



CONTACT INFORMATION  
Mining Records Curator  
Arizona Geological Survey  
3550 N. Central Ave, 2nd floor  
Phoenix, AZ, 85012  
602-771-1601  
<http://www.azgs.az.gov>  
[inquiries@azgs.az.gov](mailto:inquiries@azgs.az.gov)

The following file is part of the G. M. Colvocoresses 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.

note by S. M. C.

TIN CUP MINE

(see mine file)

I have file book file <sup>copy</sup>

6/11/37

Located in RiverRange, about 7 miles north of Oatman, and one mile northeast of Secret Pass. 24 miles by fair road from Kingman. Domestic water from well, camp buildings for ten men, compressor, hoist and about 10 ton flotation and gravity mill in which about 5000 tons of ore are said to have been treated with recovery of about \$5.00 per ton (old price) and tailings carried about \$1.20 (old price)

Have a very complete report by P. C. Benedict, April 30, 1934, but assay maps and other exhibits are not attached.

Country rock is mainly Oatman andesite resting on gneissic quartz diorite and granite, with intrusions of rhyolite. Best ore probably contained in the more acid phase of the andesite.

Ore is found in veins and disseminated zones in the andesite associated with small amount of pyrite and with gangue of quartz, calcite, and adularia as at Oatman.

There has been considerable faulting in various directions

There are surface pits and small glory holes in the rhyolite from which good ore is said to have been taken and which merit further prospecting.

The shaft had levels at 25' and 65' in '34 and has since been sunk considerably deeper. The faulting and irregular and pockety occurrence of the ore made it difficult to estimate tonnage but Benedict estimated a minimum of 1000 tons developed with average grade of 0.65 oz. (\$22.75) and much larger tonnage of indicated ore of similar grade and with width confined to less than 5'. Fraser and Gohring sampled a much greater width (apparently 30') and get an average of \$8.80

They also took samples from bottom of the shaft (depth and width not stated) which ran \$11.50 per ton.

Benedict concludes that a small zone of good ore is definitely proven with indications of a much larger but indefinite deposit of lower grade material and recommends further development.

Fraser and Gohring also think very highly of the property and it appears to hold excellent promise of developing into a profitable producer on a small or medium sized scale.

Litigation has prohibited any further progress since 1935 and the present status of this should be determined as soon as possible.

Oct. 1937

Property still in litigation to best of my knowledge

*Bostap*

TIN CUP MINE

PLATES

- Plate I Composite Geological Plan of Workings
  - IA Recommended Development
  - II Vertical Longitudnal Section
  - III Assay Plan of 25 Level and Surface Workings
  - IIIA Assay Plan and Sections #2 Glory Hole
  - IV Assay Plan of 65 Level
    - V Sections Showing Details of Sampling 65 Level
    - VA Sections Showing Details of Sampling 65 Level and Miscellaneous
  - VI Sketch of Areal Geology

TIN CUP MINE  
Mohave Co., Arizona  
by  
P. C. Benedict.

TABLE OF CONTENTS

Forestatement	Page 1
Conclusions	1
Location and Accessibility	1
General Features	2
Climate	2
Water	2
Machinery and Equipment	2
Housing	2
Mine Equipment	2
Mill Equipment	2
Historical	2
Geology	3
Relationship of Andesite to Pre-Cambrian	3
Division of Andesite into two members	3
Latite	4
Orebody	4
Character of Mineralization	4
Faults to Which Mineralization is Related	4
Northwest Striking, Steep Dip	4
West Striking, Steep North Dip	5
Flat Northerly Dippers	5
Shape of Mineralization, 65 Level	5
Shape of Mineralization, 25 Level	5
Correlation of 25 Level and 65 Level Ore Areas	6
Areal Extent of Altered Zone	6
Possibilities for Low Grade Ore	6
Rhyolite Glory Holes	7
Sampling	7
Values in Pyrite Seams	7
Method of Arriving at Horizontal Widths Shown on	
Plate IV, 65 Level	7
Description of Plate IIIA, Sampling in #2 Glory Hole	8
Assaying	8
Developed Ore	8
Ore 65 to 25 Levels	8
Possible Faulting of Orebody between 65 and 25 Levels	8
Ore Area and Average Grade, 65 Level	9
Extension with Depth	9
Genetic Classification with General Limitations	9
Secondary Enrichment Not Important	9
Possible Faulting	9
Conclusions	9
Claims and Titles	10
Recommendations	10

P. C. Benedict  
Mining Geologist  
Jerome, Arizona

April 30th, 1934.

Mr. James M. Hall,  
1825 East Third Street,  
Tucson, Arizona.

Re TIN CUP Property, Mohave County, Arizona

Dear Sir:

I submit herewith information resulting from seven days' mapping, smapling, and inspection of the above captioned property, March 27th to 30th and April 19th to 21st inclusive.

All maps are based on Brunton surveys,  $14\frac{1}{2}$  degrees East declination. Only the general vicinity of the main workings was inspected.

Complete cooperation of Mr. Cecil Smith, your superintendent, is gratefully acknowledged.

#### CONCLUSIONS

A zone or shoot of good grade ore is quite definitely demonstrated. Besides this, there is a vague but interesting possibility of indicating a large, low grade body which is as yet indefinite but warrants some further preliminary prospecting.

It is my opinion that the Tin Cup is an attractive prospect, decidedly worthy of further reasonable expenditures for development. Barring unusual difficulties in procuring a water supply, and with reasonably good management and appropriate overhead, I believe that you can break even on this property at any stage of the recommended exploration with very good prospects of developing a profitable enterprise.

