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March 21, 1966

Mr. J. Behunin  
4118 Cherrydale Court, N.W.  
Albuquerque, New Mexico.

Dear Mr. Behunin:

As promised, herewith my written report on the Rose Quartz Tungsten property in Gila County, Arizona.

Mr. Erhlinger will no doubt provide you with a report on the concentration feasibility of this ore.

Mr. Murphy and I attempted to get a sample for the metallurgical test work which would approach as near as possible the material which might be going through the mill.

If there is any additional information you may require, please contact me at your earliest.

Sincerely yours,

R. E. Mieritz, P. E.  
Mining Consultant.

ROSE QUARTZ TUNGSTEN  
Gila County, Arizona

by  
Richard E. Mieritz  
Mining Consultant  
Phoenix, Arizona

On March 13 and 14, 1966, the writer, accompanied by Messrs. John Murphy and Jim Haught, visited the Rose Quartz Tungsten property to examine the tungsten occurrence and sample same with a view to determine the possible potential of tungsten ore reserves in the immediate area of development.

CONCLUSIONS:

Information obtained through the examination of the property and the limited sampling program suggests the following to the writer:

(1)- Tungsten mineralization is limited to the quartz veins and dispersed minutely but very weakly in the diabase-quartz diorite material separating the veins.

(2)- The quartz veins are strong and have favorable geologic setting which prompts the writers calculations of 50,000 tons INFERRED ore containing approximately 1.36%  $WO_3$  or 68,000 units of tungsten.

(3)- Exploration as underground drifting and raising or surface diamond drilling must be completed before a mining and milling program are commenced. *changed.*

(4)- The property should be optioned if expenditures in the exploration direction can be considered.

PROPERTY AND LOCATION:

The Rose Quartz property, first located in 1937, consists of five unpatented mining claims known as the Rose Quartz No. 1 through No. 5. The claims are located in the Tonto National Forest in unsurveyed territory but would be located in what might be Sections 13 and 24 of T. 8 N. and R. 12 E. of the Gila and Salt River Base and Meridian, Gila County, Ariz.

This property is approximately 12 airline miles southwest of Young, Arizona but is best reached by traveling north from Globe on State Highway 88 to junction with County Highway 288 and north toward Young on Highway 288 to a point about 10 miles south of Young where a westerly road leads to the Jim Haught Homestead, about six miles by road.

The Rose Quartz claims are in Rock Creek Canyon about two airline miles west or three road miles west of the

Haught Homestead. The road is narrow, steep and very muddy when wet.

The topography in the canyon is steep and rugged and has great relief.

Rock Creek has a good flow of water all year due to its being spring feed near its head.

#### GEOLOGY and MINERALIZATION:

Rocks observed in the area include quartzite, diabase-quartz diorite, conglomerate and schist as well as some exposures of basalt. No attempt was made to map the rock formations in the immediate area at this time.

Mineralization in the immediate area includes gold, copper, tungsten and molybdenum. The main interest of concern is the tungsten and molybdenum mineralization.

Strong, steep dipping, milky to clear quartz veins, 4 inches to 10 inches wide, generally striking N. 40 to 45° W. are located in the diabase-quartz diorite rock which is in contact with steep dipping schist near the portal of the lower adit. Tungsten mineralization as scheelite, wolframite and possibly minor powellite were observed in the quartz veins, usually on the foot and hanging walls but also dispersed in the quartz. Scheelite, at least, is also dispersed in the quartz diorite-diabase rock along hairline or knife-blade fractures. This observation was made by mineral light. The quartz veins and diabase-quartz diorite rock carry small amounts of associated minerals as molybdenite, pyrite and pyrite showing cuperiferous tarnish.

#### DEVELOPMENT:

Adit portals expose three separate but quite parallel quartz veins, the two most westerly ones being 20 to 25 feet apart and the third being approximately 50 feet easterly of the middle vein.

