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Richard E. Mieritz
MINING CONSULTANT

December 15, 1956

Dr. C. A. Farris
1832 E. Abram Street
Arlington, Texas

Dear Sir:

Herewith is my report prepared from information gained from a field examination of the three mica properties located in the Bradshaw Mining District, Yavapai County, Arizona.

I have discussed in moderate detail the basis of my calculations of tonnage and grade primarily to justify the end results. These results are by no means a limitation on the propertys' potential but are indicative of what could be expected as a preliminary reserve for an initial production phase.

As has been stated, in the report, the two properties, Mossberger and Black Magic, represent a possible reserve of some 365,000 tons of material with a 20% mica content. Assuming a 5.5 to 1 concentration ratio and a 90% recovery, some 60,000 tons of 100% mica is indicated.

My invoice is also herewith attached. I advised Mr. Clarey on December 12 that my fee for the second field trip would have to be increased. Also, I have spent better than a day on the report preparation alone but have charged but ½ day, since future services have been indicated with respect to a complete geologic and engineering report on two of the properties.

I have appreciated serving you and wish to do the same in the near future.

Seasons greetings to you and your family.

Sincerely yours,

R. E. Mieritz

TONNAGE and GRADE ESTIMATE

of

CERTAIN MICA PROPERTIES

in

YAVAPAI COUNTY, ARIZONA

by

R. E. Mieritz
Mining Consultant
Phoenix, Arizona

December 15, 1956

Richard E. Mieritz
MINING CONSULTANT

December 15, 1956

Dr. C. A. Farris
Mr. W. L. Clarey
1832 E. Abram Street
Arlington, Texas

Dear Sirs:

On December 11, accompanied by Mr. Clarey, I personally visited three mica prospects in the Cleator-Crown King area, Yavapai County, Arizona. Purpose of the examination was to obtain information on which to base and provide you with a reasonable tonnage and grade estimate for each property.

The properties covered during the very brief examination are; Mossberger(7 Claims), Black Magic(5 Claims), and the Kale Hilltop(7 Claims) all in the Bradshaw Mining District. A well maintained county road between Cordes, Cleator and Crown King passes through each property and services each by connecting with paved State Highway 69 at Cordes Junction.

Conditions Effecting Reserve Calculations:

Similar geologic conditions exist on eadh property, namely strong pegmatic structures intruding the granites, quartz monzonite and schists. The pegmatic structures are mineralogicly composed of feldspars, probably orthoclase, quartz stringers and phenocrysts and mica(muscovite-usually white or light colored) in varying degrees of content. These pegmatic structures are strong and quite persistent as to width regularity, cross country traverse and possibly depthwise. Moreover, the mineralogical contents appear to remain somewhat constant, (feldspars 60%, quartz, 10-30 % and mica 10-30%). This criteria is definitely advantageous to reserve estimates, mineability and mill feed operation.

Even though the above criteria are basically factual and important in any reserve estimate, it must be borne in mind that my estimates are concluded primarily from limited "spot" observations and distant observation from prominent vantage points. No structure was personally traced and paced more than 200 feet or so. You can therefore realize and appreciate the conditions under which the estimates are being made.

Mr. Clarey states that most structures have been previously traced out for as much as 3000 to 4500 feet on each property. You will note that figures used in my calculations are only a fraction of these figures. Time did not permit actual observation or inspection to such lengths, consequently I am not justified in assuming continuity of mica content beyond the lengths used in my calculations.

The mica content for each property has been predicated on the results of but one sample taken at each property. Location of each sample was chosen with care so as to obtain the most representative sample possible, not in a lean area nor in a concentrated area. It is my opinion that the samples taken cannot be projected beyond the limits used in my calculations.

MOSSBERGER PROPERTY

A six foot chip sample was taken normal to the strike of a strong pegmatic structure near the dry wash bottom as a means to apprximate an average mica content to be applied to my tonnage calculations. This sample is idetified as number 1.

The mica on this property is varied colored from clear to light green, however, a single lamination of the colored mica is very transparent and colorless. Mica content of the structures is controlled by its disseminations and book concentrations, thus reducing to a minimum the "barren" or "lean" zones and providing for economical mine operation and good mill production.

Three separate structures were observed on this property. Their on the ground position more or less forms an A, although I am not certain of their actual junctions with each other. None-the-less, I have ascribed a 600 foot length to each structure, a 50 foot surface relief height, a 150 foot depth below lowest exposure and an average 10 foot width.

