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DONALD P. McCARTHY
CONSULTING GEOLOGIST
551 WEST SECOND PLACE
MESA, ARIZONA

TELEPHONE WOodland 4-0148

June 26, 1960

Mr. Herb Miller
Skyriders Hotel
Skyharbor Airport
Phoenix, Arizona

Dear Sir:

Enclosed herewith are two copies of the recent letter report which I made on the Cochise County proposals. In addition I am sending two replies from AS&R concerning smelter returns; Mr. Gabrielson's report "The Buckeye Mine", and another report by Mr. Gabrielson which includes the Motz Report in toto.

When you are through with the enclosures, I would greatly appreciate their return since I do not have further copies.

Following verifications of information quoted has now been made:

Mines Contracting Inc. will drift 5'X7' heading in granite for the first 1000 feet at a rate of $25.00 per foot. Probably $30.00 per foot in Schist.

Shrinkage stoping of the veins can probably be done for $6.00/T.

Room and pillar stoping of low-dip veins possibly will be more costly - up to $10.00 per ton for very narrow flat veins.

Yours very truly,

Donald P. McCarthy

AMERICAN SMELTING AND REFINING COMPANY
SOUTHWESTERN ORE PURCHASING DEPARTMENT
803 VALLEY NATIONAL BUILDING
TUCSON, ARIZONA

REED F. WELCH
MANAGER

June 24, 1960

Mr. Donald P. McCarthy
551 West Second Place
Mesa, Arizona

Dear Sir:

This is in reply to your telephone call this afternoon asking for evaluation of concentrates. I understand it is possible the ore referred to in your letter of June 20 may be concentrated by flotation. Based on the assays you quote for the concentrates I estimate the return would be substantially as follows on present metal prices:

Conct. quoted: as shown on pg. 5 - Gabrielson's report.

Payments:	Gold		$ 128.63
	Silver		57.24
	Lead		40.33
	Copper		1.55
	Total Payments		227.75
Deductions:	Base charge	14.00	
	Lead def.	.69	
			14.69
Value per ton after smelting			213.06
Less estimated freight includ. 10% moisture			12.03
Estimated net per ton Willcox			201.03

You will note the base charge is $14.00 per ton on 30% dry lead. With lead assaying under 30% there is a deficiency charge, in this case amounting to 69¢.

The freight rate used in this estimate is for $150 per ton value which is the highest published from Willcox. The product quoted above has valuation for freight purposes of about $173.60 per wet ton.

With reference to No. 3 sample, if smelted in the Copper Department the value would be about $3.75 per ton after deducting freight from Willcox. From that station the freight charge is about $4.46 per ton including estimated 5% moisture.

Yours very truly,

Reed F. Welch

REED F. WELCH

AMERICAN SMELTING AND REFINING COMPANY
SOUTHWESTERN ORE PURCHASING DEPARTMENT
803 VALLEY NATIONAL BUILDING
TUCSON, ARIZONA

REED F. WELCH
MANAGER

MA 3-3742

June 23, 1960

Mr. Donald P. McCarthy
551 West Second Place
Mesa, Arizona

Dear Sir:

I have your letter of June 20 quoting assays for samples you have taken in the northern Chiracahua Mountains. Your description is similar to a property I visited some years ago known as El Tigre Mine in the California Mining District.

In our evaluation of El Tigre for shipping to El Paso Smelting Works the property was considered uneconomic regardless of the silica content. We have accumulated rather comprehensive information on that mineral showing, which may be the property you are examining. However, if your sampling indicates tonnage that could be shipped I shall be glad to discuss this with you.

The assays quoted in your letter indicate net return at Rodeo or San Simon of about $8.30 per dry ton for No. 1 sample, $1.39 per ton for No. 2, for smelting in the Copper Department at El Paso. This estimate is based on a special treatment rate of $2.00 per ton, freight $3.86 per dry ton, including 5% moisture. Your sample No. 3 with 4.45% lead has no fluxing value for the lead plant and indicates net at Rodeo about $1.50 per ton, using present 12¢ lead price.

If I can be of further assistance to you in evaluating this property I shall appreciate your getting in touch with me.

Yours very truly,

Reed F. Welch

REED F. WELCH

9.71 treat cost
3.86 freight
15.36 = Gross pay

9.05 Au
1.16
5.15 Pb
15.36

Ph. @ 1:15 pm 6-24-60 concerning Spl #3
Welch suggested met. tests aimed @ milling and ship. concts. I quoted flotation cost. to him
Rept. by Gabrielson Pg 5 Au 3.98 Ag 67.8 Pb 24.6 Cu 1.32

THE BUCKEYE MINE

This property comprises 34 Patented and Unpatented mining claims, over 600 acres, situated in the Tevis Mining District, Cochise County, Arizona. The property is almost two miles in length, in Sections 3 and 4, Township 13 S. Range 27 East.

The mine is 10 miles from Bowie, Arizona, a ranching and cattle town on Highway 86 and the Southern Pacific railroad. Fairly good roads reach the mine with grades that permit maximum haulage. Smelters are within easy reach, giving this property the great advantage of low transportation rates.

HISTORY:

The Arizona Bureau of Mines bulletin Vol. 5, No. 6 states: "Gold deposits in the Dos Cabezas range were discovered prior to the Civil War ... and have been operated intermittently."

During the 1890's the veins of this property were operated and two mills were installed; there was a townsite and about 300 men were working. With the then almost primitive methods of recovery it was impossible to recover much of the values from gold-silver sulphide ores, therefore only rich oxidized ores were sought. However, about 10,000 tons of ore was mined in merely starting the Buckeye stope, this ore was lowered to a mine railroad built around steep mountain sides for one and a half miles, then again lowered to an Amalgamation plant. Apparently before this ore got into the mill circuit it was handled six or more times so it had to be rich ore. Sampling of ore faces in this stope indicates that this ore had to have an average value of $40 a ton in gold-silver content therefore only selected ores were milled. Prior to 1900 the mines were closed down, roads washed out, the property became inaccessible and was practically unknown when Titles passed into the hands of the present owners -- who built roads to make the property easy of access and built a substantial camp as a base of operations.