The most easterly vein is developed by a short 25 to 30 foot drift, not now accessible, but reported as such in the U. S. Bureau of Mines R. L. 8078 by V. B. Dale.

The most westerly two veins are more developed than the most easterly vein and are referred to on the attached "Map of Adits" as veins "A" and "B".

Vein "A" is developed by an upper and lower drift with approximately 40 feet difference in elevation. (see "Map of Adits") The lower adit is 155 feet in length, the upper adit is approximately 100 feet in length. These workings explore the vein for a total horizontal

length of 170 feet because the face of the upper adit is 15 feet further northwest than the face of the lower adit.

Vein "B" is developed by an upper adit about 55 feet long and a 25 foot drift at the end of a northeast cross-cut from the lower adit.

There is one small stope upwards from the lower adit immediately above the crosscut from Vein "A" to vein "B" on this level. This stope is about 20 feet high measured from the lower adit drift back. It did not intersect the upper adit level; on vein "A".

A previous lessee has "stoped" the upper adit drift on vein "A" from just inside the caved portal to the cross-cut. The broken muck is still in the drift and shows considerable scheelite with the "lamp". This stoped length is approximately 35 feet.

#### SAMPLING:

No complete sampling program was conducted, instead, character samples were taken to determine where the tungsten values occur in order to calculate a reasonable and justifiable tonnage and grade of potential ore.

Four samples were taken; one each of the two quartz veins "A" and "B", one across the upper drift back on vein "A" but not including the exposed quartz vein and one across the face and along the wall of the cross-cut on the lower adit but not including the quartz vein "B" exposed in the short drift.

A description and assay results of these four samples are tabulated below. (see Map of Adits for specific locations).

<u>Sample</u>	<u>Description</u>	<u>% WO<sub>3</sub></u>	<u>% Mo.</u>
1	Quartz vein "A", 6" wide, back upper adit. 5' NW of drift-cross cut intersection.	3.25	.009
2	Diabase-diorite, 4 ft. length, across back, same place No. 1	0.08	.003
3	Quartz vein "B", 8" wide, back, drift lower adit	2.22	Tr.
4	Diabase-diorite, 12 ft. length, face of drift and NW wall xcut.	0.06	.002

A 25 pound plus sample (bulk) was also obtained and sent to Mr. H. P. Erhlinger, Texas Western College, El Paso, Texas. This sample was taken across 20 feet of the crosscut between the two veins on the lower adit level. Mr. Erhlinger will complete metallurgical tests to de-

termine concentrating feasibility.

The sampling clearly indicates that the tungsten values are very strongly associated with the quartz veins and even though there has been some impregnation of tungsten mineralization away from the quartz veins or between the quartz veins, it is very weak in strength.

With these conditions, mining must be done to minimize dilution.

It should also be noted that the molybdenum mineralization seems to occur mainly in vein "A", however, because of its low content and no doubt sporadic occurrence, it is quite likely that molybdenum was "missed" in taking sample No. 3 of quartz vein "B".

ORE RESERVES:

Developed ore reserves are nil for all practical purposes, thus, any ore reserve is strictly "inferred". *omitted*

The adits have explored vein "A" for approximately 175 feet along the strike and vein "B" for about 90 feet. Although the veins are only 4 to 10 inches in width, they are strong and part of a strong shear zone associated with the intruded diabase-quartz diorite rock.

Similar quartz veins are present some 1200 feet further northwest on the south hillside of a creek which parallels the direction of Rock Creek at the mine. Hilltops are quartzite covered and the bottom, relatively horizontal quartzite, diabase contact is some 250 feet vertically above the adits.

Reserves are dependent on a mining plan, and to retain as high as possible, a grade which would make an operation profitable. It is here suggested that "stope" mining be kept to a maximum of 4 feet wide, keeping the quartz vein in the center.

