



CONTACT INFORMATION

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

The following file is part of the

Arizona Department of Mines and Mineral Resources Mining Collection

ACCESS STATEMENT

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

CONSTRAINTS STATEMENT

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

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

QUALITY STATEMENT

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

PRINTED: 09/05/2002

ARIZONA DEPARTMENT OF MINES AND MINERAL RESOURCES AZMILS DATA

PRIMARY NAME: TUSCUMBIA

ALTERNATE NAMES:

YAVAPAI COUNTY MILS NUMBER: 1265

LOCATION: TOWNSHIP 11 N RANGE 1 W SECTION 21 QUARTER SW
LATITUDE: N 34DEG 16MIN 44SEC LONGITUDE: W 112DEG 21MIN 40SEC
TOPO MAP NAME: BATTLE FLAT - 7.5 MIN

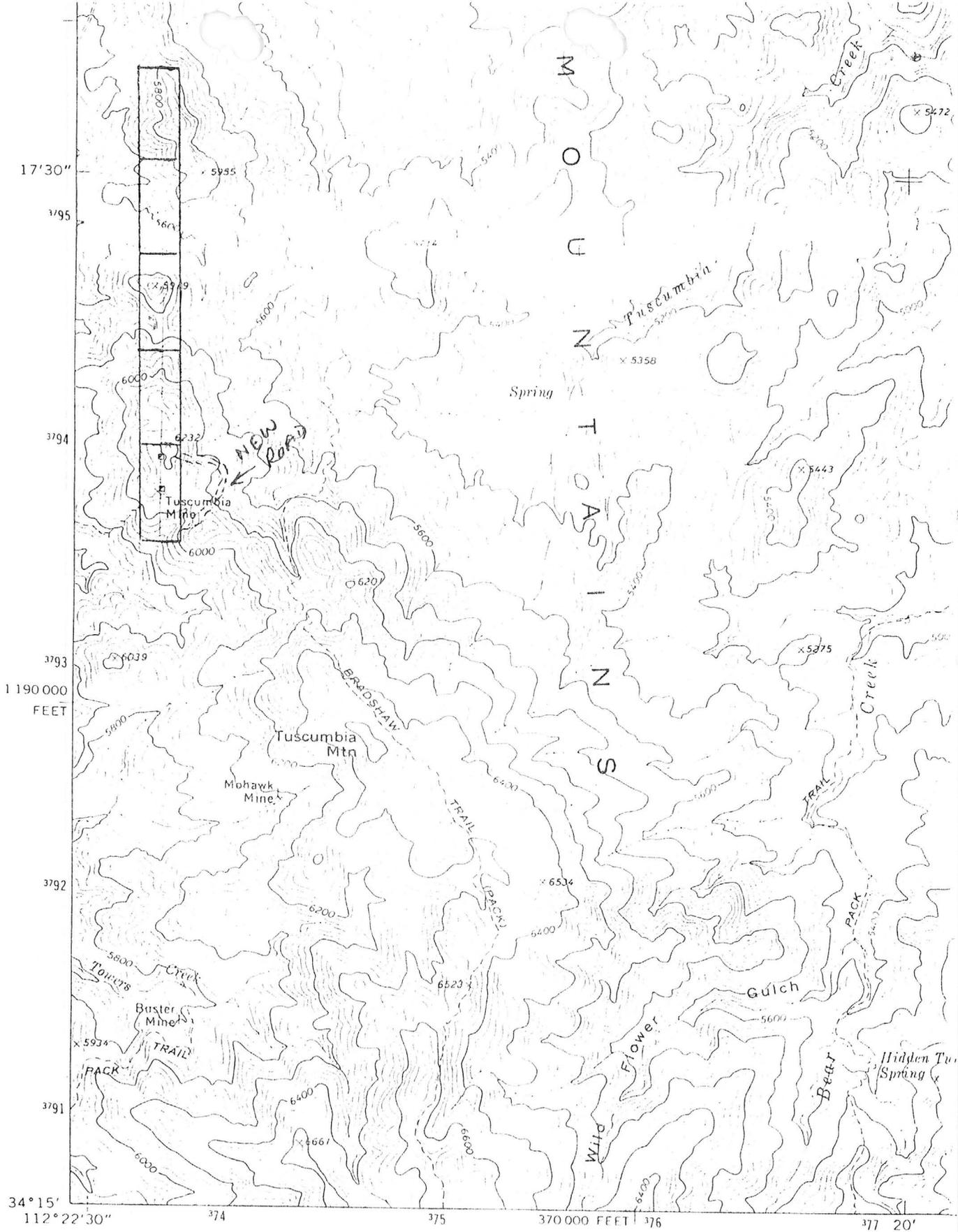
CURRENT STATUS: PAST PRODUCER

COMMODITY:

SILVER
GOLD
LEAD
ZINC
ANTIMONY

BIBLIOGRAPHY:

USGS BATTLE FLAT QUAD
ADMMR TUSCUMBIA GROUP FILE
LINDGREN, W. ORE DEPTS JEROME & BRADSHAW MTN
QUADS USGS BULL 782 1926 P 176



(MINNEHAHA)
3552 III NW

Mapped, edited, and published by the Geological Survey
Control by USGS and NOS/NOAA

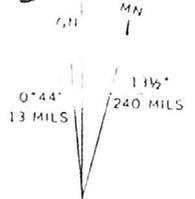
Topography by photogrammetric methods from aerial
photographs taken 1973. Field checked 1974

Projection and 10,000-foot grid ticks: Arizona coordinate
system, central zone (transverse Mercator)

1000-meter Universal Transverse Mercator grid ticks,
zone 12, shown in blue. 1927 North American datum

To place on the predicted North American Datum 1983
use the projection but transfer north and

BATTLE FLAT



TUSCUMBIA GROUP

YAVAPAI COUNTY

USGS Bull. 782 p. 176

*Capey
In file*

TION RIW

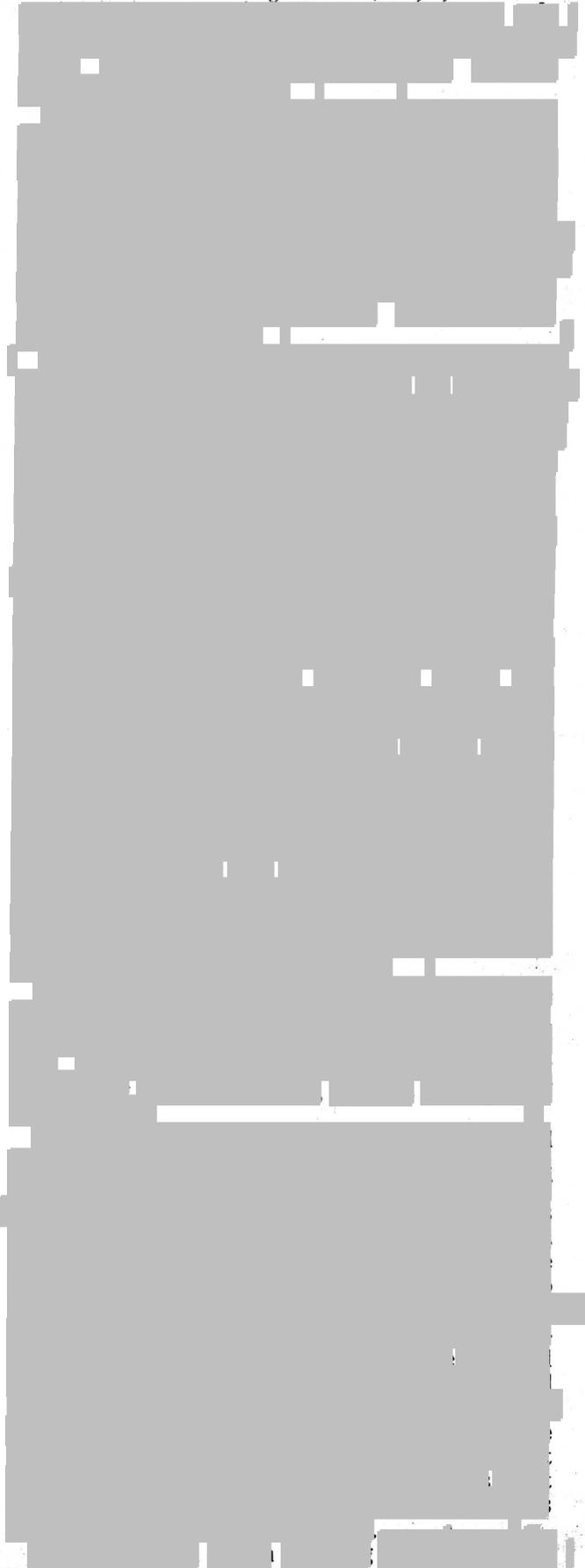
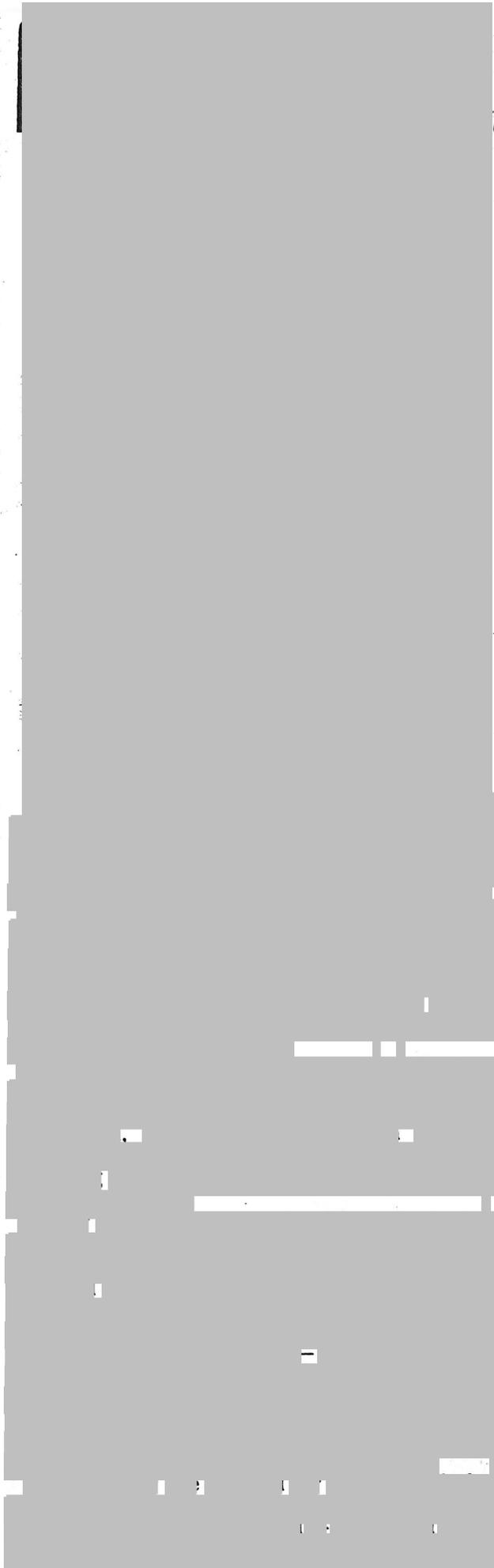
TAIME Vol 11 p. 287. 1882-83

*Capey
In file*

32/

Mine Development

Western Prospector & Miner
August 1979



TUSCUMBIA GROUP

YAVAPAI COUNTY

John H. Jett 2/27/84: John Christensen, P.O. Box 305, Mayer, Arizona 86333, reported that he has purchased the Tuscumbia Group, Yavapai County. He is starting up the mill to run 30,000 ton of dump, running 6 - 8 oz of silver, crushing to 80 mesh. Nick Caruso is his consultant.

NJN WR 6/21/85: Bob Eustace of Crown King Realty (c) reported that Fred Lorette (c) owns the Tuscumbia Mine (f) Yavapai County again. The deal to sell it to Mr. Christiansen was terminated.

