CONTACT INFORMATION
Mining Records Curator
Arizona Geological Survey
1520 West Adams St.
Phoenix, AZ 85007
602-771-1601
http://www.azgs.az.gov
inquiries@azgs.az.gov

The following file is part of the

Arizona Department of Mines and Mineral Resources Mining Collection

ACCESS STATEMENT

These digitized collections are accessible for purposes of education and research. We have indicated what we know about copyright and rights of privacy, publicity, or trademark. Due to the nature of archival collections, we are not always able to identify this information. We are eager to hear from any rights owners, so that we may obtain accurate information. Upon request, we will remove material from public view while we address a rights issue.

CONSTRAINTS STATEMENT

The Arizona Geological Survey does not claim to control all rights for all materials in its collection. These rights include, but are not limited to: copyright, privacy rights, and cultural protection rights. The User hereby assumes all responsibility for obtaining any rights to use the material in excess of "fair use."

The Survey makes no intellectual property claims to the products created by individual authors in the manuscript collections, except when the author deeded those rights to the Survey or when those authors were employed by the State of Arizona and created intellectual products as a function of their official duties. The Survey does maintain property rights to the physical and digital representations of the works.

QUALITY STATEMENT

The Arizona Geological Survey is not responsible for the accuracy of the records, information, or opinions that may be contained in the files. The Survey collects, catalogs, and archives data on mineral properties regardless of its views of the veracity or accuracy of those data.

ARIZONA DEPARTMENT OF MINES AND MINERAL RESOURCES AZMILS DATA

PRIMARY NAME: WHITE HOPE QUARRY

ALTERNATE NAMES:

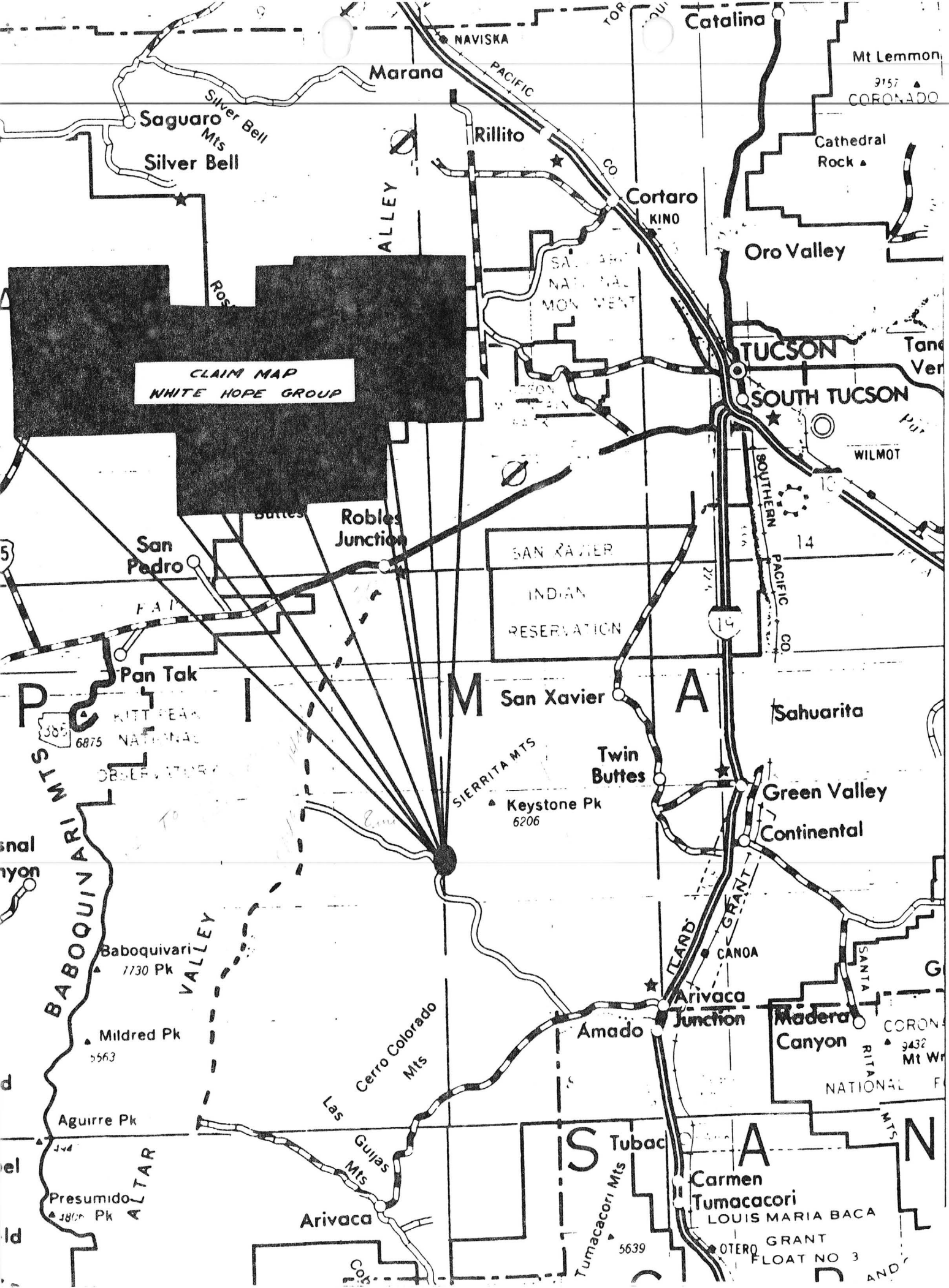
PIMA COUNTY MILS NUMBER: 596

LOCATION: TOWNSHIP 18 S RANGE 11 E SECTION 19 QUARTER SE
LATITUDE: N 31DEG 50MIN 39SEC LONGITUDE: W 111DEG 15MIN 09SEC
TOPO MAP NAME: PALO ALTO RANCH - 15 MIN