With the above assumptions, inferred ore reserves from lower level to diabase-quartzite contact above can be calculated as follows:

Triangular Block: 400 ft. long, 250 ft. high, 4 ft. wide.  
 $\frac{1}{2} \times 4 \times 400 \times 250$  equals 14,300 tons.  
14 c.f./ton  
double for two veins 28,600 tons.

Rectangular Block further northwest along strike: 150 ft. long, 250 feet high and 4 ft. wide.  
 $150 \times 250 \times 4$  equals 10,700 tons.  
14 c.f./ton  
double for two veins 21,400 tons.  
Total, two blocks 50,000 tons (two veins)

Values: Vein "A"	3.25%	WO <sub>3</sub>
" " "B"	2.22%	"
	<u>5.47</u>	
average	2.73	"
Dilution	<u>1.36</u>	" (50%, 4 ft. width.)

Probable avg. grade 1.36% WO<sub>3</sub>

Inferred WO<sub>3</sub> units equals 50,000 x 1.36 or 68,000 units.  
 Inferred "inplace" value-\$40.00/unit or \$2,720,000.00.

DEVELOPMENT BY EXPLORATION:

Exploration of the veins could best be done by drifting and raising on a sub-level above a planned haulage drift to serve both veins. This is time consuming and requires much equipment.

*Revised.*

On the other hand, diamond drilling from the surface would be somewhat faster and perhaps less expensive except for the fact of costly road and drill site construction on the very steep slopes of the canyon. Four diamond drill holes strategically located, totaling about 1000 feet of hole, could satisfactorily "prospect" the triangular block of "inferred" ore to justify or denounce forward movement toward an operation. Such a plan would prospect all three quartz veins and could increase the inferred reserve in this block because vein "C" or the most easterly vein was not considered in the reserve.

MINING:

After satisfactory indications that about 30,000 tons of tungsten ore exist in the "triangular block", an operation would be justified.

Since it is indicated that the strong mineralization is confined to the quartz veins and not adequately dispersed in the material between the veins, it is conceivable that a "haulage" drift could be driven between the quartz veins "A" and "B". Finger raises could be driven toward each vein and a 4 foot wide stope carried forward on each vein. Shrink stoping would be a satisfactory and relatively cheap mining program.

MILLING:

Mr. H. P. Erhlinger will conduct test work on the concentration feasibility of this ore.

There is little room for tailing disposal in the narrow, steep Rock Creek canyon. Water pollution from the use of flotation may also be a problem.