Reports on the property were made by Ralph L. Motz, H. F. Williams, and E. D. Elson. This report is based upon study of the foregoing reports and long extended study of the geology and genesis of ore deposition by personal examination. Experience in mines of this region and other facilities enable the writer to better understand the geology and ore deposition that has previously been possible.

CURRENT HISTORY:

This property, situated midway between Morenci and Bisbee, Arizona, is in the heart of a geologic province which has a recorded production of hundreds of millions of tons of ore. In addition to proportionate amounts of other metals this geologic province has produced 35% of the copper produced in the U.S., this vast production being due to basic and unique geologic factors which makes this one of the richest mineralized areas of earth. At both Morenci and Bisbee production started on a small scale, increased year after year until today their combined production is said to be about 100,000 tons of ore per day; they have been producing for over 70 years and their limits are probably not yet known - or even realized.

Because of successful past experience major mining corporations are currently spending millions of dollars to increase their holdings in this province, for here ore deposition has been on a tremendous scale, unbelieveable to people who are not well versed

Current History, con't.

in modern Mining. the maxim "like causes produce like effects" is particularly applicable to Geology and to ore deposition; therefore the major deposition of gold-silver ore in the Buckeye vein and branches, because of its tremendous profit potential, justifies serious thought and investigation.

GEOLOGY:

Most of the time from the Pre-Cambrian to the end of the Mesozoic this geologic province was submerged and, under Marine conditions, thousands of feet of sandstone, shales and limestone strata were laid down upon granitic and other rock formations.

Toward the close of the Gretaceous and continuing long into the Tertiary this province was invaded at great depth by a major batholith and direct lines of evidence show there was a gradual minimum uplift of the entire province of more than five miles. Morenci, Dos Cabezas, Bisbee, and other camps were on what were "high points" of this invading batholith. During the Tertiary a succession of volcanics broke through here on a mountain building scale, forming what is now the main axis of the Dos Cabezas range. The region then became exposed to erosion which has continued without interruption to the present day, a time interval estimated at over 50 million years. Only small and isolated remnants of the once great vertical thickness of sedimentaries remain, probably preserved by having been downfaulted or engulfed in the invading igneous magma. The major surface exposures over the region today are the once deep seated granite and porphry formations.

As the major invasion of volcanics cooled from the top downward the "high point" of the still uncooled portion of the batholith became a magma reservoir, from which dikes and ore deposits subsequently ascended, each as a definite phase or cycle of volcanism. After the major invasion of volcanics had cooled off "in place", at recurrent intervals of millions of years numerous dikes (principally diabasic) ascended, weakening and ribboning the granite and other formations of the area. Andesitic and aplitic dikes accompany the large and numerous dikes of diabase.

At depth in the magma reservoir temperatures and pressures were retained and gradually increased by radioactivity and the chemical reactions of rock elements, so that this magma reservoir became a "magmatic laboratory" on a tremendous scale - a zone of rock differentiation. Then as final and definite stages of volcanism there came a series of ore magma invasions, in particular that known as the Buckeye vein and branches - a tremendous sill-like invasion of quartz with gold-silver-lead content.

During the long period of uplift, through the major invasion of volcanics, succession of dikes, ore invasions and long continued erosion, the region was extensively faulted to meet the changing conditions. Dikes and ore deposits usually follow pre-existing fault fissures which, to considerable extent, determine the shape of the intrusions. The Buckeye vein and branches being the latest are the least disturbed of any of the formations of the area. There is no visible evidence of the Buckeye vein being faulted.

THE BUCKEYE VEIN:

The Buckeye vein is an immense vein-dike, a sill-like, flat angled invasion of quartz containing gold-silver-lead values associated with an average of 5% pyrite, and galena. Tellurides and free gold occur in places. The ore is readily amenable to concentration, also to cyanidation. The general strike of the vein is N - S, and average general dip of 20 degrees to the W.

The Buckeye Vein, con't

The vein was formed at a great depth below the then existing surface, a vertical thickness of several thousand feet of formerly overlying rock having since been removed by erosion. Under terrific pressure during its ascent from depth, this multi-million ton mass of ore magma forced its way upward along an irregularly fissured zone, filling breaks branching from the main zone of fissuring, resulting in many upward (and some downward) branches of the main vein that are large and important veins, such as the Mountain View, Apache, San Francisco, Gold Rock, and others. Apparently there was but one stage of ore invasion, resulting in an immense system of conjugated veins where large bodies of ore accumulated at vein junctions and at intersections with dikes which precipitated the values by chemical reactions. At vein junctions ore shoots were formed by differential cooling, where the mass of ore magma was greatest after it had come to rest values tended to concentrate in the middle of the vein. Each ore shoot can be relied upon to contain large tonnages of ore - and there are many vein junctions and dike intersections, particularly West of Buckeye Canyon.

The property is two miles in length, covering the vein system the full length of the property, with Buckeye Canyon in the centre. On the East side of this canyon, 350 feet above the level of the floor of the canyon, the Buckeye vein, with characteristic inclusions of wall rocks, is exposed as a "wall of ore" for hundreds of feet around the mountain side. This is a most impressive showing and it was reported that the original owners paid $100,000 cash for this one mining claim of 20 acres. The Buckeye stope is here, a working on the vein with four entrances into a 200 ft.wide chamber from which about 10,000 tons of ore was mined by following ore up into the mountain. In this stope is a semi-circular "face" of ore now available for mining, with drifts projecting in ore beyond the main "face" - development drifts ahead of stoping. The ore is well exposed around the stope from 6 to 12 feet thick (high), trending upward at about 20 degrees. Covering the ore lying on the floor of the stope is a bed of guano over a foot thick, left there by bats and animals bedding down there. In this stope, the Mountain View, one of the upward branch veins, has its junction with the main Buckeye vein; an ore shoot was formed at this junction which may be considered a fair demonstration of ore shoots formed at many other such vein junctions on the property.

