



CONTACT INFORMATION
Mining Records Curator
Arizona Geological Survey
416 W. Congress St., Suite 100
Tucson, Arizona 85701
520-770-3500
<http://www.azgs.az.gov>
inquiries@azgs.az.gov

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445 567

STATE OF ARIZONA
County of Pinal

I hereby certify that the within instrument was (read and received)
APR 4 1966
MINERAL RIGHTS RESERVATION CONTRACT

Doc No.
318647

Indexed:

Sealed:

Vol: 1.75

LR: 2.20



Witness my hand and official seal
DOPHIE M. WHITE, County Recorder
By *[Signature]*
Deputy Recorder

Warranty Deed

For the consideration of Ten Dollars, and other valuable considerations, I or we, *[Signature]*, do hereby convey to **FEDERAL MINES COMPANY, INC.**, an Arizona corporation

the following property situated in Pinal County, Arizona:
VENUE MINING CLAIM, MOUNT VENUE MINING CLAIM, ARGOY MINING CLAIM, GRASS PRIMER MINING CLAIM, LACROFT MINING CLAIM and PLAT IRON MINING CLAIM, lode mining claims, in Sections Thirty-four (34) and Thirty-five (35), Township line (9) South, Range Two (2) East of the Gila and Salt River Base and Meridian, being shown on Mineral Survey 64142, on file in the office of the Bureau of Land Management, as granted by Patent recorded April 20, 1933, in Book 52 of Patents, page 112, records of Pinal County, Arizona.
RESERVATION: Reservations contained in the Patent from the United States of America, reading as follows: "SUBJECT to any vested and accrued water rights for mining, agricultural, manufacturing, or other purposes, and rights to ditches and reservoirs used in connection with such water rights, as may be recognized and acknowledged by the local customs, laws, and decisions of courts; and there is reserved from the lands hereby granted, a right of way thereon for ditches or canals constructed by the authority of the United States." Any rights of a proprietor of a vein or lode to extract and remove his ore from said land, should the same be found to intersect or penetrate the premises, as provided by law; rules of the State of Arizona for working the mineral claims or premises involving easements, exchange and other necessary means of improvement, as set out in United States Patent for said premises.



Marie Westling
851 E Palm Pk Apt 51
Casa Grande AZ 85222

Also
See back
of last page



And I or we do warrant the title against all persons whomsoever, subject to the matters above set forth.

Dated this 16 day of February, 1966

[Signature]
Charles D. Duggs

STATE OF ARIZONA
County of

This instrument was acknowledged before me this day of
1966 by *[Signature]*
and Charles D. Duggs

My Commission expires

Notary Public

STATE OF California

This instrument was acknowledged before me

MEK

Fib:

Vetco mine

Pinal Co Az

ASARCO

Date: 9-8-74

From: H. G. Kreis

To: JDS

← Return to

The attached was
submitted by Harry Weathling,
and I thought it might
be of interest to you.

H.G.K.

Thanks

I have talked with Harry about the
property, but have thought I'd do nothing
(except sometimes go visit the property) as it is
isolated in a hostile environment land
position.
by.

Thanks for checking it

Jim

Papago Mine District
Veta Marteny
Tel. 1-602-361-2360

I

Metall Corp
Canada

VEKOL MINE PRELIMINARY REPORT

BY

W.R. EWING

MAY, 1987

ABSTRACT: Silver mineralization deposition and remaining zones of enrichment.

CONCLUSIONS: Sufficient silver mineralization, along with lead, zinc and copper values found in the mine are a positive leader to at least a moderate number of tons of high grade are continued long hole drilling highly recommended.

The examining process practiced during the start of the past year was to geologically lay out all visible faulting intersected by the Argosy shaft access road.

Nearly every fault found had a north-south strike.

Surface sampling at the fault exposures resulted in 0.3 ppm to 1 ppm range in silver assays, with the exception of one that showed minor silver along with platinum and palladium in the 0.4 to .04 opt range.

Although the drilling program was set up to sample all these fault zones at 30' to 50' in depth, only one such zone was drilled, since the driller refused to negotiate the hill and the turn-around at the top.

Subsequent drilling was accomplished in other areas to a total of about 1730 ft. Depths varied from 25' to 63'.

Drill cuttings from this project were negligible in values.

A D-8 cat dozer was rented for 2 1/2 months to facilitate road work and drill pad clearing.

Older penetrations near the SE corner of the Mt. Vernon claim were entered and inspected, showing only residual mineralization where probably some high grade lenses had been removed.

None of the several deep shafts were entered or examined.

Under the insistance of Mr. Westling and a young geologist, Rob Larson, an intensive search was made of the southwestern-most point at the lowest and next to lowest levels of the mine, known to them as the "Galena Room", "Bat Cave", and the lower "Winze". Grab-sampling produced assays from 8 oz. to over 100 oz. per ton.

Attached is a letter from Larson stating he got to the 1200 ounce range in some of his underground drilling (6' holes) during summer, 1982.

Although the silver is directly associated with galena and sphalerite as argentite, stephanite and tetrahedrite, it also is present in abundance in chlorides, bromides, iodides (within the sulphide zone) with calomine, cerrusite, brochantite and copper carbonates.

With such evidence at hand, as the above noted mineralization supports, we believe the source of these values is still deeper in the mine, as faulting and magmatic pressures transported them upward and to some extent, along the bedding planes.

It is felt, that until the prime source of these metals occurences is reached, the lenticular ore zones will be standing somewhat vertical and elongated.

Only a very specifically controlled drilling program will reveal that source.

However, if the zone at the "Winze" can be related to the other two (2) high grade zones, mentioned above, it is beyond any doubt that continuity can be confirmed between them and the last of further explaratory drilling could be more that offset by sinking a deeper Winze and drifting along the highly mineralized trends towards other presently visible areas.

Mining in this manner would be limited by the existing shaft dimensions, but by practicing certain other accepted techniques, the highest grade ore could be selected for hoisting to the surface, while areas of grades ranging from 150 opt and less could be used as backfilling. (Stored for future extraction)

When sufficient ore has been blocked out to warrant total extracton from the mine, either the existing Argosy shaft will have to be enlarged or a long decline be driven to a point

beneath the ore body.

At any rate, grade and tonnage will determine the extraction method, with consideration given to the shape of the area body.

Since utilization of the gas pipeline road is limited and prohibits transporting ore trucks over it, en masse, feasibility testing should be accomplished at an early stage and full consideration should be given to a means of ore beneficiation, at least to the point of dore' metal.

The presence of both oxide and sulphide minerals in the highest grade areas may require a dual extraction procedure that would treat both the concentrate and a tailings to facilitate a satisfactory recovery of the silver values.

In the event of any surface indications of silver areas, surface drilling and open-pit methods are advisable.

Current drilling operations should provide a substantial target to begin a limited mining operation.

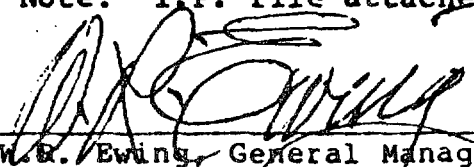
Assays of the underground drill cuttings in the next several days will no doubt support the advent of a continued program.