As a thought, based on some observations during the exam-

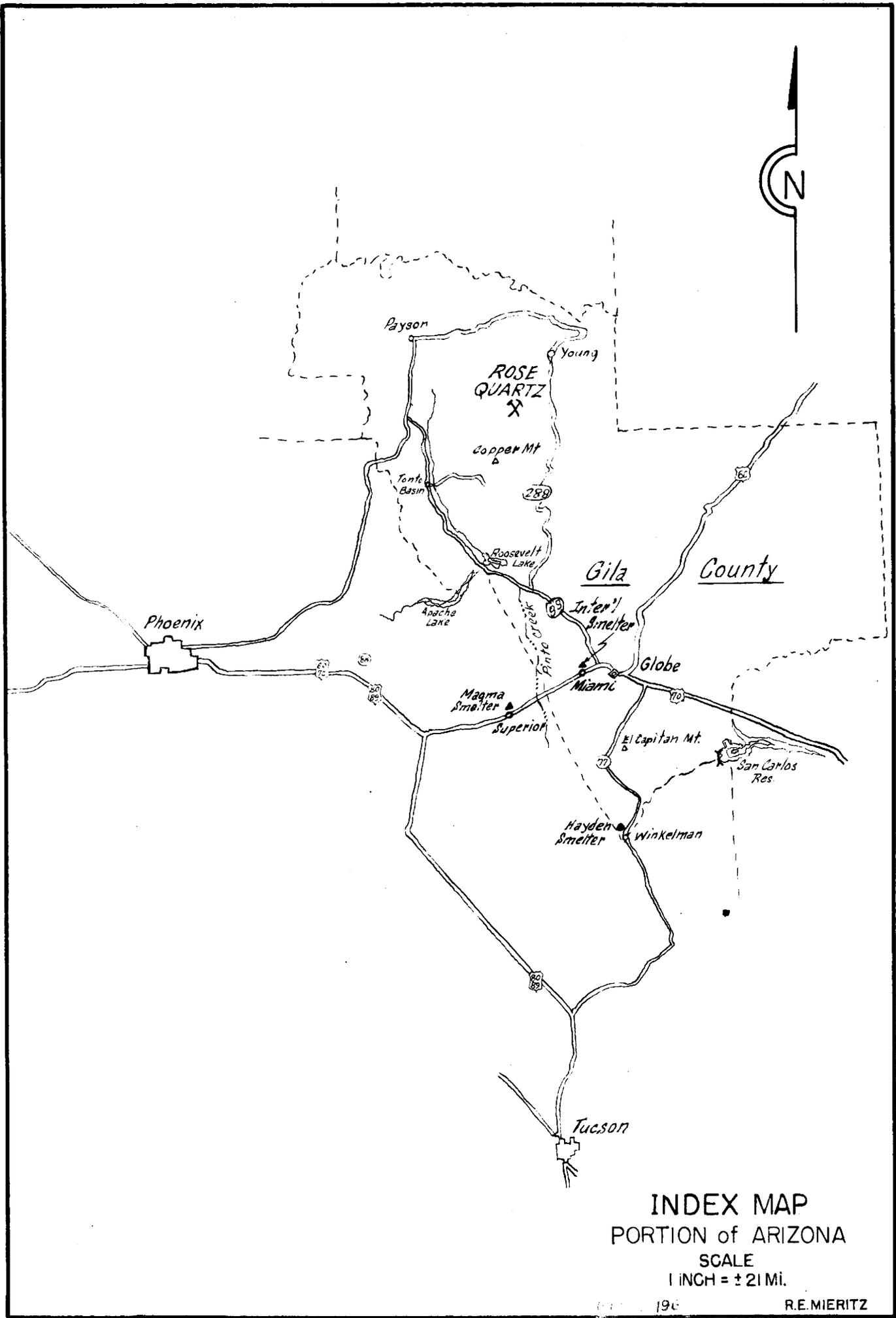
ination, it may be possible to eliminate some "waste" before entering the mill.

The quartz veins, being 4 to 10 inches wide, are quite friable and break up quite finely as contrasted to the diabase-quartz diorite. It is quite likely that a 4" screen would eliminate 75% of the "waste"; thus, reduce the size of the mill but would produce the same amount of tungsten units at a less cost of operation.

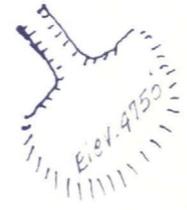
A test of this nature should be made before a mill is designed for the operation.