Mining ore from the Buckeye stope, is in many ways, equivalent to entering a shaft mine on its 4,000 ft.level and working upward toward the surface. Starting in the Buckeye stope the ore goes upward through the mountain to where it is again exposed by erosion on the West side of Cement canyon (see Map), 4,000 ft. distant. It is estimated that this one block of ore can supply a large future tonnage. With air drills, slushers, and room and pillar methods with minimum of timbering, this block of ore can be handled at low per-ton cost - with no hoisting nor pumping charges to meet.

On the West side of Buckeye canyon, opposite the Buckeye stope, the main Buckeye vein is 20 ft. thick (high). Directly uphill above this vein for about 500 feet there is an almost continuous series of croppings of upward branch veins, positive evidence of a zone of most intense brecciation and large scale mineralization along the fissured zone in this area, particularly because the main vein in its upward passage here had to pass through a series of aplitic, andesitic, and large diabasic dikes, the effect of which was to screen out and precipitate the values by chemical reactions. This tremendous vein system is due to one and the same ore invasion from depth. Until work during the summer of 1959 with bulldozers built roads and cleared away dense brush this area was relatively inaccessible and so unknown. This work enabled the veins and ore showings to be easily reached,

The Buckeye Vein, Con't

studied, and so understood and evaluated as valid evidence of the presence of large bodies of ore in this one hill. Under proper guidance about six months work will enter and definitely prove this tremendous potential and prepare it for large scale production.

When erosion was carving Buckeye canyon out of the mountain it cut through the Buckeye vein at right angles, completely removing a 1,250 ft. section of the vein, leaving it well exposed on both sides of Buckeye canyon. On the West side of this canyon the main vein and branches belong to a deeper part of the once ascending ore column than does the ore of the Buckeye stope and the several thousand feet of vein beyond this stope. Thus the ore of the West side of Buckeye canyon is closer to the source - the magma reservoir from which all this ore originated, normally there should be more ore and richer ore here -- and there is, evidenced by the exposures of vein croppings and large dikes that had to be passed through, as per preceding paragraph. The banded ore of the Buckeye stope shows that the gold-silver values were the last to crystallize and were precipitated toward the middle of the vein, positive evidence of the conditions which governed the formation of ore shoots at vein junctions. Here again "like causes produced like effects".

The Apache vein is at the top of this series of branch veins. This is a wide and strong vein, with rich ore outcropping at the surface. This ore is identical in type, character and grade with the ore of the Buckeye stope, and other workings, showing that it originated from one and the same invasion of ore. This vein was worked over 60 years ago, there was no road, no mechanical equipment, the topography was steep and the area covered with dense brush, everything used had to be packed in for miles on the backs of men or animals - and ore was packed out the same way. Yet three shafts were sunk - in rich ore. Study of this work shows that the ore of this Apache vein leads down to large and rich ore bodies at its junction with the main Buckeye vein; this is merely one of many valid indications of a series of ore shoots which, in this one hill alone, has a potential that overshadows all else concerning this property, a feature to be emphasized in this report.

Briefly, while ore is available in the Buckeye stope and other workings on this property, the "very near" presence of this series of ore shoots at the many vein junctions and diabasic dike intersections on the West side of Buckeye canyon is so convincing that a site has been selected with a view to future large scale low cost operation. It is considered that when the first ore is entered -- ore can be continued in for thousands of feet, and much of this ore can be phenomenally rich.

SUMMARY:

The basic facts concerning this property are:

It is in the heart of the richest and most productive mining area of the U.S.A., a region of big and rich mines, the owners of which are currently spending millions of dollars to increase their holdings.

The Buckeye vein and branches are a tremendous system of richly mineralized veins, along which, at vein junctions and dike intersections, numerous large and rich ore shoots were formed.

Workings now show ore available for mining, from one of which workings former operators produced about 10,000 tons of ore, estimated to have averaged $40 a ton in gold-silver content.

Summary, Con't

Advantage can be taken of this work of former operators and of the tremendous progress made in modern mining equipment, methods, and metallurgy.

Modern Industry needs, and will pay well for, the silica that was once an expense when operating. With proper handling this silica can be made to produce considerable income to add to that of ore production.

RECOMMENDATION:

In the hill "across the canyon" from the Buckeye stope the geology furnishes conclusive evidence that large and rich ore shoots are to be expected at vein junctions and dike intersections - a drift can enter the first of these ore shoots with the work of less than six months. By continuation of this work the ore may be continuous for thousands of feet.

Therefore I recommend that work be done to enter this series of ore shoots and dike intersections from a site selected on the West side of Buckeye canyon; this site will enable the ore shoots to be entered at lowest first cost, then continue and enable all ore to be handled on a large scale and low cost per-ton basis; this site is easy of access and close to camp and permanent base of operations.

$75,000 should enable this work to be done, the completion of which should see the mine started on profitable production, and enable proper plans to be drawn for very large scale future operation. All speculation will have been eliminated and the mine proved to be as outlined above.

This property has a tremendous profit potential, far too briefly outlined in this report. Your participation in the above work will place the property in your hands and can mean a lifetime of expected profits.

Respectfully submitted,

C. W. Gabrielson

C. W. Gabrielson,
3021 East Whitton Avenue
Phoenix, Arizona

AM 62780

October 16, 1959

During the latter part of the year 1937 I became interested in knowing more about a certain group of mine claims located in the Dos Cabezas mountains of Cochise County, Arizona. Therefore, in December of that year I paid a hurried visit to the properties.

Samples of mineral bearing rock were taken at different points without, however, following any particular system of sampling. These were taken merely to give me an idea as to values.