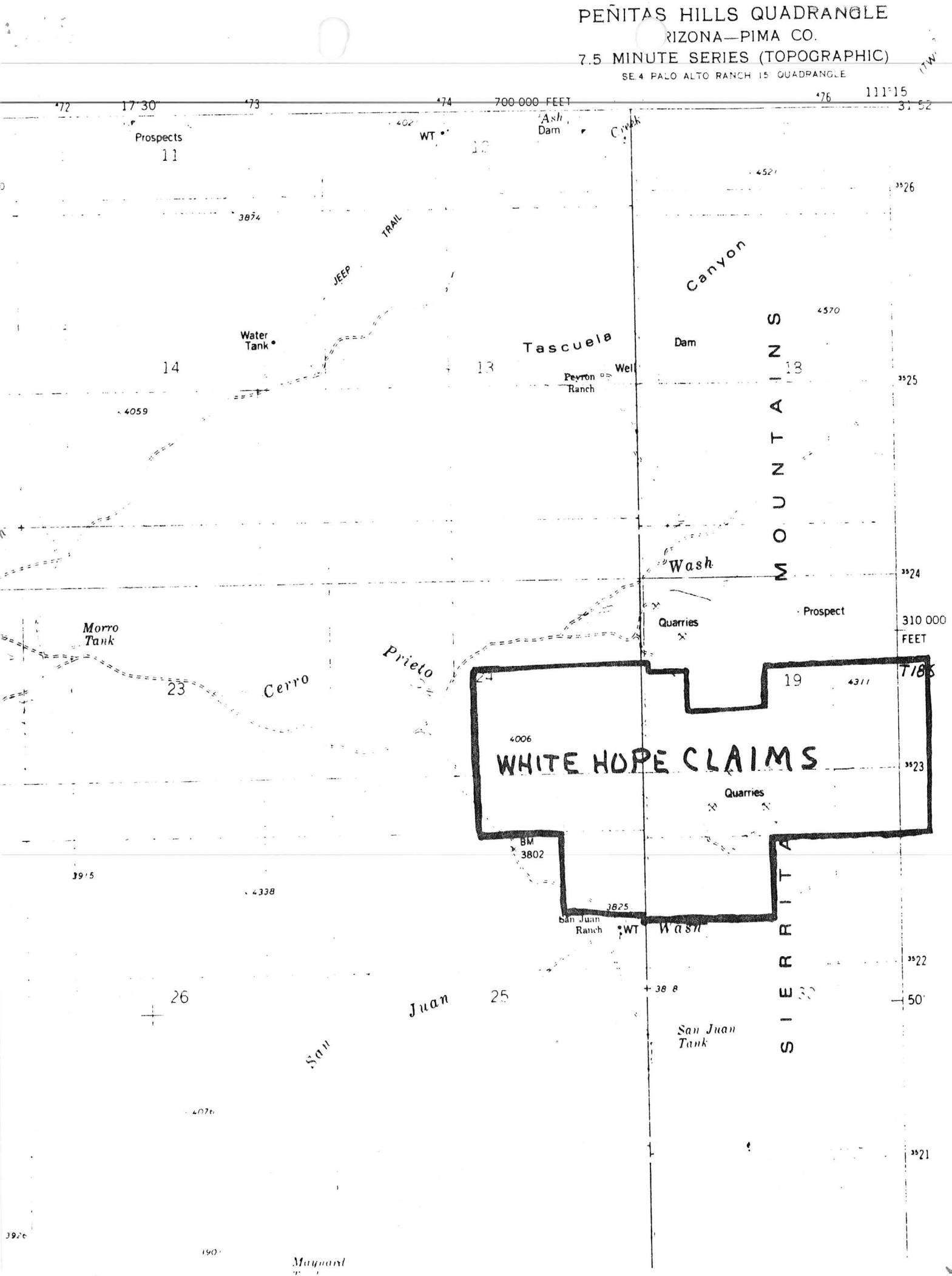
CURRENT STATUS: PAST PRODUCER

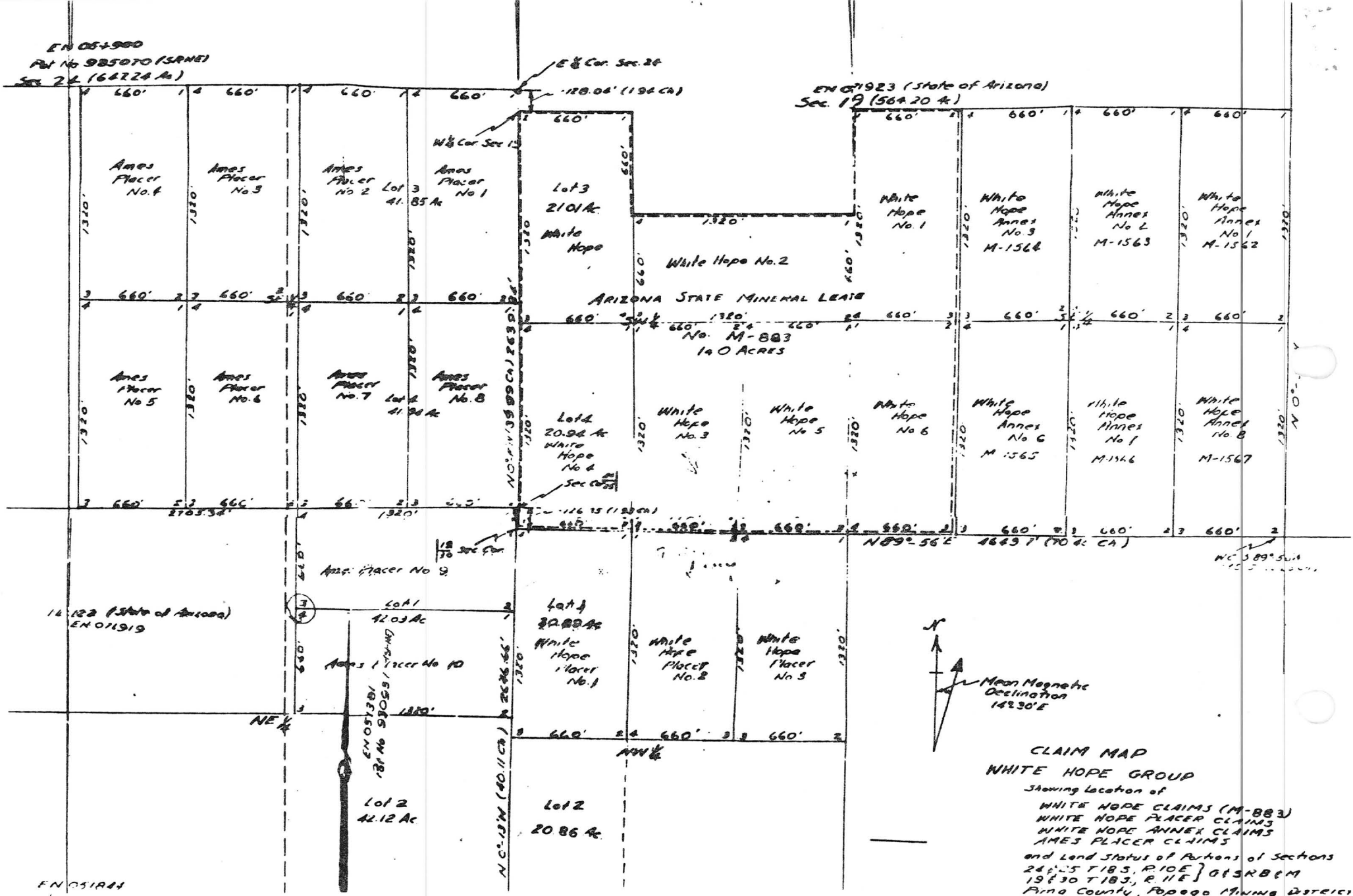
COMMODITY:
STONE MARBLE CB
CALCIUM MARBLE