Respectfully submitted,

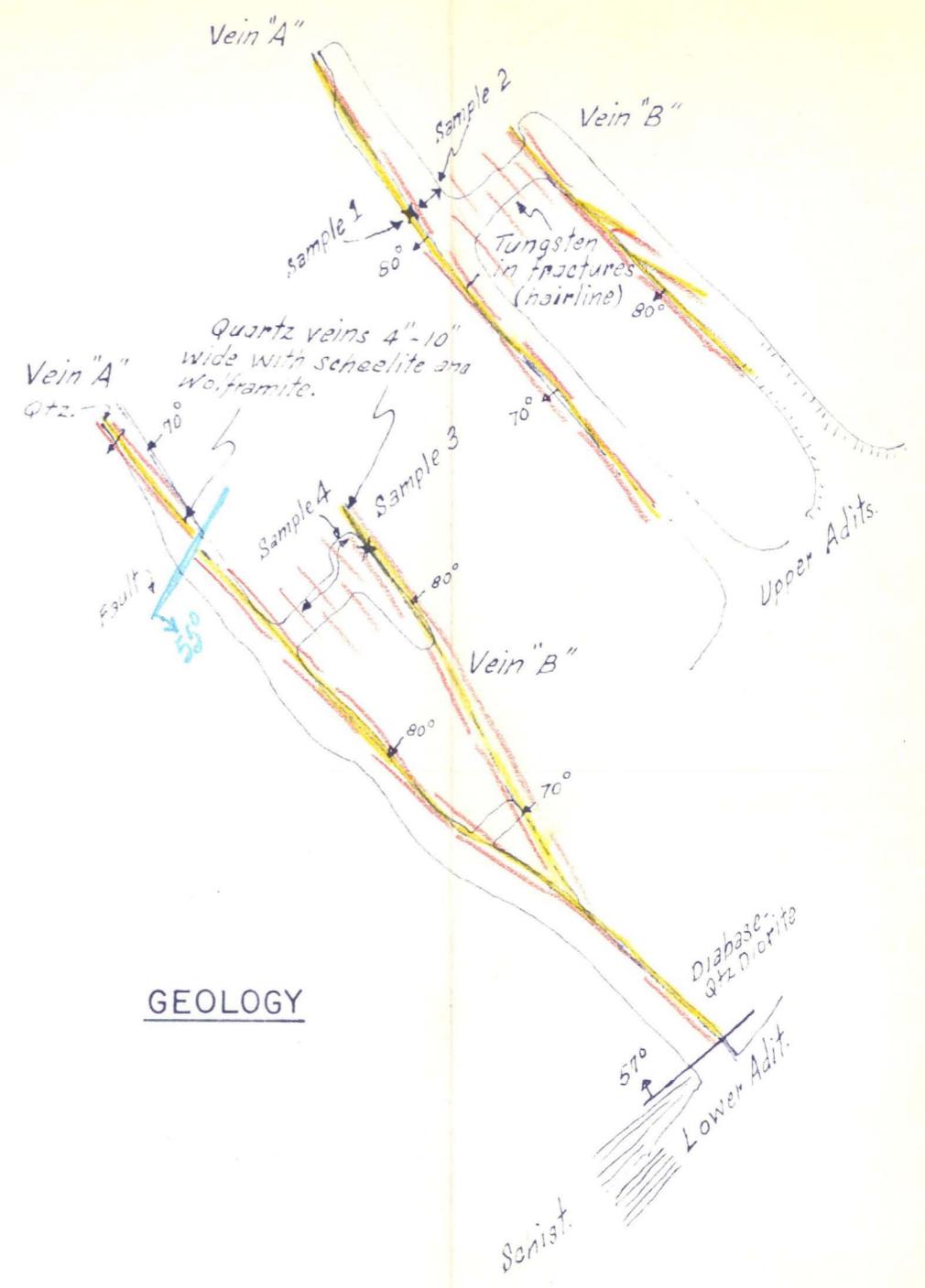