An assay report on the samples as made by Ralph L. Motz of Bisbee, Arizona, gave the following results:

Sample marked	"Buckeye No. 1":	3 cuts 6 ft. wide,	value	per	ton	$64.97
"	"Buckeye No. 2":	5 ft.wide	"	"	"	47.15
"	" No. 3":	taken along drift,	"	"	"	34.43
"	" No. 4":	Pillar 2 to 5 ft wide		"	"	51.47
"	"Apache"			"	"	28.91
"	"No. 6" -	loose pieces of quartz		"	"	14.24

The preliminary examination and sampling were so interested that in April, this year (1938) I made a second trip to the property.

At this time I was supplied with the copy of a report made by Mr. Ralph L. Motz, Mining Engineer of Bisbee, Arizona. From personal observation I found the report to be reliable in all such details as I was able to check.

I do not believe that I can do better than to copy in toto Mr. Motz' report, which reads as follows:

LOCATION: The property is situated in the Buckeye Canyon of the Dos Cabezas Mountains, Cochise County, Arizona. The Dos Cabezas Mountains are the northwest extension of the Chiricahua Mountain Range, and are part of the mountains that divide the Sulphur Springs and the San Simon Valleys. The highest points of this mountain range are two peaks or heads close together which give the range its name.

The property lies at an approximate elevation of 6500 feet above sea level. The sides of these mountains are very steep and the canyons are abrupt and rugged. The sides of the canyons are covered with brush of the semi-tropical type, with a fair growth of oak and juniper, intermingled with desert cacti.

Cochise County is located in the southeastern part of Arizona. The climate is very mild. The summers in the valley are hot but the altitude of the mountains give them a cooler climate. The nights are always cool in the hottest part of the summer. The winters are very mild. Sometimes there is a light fall of snow which keeps the springs alive. The rainfall averages about 20 inches a year. All in all the climate is ideal for all-year activities, and a man can work outside all the year round.

PROPERTY: The property consists of 18 unpatented claims: Apache, Will Rogers, Clarissa, Apache Tom, Apache Squaw, South Apache, Gen. Custer, Apache Chief, Goldie, Florencita, San Francisco, Wiley Post, Apache Kid, Cochise, Geronimo, and Halfway, these claims being shown on the accompanying map. The other two are the Gold Rock, which lies to the west of the Apache Tom, and the Mark Twain, which lies to the south of the Halfway.

ACCESSIBILITY: The property lies on the northeast side of the Dos Cabezas Mountains. At present the nearest railroad point is Willcox on the main line of the Southern Pacific Railroad. From Willcox a good automobile road, unpaced, runs 15 miles southeast to Dos Cabezas. At Dos Cabezas, a mining town, there are several stores, service station, school and other establishments. From Dos Cabezas a fair road winds up the mountains for about 5 miles to the ridge and then down the other side for 2 miles to the Elm Camp. This is a camp that was established by the Central Copper Co. some years ago, and consists of a number of buildings. (This camp can be secured under lease.) The water supply to the camp is very good and the water is piped to the various buildings.

From the Elma Camp to the several workings of the group are trails. These trails are the ordinary burro trails at present. It is about 1 12 miles by trail from the Elma camp to the Apache Shaft.

Bowie, another station on the main line of the Southern Pacific, is about 12 miles to the northeast of the property. From Bowie there is a good road to a C.C.C. Camp in the lower end of the Buckeye Canyon. This camp is about 3 miles from the property and a good road could be built down the canyon. The distance then from the property to a shipping point on the railroad would be 12 miles against the present distance of 23 or 24 miles to Willcox. Another good feature of the road to Bowie would be the fact that the haul of concentrates would be all down hill, whereas now there is 2 miles of steep grade up out of the camp.

At Willcox or Bowie, the ore or concentrates can be loaded into cars and shipped direct to the Smelter at El Paso. This smelter is the customs smelter of the American Smelting & Refining Co. Here they pay for the gold, silver, copper and lead contents.

Bisbee, the main mining camp of the southwest, lies about 78 miles from Dos Cabezas and the town of Douglas, the third largest in Arizona, is about the same distance. Tucson, the second city, and home of the University of Arizona, is about 100 miles to the west of Dos Cabezas and is reached over excellent roads.

HISTORY: The mineral showings of the Dos Cabezas mountains have been known to prospectors since the earliest days of the westward movement. The main traveled road to California of the Forty-niners ran through a low pass a few miles to the south of Dos Cabezas. A large amount of work was done in this section in the early part of the 80s. Evidence of this early work is still seen in the old shafts, tunnels and mill dumps. These old shafts are especially numerous in the vicinity of the claims herein referred to. Several mills were operated in the Buckeye Canyon.

Considerable gold has been taken out of the placers at the foot of the Dos Cabezas Mountains to the north of the property. This gold, no doubt, has been derived from veins similar to the ones on this group.

GEOLOGY: The main geological formation on these claims is granite. The granite has been cut by numerous dikes of various porphyries and other igneous rock. A detailed geological examination has not been made as yet. The granite is also cut with numerous veins of quartz. There are several of these veins that are of considerable size. The main vein from the Halfway through the Wiley Post to the Apage and Will Rogers crops out on the surface for SEVERAL THOUSAND feet and is from 18 inches to 3 feet wide on the surface. Immediately adjacent to this vein there are numerous parallel small veins. These form a banded structure that is very noticeable. In some places the footwall of this vein is schist. There are several prominent veins parallel to this vein on which considerable work was done in the past. Time has not permitted an extensive study of the Geology and the other veins.

MAIN VEIN: There has been considerable work done on this vein. Several old shafts were found that had been filled with water and debris. Two of these are on the Halfway claim. One of them, Shaft No. 2, has been completely unwatered and the depth was found to be 55 feet. The vein at the surface of this shaft is about 12 inches wide. This width persists to a depth of 45 feet. At 50 feet it is 30 inches wide and at the face at the bottom it is 33 inches wide. About 20 feet to the south of the shaft this vein outcrops for a width of 30 inches in the gulch. From this point sample No. 15 was taken. About 200 feet further west on this vein at the point where Sample No. 16 was taken the vein is 12 inches wide.