RRB WR 7/12/85: Rob Pollard, The Pollard Co. (c) came in for advise on moving a mill. He is considering the purchase of the mill at the Tuscumbia Mine from Fred Lorette and moving it to his property, the Donkey Mine, in the SW $\frac{1}{4}$, Sec 33, T12N R1W, Yavapai County (Apache Claims-file). He says that "a company in Georgia" (a paving contractor) will help financially but he will have to find some one experienced in moving and setting up mills to do the work. He also says that he owns several properties in the area which can feed the mill if he moves it to the Donkey but that he has no ore actually blocked out.

GW WR 10/19/76 - Walt Statler said that Fred Lorette, Mayer, has opened the old Tuscumbia mine and has some 5.0 - 6.0 oz. gold ore which he was concentrating to about 2,000 oz./ton.

WR GW 11/10/77 - Stopped at Walt Statler's assay lab where Mr. Lorette was made acquainted. He has closed his mining and milling operation at the Tuscumbia mine for the winter; he has had several offers to sell. 11/15/77 bh

KP WR 4/25/79 - Ron Hanna reported on activity at the Tuscumbia Mine, Pine Grove Dist., Yav. Co. Ike Kusisto, et. al. have leased the property and plan to mine the silver-antimony ore. The principle mineral is silver bearing tetrahedrite. They plan to mine and mill about 20-24 tons of ore per day. The mill consists of crushing, grinding and floatation equipment. The ore is expected to average 30 oz./ton in silver with some ore running as high as 400 oz. Ag/ton. Jack Hamilton of Tonto Mining and Milling has been assisting in setting up the mill and designing the mill flowsheet. Mill recovery is expected to near 80%. 6/19/79 a. p.

KP/WR 10/5/79 - Mr. Ike Kusisto is working the Tuscumbia Mine, Yav. Co. He is operating the mine (as superintendent) for its owners Brian Andeline et. al. DBA Tuscumbia Corp. Ike reported they are continuing to develop ore underground in drift and that they will start milling on October 8, 1979. Mr. Andeline has a residence in Prescott valley.

KAP WR 10/17/80: Mason Coggin, Consulting Engineer, reported that he had visited the Tuscumbia Mine, Bradshaw (?) District, Yavapai County. He feels that the mine has some potential and the last opened drift should be sampled in the floor to delineate what he feels may be the apex of a good ore shoot.

NJN WR 11/18/83: Gordon Miner reported that Fred Lorette has the Tuscumbia Group, Yavapai County for sale for \$40,000 including the mill that is on the property.



COE & VAN LOO
CONSULTING ENGINEERS INC.
ENGINEERING · PLANNING
4550 NORTH 12TH STREET
PHOENIX, ARIZONA 85014

October 3, 1980

OF COUNSEL
P. E. COE, P. E. (1915-1977)
H. W. VAN LOO, P. E.
ALBERT B. CUTLER, JR., P. E.

J. E. COE, P. E., PRESIDENT
H. MASON COGGIN, P. E., L. S.
RONALD J. MLNARIK, R. L. A.
PLANNING
JOHN B. NELSON, P. E., L. S.
RONALD C. FISHER, P. E.
RAMESH I. PATEL, P. E.
PAUL SIDERS, P. E.
KARL A. HIRLINGER, P. E.
JAMES J. HALL, L. S.
E. THOMPSON VAN LOO, P. E.

Mr. Aubrey Andelin
P.O. Box 5651
Prescott, Arizona 86312

Re: Tuscumbia Mine

Dear Mr. Andelin:

After reviewing your Tuscumbia property and after having time to re-think the day, I would like to make the following comments.

There are several exploration targets available. They are as follows in order of priority by highest probability of success, with my suggestions on how to proceed:

1. The previously mined and identified ore shoot should be explored at depth. Exploration should be initiated by removing the track below the mined area, cleaning the floor with a blow pipe, and cutting samples across the vein on 6 foot centers. The vein in the back of the Number Three level should also be sampled on 6 foot centers for at least 100 feet on each end of the stope and on 20 foot centers thereafter.

A resurvey of the entire mine should be made by a professional underground mine surveyor to establish elevations of the levels, the ground outline, and some surface contours, as well as tying into the property corners and accessible land mark or government survey monument.

The mine should also be surveyed and mapped geologically. This work will allow directing the advance of Level 4 so that it can be brought under the projected ore shoot from the upper workings.

I place a high probability on finding an extension of the ore shoot. However, without having a schedule of the past production and without knowing the exact mining procedure used, it is not possible to assess the probability of whether or not the projected shoot would be profitable to mine and mill.

This program should be directed by a qualified engineer or geologist to insure proper procedures and recording requirements.

2. There is a reasonable probability that the Tuscumbia vein extends both north and south and that additional reserves of ore grade materials can be found. Confirmation of this would entail additional property acquisition, geologic mapping and sampling, followed by drilling or drifting. I am sure that the vein can be traced on surface, but again I have no way of estimating the probability of successful economic results without a past production history of the Tuscumbia itself.

3. There is a probability of other veins in the immediate area with additional potential reserves. These need not have been previously explored nor prospected. Thick brush and a thin cover of topsoils may have masked such a vein. Prospecting for such a vein would entail trenching, geologic mapping and sampling, followed by drilling and drifting.

There is at least a 25% probability of parallel veining, but again no way of estimating the potential success of an economic ore reserve.

THE MILL

The presently constructed mill will require additional equipment and further control before it could operate effectively. Assuming that you could keep an employee who would pound 25 TPD of rock and fault gouge through the 4" x 8" openings in the grizzly over the ore shoot, there is still no way of thickening and drying the concentrates. Additional conditioning time is needed between the ball mill and the flotation tanks to allow reaction time. With only one bank of flotation cells, the concentrate will be disappointingly low in values and recovery will be poor. Without sufficient testing of the particular ores you intend to process, there is no way of knowing what will be required in the way of grind, reagents or dwell time in the various stages of treatment. All of this will effect capacity and recovery.

Assay control onsite is required to maintain process management. Without knowing the values in the feed, tails and product, control will be impossible. It will also be necessary to estimate the amount of material passing through the circuit and the volume of tails and concentrates. Although this can be estimated by various methods, the best approach requires scales, weightometers and flow meters. I am preparing some cost guidelines for you to consider.

A six person mine should provide 5 tons per man shift or 30 tons per day. Labor, burden and supplies will run about 4 times direct payroll. My estimate for mining is \$80/ton.

The federal and state safety and health laws frown on one man per shift and my estimate of milling cost is \$60/ton.

On top of these is the property holding costs, G & A, state and local taxes. Considering smelter treatment charges, freight costs and recovery, it looks like about \$250/ton rock will be required to break even.

The property acquisition program mentioned above is relatively inexpensive, and I have mapped out a program which is attached. I am taking our conversation Wednesday as authorization to proceed with the claim staking work using your representative, Bob Polland, and his livestock for labor.

The surveying, mapping, sampling and evaluating program described above should cost in the neighborhood of \$10,000 to \$15,000. Drilling, drifting or other exploratory work will require a designed program before an estimate can be made. I have prepared a proposal for this work should you decide to proceed.



Mr. Andelin
Re: Tuscumbia
October 3, 1980
Page 3

For my time Wednesday and preparing this report I am enclosing an invoice.
Your prompt payment will be appreciated.

It was a pleasure working with you, and I enjoyed the day.

Sincerely,

COE & VAN LOO
Consulting Engineers, Inc.

H. Mason Coggin, P.E. & L.S.
Senior Vice President - Mining

HMC:do
Encl.





COE & VAN LOO
CONSULTING ENGINEERS INC.
ENGINEERING • PLANNING
4550 NORTH 12TH STREET
PHOENIX, ARIZONA 85014
PHONE (602) 264-6831

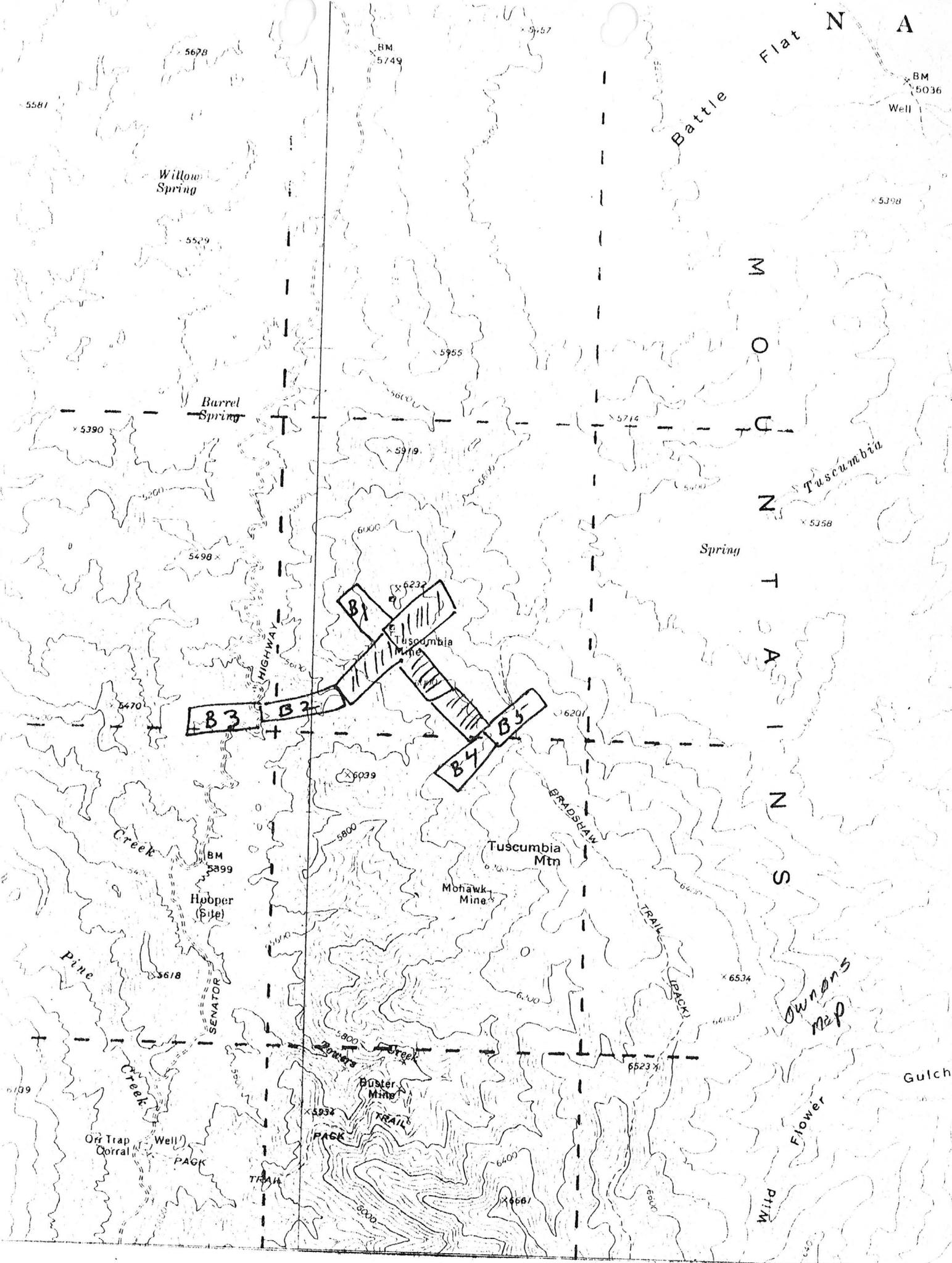
INVOICE

Tuscumbia Mining Co.
Attn: Mr. Aubrey Andelin
P.O. Box 5651
Prescott, Arizona 86312