Adequate facilities have been installed recently at the Argosy shaft collar and include a 150 CFM DSL Air Compressor, a 15 KA DSL Generator, and Air Tugger Hoist, Tripod "A" frame, Air Receiver, drills and legs, long hole steel and 500' of air hose and 500' of water hose, and an 8"x8" timber collar.

Owners will be advised immediately upon receipt of assay results.

An unsuccessful attempt to delineate a near surface ore body was made in March, by induced polarization survey covering an area that showed a high density zone within 100 ft. of the surface in an earlier geophysical profile. This should be drilled at a later date, as it may be an oxidized zone and therefore not reflect with the I.P. Note: I.P. file attached.

RESPECTFULLY PREPARED BY,


W.R. Ewing, General Manager
Arizona Western Mines, Inc.

February 2, 1987

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W. R. Ewing, President
Arizona Western Mines, Inc.
P. O. Box 7001
Tucson, Arizona 85725

Dear Wes:

RE: Vekol Silver Mine, Exploration Recommendations

In response to my on-site inspection of the above referenced facility on January 10, 1987, and previous work experience at the facility, several comments are to be made.

1. The underground drilling and exploration program carried out by Seven Cities Mining Company, Inc. during the spring and summer of 1982.

- A. The "Galena Room" area showed assays of an average silver content of 25.0 oz./ton. 2.5 tons of ore was removed from this area and was sent to a flotation mill in Mammoth, Arizona, which showed a recovery of 89%, giving a 22.0 oz./ton recovery. This is a sulfide ore.
- B. The lower winze northeast of the Argosy shaft on the Argosy level had assays running as high as 1,200 oz./ton silver, with an average over the entire area of 40.0 oz./ton. This is an oxide secondary enrichment ore with high copper content.
- C. The average silver content of the wall rock throughout the mine averaged 1.5 to 4.5 oz./ton.
- D. Gold values were detected in some of the drill cuttings, but were not consistent enough to be considered when blocking ore.
- E. All underground drilling carried out by Seven Cities was with a six foot steel. It would be my recommendation to implement a drilling program with long hole drilling in the Galena Room and Argosy level area, to get a complete understanding of the underground ore reserves.
- F. Seven Cities also sampled the Argosy dump for silver content and showed an average value of 2.5 oz./ton.

2. Before the property is fully developed, it should be recommended that an air rotary drill explore and sample the area West of past workings for reserve ore which has not been determined by drilling, but by a geo-magnetic survey ran in the past showing a high density anomaly under the west ridge. Also, an IP survey should be ran on the West ridge

as well as East of the past workings, to get a better understanding of the sub strata in the area.

Sincerely,



Rob B. Larson
Seven Cities Mining

Very respectfully

respectfully,

[Handwritten Signature]

1947

PHONE 622-0813

Sample Submitted by Mr.

VEKOL MINE

Tucson, Arizona.

WESTERN MINES - EWING

| Sample Marked | GOLD Ozs. per ton ore | GOLD Value per ton ore* | SILVER Ozs. per ton ore | COPPER Percent Wet Assay | LEAD Percent Wet Assay | Zinc Percent Wet Assay | Nickel Percent Wet Assay | Other Elements Percent Wet Assay |
|------------------|-----------------------------|--|-------------------------------|---|---|---|---|---|
| HOLE | | | | | | | | |
| 1-E | | | | | | | | |
| 0-8' | 0.004 | | 0.50 | | | | | |
| 2-16' | 0.004 | | 0.20 | | | | | |
| #9 | | | | | | | | |
| 30'-40' | 0.008 | | <0.05 | | | | | |
| #1 | | | | | | | | |
| 36-44' | 0.004 | | <0.05 | | | | | |
| 44'-51' | 0.010 | | <0.05 | | | | | |
| FIRE ASSAY | | | | | | | | |

FIRE ASSAY

$\angle = \text{LOSS} + \text{HAN}$

Charge 3:

4500

Jard

Very compressed



1435 SOUTH 10TH AVENUE
TUCSON, ARIZONA 85713

Jacobs Assay Office

Registered Assayers



PHONE 622-0813

65141

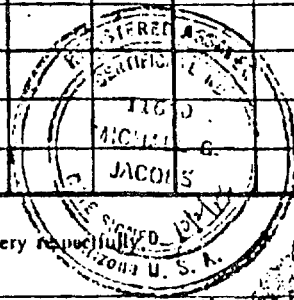
VEROL

Tucson, Arizona,

7/27/86

Sample Submitted by Mr.

| Sample Marked | GOLD Ozs. per ton ore | GOLD Value per ton ore | SILVER Ozs. per ton ore | COPPER Per cent Wet Assay | LEAD Per cent Wet Assay | PERCENT Wet Assay | PERCENT Wet Assay | PERCENT Wet Assay |
|---------------|-----------------------------|---|-------------------------------|--|--|----------------------------------|----------------------------------|----------------------------------|
| DUMP | 18.15 | | 0.05 | | | | | |
| FINEST EST | | | | | | | | |
| MAINTUNNEL | — | | 2.10 | | | | | |
| MAIN TUNNEL | | | | | | | | |
| #1 | — | | 45.00 | | | | | |
| MAINTUNNEL | | | | | | | | |
| #2 | — | | 2.90 | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| FIRE ASSAY | | | | | | | | |



Charges \$

5.25

Very respectfully,
MICHAEL G. JACOBS
TUCSON, ARIZONA U. S. A.

8

1435 SOUTH 10TH AVENUE
TUCSON ARIZONA 85713

Jacobs Assay Office

Registered Assayers



PHONE 622-0813

Tucson, Arizona,

10/9 1986

Sample Submitted by Mr.

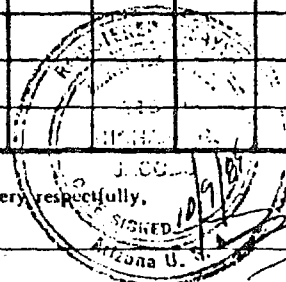
BURRIS / VERKOL / EWING

| Sample Marked | GOLD Oz per ton ore | GOLD Value per ton ore | SILVER Oz per ton ore | COPPER Percent Wet Assay | LEAD Percent Wet Assay | Per Cent Wet Assay | Per Cent Wet Assay | Per Cent Wet Assay |
|----------------------------|---------------------------|---|-----------------------------|---|------------------------------|---|---|---|
| ST. CHRISTOPHER | | | | | | | | |
| #1 | 0.835 | | 20.05 | | | | | |
| 2 | 0.118 | | 40.05 | | | | | |
| VERKOL #1 | | | 108.25 | | | | | |
| BURRIS / VERKOL | | | | | | | | |
| #2 | | | 0.95 | | | | | |
| 3 | | | 57.40 | | | | | |
| 4 | | | 2.60 | | | | | |
| 5 | | | 0.10 | | | | | |
| VERKOL 2-E | | | | | | | | |
| HAZ 2 6065 | | | 20.05 | | | | | |

Charges \$

66.⁰⁰ paid

Very respectfully,



SIGNED

Arizona U. S.