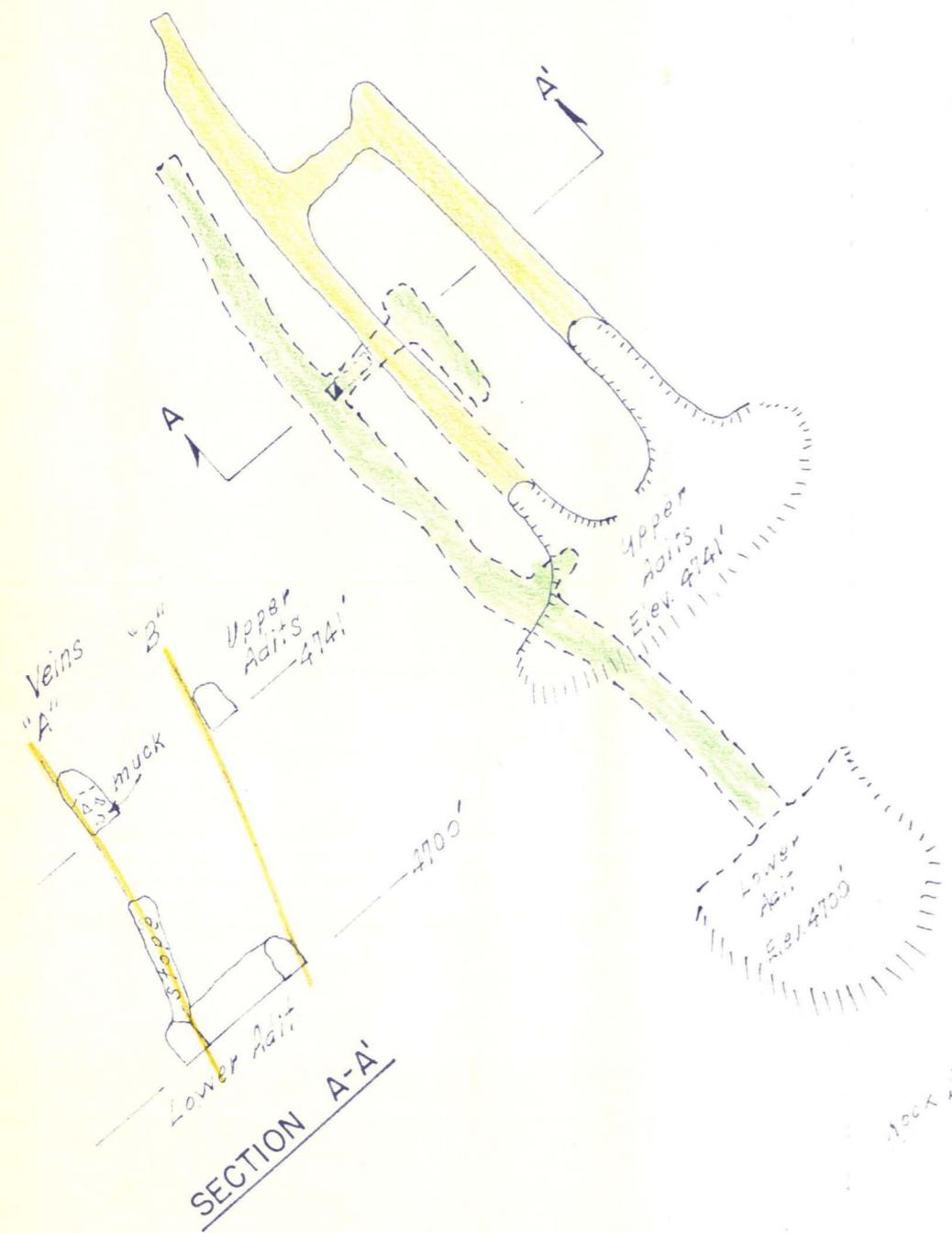
R. E. Mieritz, P. E.  
Mining Consultant.