BIBLIOGRAPHY:
ADMMR WHITE HOPE QUARRIES FILE
AZ. STATE LAND DEPT. MINERAL LEASE LIST,
1979, LEASES 1562-67883
GEO FILE - MIERITZ, RICHARD, 1970


CLAIM MAP
WHITE HOPE GROUP
Catalina
Mt Lemmon
9157
CORONADO
NAVISKA
Marana
PACIFIC
Saguaro
Mts
Silver Bell
Silver Bell
Rillito
Cathedral
Rock
Cortaro
KINO
Oro Valley
TUCSON
SOUTH TUCSON
WILMOT
SOUTHERN
PACIFIC
CO.
Robles
Junction
San
Pedro
SAN XAVIER
INDIAN
RESERVATION
Pan Tak
P I M A
San Xavier
Sahuarita
Twin
Buttes
SIERRITA MTS
Keystone Pk
6206
Green Valley
Continental
BABOQUIVARI MTS
Baboquivari
7730 Pk
VALLEY
Mildred Pk
5563
CANOA
ARIVACA
GRANT
Arivaca
Junction
Amado
Madera
Canyon
Cerro Colorado
Mts
Las
Guijas
Mts
Aguirre Pk
Presumido
Pk
ALTAR
Arivaca
Tubac
S A N
Carmen
Tumacacori
LOUIS MARIA BACA
GRANT
FLOAT NO 3
OTERO
Tumacacori Mts
5639

PEÑITAS HILLS QUADRANGLE
ARIZONA—PIMA CO.
7.5 MINUTE SERIES (TOPOGRAPHIC)
SE.4 PALO ALTO RANCH 15' QUADRANGLE





CLAIM MAP
WHITE HOPE GROUP
Showing Location of
WHITE HOPE CLAIMS (M-883)
WHITE HOPE PLACER CLAIMS
WHITE HOPE ANNEX CLAIMS
AMES PLACER CLAIMS
and Land Status of Portions of Sections
24 & 25 T 18 S., R 10 E.
19 & 30 T 18 S., R 11 E.
} G & SRB&M
Pima County, Papago Mining District
State of Arizona