FIRE + BS

2-1855+

1435 SOUTH 10TH AVENUE
TUCSON ARIZONA 85713

Jacobs Assay Office

Registered Assayers



PHONE 622-0813

Tucson, Arizona.

1/14/87

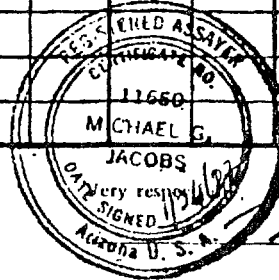
Sample Submitted by Mr.

VEKOL / Bill Ewing

| Sample Marked | GOLD Ozs. per ton ore | | GOLD Value per ton ore | | SILVER Ozs. per ton ore | | COPPER Percent Wet Assay | | LEAD Percent Wet Assay | | PERCENT Wet Assay | | PERCENT Wet Assay | |
|------------------|--|--|---|--|--|--|---|--|---|--|---------------------------------|--|---------------------------------|--|
| | | | | | | | | | | | | | | |
| BALCAVE | | | | | 44.30 | | | | | | | | | |
| SULFIDE | | | | | 83.15 | | | | | | | | | |
| WINZE | | | | | 8.25 | | | | | | | | | |
| | | | | | | | | | | | | | | |
| FIRE ASSAY | | | | | | | | | | | | | | |

Charges \$

27.10 paid



[Signature]

PAGE 022 081J

Tucson, Arizona.

Sample Submitted by Mr.

Tucson, Arizona, 10/26/64
ARIZONA Western Mines Co., Mr. Bill Ewing

| Sample Material | GOLD Ozs. per ton ore | GOLD Value per ton ore* | SILVER Ozs. per ton ore | COPPER Percent Wet Assay | LEAD Percent Wet Assay | ZINC Percent Wet Assay | PERCENT Wet Assay | PERCENT Wet Assay |
|--------------------|--|--|-------------------------------|---|---|---|---------------------------------|---------------------------------|
| 1-1 0-5 | — | — | <0.01 p.p.m. | (Sol.) | (Solution) | | | |
| 1-2 0-5 | — | — | <0.01 p.p.m. | (Sol.) | (Solution) | | | } DRILL WATER |
| 1-3 5-10 | — | — | 25.75 oz/ton | (ORE) | | | | |
| 1-4 10-15 | — | — | 138.75 oz/ton | (ORE) | | | | |

FIRE ASSAY: A. H.

MAEL D.
COB

| | |
|-----------|--|
| FIRE ASS. | |
|-----------|--|

1. 32.00

Very respectfully,

correctly. *R. D. Fisher*

10

D. W. LITCHFIELD & ASSOCIATES, INC.

MINING AND LAND PLANNING CONSULTANTS

October 12, 1978

Rabb.

Mr. Joe O'Barr
Security Metals Inc.
438 South Drew
Mesa, Arizona 85202

Dear Sir:

On September 28, 1978, I accompanied your man, Tom Brice, and Mr. Carr Krueger on an inspection and evaluation of the Vekol mine and the adjoining properties.

Considerable time was spent in the underground workings and surface observations were made. The size and type of structures were observed, and from the data contained in those reports previously written by various authors, which reports I studied in detail prior to undertaking an on site verification and evaluation, I surmised that a considerable quantity of commercial ore is available in the old workings.

It is obvious that the highgrade stringers were chlorided by the old timers and that the bulk of the ore of good mill grade is left in the stopes. The "gopher hole" type of mining has precluded the development of the mine in the past, but with some new and proven technology, using air conveyors and other modern underground mining equipment, the ore can be very economically mined and transported to a beneficiation plant.

A thorough mapping and sampling should be accomplished, or perhaps the one done by the late John Walker of Gunnex may be purchased from the Gunnex interests. In either case, it should be quite simple to establish the best zones in which to begin mining within a very short time, and then the intricate mapping could be continued while the operations proceed.

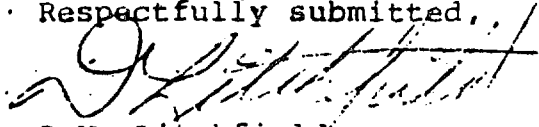
In addition to the significant quantities of ore available in the present workings, a series of vein structures exist on the claims which should be trenched and drilled to establish the

Mr. Joe O'Barr
October 12, 1978
Page 2

reserves contained therein. Some deep drilling is also indicated to establish the existence and magnitude of the inferred porphyritic ore body believed to underly these claims.

I believe that the subject claims have excellent potential to become a large producer of silver and other precious metals and do not hesitate to recommend that a program of development, production and exploration be started as soon as possible.

Respectfully submitted,



D.W. Litchfield
Mining Consultant and Engineer

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Geologic & Feasibility Overview

of the

VEKOL MINE

Pinal County, Arizona

By: Keith C. Crandall
Consulting Geologist
Mesa, Arizona

November 8, 1978

INTRODUCTION:

The purpose of this study of the Vekol Mine is to determine the feasibility of mining the old mine workings and/or discovery of new ore bodies of high grade silver.

To determine this, extensive research into the literature as well as field work was employed. A large sampling program has been involved in conjunction with geologic mapping of the area. Many

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laboratory experiments and pilot plant test runs were conducted in flow sheet design.

SUMMARY & CONCLUSIONS:

The Vekol Mine has been an excellent producer of silver in the past and is a current producer. The early miners high-graded parts of the ore body but left much ore that with modern machinery and technology can be treated economically. There are significant quantities of high-grade sulfide ore such as argentite, tetrahedrite (friebergite) and high-silver content galena and sphalerite to make a successful high-grade operation. This is ore 'in sight'. The early miners knew nothing about floatation of sulfides or did not have the proper equipment. They high-graded the oxide zone but when they got to the heavy sulfides were unable to treat the ore properly. They were after native and horn silver primarily.

After extensive research and field work on the property I believe that there has been post-mineralization block faulting of the ore body and that there are several blocks of ore yet untouched. This can only be confirmed however, by core drilling. There is also much evidence to support the theory of a large porphyry copper deposit under the present mine workings where there are more favorable replacement beds.

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GENERAL INFORMATION:

PROPERTY- There are six patented claims surrounded by the Papago Indian Reservation. They are recorded in Book 52 (deeds) page 138, Pinal County Court House, Florence, Arizona, BLM survey #4143.

CLIMATE- The climate is semi-arid with generally mild temperatures. The mine can be worked year-round without concern of weather. The temperature varies between the low of approx. 25 degrees F in the winter to a high of approx. 110 degrees F in the summer. The average rainfall is 10-15 inches per year. Most of the precipitation occurs during late summer and mid-winter.

WATER- There is presently a 380 ft. producing well on the property. It produces approx. 1500 gallons/day. The water table east of the Vekol Hills by Bitter Wells is approx. 20 ft. deep while on the west side it drops to over 300 ft.

POWER- There is no electric power lines with at least 20 miles of the property. A 40 KW diesel generator is currently in use.

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ACCESSIBILITY- There are three passable roads to the mine site. The route currently used is the El Paso Natural Gas road which is south of Stanfield approx. 10 miles. Another route is to go south on the Vekol Wash from I-8 freeway. An alternate route is to go south from Stanfield to Kohatk and through Bitter Wells to the mine site. There is also a landing strip for light airplanes on the property.