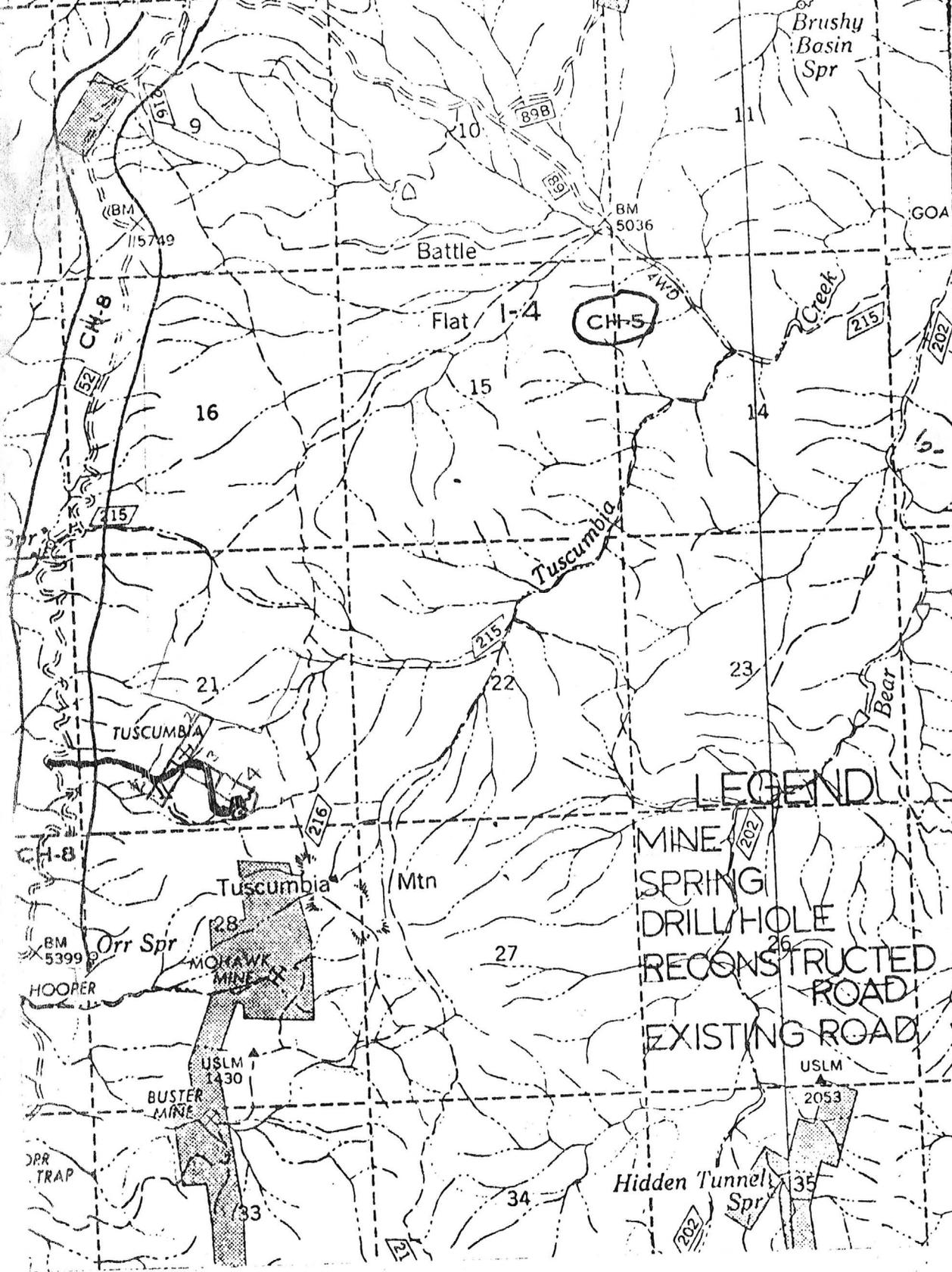
DATE October 3, 1980

NO. 14501

DATE	DESCRIPTION	CHARGES
	TUSCUMBIA MINE	
	Principal Engineer 10 hours @ \$45.00	\$450.00
	Clerical 1 hour @ \$15.00	15.00
	Travel & Subsistence	<u>31.25</u>
	TOTAL AMOUNT DUE THIS INVOICE	<u>\$496.25</u>

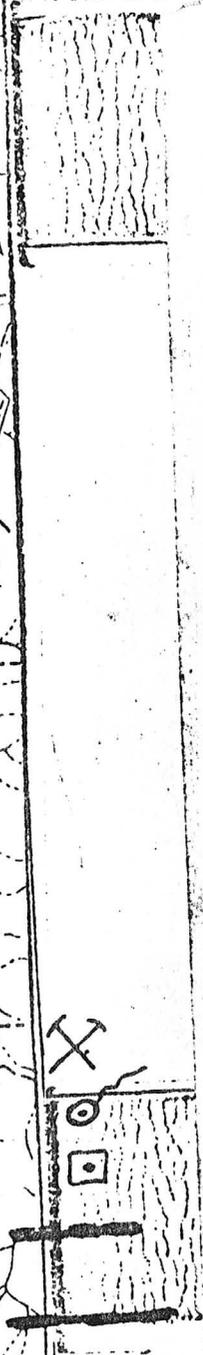


TUSCUMBIA MINE FLORETTE PLAN OF OPERATIONS MAP ADDENDUM #1



LEGEND

- MINE
- SPRING
- DRILL HOLE
- RECONSTRUCTED ROAD
- EXISTING ROAD



ELK
4-77

6G

Prescott, Arizona, Sept, 1909

Messrs. Prince and Williams,
City.

Gentlemen:

Yours of even date just received and contents noted. You desire to state in definite terms the number of ledges I have observed within the boundaries of your Tuscumbia Group of Silver mines, also the average width of the ledges, number of feet of development work done, estimate amount of ore blocked out and average value of same.

In order to answer those questions accurately, it would have required a much more extended visit to and examination of your property than I have made, but I will give an approximate outline of my impressions on these points, supplemented by information gained from your Mr. Pascoe.

Of such ledges that show heavy and continuous outcroppings I have found five, not including the main Tuscarora lode. The largest ore is seen on the Prince of India claim. It measures more than 20 feet in width, and its course is almost due north and south across the western end of claim, parallel with this, appearing first near the south side line center of the same claim, thence running southward through the entire length of the Black Hawk and Black Prince claims, it is a very prominent lode of an average width of six feet, and being the lowest down on the west slope of Tuscumbia Mountain, will be the first reached by our proposed Cross-cut tunnel. A third vein about four feet wide, runs lengthwise through the center of the Black Prince claim, and either unites with or crosses the six-foot lode within the Black Hawk ground, still higher up, nearing the summit of the mountain shows another four foot vein, whereon actual ore one foot thick has been stripped right on the face for a distance of 80 feet. This vein crosses the six foot lode near the center of the Black Hawk and passes over the north end line of the claim into the Prince of India. The fifth prominent lode shows along the dividing line between the Sierra Bonita and the Black Hawk claims and crossing the entire width of the Prince of India to the north side of the claim.

In all these croppings I have found the mineralization most pronounced through the oxidation of the lead and iron contents of the ore. Many other veins show outcroppings at different points, but the five mentioned appear to be the most prominent. What is apparently the strongest and richest vein of the group, and upon which most of the development work is done on account of geographical advantages, the Tuscarora-Tuscumbia lode shows the least of surface droppings.

In speaking of amount of development work done will state that I have taken no measurements, but have been fully informed by Mr. Pascoe, who has been living on the ground for several years, and, who by the way, is surely a most industrious miner and also very competent. He gave me the length of the several tunnels as follows: No. 1, 690 feet, No. 2, 440 feet, No. 3, 625 feet, and No 4, 160 feet, at the time of my visit, aggregating 1815 feet. Good car track of iron T-rails is laid in all these tunnels. The three upper ones need some little repairing, as some of the stulls along the slopes have come down, thus letting the filling-in down into the tunnels. From the bottom of the Tuscarora shaft, a level is run south 92 feet, and north 457 feet. The south level reaches to the surface. Besides these workings, I have seen several old shafts, partly filled in, none however of sufficient depth to be considered. Evidently, they failed to disclose any rich ore enough that would have warranted development by shaft, when it could be done much cheaper by tunnels, and in those days hundred dollar ore was not considered good enough, and they had none of our modern appliances in use on this property. The ore was hoisted out of the shafts by hand-windlass, and after carefully sorting same was packed on burros to the mill over two miles distance.

"Estimate the amount of ore blocked out and average values of same." In answer to this question will say first, that there is no ore "blocked out", although a great tonnage of excellent ore is "in sight" in all the workings to which I had access; and second; I did not take any samples, for I did not consider it necessary in your case, and besides the character of the ore, together with the record of this mine, speak for themselves, but to conform in some degree with your request, I will briefly state what has been shown me by Mr. Pascoe, as we went through the Tuscarore workings.

Beginning with the shaft, which I should judge to be about 100 feet deep, from the bottom of which the above mentioned level runs south 92 feet and coming to the surface, and north 437 feet, all of which was evidently in ore, for it is all stoped out to the surface, that is five feet of the vein, and along the hanging wall, whereas a two and one-half foot ore body is left standing upon the foot wall, all the way from the shaft to the end of the north drift. This ore is a heavy silver ore, and from tests made by Mr. Pascoe, it can safely be rated to average \$40.00 per ton silver, lead and some gold. The richer portion of the lode continues however, all along the floor of the drift, and to reach it Tunnel No. 1 was driven, but has not advanced sufficiently yet to tap it. This tunnel starts about 700 feet south of the shaft and is now in 590 feet. The first 200 feet were in ore, which has been stoped out to the surface. The next 60 feet go through barren dark quartz. Following this comes 30 feet of crushed quartz and ledge matter, rich in silver. The next 135 feet are through a schist horse, the line of the tunnel going gradually from the foot wall side of the lode toward the hanging wall, At this point a heavy silver lead ore opens, first only

the thickness of a pick handle gradually widening out to fully 10 feet in the face of the tunnel. The ore proper appears principally in three separate veins or stringers, three inches thick along the foot wall, four inches along the hanging wall and twelve inches in the center between talc seams. Besides this remarkable showing the tunnel is also rapidly rearing the very extensive and rich ore shoot described above.

In the tunnel No. 2, I found a winze fifty feet in from the mouth making connections with tunnel No. 3 at a point about 500 feet in where a car load of ore was taken out that ran over 600 ounces silver per ton. Back of the winze much ore has been extracted from the floor of tunnel by underhand stoping for nearly the entire distance I could go in No. 2 which has caved some and needs repairing.

In tunnel No. 3, ore makes its appearance within 100 feet from the mouth in the floor of the tunnel, where occasional blasts disclose the apex of another extensive shoot of ore and reaching back fully 400 feet. At 150 feet from the mouth a bunch of ore has been stoped out, and at about 400 feet from the mouth ore begins again to show in the roof of the tunnel, in places widening out to large kidneys of very rich ore, as that car load shipment has demonstrated, there is no denying the fact that a great deal of rather low grade ore is carried in this lode, but it is also a fact that the record of this property is made up of ore above the hundred dollar mark. One can get assays as readily running up into the thousands as in the tens, and I should judge the average values of the ores to be of such a grade as to be classed among the high grade propositions. The workings have proved the existence of at least two large ore shoots in the Tuscumbia-Tuscarora lode. The most extensive of the two lies in the heart of the Tuscumbia Mountains, and consequently ahead of all those tunnels. The other shoot further down the mountain and south of the first one has been demonstrated in tunnel No. 3, and to reach it tunnel No. 4 is being driven, being as far down the mountain as can be done advantageously from the southside and running on the vein. But in spite of all these flattering prospects of reaching extensive ore bodies of great richness within a very short time, the far greater advantages to be gained by the proposed cross cut tunnel from the west side of the mountain, many hundred feet lower down, loom up so gradually as to overshadow all else in connection with operating this property.

Trusting this additional description will assist you in the negotiations in hand, I remain

Yours very truly,

Jules Bauman

Messrs, Prince, Williams and Smith,
Prescott, Arizona.

Gentlemen:

In compliance with your request I recently visited the Tuscumbia Group of Mining claims, to make a few sketches and take a good look at your property. In company with your Mr. Pascoe I went over the entire surface ground, and we also examined such of the many tunnels and shafts as are safe to enter. Permit me to express my views and conclusions, gained from such observations as I have made, in the following:

REPORT

LOCATION:

The Tuscumbia Group of mining claims is situated on the northern slope of the Bradshaw Mountain, about 35 miles (25 in the air line) S. Southeast of Prescott, in Yavapai County, Arizona. It forms the northern extremity of a chain of famous producers of the precious metals, embracing the Mohawk, Buster, Wild Flower, Gladiator, Crown King, and numerous other well known Gold and Silver mines, which have made the name of the "Bradshaws" the synonym of "very rich ore". The claims comprising the Group cover Tuscumbia Mountain (about four miles north of Tower's Peak) in Township 10 North, Range 1 West of Gila and Salt River Meridian.