Shaft No. 1 on the Halfway claim has been unwatered and cleaned out to a depth of about 85 feet. This shaft was sunk on the vein and pitches 35°. The vein at a depth of 25 feet is 36 inches wide and varies between 30 and 40 inches the balance of the distance, except that at two points it is 48 inches wide. It seems to be stronger as it goes down.

At the location work on the Wiley Post Claim the vein is 12 inches wide on the surface and is highly mineralized.

This vein again prominently outcrops at the workings on the Apache claim. The vein was originally exposed in the bottom of the gulch and is from 14 to 20 inches wide. At this point from which samples 9 and 10 were taken a lense of good ore is shown. The shaft at the Apache is now being sunk and has attained a depth of 35 feet. The vein here dips at an angle of 32°, and varies from 30 to 36 inches in width. On the west side of this shaft there is exposed a fine body of ore which trends to the west away from the shaft. At the bottom of the shaft the lens exposed in the gulch is coming into the shaft and no doubt at more depth will combine with the other.

The surface oxidation along the vein is very shallow and in all workings sulphides of iron and lead are exposed in the vein. The vein at the Apache shaft is about 200 feet lower in elevation than at the Halfway shafts and the mineralization seems to be stronger at this point, leading us to believe that the mineralization is stronger with depth and that such mineralization will continue for a considerable depth.

SAMPLING AND ASSAYS: The samples were all, with the exception of 14 and 16, taken by grooves cut across the vein for the full width. These samples were then assayed by me for gold, silver and lead. The higher values of gold and silver were accompanied by a higher value of lead. In the values of the samples the lead was not taken into account. The price of lead is not as stable as gold and silver and the smelter deductions for lead are very high. If the concentrates are made by table concentration the lead will run very high and the value will add considerably to the profits. A sheet showing the assay values is attached to this report. The following points should be noted: Sample No. 7 taken at a depth of 30 feet in the shaft shows the low grade spot between the two lenses of ore, No. 8 showing good ore coming back into the shaft. The average of the 8 samples in the shaft is $37.84 and of the three taken in the tunnel at the mouth of the shaft is $26.79. The samples in Shaft No. 1 were taken at intervals of 5 feet starting with a depth of 25 feet for No. 17. The assay returns of these samples show that the values are getting better with depth with an average for last 15 feet sampled of $26.94. The bottom 15 feet of the No. 2 shaft average $28.95. The average width of these samples in the two shafts on the Halfway and the one on the Apache is 33 inches.

RECOMMENDATIONS: The main vein is a very strong vein on the surface, and can be traced for a considerable distance. At all places where opened up the sampling showed a good grade of ore. Where any depth has been obtained the mineralization is stronger than on the surface. In the assaying the samples showed the presence of tellurium. The values appear to go with the iron and lead sulphides. The property has merit and should be vigorously prospected and developed. This should be done at the points where the values have been proven.

The No. 1 shaft of the Halfway is now down to the 85 foot point, and from all evidences must be considerably deeper. The No. 2 shaft is only 175 feet from the No. 1 shaft and has a depth of only 55 feet. This shaft has been boarded up to keep debris from falling in. It might come in handy at some future time as an air shaft or other outlet.

The No. 1 shaft should be sunk to a depth of about 400 feet or approximately 300 feet below the present bottom.

The shaft on the Apache should be sunk 200 feet. From the bottom of this shaft a drift should be run to connect with the bottom of the No. 1 shaft on the Halfway. The distance along the vein between these two shafts will be about 1400 feet. The connection should be run from both ends which will shorten the time. The time necessary to complete this work, shaft sinking and drifting will be from 9 to 10 months.

Work should be done at the same time on the trail from the Elma Camp to the shaft sites.

If the vein is found to be of the same general average and width by this development work there will be proven an orebody containing 126,000 tons. The factors used in this computation being a length of 1400 feet between the two shafts, an

extension of 100 feet beyond both shafts, a width of 33 inches, a depth of 350 feet as the surface rises from the No. 1 shaft of the Halfway and then drops sharply to the Apache shaft, and 12 cubic feet in place to weigh one ton. With an average value of $20.00, which is below the average found in the sampling, the gross value of the silver and gold in the ore at the present prices would be $2,520,000.00.

Accurate record of the assay values of the shafts and drifts should be kept. When the work is completed it should not be a difficult matter to determine the flow sheet and the tonnage of a mill.

The following is an approximate cost of doing this work:

2 portable compressors, each 240 cu. ft. capacity	$ 3,000.00
2 hoists	1,000.00
Drill, steel, tracks, cars	1,000.00
Shaft sinking - 100 ft. at Apache	1,500.00
" " - 100 ft. at Apache, 300 ft. Halfway	8,000.00
1400 ft. drifts at $8.00	11,200.00
Superintendence, engineering, assaying, etc.	4,300.00
	$30,000.00

Bisbee, Arizona
Dec. 11, 1935

(Signed) Ralph L. Motz.
Registered Engineer, State of
Arizona, Certificate No. 266.

MOTZ ENGINEERING CO.