PRODUCTION

PAST- Most of the silver and gold was produced from 1882 to 1916. Very little has been done since then. An estimated 1,000,000 oz. of silver were taken out during this time.

PRESENT- There is a heap leaching operation in production at this time. There are approx. 60,000 tons of mine dump material available. About 15,000 tons are currently on the leaching pad but only a fraction of which is presently being leached. This pad produces at least 850 oz. of silver per week. They are leaching the lowest grade dumps and only recover 20-25% of the silver, which is about average for a heap leach. Even with the low grade material and low recovery the system is very economical.

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GEOLOGY AND ORE OCCURANCE:

The rock types at the Vekol Mine and vicinity comprise one of the most complete stratigraphic columns in the Basin & Range province of Arizona. At the base of the column is the pre-Cambrian Pinal Schist which is intruded by granite of questionable age. The Apache group rests unconformable on the schist basement. It is comprised of shales, conglomerates, quartzite, and limestone. It is estimated to be in excess of 1500 ft. thick. The Troy quartzite, of doubtful age unconformably overlies the Apache group. The Santa Catalina formation and the Southern Belle quartzite lie above the lower Troy. All of these are believed to be Cambrian in age. These are succeeded by the Upper Cambrian Abrigo formations, which is followed by the Upper Devonian section composed of the Martin limestone and the Lower Oury formation. The Lower Mississippian Escondido limestone follows, and is separated from the lower Pennsylvanian Naco limestone by a distinct shale bed. This can easily be seen near the main audit of the Vekol Mine.

The entire Paleozoic section at the Vekol Mine and vicinity is approximately 1700 ft. thick. Although the entire section is essentially conformable in dip and strike, there are at least five disconformities. Red beds, Quartzites and conglomerates

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were deposited on the eroded Naco limestone and are visible south of the Vekol Mine. These were probably Cretaceous in age. The Dacite porphyry, sills, flows and dikes are thought to be mid-tertiary and possibly Larimide in age.

At the Vekol Mine the Naco limestone and the underlying Escabrosa limestone form a northwesterly trending ridge which strikes generally N 30 W and dips about 25 degrees to the southwest. Two sets of pre-mineral faults cut these formations with apparently small displacement. The N 10-20 W set shows dips from 10 degrees east to 70 degrees west, and are commonly multiple structure of fractured or brecciated rock and comprise some very extensive fault zones. The N 70-80 E set dip about 80 degrees North and are usually straight and well defined. The largest of this second set cuts the north end of the old workings and is intruded in places by small andesite dikes which can be seen in the main shaft. The faults of both types may have been channels of mineralizing hydrothermal fluids. This calc-alkaline rock type is commonly associated with porphyry copper deposits in the Southwest U.S.

According to old reports and from field observations it is apparent that the ore extracted from the old workings consisted of small nodules of horn silver, argentite, and silver bearing tetrahedrite (Friedbergite). During most of the production period

/ 8

The ore was concentrated by hand sorting. This was mined from small pockets and lenses in the dolomitized upper horizon of the Escabrosa limestone within a few tens of feet of the basal shale bed of the overlying Naco Formation. Associated copper, lead, and zinc carbonates and sulfides can be found on the dumps and throughout the old workings.

The values of the high-grade material run about 1200 oz. Ag/ton. This is comprised mainly of argentite and frieborgite. The wall rock varies in value from approx. 2.0 oz. Ag/ton to 12 oz. Ag/ton, with the average of 9 to 10 oz. It is interesting to note that there is little native or horn silver to be found on the dumps or in the old workings yet there is substantial amounts of sulfides still present.

ENVIRONMENTAL IMPLICATIONS:

Newmont Mining Co. has plans to start a large open-pit operation 3-5 miles east of the Vekol Mine. Their Vekol Hills project includes the Christmas Gift and Reward Mines. They have prepared a lengthy and in-depth study which has already been approved. This study is available from the U.S. Dept. of Interior, Bureau of Indian Affairs, Phoenix, Arizona.

The general conclusion was that an open-pit operation in this locality would be much more beneficial than detrimental. Since

the Vekol Mine is on patented property no environmental impact statement is needed. However, if extensive work outside the patented claims is done then an updated statement might be necessary.

RECOMMENDATIONS:

I would recommend a systematic program of geologic mapping, sampling, and drilling to confirm the presence and value of untapped ore bodies as well as the remaining value of ore bodies that have been partially exploited. While this exploration program is in progress I would also recommend a small scale high-grade operation which will not only prove financially beneficial but will also help in mapping and provide the material for a pilot mill to test the ore beneficiation techniques. Special care should be taken in working the old mine because of safety conditions. There are places which may need to be timbered.

I would strongly recommend development of the property, both as a high-grade and open-pit operation. I believe it would yield a high return on the investment.

Keith C. Crandall
Keith C. Crandall
Consulting Geologist
645 E. Bates
Mesa, Ariz. 85203

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VEKOL SILVER MINE

Pinal County, Arizona

Results of chemical and geological investigation

by Don Stout for Rare Metal Products Company June, 1968

The purpose of this investigation has been to evaluate the Vekol silver mine to determine what possibilities, if any, exist for the discovery of unmined high grade silver ores in the near surface. This has involved attempts to outline the major structural controls of mineralization, the nature of mineralization, and its probable source. Aside from field mapping, the principal method I have employed is a fairly intensive sampling program. Heavy emphasis was placed on emission spectrographic analysis to determine what elements were present, and their approximate concentration. This work was performed by me in the laboratory of Research Chemicals, Phoenix, Arizona. Silver assays performed by Arizona Testing Laboratories, Phoenix, Arizona were used as a cross check on the spectrographic work, and pulp from these used for secondary spectrographic standards.

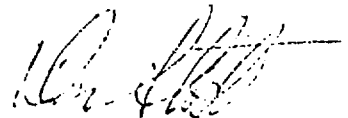
Major structural controls consist of faults and probable joint fractures, with a possibility of some shearing at the extreme south end of the old workings. The faults for the most part show no measurable deflection, although strong dip-slip slickensides are common in the tunnels. To further complicate the picture, the large E-W fault at the south end of the property is strongly reflected in the underlying Escabrosa dolomite, but shows only minor silicification of the zone along its strike in the overlying Haco limestone. It appears that all of the mineralized zones in the main workings are poorly reflected in the upper limestone, if at all. The E-W fault at the north end of the workings, however, appears to have cut the limestone with substantial strike slip displacement. This is the only fault with notable displacement, and is concluded to be younger than the other features, and probably post mineral. The great majority of the

faulting is premineral, and indeed probably existed as faults and/or joint fractures before the unconformable deposition of the Naco limestone. Later hydrothermal action was undoubtedly responsible for the mineralization, and intersections of faults and/or fractures together with the base of the much more chemically reactive limestone were the loci for higher grade ores. The mineralized fault zones delineated by the old workings trend N 10 - 15 degrees W, but a strong case can be built for the existence of an intersecting set of fractures showing a trend of N 30 - 35 degrees W which are also mineralized.