© Arthur Woodcock 10/20/61

WHITE HOPE QUARRIES

PIMA COUNTY
T18S R11E Sec 19 , 30

KAP WR 7/6/84: Joe Sul of Double J Investment Co., 3705 W. Thunderbird Road, Phoenix, Arizona 85023 is trying to either sell the White Hope Quarries Pima County property or find a buyer for the marble. He provided a copy of a geologist's report by Dirk den Baars for the file. In the early sixties the property was partly held by State lease and part by Federal location. The Federal claims are the White Hope Placer #1-#3 (AMC 76936-76938) located in the NW¼ sec 30, T18S R11E. Additionally, the State leases occupy portions of the south half of Sec 19, T18S R11E. The claims and leases are in the name of Arthur Hendrickson, 101 West Old Ina Road, Tucson, Arizona 85704.

Tucson Realty & Trust Co.

GEOLOGY AND EXPLORATION OF THE WHITE HOPE PROPERTY.

Location and Ownership:

The White Hope limestone claims are located about 48 miles southwest of Tucson, on the southwest side of the Sierrita Mountains.

The property can be reached from Tucson in one hour and fifteen minutes over Highway 86 going west to Three Points, turning south to the Sasabe highway 286, thence turning east to a graded dirt road just before reaching the Palo Alto ranch.

This graded dirt road leads to the property in about nine miles. The claims are located in the south half of section 19 and in the north-west corner of section 30, T 18 S, R 11 E, G&SRB&M, about a half mile east of the San Juan Ranch.

There are seven Type B claims in the SW¼ of section 19, named White Hope, White Hope No. 1 through White Hope No. 6, on which a State Mineral Lease No. M 883 has been issued to Mr. Arthur Hendrickson.

Further six Type B claims in the SE¼ of section 19, for which a State Mineral Lease Application has been made by Mr. Arthur Hendrickson. Three more Federal Placer Claims are located on the N½ of the NW¼ of section 30; these claims are contiguous with the White Hope State lease claims.

The terrain consists of low hills, with an average elevation of about 4000 ft., the tops of the hills are about 4200 and 4300 ft. and the lower part of the claims is around the 3900 ft. contour line.

Three small quarries exist on the property, and are located on the White Hope No. 3, White Hope No. 5 and on the White Hope No. 6 claims. The white marbleized limestones were mined, crushed, screened and mostly sold as roofing material during the past years.

Geology of the Area:

The limestones and marbleized limestones of this property are classified on the geological map of Pima County as to belong in the Palaeozoic series of rocks, consisting of limestones, shales, sandstone and quartzite. This places these formations in the Devonian, Carboniferous or Permian series.

Apparently no fossil evidence was found to classify these rocks as to belong in one specific era. Intrusive and volcanic activity during Cretaceous and early Tertiary times are very pronounced to the south and west of the property, mainly andesites, basalt and Rhyolites.

The andesite is of an earlier age than the basalt that occurs to the west. On the property the Rhyolite seems to occur only as a Rhyolite porphyry. The andesite, andesite porphyry and diorite porphyry are all of Cretaceous age and can be observed on the property mostly in contact with the limestone and quartzite beds.

Assimilation and metamorphosis of the limestone beds took place, causing zones of garnet, wollastonite and epidote, and in some places tourmaline. The strike and dip of the limestone beds is mostly N 30 to 80 W and dipping 20 to 65 to the southwest.

Folding and faulting took place during and after the Cretaceous period. Intrusive andesite porphyry and diorite porphyry invaded along faults and bedding planes, causing a recrystallization and marbleization of the limestones and dolomitic limestones. Along contacts mostly narrow bands of contact minerals can be observed mostly calcium garnet and wollastomite, but also tourmaline, epidote and probably grammatite and diopside.

The marbleized beds are usually finegrained and jointed in two directions, ironstain if present is mostly located along cleavage planes or joints and sometimes some pyrite or markasite can be observed. The color varies from bright white to dull white and translucent with cream and beige tints.

The light grey and grey varieties of limestone and marbleized limestone are usually dolomitic in nature. The grainsize varies from fine to medium coarse, the purer limestone marbles usually are more massive and finer grained than the dolomitic varieties.