ACCESSIBILITY:

The Tuscumbia Group can be reached over two different routes. One going south by wagon road to Hooper Post Office (35 miles) and thence by trail north $1\frac{1}{2}$ miles; the other by the Prescott & Western Railroad to Crown King (60) miles and thence by trail northerly seven miles. Both routes will soon be greatly improved and as I mentioned shortened by two and one-half miles, the cut-off to pass within half a mile of the group, while the contemplated Territorial Highway will pass directly over the Tuscumbia Mountain, thus effecting first class wagon road connection with the railroad at Crown King.

THE CLAIMS:

The Tuscumbia Group contains the following seven full mining claims: Ingersol No. 1, Ingersol No. 2, Tuscarora, Black Prince, Sierra Bonita, Black Hawk, and Prince of India, aggregating over 140 acres of as highly mineralized land as I ever saw during my 32 year experience in mines and mining. Plat No. 2 shows the relative position of each claim. The Group covers the summit, and southern, northern and western slopes of the Tuscumbia Mountains offering excellent opportunity for exploration work by tunnels.

GEOLOGY:

The country rock on Tuscumbia Mountain is chiefly granite, traversed in a northerly strike by large dykes of more or less metamorphosed hornblende-schist. The several mineral lodes that have been developed to some extent prove to be fissure veins, cutting through the different formations and therefore having walls of the same character for long distances. They become contact veins only transitory, when entering from one formation diagonally into another.

The dip of the lodes is to the west at an angle of from 60 to 70, as shown in the 100-foot shaft on the Tuscarora claim near the summit of the mountain. This same dip appears in every instance where an ore vein has been exposed by either open cut, tunnel or shaft. Several mineral lodes show up strong and continuous on the surface, but others can be traced only by their occasional and short outcroppings, wherever a vein crops out it shows the high state of oxidization of its mineral and I might say that one stumbles upon an outcrop of oxidized and carbonate of lead and hematite at every few steps. Although considerable "dry" silver ore has been mined from this property in former years, and hundreds of tons of low grade ore of this character are lying upon the dumps of the Tuscarora shaft and tunnels. I believe the Product of deep mining will be good smelting and concentrating ore of galena and iron and copper sulphide, based on the fact that these minerals form the chief substance in the many croppings on the summit and the western slope of the mountain, only that they appear much leached and in oxidized form. The ores so far explored by the shallow development contains silver, gold and lead values. No depth of any consequence has been reached anywhere within the group.

The presence of so much "dry" silver ore in the Tuscarora workings suggests the existence of a parallel vein within the same lode, one along the hanging wall, the other near the foot wall, but gradually converging to the northward, towards the heart of the mountain.

DEVELOPMENTS:

Although numerous shafts and tunnels are found scattered over the group, the Tuscarora claim alone shows some systematic development. The southern slope of Tuscumbia mountain is pierced by a series of tunnels along the vein, each of several hundred feet in length and about 100 feet above one another. Most all the ore has been stoped out between them and direct to the surface. Toward and at the face of Tunnels Nos. 1, 2 and 3 appears strong veins of good ore, in one instance having been stripped and left on the foot wall for a long distance. The 100-foot shaft mentioned before is near the north end line of the Tuscarora and almost on the summit of the mountain. From the bottom of this shaft a drift is run northward 400 feet and everything stoped out to the surface. This shaft and tunnel No. 1 are in very good condition, whereas, tunnels Nos. 2 and 3 are caving some.

Tunnel No. 4, which is being driven now, is cutting across the formation

feet below No. 3. It is now 160 feet in, and 60 feet more will bring it directly under the mouth of No. 3. Although a considerable distance from the vein the traversed country rock (hornblende-schist) is very highly mineralized, being full of iron pyrites in quartz, and I have found samples containing specks of galena and copper sulphide.

These workings demonstrate the existence of two distinct ore shoots or lenses, which again prove beyond a doubt the existence of two ore veins, or "pay streaks" within the same mineral lode. We find the true hanging wall in the lower workings and the foot wall in the upper tunnel, both as smooth as glass underneath a gouge of clay.

Of the many other workings, shafts and tunnels and endless open cuts, all of which show "ore in place" I will only mention a new find on the Black Prince claim. The ordinary croppings of a strong vein appears near the top of the mountain within the northeastern portion of the claim, and a trench two feet deep is dug along the vein, and a continuous ore body exposed for the entire distance, averaging one foot in thickness, nor is this the only vein within this claim: another strong lode runs longitudinally through the center of the claim; another fully six feet in width, passes through it from near the southwest corner of the claim due north into the adjoining Black Hawk claim. I cannot help to express my astonishment at how little this property has ever been prospected, with all the beautiful manifestations of great wealth in evidence at every turn.

FACILITIES AND OPPORTUNITIES:

Very seldom one finds an opportunity for unlocking nature's treasure chest such as is offered here. The topographical features combined with the geological make the Tuscumbia Group one of the most inviting mining propositions. All those numerous veins can be developed by a cross cut tunnel from the western base of the mountain. The Tuscumbia and Tuscarora lode, the furthest lode east from said tunnel site, can be reached at a depth of over 900 feet, by a tunnel not to exceed 1200 feet in length, if said lode should change its dip to the vertical, which however is not unlikely, but instead, it and all other veins, dip to the west, or toward such tunnel, which I understand you gentlemen contemplate driving at some future date. That there exist many mineral veins or lodes other than those showing out croppings along the surface is lesser the rule than the exception, wherefore I unhesitatingly declare, you have in your Tuscumbia Group one of the most tempting and appetizing propositions I ever saw. Almost sure results can be gained sooner and much more economically than in the case in most mining ventures. The fact that this property has already produced nearly half a million dollars to the original owners, and that later leasees, within a week's work, have taken out 9,000.00, all within touch of the grass roots, is of sufficient guarantee that your property will prove a bonanza when worked in a miner-like manner.

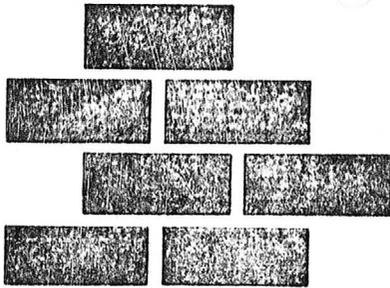
There is but one so called drawback to your enterprise, but even this after due consideration dwarves and disappears entirely. It has been shown to me that small but permanent springs of good water exist in several gulches right on your property, not to mention the nice little stream down at Hooper. And as these springs flow from the western slope of Tuscumbia Mountain, it is reasonable to expect that such cross cut tunnel, which will penetrate every crevice and contact between the formation of the mountain, will develop all the water needed for whatever works may be contemplated in the future. Furthermore, should this fail, and the springs prove insufficient, Mr. Pascoe has shown me an excellent dam site very close by the deep tunnel site, where abundant water can be impounded at a nominal cost, and brought to the tunnel and the works by gravity.

In conclusion let me assure you that I can and will unhesitatingly recommend your Tuscumbia property as a sound and safe mining proposition, even without considering one very important but prospective feature, namely, that of developing more gold values with greater depth without diminishing silver contents in the different ores.

Yours very truly,

Jules Bauman

Prescott, Arizona, Sept., 8th, 1909



Metal Refiners Ltd.

255 S. Extension Road • Mesa, Arizona 85202 • (602) 964-2704

October 23, 1978

Mr. Brian B. Andelin
816 N. Pioneer
Mesa, Arizona 85203

Dear Mr. Andelin:

I was pleased to learn of your interest and plans for developing the old Tuscumbia Mine near Meyer, Arizona and putting it into production. As you know from our previous conversations, I believe this mine has excellent potential for profitable development if a sensible plan is followed with adequate financing. I have recommended it to others and one group was preparing to move onto it when they learned you had taken an option on it.

Our interest, of course, is in assisting investor-developers such as yourself with technical advice in setting up a sound program in anticipation of obtaining business in the form of good high-grade concentrates for refining. Our services are geared specifically for the small mine operator who produces precious metal concentrates which we refine by modern hydrometallurgical methods which lend themselves well to handling small batch production with high recovery efficiencies and simple accountability. In view of that interest I am providing you with some data on tests which I personally conducted on the Tuscumbia ore in hopes that it will be helpful to you in arranging proper financial support.

I collected a representative sample totalling some 300 pounds over a distance of some 90 feet, including in my sample some "in place" ore from the vein, some ore from the existing ore chute, and some ore from a pile of freshly broken ^{rock} pile in the tunnel. I crushed and mixed the sample and then quartered out about 25 pounds for beneficiation studies. That sample was further crushed then ground in a

laboratory ball mill and concentrated by froth flotation. The original head feed, the flotation tailings, and the flotation concentrate were then assayed.

Original Heads:	Silver, 34.8 ounces /ton	Gold, 0.03 ounces/ton
Tailings:	" 0.95 " "	" 0.01 " "
Concentrates:	" 3,139.3 " "	" 4.95 " "

These results showed an excellent recovery of over 97% of the silver in the concentrate, plus good recovery of the small amount of gold, with a reduction ratio of about 150:1 in mass. The concentrate was very high in grade and suitable for shipment for refining in our facilities.

The silver bearing mineral in the ore appears to be a tetrahedrite as indicated by the antimony in the concentrate. This antimony would represent a penalizing deterrent for pyrometallurgical (smelter) refining of the concentrates but offers no significant problem for hydrometallurgical refining by our proprietary methods.

I hope this metallurgical information will aid you in moving ahead with this project. Based on my experience both in the field and the metallurgical laboratory, I feel that I can recommend this project to you at this time in view of today's precious metal prices and improved technology. It certainly stands out as to potential compared to a number of other projects I have evaluated recently.

Sincerely yours,



Duane Brown, Ph.D.

Vice President and Metallurgist.

Mason



COE & VAN LOO
CONSULTING ENGINEERS INC.
ENGINEERING · PLANNING

OF COUNSEL
P. E. COE, P. E. (1915-1977)
H. W. VAN LOO, P. E.
ALBERT B. CUTLER, JR., P. E.

J. E. COE, P. E., PRESIDENT
H. MASON COGGIN, P. E., L. S.
RONALD J. MLNARIK, R. L. A.
PLANNING
JOHN B. NELSON, P. E., L. S.
RONALD C. FISHER, P. E.
RAMESH I. PATEL, P. E.
PAUL SIDERS, P. E.
KARL A. HIRLINGER, P. E.

October 3, 1980

Tuscumbia Mining Company
P.O. Box 5651
Prescott, Arizona 86312

Attn: Mr. Aubrey Andelin

Re: Tuscumbia Mine Examination

Dear Mr. Andelin:

Coe & Van Loo Consulting Engineers, Inc. (CVL) is pleased to submit this proposal for professional services regarding the subject project. We will perform the following services on an hourly basis as set forth on the attached fee schedule. We expect the final costs for the services involved to range from \$10,000.00 to \$15,000.00.

SCOPE OF WORK

Survey, map, sample, evaluate and prepare an economic analysis of the Tuscumbia Mine. Study to be prepared for the purpose of determining if the property is economically viable and how much additional capital is required, the expected rate of return, and assessment of the probability of success.

No extra work will be performed or billed without your written authorization of extra work. Billings will be based on the fee schedule attached hereto and by this reference made a part hereof.

If there are protracted delays beyond our control and if it is not possible for us to complete the work set out herein within 6 months from the date of your acceptance we would expect to renegotiate, with you, the basis for our compensation in order to take into consideration changes in price indices, pay scales and our fee schedule applicable to the period when services are in fact being rendered.

The client warrants and represents that he has the right to enter upon the real property involved herein, and extends this right to CVL. CVL agrees to exercise due care in the performance of all services pursuant hereto.

All charges for filing fees, permits, title reports, bond premiums, soils investigations, aerial mapping, and other charges, unless specifically set forth otherwise herein, will be paid directly to the entity involved, by the client. Charges for prints, reproductions and photowork, beyond any allowance that may be provided herein, will be billed in accordance with the attached fee schedule.