Mineralization consists for the most part of a very low grade, highly calcareous fracture filling whose metallic constituents are iron, zinc, lead, manganese, silver, antimony, and copper in order of concentration. The lead and silver, and to some extent the zinc, will concentrate by gravity. I feel that all the metallics are present as carbonates and oxides, with the possible exception of some silver present as the chloride. This is the nature of the great bulk of material in the fractures, which are metal bearing along the entire length of working. In the small pockets of higher grade ore, probably all formed in the intersections of fractures, lead, copper, and silver combine in a complex sulfide probably best described as bournonite. Silver bearing carbonates of zinc and lead are accessory minerals. One sample of this ore from the Argosy dump assayed 241 oz. of silver per ton. Spectrographic analysis showed this to be antimonial, with a trace of mercury, and lead higher than copper. Underground investigation and chemical analysis indicated that this probably came from the extreme south end of the workings under the Argosy claim. On the Mount Vernon claim 150 feet south of the E-W fault which crosses the south end of the property, a pocket of sulfides was mined which showed copper higher than lead, with silver down to 75 oz. per ton, and antimony replaced by arsenic. This, together with the presence

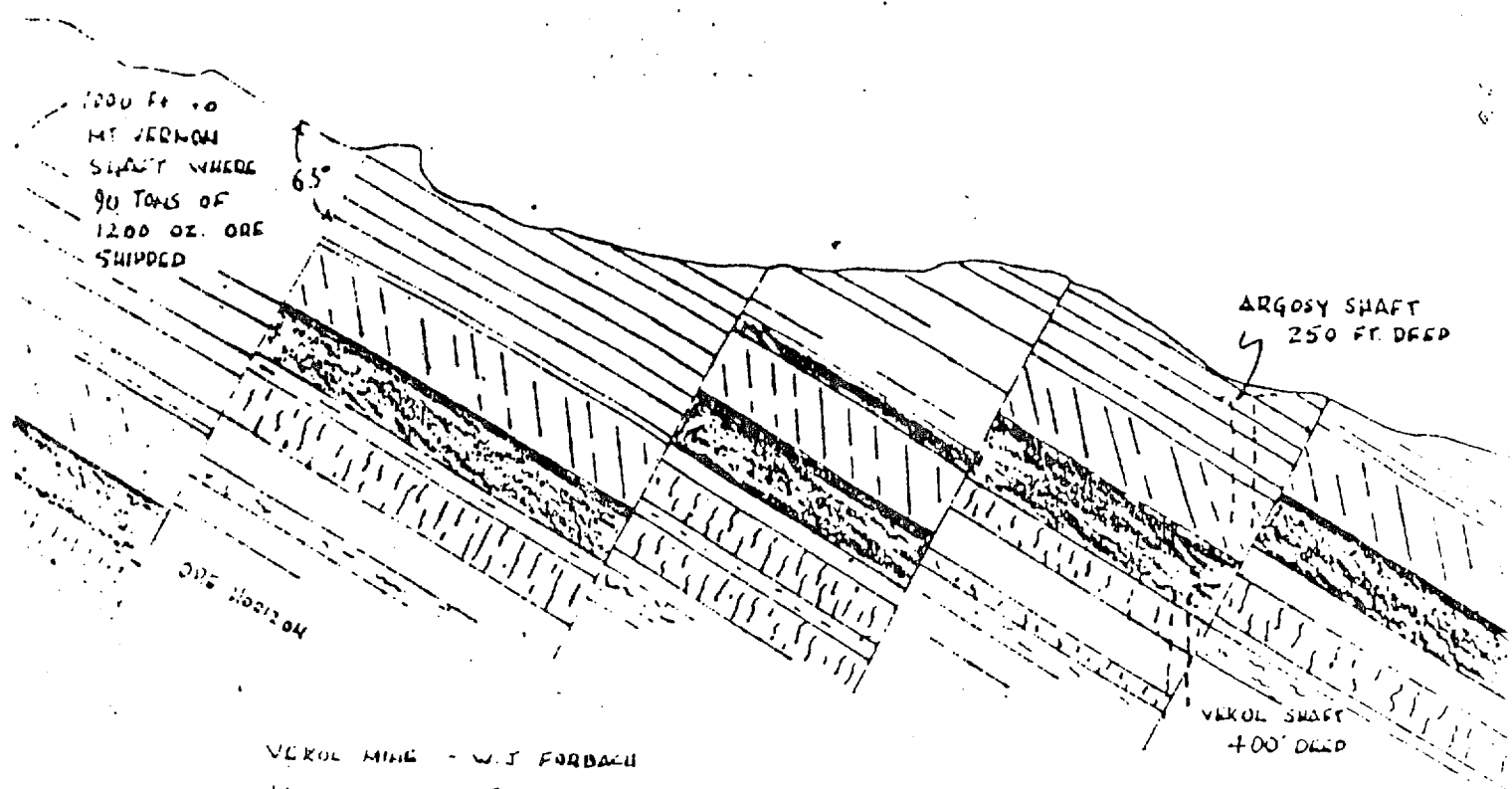
of antimony in the western workings, and its absence in the eastern workings in stopes further north, would indicate that the source of the mineralization either is closer to the surface on the east side of the property, or may actually lie east of the claims. The chemical makeup of the mineralization would indicate, from my experience in Arizona, an andesitic source.

Future exploration for unmined higher grade silver ore should be directed along the strike of the southernmost E-W fault, but the expense is apt to be prohibitive unless geochemical methods are employed as a guide to promising areas along the fault. Also, the temperature zoning of the property seems to point to higher grade silver ores to the west of the main workings where this fault is presumed to extend. The 25 degree westerly dip of the beds puts the base of the limestone at a rapidly increasing depth to the west. This could conceivably force explorations into highly speculative underground drifting, but it also could easily be worth the risk.



DON STOUT

23



VEROL MINE - W. J. FORBACH
ILLUSTRATIVE E-W GEOLOGICAL SECTION

THIS SKETCH SHOWS THE ORE OCCURENCE IN A WELL DEFINED LIMESTONE SERIES. APPROXIMATELY 10% OF THE MINERALIZED LIMESTONE STRATA HAS BEEN EXPLORED, DEVELOPED, & MINED. THIS DEVELOPMENT WORK CONSISTS OF SOME 10 MILES OF TUNNELS & DRIFTS, 13 SHAFTS & 13 SURFACE CUTS. THE WORKINGS EXTEND SOME 1400' ON THE STRIKE.

THE COLORADO ASSAYING COMPANY

(Incorporated)

ASSAYERS AND CHEMISTS

2244 BROADWAY

DENVER, COLO. 80201

March 14, 1966

OUR MOTTO: -

"What there is in it,
no more, no less."

