ECONOMICAL SURFACE MINING
 SEC. 14 & 15, T. 5 N., R. 10 W., MARICOPA CO., ARIZ.
 MARCH 20, 1964 SCALE: 1" = 100'

DIOPSIDE

A new mineral---A new industry for Arizona

During the past year over 1000 tons of the mineral diopside has been mined and sold on the west coast. Present production is 200 ton per month and the market is increasing.

Anchor Minerals and Chemical Co., A subsidiary of Chas. Pfizer & Co. Inc. has its main plant and offices at Victorville Calif. They are principally a fine grinding company and the purchaser of the Diopside material. They process it and market the finished material at minus 200 fine. They have found that it has ceramic uses and are exploring the applications in the fields of rubber, sizing, paper, paint and other related body uses.

Redondo Tile Co. of Los Angeles is a big user of present production and the pioneer commercial user of Diopside. They have found that it imparts desirable properties to their Ceramic tiles and replaces talc in the mix.

At present prices for the processed diopside are favorable or slightly lower than seatite talc. Anchor feels that as production is increased sizable reductions in price will greatly increase market potential. Present planning contemplates a 5,000 ton stockpile at the mine and primary crushing at the source.

The property is located 20 miles south west of Aguila, Ariz. in Maricopa County. It is owned by the Sunset South Co., A partnership of Aguila miners. It is represented in this operation by one of the partners-Mary Jo Bracken, of 3518 N. 2nd. Ave. Phoenix, Ariz.

Mining is by open pit method. The diopside is a flat laying bed, varying in thickness from 20-40 feet. Overburden never exceeds 10 feet and is unconsolidated. The material is extremely tough and breaks along pressure joints. Some difficulty has been encountered in maintaining the 12 inch sizing requested. Deeper benches and fast shattering powder have helped. The reserve at the operation site exceeds 500,000 ton and the estimated property potential is several million tons of high quality diopside.

Diopside is a pyroxene closely related to tremolite and all gradations exist between both members. The material as mined contains approx. 80% diopside. Crystals account for over 50% of the material the balance being a compact massive material and tremolite stars.

The property-1700 acres- was located in 1959 for a granule source. In developing a quartzite white strata the diopside was uncovered. It has a pleasant greenish cast and was placed on several roofs. Its high specific gravity quickly eliminated it as a cost item in this market. Samples were taken to the Bureau of mines, and the Ariz. Mineral museum. They identified it as a pyroxene of the Tremolite family but knew of no markets.

M. J. B.
1963

Mrs. Bracken took samples to a family friend in Los Angeles; Norman Whitmore. Mr. Whitmore owns Mecco Engineering Co. and he ran spectographic analysis on the material. He introduced Mrs. Bracken to the head geologist of Gladys McBean Co. Mr. Nichols visited the property and his company became interested. They discovered it replaced seatite talc in their tile blends and felt that it could cut costs as well as add saleability to their product. After long negotiations with the owners McBean decided that the plant and development necessary exceeded their use.

Mainly thro Mrs. Brackens efforts John Kennedy, of Kennedy Minerals became interested in the property. Kennedy was well into the development of a market when he sold his finegrinding interests to Victorville Lime Rock Co. Victorville was in turn sold to Chas Pfizer Co. Thro all the reorganizations the material was interesting. Present operations are due in no small part to Elmer Piercy, Gen. Mgr. Anchor Minerals Co, and Mrs Bracken of Sunset South.

July 31- 63

Mrs. Mary J. Bracken

ARIZONA DIOPSIDE FINDS
MARKET ON THE WEST COAST

YELLOW FLOWER. MARICOPA Co.

Pay Sirt 8/23/63

The Brannon Corp. Robert Brannon and company
connected with property. (L.S. 4/65)