	Au Ozs.	Value	Ag Ozs.	Value	Total Value	
Apache - Shaft - 1	0.36	$12.60	5.7	$ 4.39	$16.99	
2	0.42	14.70	6.1	4.70	19.40	
3	1.68	58.80	15.2	11.70	70.50	
4	1.72	60.20	29.2	22.48	82.68	
5	0.49	17.15	8.4	6.47	23.62	
6	0.67	23.45	8.9	6.85	30.30	
7	0.28	9.80	5.2	4.00	13.80	
8	0.84	29.40	20.8	16.02	43.42	$37.84 Av.
Vein - 9	0.73	25.20	6.8	5.24	30.44	
10	1.19	41.65	19.6	15.09	56.74	43.59
Tunnel -11	0.86	30.10	10.4	8.01	38.11	
12	0.32	11.20	2.3	1.77	12.97	
13	0.67	23.45	7.6	5.85	29.30	26.79
Wiley Post Cut -14	1.28	44.80	68.9	53.05	97.85	97.85
Halfway - Gulch -15	0.16	5.60	6.0	4.62	10.22	
Cut -16	0.33	11.55	9.8	7.55	19.10	14.66
No. 1 Shaft -17	0.18	6.30	1.8	1.39	7.69	
18	0.16	5.60	3.4	2.62	8.22	
19	0.12	4.20	2.00	1.54	6.74	
20	0.21	7.35	2.4	1.85	9.20	7.71
21	0.27	9.45	2.7	2.08	11.53	
22	0.48	16.80	6.9	5.31	22.11	
23	0.44	15.40	3.4	2.62	18.02	
24	0.18	6.30	2.8	2.16	8.46	15.03
25	0.56	19.60	6.1	4.70	24.30	
26	0.37	12.95	5.2	4.00	16.95	
27	0.85	29.75	12.9	9.93	39.68	26.94
No. 2 Shaft -28	0.41	14.35	12.5	9.63	23.98	
29	0.72	25.20	13.7	10.55	35.75	
30	0.52	18.20	11.6	8.93	27.13	28.95
Average No. 1 Shaft						15.63

Note: this distrib. to shafts not on copy of Motz Rpt. which I read 6-22-60 DPMc.

This is the termination of the Motz report.

Under date of January 31, 1936, the College of Mines and Metallurgy, El Paso, Texas, rendered a report of results obtained in flotation tests made with ore from the Apache Shaft, from which I take the following summary. The complete report is a very exhaustive analysis of the methods employed, leaving room for no doubt as to the correctness of the results:

A summary reads: "Flotation Tests on Apache Shaft ore. This is unusually good flotation ore, the high recoveries obtained being much better than can usually be expected.

While the ore is hard, the values shatter out while the ore is still coarse, so that grinding costs will be about normal.

The amount of reagents required is a minimum, both in quantity and kinds, xanthate and pine oil being all that is necessary.

Thirteen tons concentrate into one, thus dividing haulage, freight and smelter charges and treatment by thirteen.

The value of the sample treated is: Au. .32 ozs. Ag. 5.64 oz. Pb. 1.95%

The grade of concentrate shipped, assuming that the ore milled is represented by the sample tested, will be:

Au - 3.98 oz., Ag - 67.8 oz, Pb - 24.6%, Cu - 1.32%

The recovery is:

Gold - 98.7% Silver - 96.1% Lead - 99.0%

The value of a ton of concentrate is	$192.67
Haulage, freight and Smelter charges are	14.00
Returns per ton of concentrate	$178.67
Returns per ton of ore milled	13.85

Out of this will be paid mining and milling charges."

This completes the summary.

Since Mr. Motz' report already quoted was prepared, the two groups of claims known respectively as the "Sunrise" and "Buckeye", have been included in the one ownership. These properties are physically part of the group of claims constituting the great mineralized area under discussion.

According to local history, the Buckeye and Sunrise mines were profitable producers until the demonetization of silver forced their suspension. The former owners are stated to have held on to the properties for many years until they finally abandoned hope of being able to operate under the then prevailing prices of gold and silver.

The Sunrise mine is stated to have been quite extensively developed, but will have to be unwatered before an exhaustive examination can be made. However, this is a step that can be left until some future time as the development of the Buckeye mine, in conjunction with other openings, will give ample ore reserves for a long time.

The Buckeye is directly across the canyon from the Halfway shaft. It shows evidence of considerable stoping, and must have supplied a large tonnage to the mill erected at a point nearer the outlet of the canyon.

Mr. Thos. P. Bean, who has made an exhaustive study of the Buckeye property estimates that the tonnage of the Buckeye, easily available, amounts to 369,228 tons. He has been rather conservative in taking a value of $8.00 per ton as a basis for calculating that the tonnage stated represents a gross value of $2,953,824.00. The assay records show that the average of 35 samples taken gave a value of $10.13 per ton.

CONCLUSION

After two visits to the properties referred to above, I am of the opinion that no further time should be wasted but that steps should be taken to properly finance the installation of a mill of, say an initial capacity of 50 tons per day.

Without doubt the properties should be opened up and equipped from the Bowie side, not only on account of the shorter haul from the mines to that station, but also because of the greater accessibility.

A good road should be built from a point in the Buckeye Canyon where the present road from Bowie terminates up to the Buckeye mine. While the topography of the country is decidedly rugged, it is nothing compared to situations I have had to overcome in Mexico. The construction of such a road presents no engineering difficulties.

In the building of a small initial mill it will be well to plan the set-up so that its capacity can be increased without the necessity of complete modifications.

There is no doubt that these properties can be worked to very great advantage to the interests of investors. The estimates have been made on a conservative basis, so that zones of high grade ores that are sure to be encountered at intervals in ore occurrencies such as these, will be so much "velvet".

Respectfully submitted,

(Signed) E. D. Elson, General Manager
Mexican Coal & Coke Co.
Las Esperanzas, Coahuila, Mexico

* * * * *

(Notary)
(Seal)

CERTIFIED to be a true copy made
from the original document, this 15th
day of August, 1945, at Tucson, Arizona

ISABEL M. LAUDER
Notary Public, Pima County, Arizona

My Commission Expires May 15, 1948

DONALD P. McCARTHY
CONSULTING GEOLOGIST
551 WEST SECOND PLACE
MESA, ARIZONA
TELEPHONE WOODLAND 4-0148

June 22, 1960

Mr. Herb Miller
Skyriders Hotel
Skyharbor Airport
Phoenix, Arizona

Dear Sir:

Two properties situated in the Dos Cabezas Mountains, Cochise County, Arizona controlled by Mr. C.W. Gabrielson and Mr. Sam Wollack were visited by me on June 17th and 18th. In addition to being guided around the properties by these two gentlemen, they also have provided me with reports of examinations made by other persons, notably Mr. Ralph L. Motz Mining Engineer, Bisbee, Arizona dated Dec. 11, 1935. Mr. Gabrielson also has written on the Buckeye Mine, Oct. 16, 1959 and has compiled an annotated sketch illustrating the Gold Hill proposal.