Report on Spectrographic Analysis submitted by Mr. Donald E. Coombes, Brooks, Oregon

ELEMENTS PRESENT APPROXIMATE PERCENTAGES

| | |
|---------------------|---------|
| Silicon - - - - - | Major |
| Calcium - - - - - | 10.-15. |
| Magnesium - - - - - | 5. |
| Zinc - - - - - | 5.-10. |
| Aluminum - - - - - | 5.-8. |
| Iron - - - - - | 5. |
| Lead - - - - - | 2.-5. |
| Sodium - - - - - | 1. |
| Potassium - - - - - | .5 |
| Manganese - - - - - | .05-.1 |
| Titanium - - - - - | .1 |
| Arsenic - - - - - | .01 |
| Antimony - - - - - | .2-.5 |
| Barium - - - - - | .01-.03 |
| Cadmium - - - - - | .005 |
| Chromium - - - - - | .01 |
| Copper - - - - - | .3-.5 |
| Lithium - - - - - | .001 |
| Mercury - - - - - | .05-.1 |
| Nickel - - - - - | .002 |
| Strontium - - - - - | .01 |
| Silver - - - - - | .01 |
| Vanadium - - - - - | .002 |
| Yttrium - - - - - | .01 |

Gold .01 oz./ton @ \$35./oz. - \$.35/ton
 Silver 3.80 oz./ton @ \$1.30/oz. - \$4.94/ton
 Copper - 0.35% @ \$6./unit - \$2.10/ton
 Lead - 3.0% @ \$2.50/unit - \$7.50/ton
 Zinc - 7.3% @ \$1.50/unit - \$10.95/ton
 Uranium, Thorium - None detected

REMARKS:

The heavy white minerals in this sample are Cerussite (lead carbonate) and Smithsonite (zinc carbonate).

The gangue consists of soft Dolomite (calcium and magnesium carbonate), fine Sand (mostly silica), soft Clay (complex hydrous aluminum silicate) and the red-brown Hematite (iron oxide).

The Silver, Copper, Lead and possibly Zinc and Mercury contents are of interest.

Respectfully submitted,

THE COLORADO ASSAYING COMPANY

BY Ed. Phillips

25

DATA SHEET

Estimates of ore based on field observations yeilds the following quantities:

| | |
|----------------|----------------|
| Indicated ore- | 2,405,000 tons |
| Inferred ore- | 2,509,000 tons |
| Potential ore- | 3,300,000 tons |

High Grade Operation:

| | |
|----------------|-------------|
| Indicated ore- | 30,000 tons |
| Inferred ore- | 30,000 tons |
| Potential ore- | 40,000 tons |

| | | |
|-------------------------|---------------------------|-----------------|
| *Minimum Average grade: | .02 oz Au/ton @ \$220 | \$4.20 |
| | 50.00 oz Ag/ ton @ \$5.50 | \$275.00 |
| | | <u>\$279.20</u> |

| | |
|--------------------|----------|
| Mill recovery- 70% | \$195.44 |
|--------------------|----------|

Open Pit Operation:

| | | |
|-------------------------|-------------------------|----------------|
| *Minimum Average grade: | .01 oz Au/ton @ \$220 | \$2.20 |
| | 5.20 oz Ag/ton @ \$5.50 | \$28.60 |
| | | <u>\$30.80</u> |

| | |
|--------------------|---------|
| Mill recovery- 70% | \$21.56 |
|--------------------|---------|

*The actual values that we have mined and smelted of the high grade ore runs approx. 1100 oz Ag/ton. The ore that would be mined in an open pit operation runs approx. 11 oz Ag/ton. However, allowing for dilution factors, and the undeterminable parameters involved in mining, and for the sake of being conservative we have used the lower values.

Third camp in this tragic trio is Vekol. It lies down in the Papago country, in the southwestern corner of Pinal County, where the only living settlements bear names that sound more like Saudi Arabia than like Arizona—names such as Chiapuk, Totopik, Sif Vava, and Kokatk.

Back in the early 1860s, when Arizona was still plenty wild and a man's scalp was in constant danger of being lifted, the Territory was enriched by the arrival of a new settler, John D. Walker, of Illinois. Enterprising, honest, and public spirited, Walker would have been a material asset to any community, and Arizona was soon reaping the benefits of his character and energy.

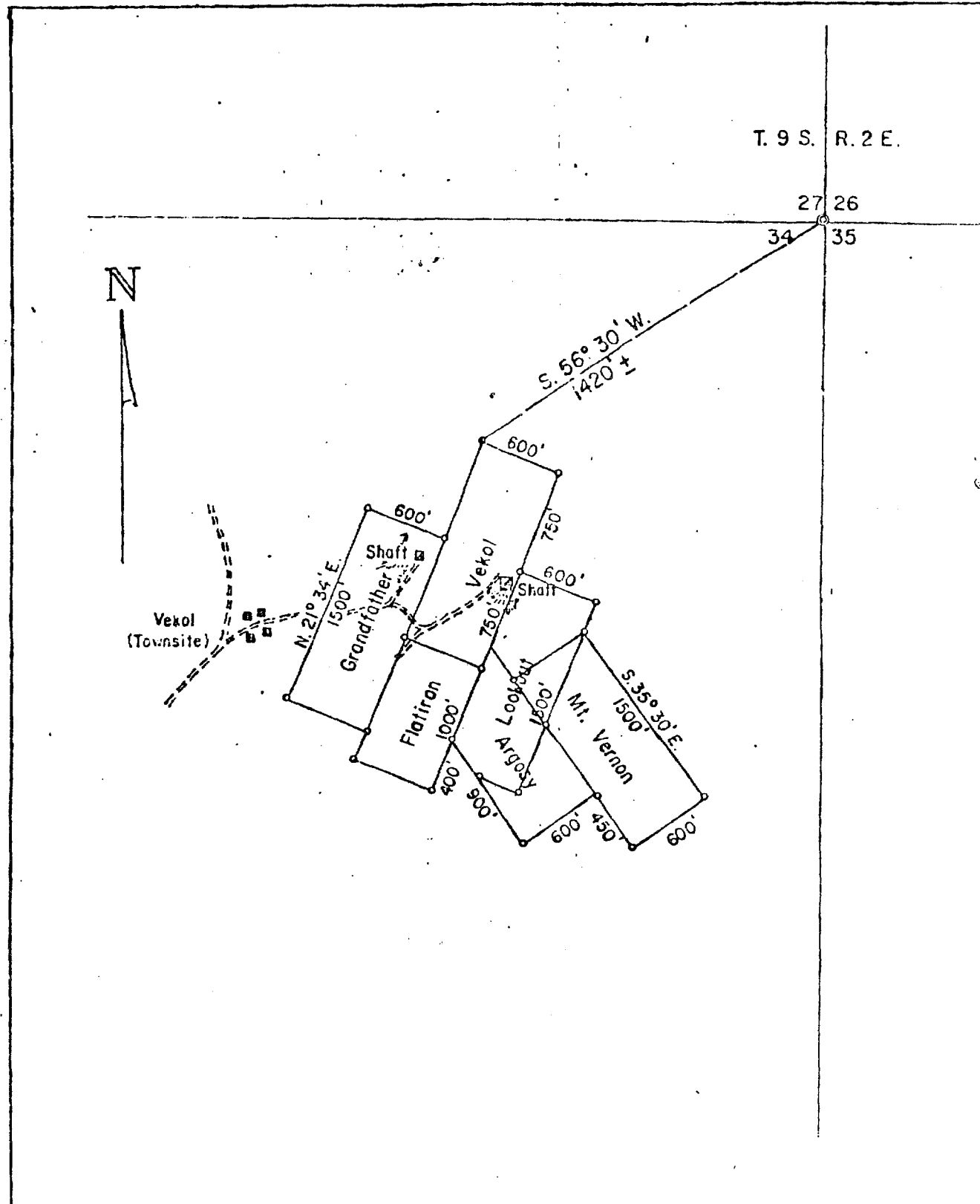
In addition to large-scale ranching operations, Walker quickly became interested in mining and had a hand in developing several important properties. From time to time, during the next dozen years, Walker heard rumors of a rich silver deposit in the Papago country south of Casa Grande, but when he mentioned the matter to Papagos employed on his ranch they would either disclaim all knowledge of the location, or would refuse to disclose the long-held tribal secret.