If the services included hereunder are terminated for any reason, CVL shall be paid for all services rendered to the date of termination in accordance with the attached fee schedule, together with reasonable termination expenses and charges for authorized extra work.

Neither party hereto shall be considered in default in the performance of its obligations hereunder to the extent that the performance of any such obligation is prevented or delayed by any cause, existing or future which is beyond the reasonable control of such party.

CVL shall perform the services hereunder in accordance with generally accepted engineering methods and standards. The parties acknowledge the difficulties, inconveniences and nonfeasibility of foreseeing, anticipating or proving damages, although they may be substantial, that may be caused by CVL's breach or negligent performance of this agreement and therefore, the parties expressly agree that CVL's liability shall not exceed the sum of Twenty-five Thousand Dollars (\$25,000.00) or the amount of the fee hereunder, whichever is greater, including all consequential or incidental damages and the payment of said amount shall constitute a fulfillment and complete satisfaction of all of CVL's liabilities, obligations, representations or warranties, expressed or implied. In the event that the client does not wish to limit CVL's professional liability to this sum, CVL will waive this limitation upon the client's written request provided that the client agrees to pay for this waiver an additional consideration of 5% of the total amount of this proposal.

It is mutually agreed that Coe & Van Loo Consulting Engineers, Inc. shall have a lien against the property for which service is rendered hereunder and all development, improvements, and structures erected thereon, for the value of services rendered in performance hereof. Such lien shall attach on the date of acceptance and authorization to proceed and shall cover all improvements and services as they are performed thereafter. This lien shall be prior to all other mortgages, encumbrances, mechanics or material-men's liens which shall arise or be exacted from and after said date.

We would expect to start our services promptly after receipt of your acceptance and complete our services within 45 working days. This proposal represents the entire understanding between you and us in regard to the work set out herein and may only be modified in writing signed by both of us.

If this proposal is agreeable to you, we would appreciate your signing the enclosed copy in the space provided below and returning it to the undersigned. This proposal will be open for acceptance for 60 days unless changed by us in writing.



Proposal to Tuscumbia Mining Co.
Re: Tuscumbia Mine
October 3, 1980
Page 3

We appreciate the opportunity to submit this proposal and look forward to working with you on this interesting project.

Sincerely,

COE & VAN LOO
Consulting Engineers, Inc.

H. Mason Coggin, P.E. & L.S.
Senior Vice President - Mining

HMC:do
Encl.

PROPOSAL ACCEPTED AND
AUTHORIZATION TO PROCEED

By: _____

Title: _____

Date: _____





COE AND VAN LOO CONSULTING ENGINEERS, INC.
CONSULTING ENGINEERS • PLANNERS • LANDSCAPE ARCHITECTS

CURRENT FEE SCHEDULE
 April 1, 1980

A. PERSONNEL SERVICES

1. Regular Time

CLASSIFICATION	RATE/HOUR
ENGINEERING	
Principal Engineer	\$45.00
Senior Engineer	40.00
Project Engineer	36.00
Registered Engineer	34.00
Staff Engineer	32.00
PLANNING/LANDSCAPE ARCHITECTURE	
Principal Planner	45.00
Senior Planner/Landscape Architect	40.00
Registered Planner/Landscape Architect	34.00
Staff Planner	32.00
ENGINEERING/PLANNING/LANDSCAPE ARCHITECTURE	
Designer	25.00
Drafter	20.00
Field Inspector	30.00
SURVEYING	
3 Person Regular Survey Crew	55.00
SPECIAL	
Computer Applications	RATE
Data Systems Manager	\$32.00/hour
Data Systems Specialist	\$30.00/hour
Data Systems Technician	\$20.00/hour
300 BAUD Service (terminal connect time)	\$22.00/hour
1200 BAUD Service (terminal connect time)	\$58.00/hour
Plotter	\$55.00/hour
Digitizer	\$20.00/hour
See current "Computer Service Pricing Sheet" for other computer charges.	
Court Testimony (1 day minimum, in court time)	\$500/day
Electronic Distance Measuring Devices	\$20.00/hour
Typist/Clerical (identifiable work, legal descriptions, reports, specifications, etc.)	\$15.00/hour
Deliveries (by "in house" service)	\$15.00/hour
Deliveries (by outside service)	At Actual Cost

2. Overtime Premium

Regular time fees apply to all client authorized overtime except for the following classifications. The overtime premium, rate/hour, is additive to the regular time rate indicated above.

CLASSIFICATION	OVERTIME PREMIUM RATE/HOUR
Designer	\$12.50
Drafter	10.00
3 Person Survey Crew	20.00

B. TRAVEL & TRANSPORTATION EXPENSES

(Outside of Phoenix Metropolitan Area)

1. Travel expenses, lodging and subsistence At Actual Cost
2. Auto or Truck \$0.20/mile
3. Equipment Rental At Actual Cost

C. OTHER REIMBURSABLE COSTS

1. Long distance telephone/telex & postage At Actual Cost
2. Filing fees and permits At Actual Cost
3. Prints, reproductions and photowork (blue-line prints \$0.07/S.F., copies \$0.10 ea.) At Actual Cost
4. Special stenographic and drafting supplies At Actual Cost

D. OUTSIDE CONSULTANTS

All outside consultants required in the course of the work will be charged at actual cost plus 15%.

E. SALES TAX

The above fees and charges do not include sales tax in those states where sales tax applies to professional services or gross receipts. The amount of applicable sales tax, if any, is additive to gross charges.

Fees and all other charges will be billed monthly as the work progresses and the amount of each billing shall be due and payable ten days after the date of such billing. Any portion of a billing not paid within thirty days of the billing date shall be considered delinquent and shall bear a delinquency charge of one and one-half (1½) percent per month (annual percentage rate 18%) on the unpaid balance, but in no event shall said delinquency charge or the payment thereof extend the due date.

Should legal action be necessary to enforce the provisions of any contract or agreement entered into in which this schedule is a part, the client agrees to pay all attorney's fees and court costs incurred in the prosecution thereof.

All fees set forth in any contract or agreement entered into, in which this schedule is a part, are subject to reasonable escalation as required to offset inflationary increases in our cost of doing business.

ZONA DEPARTMENT OF MINERAL RESOURCES

Mineral Building, Fairgrounds

Phoenix, Arizona

1. Information from: Brian Andeline Phone: (417) 476-2423
Address: P.O. Box 121, Pierce City, Missouri 65723
2. Mine: Tuscumbia 3. No. of Claims - Patented _____
Unpatented _____
4. Location: See previous file data
5. Sec _____ Tp _____ Range _____ 6. Mining District _____
7. Owner: Tuscumbia Corporation
8. Address: P.O. Box 121, Pierce City, Missouri 65723
9. Operating Co.: Same
10. Address: Same
11. President: Brian Andeline 12. Gen. Mgr.: Ike Kusisto
13. Principal Metals: Silver, Antimony 14. No. Employed: 3 - 8
15. Mill, Type & Capacity: Flotation, 24 TPD
16. Present Operations: (a) Down (b) Assessment work (c) Exploration & Development
(d) Production (e) Rate _____ tpd.
17. New Work Planned: Open lower levels, pull ore from upper levels for mill feed.

18. Misc. Notes: Historically the antimony content of the silver ore has been
a major hindrance to marketing the concentrates. Two local refiners are
being considered to refine the silver from the concentrates. They are:
Metal Refiners Limited of Tempe and Master Refiners of Phoenix. Both
have quoted charges in the \$1.00 per recovered ounce range. The names
of other possible treaters were provided.

Date: June 18, 1979

(Signature)

Ken A. Phillips

Ken A. Phillips
(Field Engineer)

* GENERAL REFERENCES

REFERENCE 1 F1 < U.S. GEOL. SURVEY B 782, p. 176 >
 REFERENCE 2 F2 < ABGMT BULL 140, p. 103 >
 REFERENCE 3 F3 < ABGMT CLIPPINGS FILE >
 REFERENCE 4 F4 < USGS BULL 1336, GEOL MAPS >

U.S. CRIB-SITE FORM

* RECORD IDENTIFICATION

RECORD NUMBER B10 < >
 REPORT DATE G1 < 8.18.09 >
 REPORTER(SUPERVISOR) G2 < DEWITT, ED H >
 REPORTER AFFILIATION G5 < ABGMT >
 SYNONYMS A11 < TUSCULUM DEPOSIT >
 RECORD TYPE B20 < X, 1, 1 >
 INFORMATION SOURCE B30 < 1, 2 >
 DEPOSIT NUMBER B40 < >
 FILE LINK IDENT. B50 < US8M 004 025 >
 (last, first, middle initial) (last, first, middle initial)

LOCATION

MINING DISTRICT/AREA A30 < TUSCUMBIA DISTRICT >
 COUNTY A60 < YAVAPAI >
 PHYSIOGRAPHIC PROV A65 < 1, 2, 4 >
 DRAINAGE AREA A62 < 1, 5, 0, 7, 0, 1, 0, 2, 4 >
 QUADRANGLE NAME A90 < BATTLE PLAT >
 SECOND QUAD NAME A92 < >
 ELEVATION A107 < 6, 0, 0, 0, 4, F, T >
 STATE A80 < A, Z >
 COUNTRY A40 < U, S >
 LAND STATUS A64 < 1, 0, 0, 4, 4, 1 >
 QUADRANGLE SCALE A100 < 2, 4, 0, 0, 0 >
 SECOND QUAD SCALE A91 < >

UTM ACCURACY GEODETIC
 NORTHING A120 < 3, 7, 9, 3, 6, 5, 0 >
 EASTING A130 < 3, 7, 3, 9, 5, 0 >
 ZONE NUMBER A110 < +, 1, 2 >
 ACCURATE (ACC) (circle)
 ESTIMATED EST < >
 LATITUDE A70 < 3, 4, -1, 6, -4, 1, N >
 LONGITUDE A80 < 1, 1, 2, -2, 2, -1, 0, W >

CADASTRAL
 TOWNSHIP(S) A77 < 0, 1, 1, N >
 SECTION(S) A79 < 21 >
 SECTION FRACTION(S) A76 < >
 MERIDIAN(S) A81 < GILA AND SALT RIVER >
 RANGE(S) A78 < 0, 0, 1, W >

POSITION FROM NEAREST PROMINENT LOCALITY A82 < 3.2 MILES NORTH OF TOWERS MOUNTAIN >
 LOCATION COMMENTS A83 < >

* ESSENTIAL INFORMATION
 + ESSENTIAL SOMETIMES OR HIGHLY RECOMMENDED

LICKLER

INSTRUCTIONS TO OPERATORS. Items 1 through 6 and 12 constitute a Notice of Intention; items 1 through 12 constitute a Basic Operating Plan. Please complete in as much detail as possible and furnish to District Ranger's office. Additional sheets may be used if necessary.

NOTICE: To the extent authorized by law this information will be held confidential. As an agency of the Federal Government, the Forest Service is required to comply with the Freedom of Information Act.

NOTICE IS HEREBY given that the undersigned intends to conduct prospecting, mining, or milling operation, etc. on the lands described below, and in the manner indicated.

1. Operator(s):

Name(s) Address(es) Telephone No(s).

John Christensen P. O. Box 305 632-5211
Mayer, Ar. 86333

2. Area of Operation:

National Forest: Prescott State: Arizona Mining District: Bradshaw
Ranger District: Bradshaw County: Yavapai T. 11N, R. 1W, Sec. 21

3. Access:

The proposed route of access to the operation is (describe route from point of entry into National Forest, using road numbers when possible):

Existing road and mill already on site

The following means of transport will be used (4-wheel drive vehicle, tractor, pickup, etc.):

track loader

(NOTE: Construction, reconstruction, or restoration of a road across National Forest System lands as a means of access to mining claims must be authorized separately by special-use permit.)

4. Type of Proposed Operation:

Describe the type of proposed surface disturbing activities, such as trenching, bulldozer exploration, drill road construction, tunnel site development, etc.

an access road to existing ore dumps - bulldozer

5. Map:

A map is attached which shows the general area of operation and the proposed route of access to it. (This map is required. A map scale of about 1 inch = 2 miles is adequate.)