INDEX MAP  
 PORTION of ARIZONA  
 SCALE  
 1 INCH = ± 21 Mi.



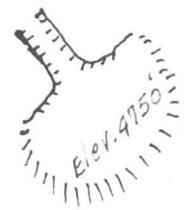
PLAN



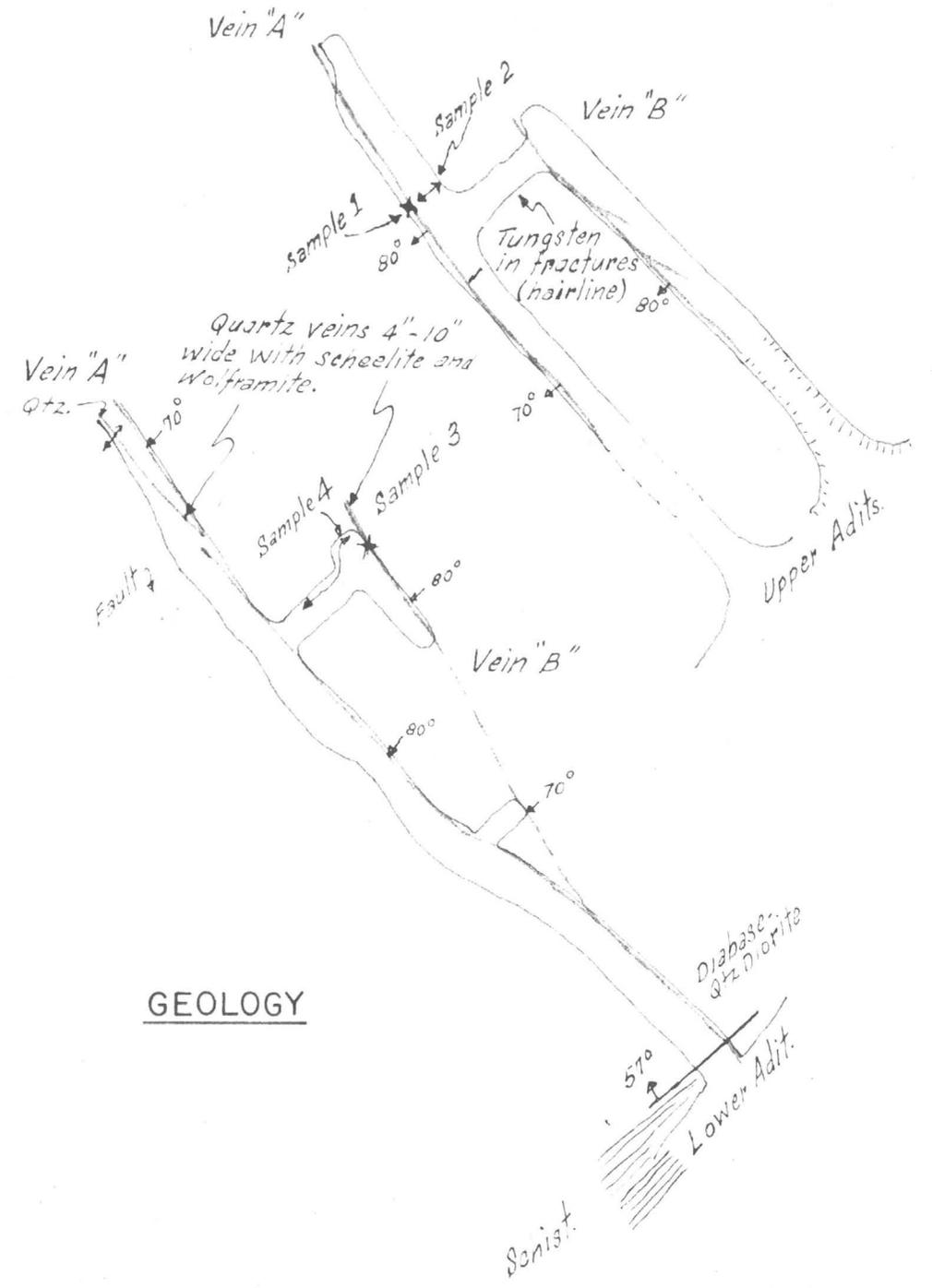
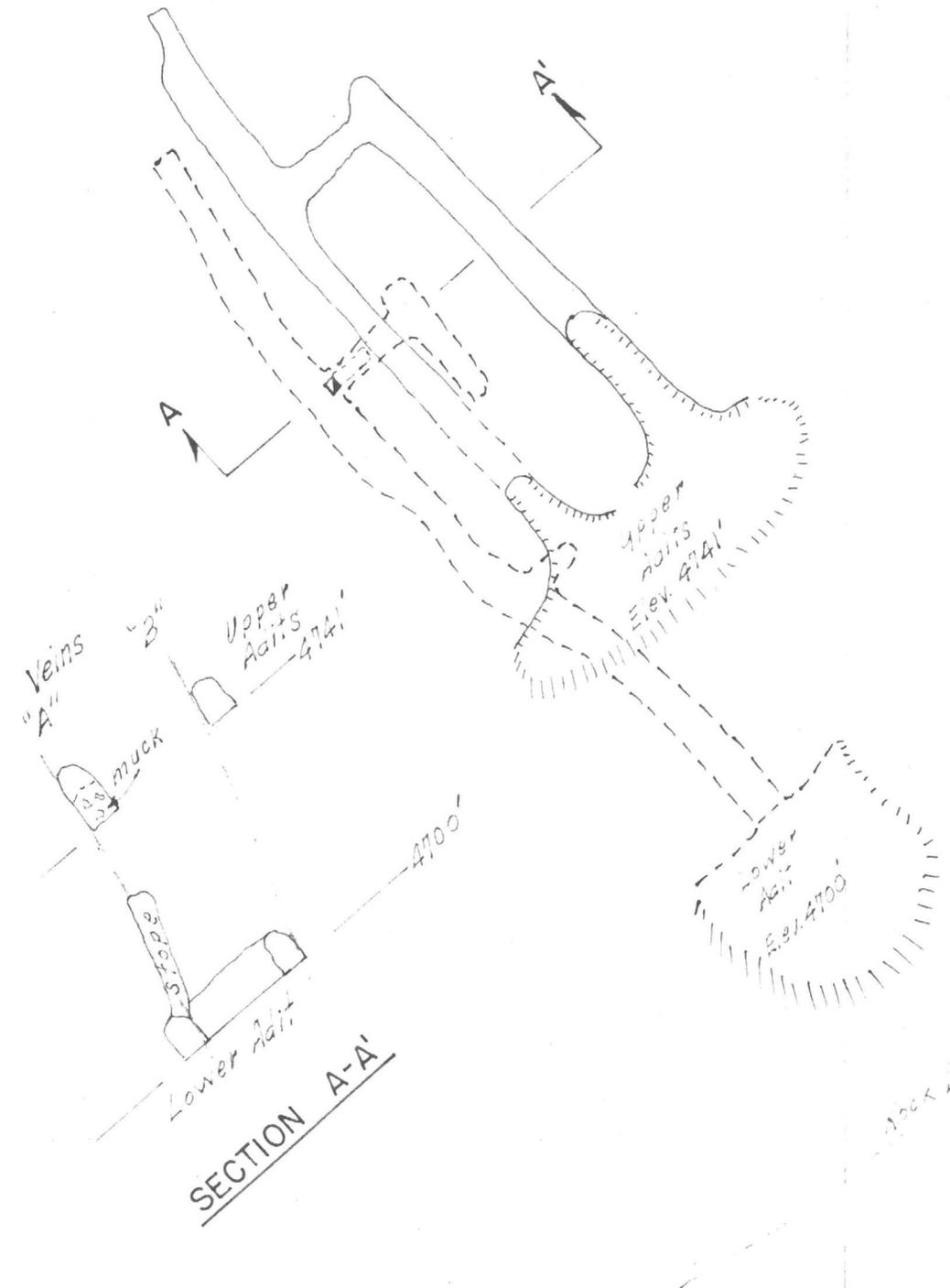
GEOLOGY

MAP of ADITS  
 ROSE QUARTZ CLAIMS  
 Gila County, Arizona  
 Scale: 1" = 30'

MARCH, 1966 R.E. MIERITZ



PLAN



GEOLOGY

MAP of ADITS  
ROSE QUARTZ CLAIMS  
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