Sturcture 1- 600'x200'x10'	=	1,200,000 cuft.
Structure 2- 600'x200'x10'	=	1,200,000 "
Structure 3- 600'x200'x10'	=	1,200,000 "
		3,600,000 "
12cuft tonnage factor	=	300,000 Tons
25% Barren material	-	75,000 Tons
Reserve- 20-25% Mica	=	225,000 Tons

Primarily "scrap" production.

BLACK MAGIC PROPERTY

This property has been worked by previous owners or leasors since there still remains two crushers, two vibrating screens and miscellaneous items.

Besides the main structure which has an observed length of plus 1000 feet, several bluff side exposures were noted, however, none of the latter structures were inspected.

The strong structure on which some quarrying had been done is approximately 30 feet wide at this point and contains pearly and light green to brown mica as disseminations, book concentrations and as veinlets paralleling the nearly vertical foot and hanging walls. Probably some "punch" mica may be available.

A 12 foot chip sample was taken across the face of the exposure and normal to the apparent strike of the structure. This sample was designated as number 2.

The following tonnage calculation is ascribed to the property. Only the main structure has been considered. A 600 foot length, a 75 foot surface relief above creek floor, a 175 foot depth below creek floor and an average 15 foot width.

Structure 1- 600'x250'x15'	=	2,250,000 cuft.
12 cuft. Tonnage factor	=	187,500 Tons
25% Barren material		- 46,875 "
Reserve- 20-30% Mica	=	141,000 Tons

Predominately scrap, some "punch".

KALE HILLTOP PROPERTY

There are many pegmatic structures on this property which have been freshly exposed by the road cut and a pit. The material observed indicates the mica content has been materially reduced as compared to the previous discussed properties to the north. This reduction indicates a closer proximity to the original magma rock; quartz monzonite. Moreover, the mica appears to have lost its continuity behavior which tends to promote sporadic mineralization, thus more barren material.

Sample number 3 was taken in a surface pit over a 5 foot width normal to the strike of the structure. I do not believe this sample would be representative of the overall material, the latter being somewhat lower in mica content.

No structure appeared to be particularly strong in direction, width or mica content, consequently I hesitate to provide a tonnage estimate for any individual structure. I would however, ascribe 175,000 tons of a 10-20 % mica content after a reduction of an equivalent tonnage for "barren" material.

SAMPLING and ASSAY RESULTS

The following three samples were taken by the writer, placed in trust with Mr. Clarey and assayed for mica content by Martin and Carlisle Chemical Laboratory, Inc., of Albuquerque, New Mexico.

Although extreme care and caution were exercised during the sampling, the writer feels he may have unavoidably "salted" the samples to some degree because of the varying mineral hardness of feldspar, quartz and mica, the tendency being to get more of the softer material and less of the harder. However, a trend is indicated by the samples, at least for numbers 1 and 2. Visual examination of the pit from which sample 3 had been obtained did not indicate a mica content such as is represented by the assay. For this reason I have not projected the mica content of the Kale-Hilltop to more than the 20% limit.

Sample No.	Property	Sample Length	Mica Content
1	Mossberger	6 ft.	20.6%
2	Black Magic	12 ft.	37.2%
3	Kale-Hilltop	5 ft.	34.3%

RECAPITULATION

The following schedule indicates what tonnage could be available for early mining of the two properties which are thought to be more promising.

Property	Reserve	% Mica
Mossberger	225,000 tons	20-25 %
Black Magic	141,000 tons	20-30 %
Total	366,000 tons	20 % plus
Concentrate Ratio, assume 5.5 to 1	66,600 tons	
90% Mill Recovery	60,000 tons	100 %

CONCLUSIONS

The writer concludes the following:

(1)- that some 365,000 tons of 20% mica "ore" material is available for a mining and milling operation from the Mossberger and Black Magic properties,

(2)- that each pro;erty individually can provide sufficient mica "ore" material to meet a minimum requirement of 100,000 tons,

(3)- that the estimates are conservative, leaving ample margin for increasing same by closer and more detailed examination, sampling etc,

(4)- that the Mossberger property will primarily produce "scrap" mica whereas the Black Magic property can be expected to produce upwards of 5% "punch" mica, the balance being "scrap" mica, and

(5)- that the Mossberger and Black Magic properties should be throughly geologized, sampled and reported on prior to moving in of equipment for mining and mill erection.

Respectfully submitted,

R. E. Mieritz, P. E.