6. Period of Operation:

Period or periods during which operations, including road work, will take place. The work will be continuous intermittent, during the periods: over 1 yr.

Road Work: 2 day operation (less than 1/2 mile) Other Operations: milling of existing ore to a concentrate form. The concentrate to be removed from site.

OPERATING PLAN. The following information taken together with that in items 1 through 6 constitutes a Basic Operating Plan for which approval is requested.

Claims on which Operations will be Conducted:

Claim Name	BLM Serial No.	Date of Location	Lode Placer Millsite (check)
Old Tuscumbia Mine	44954 thru 44958 <i>215082 thru 215085</i>	Sept. 15, 1975	Lode

8. Identification of Owners and Other Interested Parties:

Specify, under "status," whether owner, lessee, assignee, designee, etc:

Name	Address	Telephone No.	Status
------	---------	---------------	--------

John Christensen	P.O.Box 305, Mayer Arizona, 86333	632-5211	Owner
------------------	--------------------------------------	----------	-------

Field Representative:

Name	Address	Telephone No.
------	---------	---------------

Tom Youngblood	Hc 61 Box 5, Bluehill Rte Dewey, Ar.	632-5146	Designee/, Mine Mgr.
----------------	---	----------	----------------------

9. Method of Proposed Operation:

Specify how the operations of Item 4 would be conducted:

Start up of existing mill, removing existing ore dumps, milling these to a concentrated form. These concentrates will be removed from site. The tailings will be placed on existing tailing pile which will be flattened to match the surrounding terrain. Only bio degradable reagents will be used for the milling operation.

10. Environmental Protection Requirements:

Measures to be taken to minimize adverse environmental impacts and reclaim disturbed areas. (36 CFR 228.8):

After the ore dumps have been removed we shall seed the area with grass. The newly constructed access road will be removed and seeded with grass.

11. Map of Surface Disturbance:

A map is attached which shows the location and size of the areas of surface disturbance. (This map is required. A map scale of about 1"=1/2 mile is adequate.)

February 3, 1984

ADDITIONAL INFORMATION ON BASIC OPERATING PLAN

I, John Christensen, Have just purchased the Old Tuscumbia Mine with it's existing mill and campsite from Fred Lorette. It is the intent to mill the existing ore dumps and remove the concentrated product for chemical treatment to be done by our chemist on the Iron King location in Humboldt. The milling operation will employ six to eleven people on a year round basis. During the milling, only bio-degradable reagents will be utilized. The water used for this milling operation is water produced from an existing mine shaft (two storage tanks and water line are existing). The camp and the mill will be powered by a stationary diesel generator and a notice of operation has been filed with the State of Arizona Mining Inspector.

I have requested permission to construct an access road to two existing ore dumps sitting on the far side of the mountain. The road will be less than $\frac{1}{2}$ a mile long and will require very little dozer work and no trees will be removed. The grade is quite level and will be easy to restore to it's original state! Special care will be taken in placing the tailings so that they will blend in naturally with the existing contours. This can be accomplished by simply placing the new tailings carefully on the existing tailings dump.


John Christensen
February 3, 1984

PLAN OF OPERATIONS
ADDENDUM #2

1/79

Tuscumbia Mine

- Operator : Ike W. Kusisto
P.O. Box 310
Mayer, Arizona 86333
- Owner : Tuscumbia Corporation
President : Brian Andelin
P.O. Box 219
Pierce City, Missouri 65723
Phone No. (417) 476-2978
- Location : SW $\frac{1}{4}$ of Section 21, T11N, R1W, Crown King Ranger District,
Prescott National Forest, Yavapai County, Arizona.
- Objective : To expand operations at the Tuscumbia Mine by reopening an
abandoned adit, and constructing a larger mill with
accompanying access road.

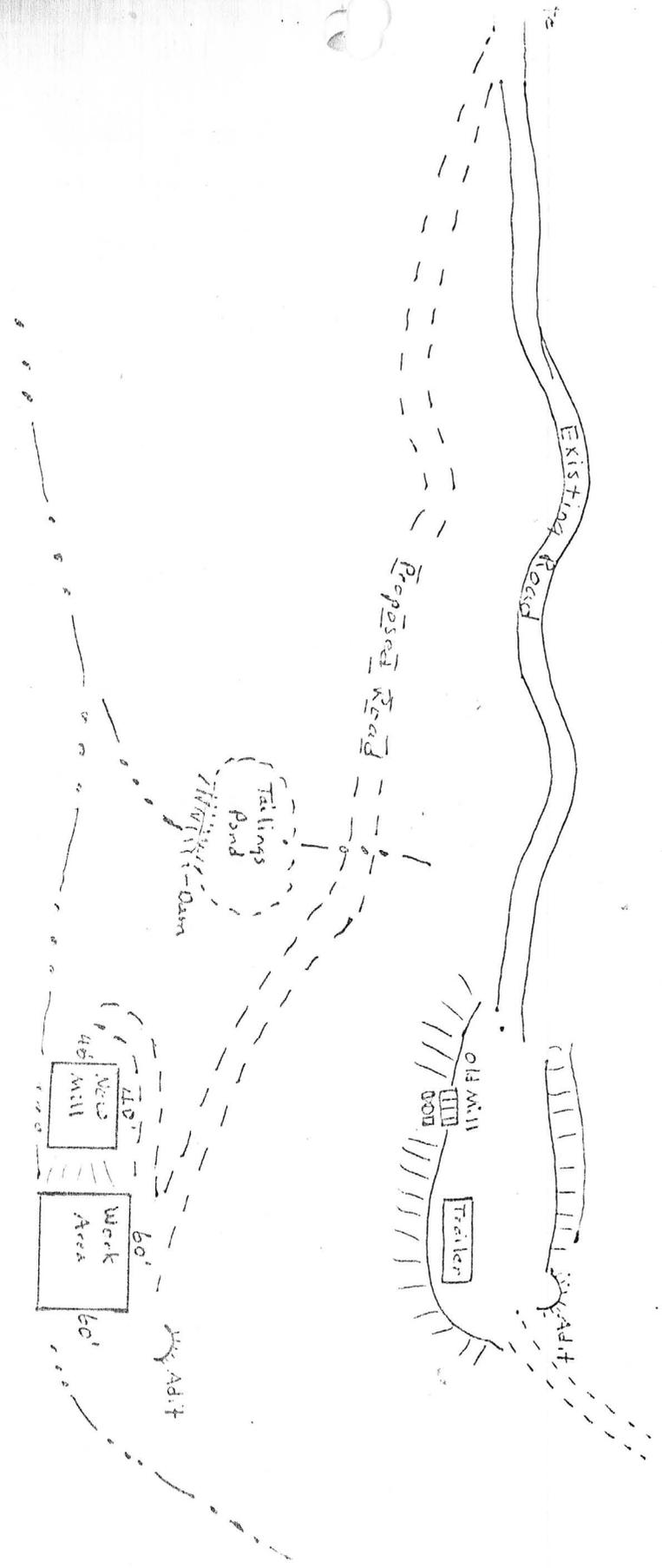
Operation Plan: A new 50 ton/day flotation mill will be constructed in the drainage directly below the existing millsite (see attached map). This will involve clearing two pads for mill equipment and work areas totaling about 5200 sq. feet. A tailings pond will also be created by constructing a dam 60 feet long by 10 feet high in a small subdrainage. The tailings pond will cover about 5000 sq. feet. The drainage at the millsite will be widened about ten feet on each side and a ditch will be constructed to divert the water course around the pads. (Dam construction standards will be subject to approval by Forest Hydrologist).

An abandoned adit will be reopened adjacent to the upper pad at the millsite.

An access road will also be constructed from the existing road to the new millsite (see attached map). The new road will be approximately 1/8 mile long and its slope will not exceed 3%. Waterbars will be constructed where needed.

A gate will be installed just below the junction of the existing road and the proposed access road. The gate will be double locked with a Forest Service lock and will be marked with a reflective sign for night-time visibility.

TUSCUMBIA MINE - PLAN OF OPERATIONS
ADDENDUM #2



John Christensen
P. O. Box 305
Mayer, Arizona 86333

HAMM

STATE MINE INSPECTOR

FEB 08 1984

February 4, 1984

START

Tuscumbia File

Mr. David Hamm
Arizona State Mining Inspector
705 Capital Tower
Phoenix, Arizona 85007

Re: Old Tuscumbia Mine

Dear Mr. Hamm:

This constitutes a Notice of Start-Up commencing February 9, 1984. Initially it will be a straight operation (milling) of existing ore dumps. Actual mining and workings underground will probably commence in four to six months.

The Old Tuscumbia Mine legal location is:

Yavapai County, Arizona
Township 11 N, Range 1 W.

as recorded in book 981, Pg. 954 in
County Recorder's Office

HMC # 44954 -44958

Regards,



John Christensen
Owner/Operator
(602)632-5211

JC/jec

DEPARTMENT OF THE INTERIOR
Hubert Work, Secretary

U. S. GEOLOGICAL SURVEY
George Otis Smith, Director

Bulletin 782

ORE DEPOSITS OF THE
JEROME AND BRADSHAW MOUNTAINS
QUADRANGLES, ARIZONA

BY

WALDEMAR LINDGREN

WITH STATISTICAL NOTES BY

V. C. HEIKES



WASHINGTON
GOVERNMENT PRINTING OFFICE
1926

STANDARD GROUP

The Bull Run mine, in the Standard group, opens the most westerly of the veins in the district. It is $1\frac{1}{4}$ mile south-southwest of the Tiger mine. A tunnel exposes a north-south vein of drusy quartz containing silver, gold, and chalcopyrite.

BRADSHAW DISTRICT

There are a number of small veins on the west side of Tuscumbia Mountain, most of them in Bradshaw granite.

The Buster, owned by Charles Swazey, is a north-south vein dipping west. There are three tunnels, the longest 400 feet on the vein. The vein, of doubtful type, is 6 inches to 4 feet wide. Some ore has been milled in a 2-stamp mill at the mine, and the grade is reported to be \$20 a ton. There has been some production from this vein.

The Cornucopia is a parallel vein, owned by M. Roland. It is reported to be 18 inches wide. A tunnel follows the vein for 350 feet. A few years ago 100 tons of \$9 gold ore from this vein was milled. There is some molybdenite in the ore.

The Mohawk, 1 mile north of the Buster, is developed by a 300-foot shaft. There has been some production of gold ore, which was reduced in a small mill at Hooper.

In all these veins there is, besides free gold, a considerable amount of sulphides. The free gold is probably derived from the oxidation of the sulphides.

The Tuscumbia is an old property 2 miles north of Hooper, mentioned by Blandy⁵³ in 1883. This is a silver deposit which has a considerable production to its credit. It is now owned by Frank Williams and Barry Smith, of Prescott. The deposit is developed by four tunnels. The ore has a quartz and barite gangue, with silver chloride, brittle silver ore, galena, and sphalerite. The vein is evidently of comparatively recent age and is more or less similar to the N. C. 4 in the Hassayampa district.

Much quartz float is observed in the Battle Flat basin. A vein with coarsely crystalline stibnite is found there north of the Tuscumbia mine. The stibnite is reported to contain 7 ounces of silver to the ton. It is coarsely radial, is accompanied by a little quartz, and appears to be contained in a rhyolite porphyry.

MINNEHAHA FLAT AND SILVER MOUNTAIN

Scattered mineralization is observed to the southwest of Crown King, in the mountainous, irregularly dissected area of Minnehaha Flat and Silver Mountain.

Silver Mountain is a prominent southwestward-trending ridge reaching an altitude of 6,185 feet. The Bradshaw granite is the predominant rock, capped in places by Tertiary andesitic rocks. A belt of Yavapai schist 2 miles wide trends south-southwestward from the Tiger mine toward Copperopolis. The scant mineralization is in part pre-Cambrian, in part apparently connected with the extension of the Crown King belt of dikes of rhyolite porphyry. There are practically no mines in the area. A wagon road in a bad state of repair leads northward to Prescott and another connects westward with Walnut Grove.