Most limestone contacts with the intrusive rocks show minor quantities of contact minerals as mentioned above, while sometimes only heavier ironstain and fracturing seem to exist along the contacts.

This could indicate that intrusion took place at shallow depths under relatively low temperature and pressure conditions, while the rapid cooling would account for the fineness of grain in the marbleized limestones.

The few places where contact metamorphosis caused heavy garnet zones and some silicification of the limestones could have been originally located at greater depth. Folding and faulting together with the intrusive activities before and after periods of movement obscures the true stratification of the sedimentary beds.

The general trend of the sedimentary series seems to be that the younger formations occur to the southwest, while the older and coarser marbleized limestones seem to occur in a north-easterly direction whithin one block.

Exploration Drilling:

During the months October, November and December of 1961 diamond drilling of the White Hope claims was undertaken by Paul Lime Plant, Inc. to determine the extent and quality of the marbleized limestone deposits. Drilling was carried out with a Sullivan diamond drill of medium capacity with AX head and screw feed.

Frequent water loss along fractures caused some time loss, but good core recovery in the AX size could be made throughout the drilling program. The location and numbers of the drillsites are indicated on the geological map attached to this report.

Cores obtained were split in the field, half of each ten ft. piece of core bagged into one sample and the other longitudinal half arranged in coreboxes for physical description and reference. The bagged ten ft. samples were sent to the Paul Lime Plant laboratory for chemical analysis.

Mr. Henry Bollweg, Jr., chemist for Paul Lime Plant, Inc., analyzed all the core samples obtained for CaO content, while many of the samples were also analyzed for MgO, Al_2O_3, Fe_2O_3, SiO_2, total Insol and R_2O_3 (See diamond drill logs). Composite samples were sent out by Mr. Bollweg to Hawley, Hawley and to Jacobs assay office to verify results obtained at the plant.

As targets for the diamond drill holes were taken the best possible sites where good grade lime rock was outcropping on the surface to some lateral extent. All holes were drilled as close as possible rectangularly to the strike and dip of the formations, which varied from north to northeast and from 45° to 75° from the horizontal for the direction of the holes.

Hole #1
0 to 20 Ft. is 20 Ft. of plus 94% $CaCO_3$ rock
20 to 40 Ft. is 20 Ft. of minus 94% $CaCO_3$ rock
40 to 155 Ft. is 115 Ft. of plus 96% $CaCO_3$ rock

Total of good rock corrected to 130 ft. in two sections at 176 ft. depth drill enters contact zone of mixed intrusive and limestone rock to a depth of 180 ft. below which altered diorite porphyry was drilled through to 215 ft. depth.

Hole #2 Was not drilled because of lack of road to the site.

Hole #3 In upper quarry, left side.

0 to 20 ft. is 20 ft. of plus 96% $CaCO_3$ rock
20 to 40 ft. is 37 ft. of Dolomitic rock
57 to 80 ft. is 23 ft. of mixed intrusive and limestone rock

Total good rock in this location 20 ft. (plus 10 ft. from quarry floor to original surface) is 30 ft. (continuous).

Hole #3A Same quarry, right side.

0 to 10 ft. is 10 ft. of plus 96% $CaCO_3$ rock
10 to 50 ft. is 40 ft. of minus 94% $CaCO_3$ rock
50 to 60 ft. is 10 ft. of plus 97% $CaCO_3$ rock
60 to 90 ft. is 30 ft. of dolomitic rock
90 to 120 ft. is 30 ft. of plus 96% $CaCO_3$ rock
120 to 200 ft. is 80 ft. of dolomitic rock

Total of good rock in this location 50 ft. (plus 10 ft. from floor to original surface) in 3 sections down to 120 ft. depth. From 200 to 235 ft. drill enters contact zone of mixed intrusive and limestone rock.

Hole #4
0 to 10 ft. is 10 ft. of fractured surface rock
10 to 60 ft. is 50 ft. of plus 94% $CaCO_3$ rock
60 to 121 ft. is 61 ft. of dolomitic limestone

Enters contact zone at bottom of hole. Total of good rock in this location 55 ft. (continuous).