The purpose of the examination was to determine the present status of the properties and insofar as the available time would permit to decide if there was agreement or disagreement with the earlier reports and projected manner of development.

First described is the Buckeye Area: Located about 12 miles west of Bowie, Arizona at an elevation of approximately 6500 feet on the northeastern flank of the Dos Cabezas Mountains, this property includes 34 patented and unpatented mining claims. An excellent camp consisting of 2 Quonsets and a large cook and mess-hall has been established in Buckeye Canyon. This is also the site of a small mill which employed 5 air and vibrating tables to concentrate sulphides from quartz vein rock. The mill as well as the mines are not operating at the present time. The topography is rugged, consisting of quite narrow ridges separated by deep and steep-sided canyons. Access to the area is provided by a good graded road for the first 6 miles from Bowie and by a lesser though readily negotiable road on to the Mill Site and camp. From the camp, jeep roads continue on up the canyon and also continue to the top of the ridge west of Buckeye Canyon.

Outcropping rocks consist principally of granite with several diabase dikes, aplite dikes, and a number of quartz veins exposed.

The largest quartz vein which I visited was the Buckeye Vein which measured 27 feet thick at one point on the west side of

Buckeye Canyon. It is a westward dipping (20°), sill-like vein which has been penetrated by Buckeye Canyon so that the outcrops are over one hundred feet above the floor of the canyon. Extensive mining has been done in this vein on the east side of the canyon, and the old workings are very evident from across the canyon. Several smaller veins outcrop up the side of the canyon and across the ridge between this and the next canyon westward. All the veins dip westward at angles varying from over 50° to slightly more than 30°. The strike is nearly north-south and the veins can be visually traced for distances of well over 1000 feet. The thickness of these veins at their outcrops is from 2 to over 3 feet. Two of the veins at least have been named; both outcrop on the ridge; one is the San Francisco and the westernmost vein visited is the Apache. All of the veins from the Buckeye at the bottom to the Apache at the top consist of clean white quartz liberally marked and banded by voids which are clearly molds of pyrite and galena. Upon breaking farther back into the veins a few inches in most cases, unoxidized sulphides are disclosed. Most abundant is pyrite, followed by galena, and occasionally chalcopyrite is seen. A channel-sample was taken from the westernmost vein at the top of the ridge where it was crossed by a small wash. Vein dip measured as 32° W.

18" White quartz, highly mineralized with pyrite and galena in bands.

44" Light green, altered diabasic (?) material with numerous pyrite inclusions. Some quartz in stringers and nodules.

26" Quartz as at top but with lesser pyrite.

88" Total Assay: Au 0.18 oz/T ($6.30) Ag 2.10 oz/T ($1.89)
Pb 1.15% ($2.76 @ .12/lb) Total Value $10.95/T

A grab sample obtained from all the veins crossed from the Buckeye to the one sampled separately above, assayed as follows: Au 0.22 oz/T ($7.70) Ag 8.40 oz/T ($7.56) Lead, not determined, Total $15.26 / T. This last sample included much pyrite and galena in the quartz.

The strength of the veins evidenced by both their great length and quite uniform thickness, indicated that depth is probable. Projecting their surface dips downward they would all intersect the Buckeye Vein which is considered by Mr. Gabrielson to be the main vein in the area. It does appear to me to be the case. Structural conditions for probable higher grade "ore" shoots are numerous in the form of vein intersections and intersections of veins with both diabase and aplite dikes.

A site has been selected by Mr. Gabrielson for a cross-cut which entering beneath the Buckeye Vein in Buckeye Canyon would extend westward and cut all of the veins which were visited on outcrop. Advantages of this method of development would be level haulageway, access to portal by vehicular equipment, large tonnage of quartz vein material overhead to simplify mining, and others. It is considered possible that ore would be encountered within 500 feet of the portal. Contracted cost of such a drift has been stated to be at the rate of $25.00 per foot. I have been unable to contact the contractor to verify this at this time but I will do so.

Mr. Motz reported only on the Apache Vein which he sampled at three inclined shafts. His projected estimate of ore to be blocked out by deepening two of the shafts to around 400 feet and then connecting them with a drift along their bottoms was 126,000 tons with average value of $20.00 per ton. His estimated approximate cost for the exploration outlined was $30,000.00 at 1935 prices. On the other hand, drifting from Buckeye Canyon would be much cheaper than shaft-sinking and might be accomplished at a present price which would be comparable with that expenditure. The total tonnage of vein rock lying above a cross-cut such as has been outlined and extending westward to intersect the Apache Vein would be at least 2,000,000 tons with the following assumptions: Over 500 feet of backs; 1000 feet of width developed by drift across each vein; and vein width of 4 feet; and 12 to 15 cu. feet per ton. Costs of drifting on the veins has not been included with the cross-cutting costs, however, this would be drift mining of a marketable vein rock and could be offset by sales to some extent. Vein samples together with outcrop examinations lead me to conclude that a gross value of $10.00 per ton is possible, exclusive of premium for silica which might be paid by smelters. The foregoing is presented to demonstrate possible expectations concerning costs of exploration; volumes, and grades, of product; it is conceded at the outset that mining methods and direction of exploration would probably be adjusted to the particular conditions encountered and might be found to differ considerably from the simple outline above.

The second area visited was the Gold Hill property. It is located southeast of Wilcox, Arizona a distance of 6 miles. 21 claims are involved in this offering. Recent discovery work was not in evidence and therefore the manner by which the claims are held should be looked into.