Minnehaha Flat is a northward-trending well timbered and watered basin on the headwaters of Minnehaha Creek, which discharges into Hassayampa River near Walnut Grove. The only inhabitant at present is George Lapham, who has been there since 1890 and whose well-ordered place is 3 miles north of the divide. Placer mining was carried on here in the eighties of the last century all the way up from the "Old Log House" to the Button mine, also in branches coming in from the east. The gold was worth about \$17 an ounce and was extracted by arrastres, sluices, and dry washes. The probable production was \$100,000, according to Mr. M. A. McKay, an old-time resident of the district. The gold is believed to have been derived from the Fortuna lode near Lapham's place.

Placers were also worked on Oak Creek 1 mile below Fenton's ranch. A silver-bearing vein, the Joker, is about a mile below the same place, and some good chloride ore is reported to have been shipped from it in 1921.

At the head of Minnehaha Creek, where there is a fine view southward into the hot, hazy valleys of the foothills, is the old Button mine. The formation here is Bradshaw granite, with some amphibolite and diorite. The Button shaft is 400 feet deep, and from it drifts extend about 650 feet northward and 100 feet southward. The work was done about 1900, and the wreck of an old 5-stamp mill still stands on the property. The deposit is a pre-Cambrian quartz vein with glassy quartz and a little pyrite, chalcopyrite, galena, and sphalerite. The wall rock of amphibolite shows no sericitization.

M. Roland has a claim on a silver-lead deposit about a quarter of a mile west of the Button mine.

About $1\frac{1}{2}$ miles south-southwest of the Button deposit is the Boaz mine, also closed down for many years. This is an east-west quartz vein which the late F. E. Harrington opened about 1902 and equipped with a 20-stamp mill and a cyanide plant. It is said to be a "spotty" vein, "frozen to the walls." From its upper parts some ore containing about \$20 a ton in gold is reported to have been

⁵³ Blandy, J. F., *Am. Inst. Min. Eng. Trans.*, vol. 11, pp. 286-291, 1883.

TRANSACTIONS

OF THE

AMERICAN INSTITUTE OF MINING ENGINEERS.

VOL. XI.

MAY, 1882, TO FEBRUARY, 1883.

PUBLISHED BY THE INSTITUTE,

AT THE OFFICE OF THE SECRETARY.

1883.

THE MINING REGION AROUND PRESCOTT, ARIZONA.

BY JOHN F. BLANDY, PRESCOTT, ARIZONA.

WITH the Report of Mining Statistics, for the year 1872, there was published a geological map of the United States and Territories. This is, I believe, the only map which represents the geology of Arizona, and is, as far as my observations go, correct. It is, however, on so small a scale as to be of little practical value to the miner. I know of no other maps, even of localities, of this Territory. The topographical maps are also on so small a scale as not even to serve as guides from place to place; the largest, that of Eckhoff and Ricker, being only 30 by 30 inches to represent a territory of 135,000 square miles. For these reasons, it makes it exceedingly difficult to describe the various mining centres in an intelligent manner, and equally so to examine such a hilly country as it is intended to describe in this paper.

When I first came into this Territory I soon realized the troubles I had to encounter in trying to form an opinion, or even to get the needed information on the geological contour. I have, therefore, labored as best I could to get a topographical diagram of the section of country represented by the map which accompanies this paper.*

The lines run by the Land Department up the valleys of the Aqua Frio, and those west of the Hassayampa, and connected east and west to the north of Prescott, enabled me to inclose correctly the space covered by the Bradshaw and Sierra Prieta mountain groups, but the territory covered by these mountains, and the most difficult part, I have had to fill up as best I could. I have met with such success as to meet the approbation of those most familiar with the country, and, with the map in hand, any one would be able to cross it in any direction. As there has not been a single line of survey made across it, this has been no small undertaking, and I have had to depend upon sights from prominent points with the pocket-compass, or, in the absence of that, to make observations, with watch in hand, and guess as near as possible the meridian direction. But one main wagon-road passes through the district, that from Prescott to the Peck mine.

* The engraved map accompanying this paper, is one-half the scale of the original map.—ED.

Having constructed a map with approximate correctness, it remains to mark in the general geology; but it is still difficult to draw accurately the distinct lines of junction between the formations. To do this requires an amount of muscular exertion that no one can understand unless he has tried it in such a hill-country—a region of gulches and steep, rocky hillsides, most of it covered with a growth of tangled thorny bushes, or prickly, poisonous cactus plants.

I have, therefore, only marked the general run of the rocks, without attempting the line of the boundaries of any. It is only meant as a skeleton upon which others may assist in filling in the details they may be able. It is the detailed geology of a region which is of the most assistance to the miner, and it cannot be too minutely done. I am not aware that any geological map has been issued of any locality of Arizona.

I shall refer only to that part of the map which shows the country between the Peck mine and the town of Prescott. The Peck mine is situated in a primary slate formation, the north boundary of which is at Bear Run. This sweeps around in a northerly direction, crossing Turkey Creek, and the mouth of Wolf Creek, the head of Cedar Creek, and after crossing the Big Bug Creek to the north of the Station, passes northward by the Silver Belt mine, and is lost to view under the Aqua Frio flats and Lonesome Valley, or what is marked on the government maps as the Prescott Plains.

To the north of this formation we have a porphyritic-granite ridge, passing from the Tuscumbia mine through to Trinity, crossing Turkey Creek at the mouth of Pine Creek, thence over the high divide between Pine and Wolf creeks. This does not show itself at Big Bug Creek, unless the small field of granite near Boggs be a continuation of the same. Next north of this granite ridge we have a syenitic gneiss, covering the country up to the foot of Mount Union, with the exception of a narrow belt of hornblende slate, which crosses Turkey Creek at the Masterson mill. This brings us to the great granite centre of Mount Union. From its sides start out the various streams of Main and East Hassayampa, Turkey, Big Bug, and Lynx creeks. Mount Union is said to be the highest peak, with the exception of San Francisco Mountain, in Yavapai County, which would make it about 10,000 feet above tide. It, with two neighboring peaks, one to the north, the other to the south, appears more like a north and south ridge of granite, and throws out a finger forming the dividing ridge between the Big Bug and Lynx creeks, reaching nearly to the Silver Belt mine, where it

abuts against the high-tilted slates of the first-mentioned formation. Another finger is thrown out to the southwestward, forming the divide between the East Hassayampa and Turkey Creek, the highest point of which lies between the Bodie and Bully Bueno mines. At the point where the Peck road crosses this divide, at the lowest point, it is hidden by a thin covering of the syenitic gneiss. Between Big Bug Creek and the head of Wolf Creek lies a high plateau called the "Mesa." This is a sheet of "malpais," or lava, from fifty to one hundred feet or more in thickness, which rests upon the vertical strata of the syenitic gneiss. The valley of Lynx Creek is occupied by a more or less stratified granitic rock, which extends southward across the head of Hassayampa, and beyond the Senator mine. This is separated from the large field of granite which surrounds Prescott, by the ridge of hornblende schists which crosses the Hassayampa at the bridge, and forms a divide between it and Lynx Creek, and in which heads the North Wolf, Groom, and Granite creeks, the highest point of which is Spruce Mountain.

The Prescott granite, extending northward to the great mass of Granite Mountain, here and there incloses patches of hornblende slates and syenitic gneiss, and is intersected by trap dikes, and protrusions of columnar basalt. Of the latter, two fine examples are to be seen near the town—Thumb Butte, and a hill near the mouth of Banning Creek.

To the north of Prescott on the east side of Granite Creek can be seen the syenitic gneiss which underlies the county eastward to lower Lynx Creek.

We now have a general outline of the geology of the space lying between the Peck mine and Prescott. I have seen too little of that lying to the westward or of that lying to the east of the Aqua Frio to refer to it at present.

It only remains to make some reference to the veins occurring in the various formations.

The large majority of these whether in the stratified rocks or in the granite have a northward and southward trend, varying, say, from N. 20° E., and S. 20° W. to N. 20° W., and S. 20° E. The exceptions do not vary greatly from this, though I have noticed a few that have a nearly east and west course.

Among the stratified rocks a large number are what might be called "*layer*" veins, that is, they strike and dip with the formation and are limited in length, seldom extending for more than three or four mining claims. In many instances I have supposed these to

ward to Copper Mountain. Whether this formation lies next east to the slates of the Peck district or not, I cannot tell, not having closely examined it. So far as examined, these porphyritic slates show veins of copper ore of high grade, containing silver in greater or less quantities from \$7 to \$35 per ton.

On the map I have marked approximately the sections covered with timber. This consists of pine, oak, and juniper.

The streams called creeks, for the want of a better name, might more properly be called *sluice ways* to carry off the heavy falls of water in the rainy season. There is, however, a small amount running water in all of them for most of the year, particularly in winter and spring, caused by the melting of the snows.

As I have said, this is but a meagre description of the geology of a large and important mineral district; but I have meant it only as a beginning, by furnishing an outline of the district and giving an opportunity for others to assist in building upon the foundation which is thus begun.

It will be understood that the mineral district extends much beyond that part which I have attempted to describe. It reaches southeastward to the Tip Top mine region, the copper deposits of Castle Creek, the Tiger district, and southwestward to the Vulture mine near Wickenburg, and the gold mine of Antelope Peak; westward to include the copper mines in Copper Basin, and on the east it covers the copper and silver mines of the Black Hills and Ash Creek, and the gold region of Cherry Creek near the Verde. These may be added the gold mines and placers of the Black Cañon and Squaw Creek.

This region possesses as fine a climate as can be found in the United States, fine open weather in winter with but few storms and those of snow. The nights, from November to April, are cold, although the days may be clear and balmy. In summer, though the thermometer may register 105° to 110° in the shade, the atmosphere is by no means as oppressive as in the Atlantic States at 85° to 90°. There are very few days in the year when it is too disagreeable to work in the open air. Many severe things have been said of "dry Arizona," but it has never been called the "land of beautiful and glorious sunshine," to which it is entitled.

Messrs. Prince, Williams & Smith,
Prescott, Arizona.

Gentlemen:

In compliance with your request I recently visited the Tuscumbia Group of Mining claims, to make a few sketches and take a good look at your property. In company with your Mr. Pascoe I went over the entire surface ground, and we also examined such of the many tunnels and shafts as are safe to enter. Permit me to express my views and conclusions, gained from such observations as I have made, in the following:

REPORT.

LOCATION:

The Tuscumbia Group of mining claims is situated on the northern slope of the Bradshaw Mountain, about 35 miles (25 in the air line) S. Southeast of Prescott, in Yavapai County, Arizona. It forms the northern extremity of a chain of famous producers of the precious metals, embracing the Mohawk, Buster, Wild Flower, Gladiator Crown King, and numerous other well known Gold and Silver mines, which have made the name of the "Bradshaws" the synonym of "very rich ore". The claims comprising the Group cover Tuscumbia Mountain (about four miles north of Tower's Peak) in Township 10 North, Range 1 West, of Gila & Salt River Meridian.

ACCESSIBILITY:

The Tuscumbia Group can be reached over two different routes: One going south by wagon road to Hooper Post Office (35 miles) and thence by trail north 1 1/2 miles: the other by the Prescott & Eastern Railroad to Crown King (60) miles and thence by trail northerly seven miles. Both routes will soon be greatly improved and the first mentioned shortened by two and one-half miles, the Cut-off to pass within half a mile of the group, while the contemplated Territorial Highway will pass directly over the Tuscumbia Mountain, thus effecting first class wagon road connection with the railroad at Crown King.

(1)

THE CLAIMS.

The Tuscumbia Group contains the following seven full mining claims; "Ingersol No.1." "Ingersol No. 2." "Tuscarora" "Black Prince", "Sierra Bonita", "Black Hawk" and "Prince of India", aggregating over 140 acres of as highly mineralized land as I ever saw during my 32 years' experience in mines and mining. Plat No. 2 shows the relative position of each claim. The Group covers the summit, and southern, northern and western slopes of the Tuscumbia Mountains offering excellent opportunities for exploration work by tunnels.

GEOLOGY:

The country rock on Tuscumbia Mountain is chiefly granite, traversed in a northerly strike by large dykes of more or less metamorphosed hornblende-schist. The several mineral lodes that have been developed to some extent prove to be fissure veins, cutting through the different formations and therefore having walls of the same character for long distances. They become contact veins only transitory, when entering from one formation diagonally into another.