Hole #5
Enters intrusive stringer down the dip below one ft. of soil and was relocated to 5A.

Hole #5A
0 to 20 ft. is 20 ft. of dolomitic rock
20 to 40 ft. is 20 ft. of plus 94% $CaCO_3$ rock
40 to 50 ft. is 10 ft. of below grade rock
50 to 80 ft. is 30 ft. of plus 94% $CaCO_3$ rock
80 to 98 ft. is 18 ft. of dolomitic rock

Total good rock this hole corrected to 48 ft. in two sections from 21 ft. to 80 ft. depth.

Hole #6
0 to 30 ft. is 30 ft. of plus 96% $CaCO_3$ rock
30 to 50 ft. is 20 ft. contamined by intrusive stringer
50 to 71 ft. is 21 ft. of plus 95% $CaCO_3$ rock

Total good rock this hole 50 ft. in two sections down to 71 ft. This hole should be continued.

Hole #7
Enters intrusive stringer below soil overburden and was abandoned at 20 ft. depth.

Conclusions: The geological mapping up to date indicates that the individual limestone blocks have irregular boundaries caused by folding and presence of intrusive rocks, mostly along faults and bedding planes, but also intruded in joints and fractures perpendicular to the dip.

The unpredictable presence or absence of intrusive rocks in the limestones at depth makes it necessary to drill a regular pattern of drill holes in each block for instance on 100 ft. centers.

Even though the diamond drilling was of limited extent it did indicate the presence of a considerable tonnage of good Calcium carbonate rock, separated by beds of dolomitic rock and below grade material.

In actual mining practice it would be necessary to mine the below grade and dolomitic limestones separately to avoid contamination of the good lime rock and maintain a consistent grade kiln feed.

It is estimated that by doing additional diamond drilling the reserves of high grade calcium carbonate rock might prove to be in the order of 4 to 5 million tons.

The differences in physical appearance of the high grade marbleized limestones along the strike make it desireable to run separate kiln and other tests on good sized samples to determine their adaptability towards the fabrication of lime products.

Respectfully submitted,

Dirk den Baars
Consulting Geologist

WHITE HOPE QUARRIES PIMA COUNTY

Temporarily operated as the demands require, supplying Sierrita Marble Crushing and Screening Plant with marble. 1 man on the job working on the truck.

ALJ WR 5/4/64

DEPARTMENT OF MINERAL RESOURCES
STATE OF ARIZONA
FIELD ENGINEERS REPORT

Mine White Hope Quarries Date April 29, 1964

District Papago District, Pima Co. Engineer Axel L. Johnson

Subject: Mine Visit. Information from Dale C. Brittain and Bob Woodworth.

References: Report of June 26, 1959.

Location: See report of June 26, 1959.

Owner: Dale C. Brittain, 891 E. Alta Vista, Tucson.

Lease or Option: Sierrita Marble Products, 4025 E. Third St., Tucson, Arizona.

Contractor: Bob Woodworth, Box 97-C, Sasabe Star Route, Tucson.

Principal Minerals: Marble.

Present Mining Activity: Operated by Bob Woodworth, who has a contract from R.O.Classon, Sierrita Marble Products, for quarrying the marble required for the Sierrita Marble Crushing and Screening Plant at Three Points.

Review of Operations: Mr. Woodworth has a contract of so much per ton for the quarrying. The marble is then hauled to the marble plant at Three Points in the Sierrita Marble Products own trucks.

Operations at the White Hope Quarries were started on Mar. 8, 1964. Since then 96 tons of marble have been quarried and hauled.

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

Tucson, Arizona,
July 12, 1960

Mr. Frank P. Knight, Director,
State Dept. of Mineral Resources,
Phoenix, Arizona.

Dear Frank:

Regarding your letter of July 7, reg. Dale Brittain's marble royalties:

I have just discussed the matter with Mr. Brittain by telephone, and received the following information.

The Brittain-Hendrickson Mining Co. operates the White Hope Quarries, 25 miles south of Three Points (see report of White Hope Quarries --June 26, 1959), and sells the marble to Sierrita Marble Products at Three Points. Mr. Brittain and Mr. Hendrickson now do all the work themselves, including the drilling and blasting.