This property is much more accessible than the Buckeye with a nearly flat approach from Wilcox for the first 5 miles. The last mile of road raises gradually to the foot of Camel-back Mountain. A mile or more further the crest of the mountain rises to a height of 6500 feet above sea-level or 1900 feet above the foot of the mountain. Dry-washes extending generally westward from the mountain separate ridges lying between.

Country rock in this area consists of dark-gray finely laminated schist which appears to strike E-W and have vertical dip. Several andesite and some diabase dikes were noted.

Quartz veins striking N 10 to 20 degrees W and dipping west at rates from 59 to 69 degrees cross the low westward extending spur-ridge. Two or possibly three dross veins strike N 70° W. and dip SW at 61°. Composition of the veins appears identical with that of the Buckeye area veins. Thickness and apparent length are also comparable, except no vein here had the prominence which is displayed by the Buckeye Vein itself.

An assay of a sample grabbed from several of the veins follows: Au 0.28 oz/T ($9.80) Ag 1.80 oz/T ($1.62) Pb 4.45 % ($10.68) Total value $22.10. This demonstrates that in addition to the lead and iron sulfides which are readily visible in the rock, that gold

and silver also occur here as they do in the Buckeye area. Several prospect pits and shallow shafts have been sunk on the veins. The deepest is probably about 40 feet and shows uniform vein width throughout of 3 to 4 feet. The shaft was not accessible.

Proposed development of these veins by Mr. Gabrielson is illustrated by the enclosed sketch which he has prepared. At the site of the proposed portal the cross-vein is not evident on the ground. However, it does outcrop higher up the slope. In order to have as much ore overhead as possible it would probably be desireable to start cross-cutting at the lower site rather than go any higher up the hill. Since this is a relatively low ridge the first veins encountered would have probably less than 125 feet of back. With that one exception, the sketch drawn by Mr. Gabrielson seems to be correctly interpretive of field conditions. Additional surface work and sampling should be done however, and possible alternate exploration methods should be considered.

A composite of the three samples reported above (2 from the Buckeye area and 1 from the Gold Hill) was run for insoluble residue and determined to be 89.35% insol. Correspondence with representative local smelters inquiring about the salability of silica have been initiated.

To summarize briefly, the two properties visited - The Buckeye and the Gold Hill - both display strong and rich quartz veins on the surface. Shallow workings down to a maximum depth of 85 feet show the values increasing. An expenditure of from 25,000 to 50,000 dollars on each of these properties should develop a very large tonnage of direct-shipping quartz vein "ore". Accessibility of the properties to shipping points - 12 miles and 6 miles distant, respectively, and to a number of smelters located in southeastern Arizona and one at El Paso, Texas, makes these very attractive proposals.

Yours truly,

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Geologist

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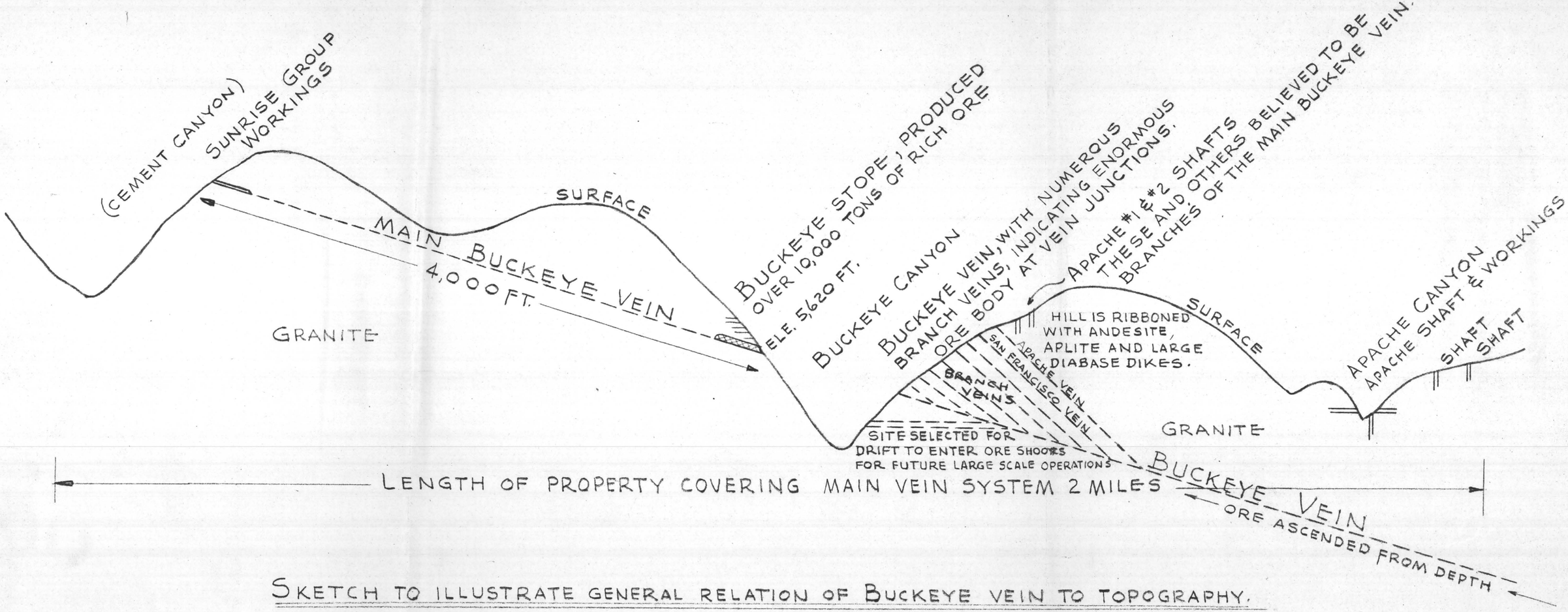

SKETCH TO ILLUSTRATE GENERAL RELATION OF BUCKEYE VEIN TO TOPOGRAPHY.

NOT DRAWN TO EXACT SCALE