The dip of the lodes is to the west at an angle of from 60 to 70, as shown in the 100-foot shaft on the Tuscarora claim near the summit of the mountain. This same dip appears in every instance where an ore vein has been exposed by either open cut, tunnel or shaft. Several mineral lodes show up strong and continuous on the surface, but others can be traced only by their occasional and short outcroppings, wherever a vein crops out it shows the high state of oxidization of its mineral and I might say that one stumbles upon an outcrop of oxidized and carbonate of lead and hematite at every few steps. Although considerable "dry" silver ore has been mined from this property in former years, and hundreds of tons of low grade ore of this character are lying upon the dumps of the Tuscarora shaft and tunnels, I believe the Product of deep mining will be good smelting and concentrating ore of galena and iron and copper sulphide, based on the fact that these minerals from the chief substance in the may croppings on the summit and the western slope of the mountain, only that they appear much leached and in oxidized form. The ores so far expored by the shallow development contains silver, gold and lead values, No depth of any consequence has been reached any-

where within the group.

The presence of so much "dry" silver ore in the Tuscarora workings suggests the existence of a parallel vein with in the same lode, one along the hanging wall, the other near the foot wall, but gradually converging to the northward, towards the heart of the mountain.

DEVELOPMENTS:

Although numerous shafts and tunnels are found scattered over the group, the Tuscarora claim alone shows some systematic development. The southern slope of Tuscumbia mountain is pierced by a series of tunnels along the vein, each of several hundred feet in length and about 100 feet above one another. Most all the ore has been stoped out between them and direct to the surface. Toward and at the face of Tunnels Nos. 1, 2 and 3 appears strong veins of good ore, in one instance having been stripped and left on the foot wall for a long distance. The 100-foot shaft mentioned before is near the north end line of the Tuscarora and almost on the summit of the mountain. From the bottom of this shaft a drift is run northward 400 feet and everything stoped out to the surface. This shaft and tunnel No. 1 are in very good condition, whereas, tunnels Nos. 2 and 3 are caving some.

Tunnel No. 4, which is being driven now, is cutting across the formation 100 feet below No. 3. It is now 160 feet in, and 60 foot more will bring it directly under the mouth of No. 3. Although a considerable distance from the vein the traversed country rock (hornblende-schist) is very highly mineralized, being full of iron pyrites in quartz, and I have found samples containing specks of galena and copper sulphide.

These workings demonstrate the existence of two distinct ore shoots or lenses, which again prove beyond a doubt the existence of two ore veins, or "pay streaks" within the same mineral lode. We find the true hanging wall in the lower workings and the foot wall in the upper tunnel, both as smooth as glass underneath a gouge of clay.

all from within' each of the grass roots, is of sufficient guarantee that your property will prove a bonanza when worked in a miner-like manner.

There is but one so called drawback to your enterprise, but even this after due consideration dwarves and disappears entirely. It is the water question. It has been shown to me that small but permanent springs of good water exist in several gulches right on your property, not to mention the nice little stream down at Hooper. And as these springs flow from the western slope of Tuscumbia Mountain, it is reasonable to expect that such cross cut tunnel, which will penetrate every crevice and contact between the formation of the mountain, will develop all the water needed for whatever works may be contemplated in the future. Furthermore, should this fail, and the springs prove insufficient, Mr. Pascoe has shown me an excellent dam site very close by the deep tunnel site, where abundant water can be impounded at a nominal cost, and brought to the tunnel and the works by gravity.

In conclusion let me assure you that I can and will unhesitatingly recommend your Tuscumbia property as a sound and safe mining proposition, even without considering one very important but prospective feature, namely, that of developing more gold values with greater depth without diminishing silver contents in the different ores.

Yours very truly,

Jules Bauman

Prescott, Arizona, Sept., 8th, 1909.

Of the many other workings, shafts and tunnels and endless open cuts, all of which show "ore in place" I will only mention a new find on the Black Prince claim. The ordinary croppings of a strong vein appears near the top of the mountain, within the north-eastern portion of the claim, and a trench two feet deep is dug along the vein, and a continuous ore body exposed for the entire distance, averaging one foot in thickness, Nor is this the only vein within this claim; another strong lode runs longitudinally through the center of the claim; another fully six feet in width, passes through it from near the southwest corner of the claim due north into the adjoining Black Hawk claim. I cannot help to express my astonishment at how little this property has ever been prospected, with all the bountiful manifestations of great wealth in evidence at every turn.

FACILITIES AND OPPORTUNITIES:

Very seldom one finds an opportunity for unlocking nature's treasure chest such as is offered here. The topographical features combined with the geological make the Tuscumbia Group one of the most inviting mining propositions. All those numerous veins can be developed by a cross cut tunnel from the western base of the mountain. The Tuscumbia and Tuscarora lode, the furthest lode east from said tunnel site, can be reached at a depth of over 900 feet, by a tunnel not to exceed 1200 feet in length, if said lode should change its dip to the vertical, which however is most unlikely, But instead, it and all other veins, dip to the west, or toward such tunnel, which I understand you gentlemen contemplate driving at some future date. That there exist many mineral veins or lodes other than those showing out croppings along the surface is oftener the rule than the exception, wherefore I unhesitatingly declare, you have in your Tuscumbia Group one of the most tempting and appetizing propositions I ever saw. Almost sure results can be gained sooner and much more economically than is the case in most mining ventures. The fact that this property has already produced nearly half a million dollars to the original owners, and that later lessees, within a week's work, have taken out \$9,000.00,

SUPPLEMENT.

Prescott, Arizona, Sept. 1909

Messrs. Prince & Williams,
City.

Gentlemen;

Yours of even date just received and contents noted. You desire me to state in definite terms the number of ledges I have observed within the boundaries of your Tuscumbia Group of Silver mines, also the average width of the ledges, number of feet of development work done, estimate amount of ore blocked out and average value of same.

In order to answer these questions accurately, it would have required a much more extended visit to an examination of your property than I have made, but I will give an approximate outline of my impressions on these points, supplemented by information gained from your Mr. Pascoe.

Of such ledges that show heavy and continuous outcroppings I have found five, not including the main Tuscarora lode. The largest one is seen on the Prince of India claim. It measures more than 20 feet in width, and its course is almost due north and south across the western end of claim, parallel with this, appearing first near the south side line center of the same claim, thence running southward through the entire length of the Black Hawk and Black Prince claims, it is a very prominent lode of an average width of six feet, and being the lowest down on the west slope of Tuscumbia Mountain will be the first reached by your proposed Cross-cut tunnel. A third vein about four feet wide, runs lengthwise through the center of the Black Prince claim, and either unites with or crosses the six-foot lode within the Black Hawk ground, still higher up, nearing the summit of the mountain shows another four foot vein, whereon actual pay ore 3 feet thick has been stripped right on the face for a distance of 80 feet. This vein crosses the six-foot lode near the center of the Black Hawk and passes over the north end line of the claim into the Prince of India. The fifth prominent lode shows along the dividing line between the Sierra Bonita and the Black Hawk claims and crossing the entire width of the Prince of India to the north side of the claim.

(6)

In all these croppings I have found the mineralization most pronounced through the oxidization of the lead and iron contents of the ore. Many other veins show outcroppings at different points, but the five mentioned appear to be the most prominent. What is apparently the strongest and richest vein of the group, and upon which most of the development work is done on account of geographical advantages, the Tuscarora-Tuscumbia lode shows the least of surface droppings.

In speaking of amount of development work done will state that I have taken no measurements, but have been fully informed by Mr. Pascoe, who has been living on the ground for several years, and, who by the way, is surely a most industrious miner, and also very competent. He gave me the length of the several tunnels as follows: No.1, 590 feet, No.2, 440 feet; No.3, 625 feet, and No4, 180 feet, at the time of my visit, aggregating 1815 feet. Good car track of iron T-rails is laid in all these tunnels. The three upper ones need some little repairing, as some of the stulls along the stopes have come down, thus letting the filling-in down into the tunnels. From the bottom of the Tuscarora shaft, a level is run south 92 feet, and north 457 feet. The south level reaches to the surface. Besides these workings, I have seen several old shafts, partly filled in, none however of sufficient depth to be considered. Evidently, they failed to disclose any rich ore enough that would have warranted development by shaft, when it could be done much cheaper by tunnels, and in those days hundred dollar ore was not considered good enough, and they had none of our modern appliances in use on this property. The ore was hoisted out of the shafts by hand-windlass, and after carefully sorting same was packed on burros to the mill over two miles distance.

"Estimate the amount of ore blocked out and average values of same." In answer to this question will say first, that there is no ore "blocked out", although a great tonnage of excellent ore is "in sight" in all the workings to which I had access, and second; I did not take any samples, for I did not consider it necessary in your case, and besides the character of the ore, together with the record for this mine, speak for themselves, but to conform in some degree with your request,

I will briefly state what has been shown me by Mr. Pascoe, as we went through the Tuscarora workings.

Beginning with the shaft, which I should judge to be about 100 feet deep, from the bottom of which the above mentioned level runs south 92 feet and coming to the surface, and north 457 feet, all of which was evidently in ore, for it is all stoped out to the surface, that is five feet of the vein, and along the hanging wall, whereas a two and one-half foot ore body is left standing upon the foot wall, all the way from the shaft to the end of the north drift. This ore is a heavy silver lead ore, and from tests made by Mr. Pascoe, it can safely be rated to average \$40.00 per ton silver lead and some gold. The richer portion of the lode continues however, all along the floor of the drift, and to reach it Tunnel No.1 was driven, but has not advanced sufficiently yet to tap it. This tunnel starts about 700 feet south of the shaft and is now in 590 feet. The first 200 feet were in ore, which has been stoped out to the surface. The next 60 feet go through barren dark quartz. Following this comes 30 feet of crushed quartz and ledge matter, rich in silver. The next 135 feet are through a schist horse, the line of the tunnel going gradually from the foot wall side of the lode toward the hanging wall, At this point a heavy silver lead ore opens, first only of the thickness of a pick handle gradually widening out to fully 10 feet in the face of the tunnel. The ore proper appears principally in three separate veins or stringers, three inches thick along the foot wall, four inches along the hanging wall and twelve inches in the center between talc seams. Besides this remarkable showing the tunnel is also rapidly rearing the very extensive and rich ore shoot described above.

In tunnel No.2, I found a winze fifty feet in from the mouth making connections with tunnel No. 3 at a point about 500 feet in where a car load of ore was taken out that ran over 600 ounces silver per ton. Back of the winze much ore has been extracted from the floor of tunnel by underhand stoping for nearly the entire distance I could go in No.2 which has caved some and needs repairing.

8

In tunnel No. 3, ore makes its appearance within 100 feet from the mouth in the floor of the tunnel, where occasional blasts disclose the apex of another extensive shoot of ore had reaching back fully 400 feet. At 150 feet from the mouth a bunch of ore has been stoped out, and at about 400 feet from the mouth ore begins again to show in the roof of the tunnel, in places widening out to large kidneys of very rich ore, as that car load shipment has demonstrated, there is no denying the fact that a great deal of rather low grade ore is carried in this lode, but it is also a fact that the record of this property is made up of ore above the hundred dollar mark. One can get assays as readily running up into the thousands as in the tens, and I should judge the average values of the ores to be of such a grade as to be classed among the high grade propositions. The workings have proved the existence of at least two large ore shoots in the Tuscumbia-Tuscarora lode. The most extensive of the two lies in the heart of the Tuscumbia Mountains, and consequently ahead of all these tunnels. The other shoot further down the mountain and south of the first one has been demonstrated in tunnel No. 3, and to reach it tunnel No. 4 is being driven, being as far down the mountain as can be done advantageously from the south side and running on the vein. But in spite of all these flattering prospects of reaching extensive ore bodies of great richness within a very short time, the far greater advantages to be gained by the proposed cross cut tunnel from the west side of the mountain, many hundred feet lower down, loom up so grandly as to overshadow all else in connection with operating this property.

Trusting this additional description will assist you in the negotiations in hand, I remain

Yours very truly,

Julius Baerman