It was Juan José Gradello, a Papago, who eventually volunteered to take Walker to the site of the mine. Surface indications showed the deposit to be as rich as rumor had said, and on Feb. 5, 1880, the property was located in the names of John D. Walker, his partner, Colonel Peter R. Brady, and Juan José, the Indian. That same year the Indian's interest was purchased by Brady and Walker, and in the fall of 1881 Walker's brother, Lucien, acquired an undivided one-third interest in the mine, which had been named the Vekol, a Papago word meaning "grandmother."

The Vekol paid handsomely from the grassroots down. Before the close of 1881 the main tunnel had been sunk to a depth of 118 feet, through rich ore all the way, and the partners were taking out and shipping to San Francisco and Denver about ten tons monthly, averaging \$300 per ton. From this they were netting some \$2000 each month, and were stockpiling around 150 tons of second-grade ore running from \$40 to \$90 per ton.

On April 29, 1882, the *Weekly Arizona Enterprise* reported, "The last shipment of ore from the Vekol . . . was the richest cargo yet sent out from that wonderful mine. It consisted of 22 tons, and every ton of it milled over \$1,200! The owners of this rich mine . . . refused an offer of \$100,000 for the property last week. They have a splendid well at the mine, now, which furnishes water for about 400 Indians and a large amount of stock, besides the water used at the mine . . ."

¹Sheriff O'Neill, recording this same incident only three days after the flood, identified the saloonkeeper as Robert Drew, and stated that the amount contained in the safe was "in the neighborhood of \$7000."



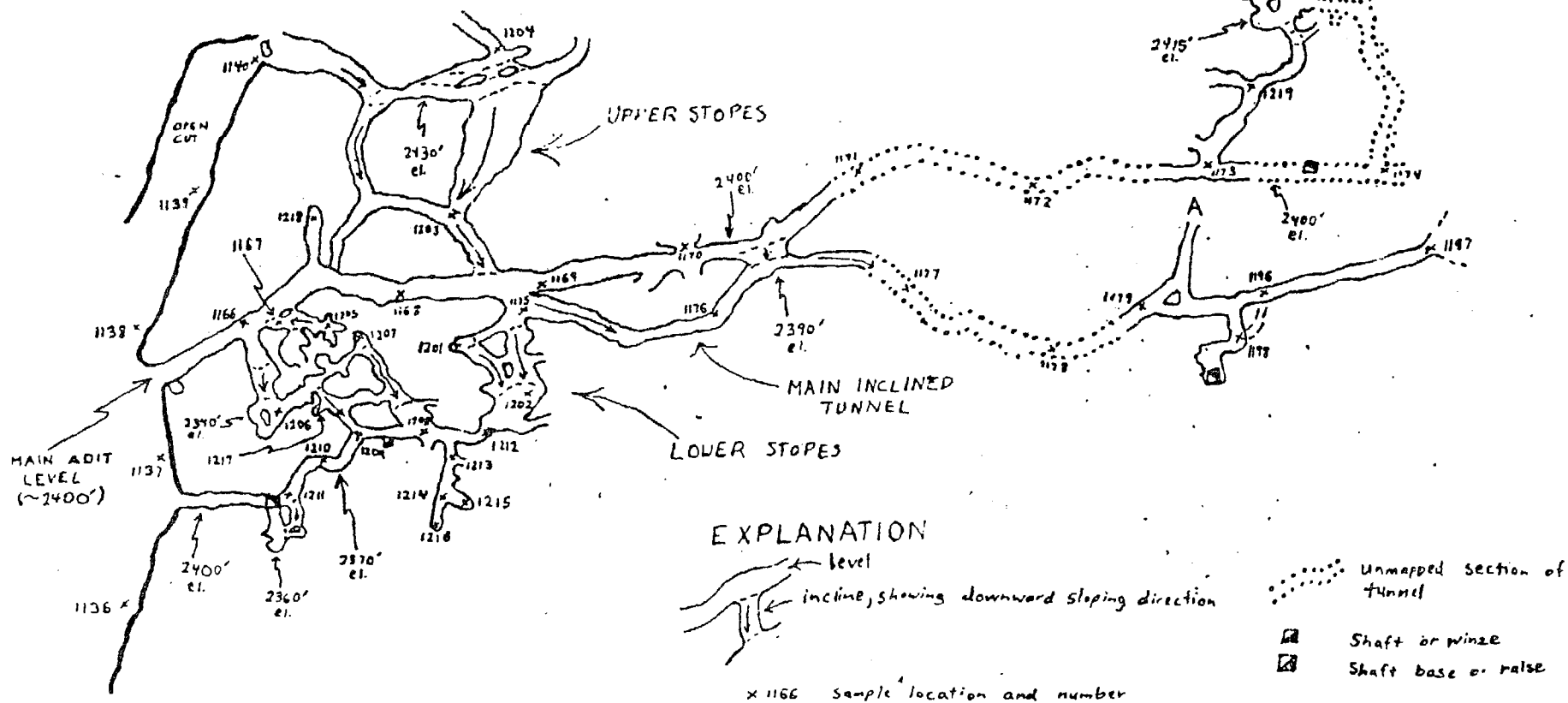


0 100 200
SCALE ~ 1" = 50'