The marble is sold to Sierrita Marble Products f. o. b. mine at a price of $ 3.50 per ton, ~~and~~, which is really all they can afford to pay, considering the fact that they have to haul the marble 25 miles to their crushing and screening plant, process it in their plant, and then haul the product an additional 25 miles to markets in Tucson.

Mr. Brittain stated that Mr. Townsend, the State Land Dept. geologist has valued the marble at $ 10.00 per ton for the purpose of computing royalties, and Mr. Brittain, of course, is objecting to this, when he only gets $ 3.50 for the product.

Dale Brittain told me that he would be glad to write you a letter, stating the facts of the case, so you will probably hear from him direct. He also said that he had an appointment to see Mr. Lassen at the State Land Dept., Phoenix next Friday, and may have time to stop in and see you in your office before the meeting with Lassen.

Sincerely,

Axel

Axel L. Johnson,
Box 5047, Tucson, Ariz.

DEPARTMENT OF MINERAL RESOURCES
STATE OF ARIZONA
FIELD ENGINEERS REPORT

Mine White Hope Quarries Date June 26, 1959 ✓

District Papago Mining District, Pima County Engineer Axel L. Johnson

Subject: Field Engineers Report. Information from Dale C. Brittain & personal visit.

Location: About 50 miles SW of Tucson. From Tucson take the Ajo Road, #86, to Three Points. Turn left at Three Points and drive 14¼ miles south on the Three Points-Sasabe road. Turn left and drive 10 miles to the quarry.

Number of Claims: 11 unpatented claims -- 7 claims on State lease, and 4 claims on Federal land adjoining same on the south.

Owners & Operators: Brittain-Hendrickson Mining Co., 891 E. Alta Vista, Tucson, Arizona.

Principal Product: Marble

Present Mining Activity: Excavating marble rock from an open cut. Production about 20 yds. or 26 tons per day. One man working (Dale Brittain), sometimes helped by his son. Drilling and blasting is contracted out to another party.

Rock Analysis: Mr. Brittain reports the following chemical analysis of the marble rock -- $CaCO_3$ - 98%; SiO_2 - 1.2%; Fe - 0.5%.

Milling & Marketing Facilities: The marble rock excavated is sold to Sierrita Marble Products f.o.b. mine at a fixed price per ton of rock (price not given). See report of same date on Sierrita Marble Crushing and Screening Plant.

Past History: No past history. This is a new operation.

Present Operation: The drilling and blasting is contracted out to Alejandro Chiquete at a price of 10¢ per foot of hole drilled and blasted. 10 ft. holes, 1½" to 1 3/16" dia. are drilled by means of a jackhammer and a 105 cfm compressor.

Ammonium nitrate is used to break the rock, the other ingredients added to the ammonium nitrate depending on the hardness of the rock. Sometimes fuel oil is added, sometimes fertilizer and sometimes it becomes necessary to add some black powder to the charge.

The rock blasted is pushed from the mine workings with a TD 9 Skid Shovel and dropped through a 7" grizzly. Below this grizzly is a 3' x 5' screen with 1¼"mesh, which screens out the dirt and the fines. Mr. Brittain reports that 18 to 20% of the material is screened out in this operation. The oversize from the screen drops in a pile and is loaded on the Sierrita Marble Products' trucks by means of the Skid Shovel.

The open cut is still relatively near the surface, and, consequently contains streaks of surface material and marble with a yellowish color. As the agreement specifies white marble, a large amount of the material quarried at the present time must be wasted. Mr. Brittain reports that he has to move about 60 cu. yd. of waste per day to obtain 20 cu. yd. of good white marble. Mr. Brittain reports that the marble in the bottom of the pit is now pure white, and he expects very much less waste when the excavations can be made at a lower level.

This property Active Feb. 1959, Oct, 1959, Feb. 1960, Sept. 1960, Feb. 1961, Oct. 1961.

Active Feb. 1962 - 2 men working.