LEAD TUNNEL
MAIN ADIT LEVEL,
MAIN INCLINED TUNNEL,
AND
UPPER AND LOWER STOPS

Map 3

UPPER
STOPES

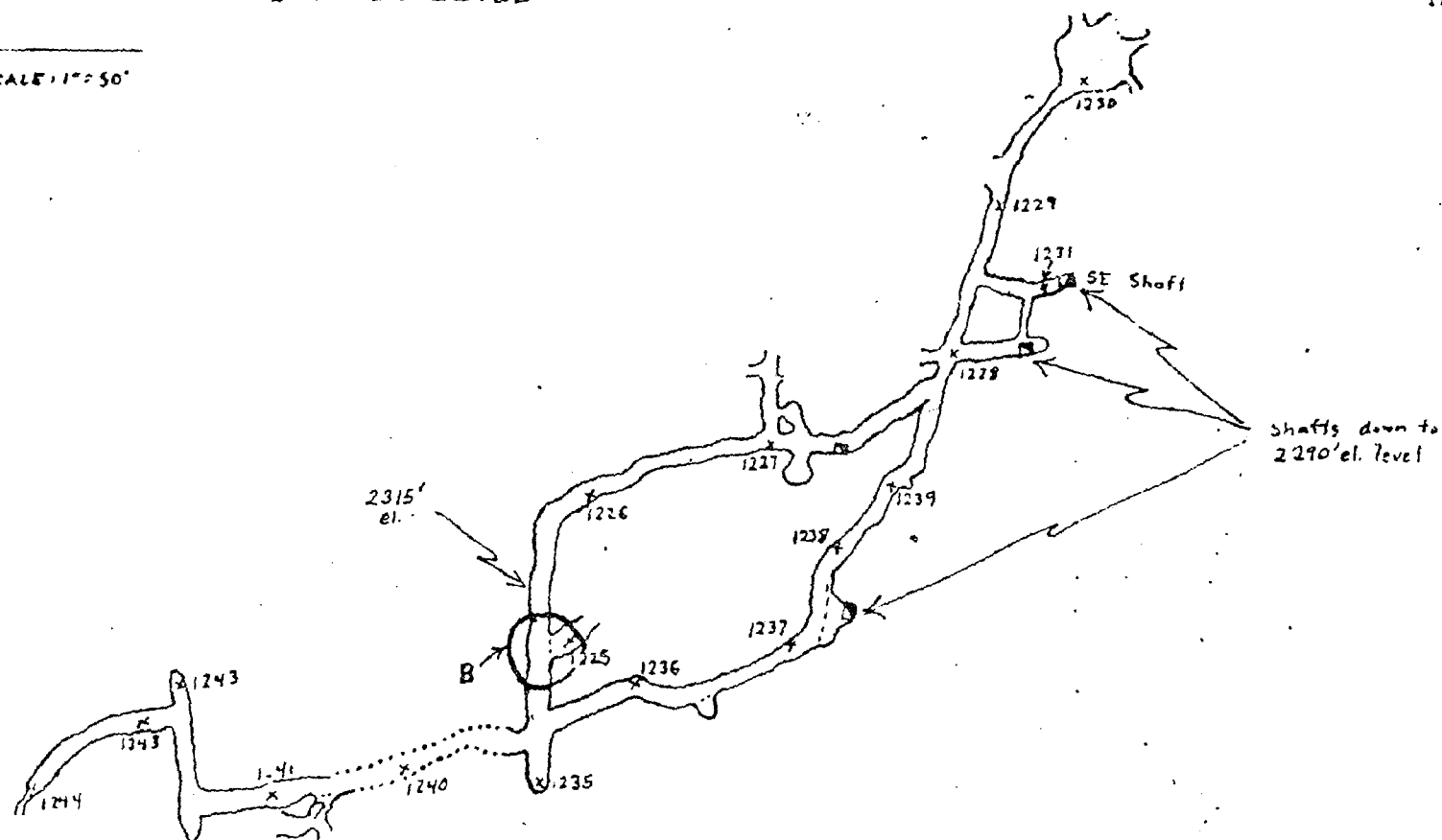


W
D

VEROL MINI.
2315' EL. LEVEL

Map # 5

N ←
SCALE: 1" = 50'



32
REPORT on the VEKOL MINE

by

W.J. FORBACH, Mine Superintendent, 1907-1908

Superior, Arizona

July 12, 1946

To Dr. H.A. Moore,
Arizona Club,
Phoenix, Arizona

Dear Sir:

Referring to the Vekol Mine, this property was discovered by Papago Indians and samples taken to the J.D. Walker ranch on the Gila River, where samples were sent out for assaying, the results of which showed high values in silver; whereupon J.D. Walker, P.R. Brady and Lucien Walker located the property in 1880 and jointly began the operation as a co-partnership. For some reason or other, Brady and the Walkers failed to agree on the manner of operating the property, and the net result was the sale of Brady's one-third interest for \$60,000.00 to the Walker Brothers, who jointly operated the property from 1880 to 1892. During this period, several million dollars worth of ore was shipped to various smelters, and the lower grade ores were milled in a 10-stamp mill followed by pan amalgamation.

In 1892 J.D. Walker became ill and died a short time later. Following the death of Mr. Walker, the property was involved in a series of legal entanglements which extended over a period of ten years, and following this period of litigation, I secured a lease and option for the sum of \$200,000.00, and interested some southern gentlemen to take it over. At that time I had recommended a campaign of diamond drilling to determine the exact displacement of the ore-bearing series which occur between the highly altered shale beds and a dolomitized limestone which had been faulted by post-mineral east dipping faults, displacing the ore-bodies which follow the bedding planes, which dip approximately 32° to the west-south-west.

The walkers, in operating the property, followed in along the strike for a distance of some 1400 feet from the discovery point, and in the extreme southern workings of the mine the ore-bodies became much more base -- the lead and zine increasing -- thus rendering their method of milling inadequate for the treatment of the sulphide ores. The displacement of the ore-bearing blocks increased from a throw of 63 feet from the western

extremity of the ore-blocks to a distance of 113 feet on the last fault to the east. These are the two faults, in my estimation, that make the Vekol a very interesting mining venture, as there is a large block of ground, lying to the south and east, of virgin territory which is exposed on the brow of the hill, where it is said that two carloads were shipped from this outcrop which averaged 1200 ounces silver per ton.


To the west of the Argosy shaft there is a very strong probability that the Vekol ore-bodies can be picked up in comparatively short diamond drill holes and that was the reason why I became interested in the mine in 1907, besides the fact that the records then in the office safe, which were not complete by any means, but which, showed by smelter settlement sheets, accounted for a million, six hundred thousand dollars, the average value in silver being 312 ounces and 12% lead. The mill book then in the safe, showed some \$388,000.00 odd dollars as return from bullion indicating an average of 39 ounces of silver per ton. I had also been told by the bookkeeper, Mr. Mitchell, that the total production of the Vekol, at the time of Mr. Walker's death, was approximately seven million dollars.

I had proposed to the people interested that we initiate a diamond drilling campaign prior to attempting constructive development, but unfortunately I was over-ruled by the president of the company, and was instructed to sink a two-compartment working shaft adjacent to a 600 - foot water well which had been drilled to supply water for the mill and camp. The reason for the insistence of the president on sinking the two-compartment working shaft at this point was based on a drunken well-driller's story that in drilling the water-well, they had passed through 20 feet of 30 ounce silver ore. However, when the shaft reached the depth of 120 feet, we encountered an east-dipping post-mineral fault which made it clear to me that the collar of the shaft had been started at a point where the ore-bearing series had long since been eroded, and was below the ore-bearing strata, there being a canyon extending from a pass in the mountains downward, forming a V-valley at the place where the shaft was sunk. I stopped the work at the 120 foot level, and advised the president of the company of the true conditions. They ignored the advice so furnished and instructed me to continue the shaft to a depth of 400 feet. No ore-bodies were encountered, proving the deductions previously given were correct.

This shaft, however, will be worth a good deal of money in the future operations in entering into the extension of the ore-bodies to be determined by future drilling, there being a long cross-cut

Note - Balance of this report
has been lost.

MR HARRY WESTLING
APT 51
851 E PALM PARKE BLVD
CASA GRANDE, AZ 85222

 HARRY WESTLING
851 W PALM PARK BLVD APT 51
CASA GRANDE, AZ 85222