#### LOCATION AND ACCESSIBILITY

The property is situated in the Black Mts., or River Range, about 7 miles north of Oatman and 19 miles westerly of Kingman in an air line. It is about one mile northeasterly of Secret Pass.

The property is 24 miles by fair desert auto road from Kingman. The last two or three miles will require a little improving before the road could be readily used for heavy trucking.

### GENERAL FEATURES

Climate: Hot summers, delightful winters. Rainfall probably averages about eight inches per year.

Water: A well on your ground, something less than a thousand feet from the mill, is said to furnish about 2,000 gallons daily, but is believed to have fallen off somewhat since just before April 1st. There is good reason to believe that this well has, at times in the past, furnished considerably in excess of 2,000 gallons and it very probably will again after the summer rains. I made no investigation regarding improving the water situation but there is little doubt but that an adequate supply can be developed and probably at reasonable cost.

Machinery and Equipment: There are camp accommodations for about ten men.

The mine is equipped with a 10 HP Fairbanks Morse type hoist; 9 x 8 - 118 cu. ft. Ingersoll compressor driven by a 20 HP Fairbanks Morse gas engine; jackhammers, stoper, blacksmith tools, etc.

The mill is driven by a 35 HP Western engine. Crusher is a 2M Wheeling with 9 x 12" opening, at present crushing from 5 to  $\frac{1}{2}$  inch. The mill is a 7-foot Lane Chile, rated at one ton per hour but capable of about 1.25 tons through about 40 mesh on Tin Cup ore. The pulp passes through a 10-foot K & K flotation cell, tails from which go over a Wilfley #6 table.

### HISTORICAL

It is stated that a man named Olsen, the North Star Mining Co., with whom "Smiley Jones" was connected, and various leasers have worked the property in a small way at various times. They probably quit because they were not making money. There are the usual tales of incompetent management which, in this case, deserve some credence for it is perfectly clear that there were certain exposures of ore left which would have been profitable under \$20 gold.

I believe that is likely that a factor which has contributed to lack of interest in the property is that the deposit looks like a bunch of altered rock for which there appear to be no general criteria for visually separating the good from the poor. I believe very few men would have had the courage to have taken enough samples to have indicated the possibilities of the property.

Superintendent Smith states that the best available information indicates that something like 5,000 tons of ore have been treated yielding something like \$25,000, or an average of about \$5 per ton recovered. Such tails as have not been washed away show an unrecovered content of about 0.05 to 0.07 ounces per ton.

### GEOLOGY

The prevailing rock, in the vicinity of the main workings, is andesite. It is similar in appearance and is probably to be correlated with the Oatman andesite described by Ransome (U.S.G.S. Bull. 743). This rests on Pre-Cambrian granite rocks, the local representative being a somewhat gneissic quartz diorite.\* The actual flow contact was not observed but it is thought that the fault 800 feet southeasterly of the mine (see Plate VI) which separates the two formations, is not of very great displacement and that it is unlikely that any flow older than the andesite separates it from the Pre-Cambrian.

No broad regional studies were undertaken but my casual impression is that the general dip of the flows is westerly. The inference from Schrader's mapping (U.S.G. Bull. 397, Plate I) is that the volcanics are filling a basin, either due to erosion which antedates the volcanics, or due to folding or faulting, or all of these features. Near the Tin Cup the relative position of the andesite to the Pre-Cambrian is due to faulting, a rhyolite dike having intruded along such a fault 400 feet easterly of the mine. Except for intrusive phases of the volcanics the Pre-Cambrian would be encountered probably at a depth of a few hundred feet vertically under the present Tin Cup workings, but as hereinafter described it is probable that the trend of the Tin Cup ore zone is flatly northwesterly and in such direction it may be a very great distance before the Pre-Cambrian is encountered. The present amount of development is too limited and the geologic structure entirely too vague to make worth while even an approximate guess as to the least depth at which the present trend of the ore zone would encounter the Pre-Cambrian. There is certainly no definite indication that there is not plenty of room for a mine of first magnitude. Nor need the Pre-Cambrian be considered absolutely fatal for though, broadly speaking, the andesite in this general district is considered the most favorable horizon, yet considerable amounts of gold have been mined in the Pre-Cambrian, and in intrusive phases of the volcanics in this horizon, as at the Catherine 12 miles to the northwest, and in the Union Pass section, 6 miles to the northwest.

\*No petrographic work has been performed on any of the rocks named. All terms are on the basis of megascopic determinations

It is probable that detailed geologic study would make possible the division of the andesite into two members. Both contain abundant feldspar phenocrysts and the distinction is not marked but one has a somewhat more basic appearance than the other. This more basic member occurs adjacent and to the northeast of Nos. 1 and 2 glory holes. There is some evidence that the more basic member underlies and is an older flow than the slightly more acid appearing rock in which the ore seems to principally occur. Distinguishing between these rocks, especially where altered, would require much detailed geologic work, which was not undertaken, and it is quite possible that such work might indicate other structural relationship than above suggested. There seems to me a slight suggestion that the more acid appearing andesite is a somewhat more "friendly" host for ore than the more basic.

The rather fine grained latite dike shown on Plate VI is younger than the andesite but older than the Rhyolite dikes. The small lens of rhyolite in Nos. 3 and 4 glory holes is intrusive into the andesite.

Orebody: The Tin Cup contains a good grade of gold ore without any other gangue than rock and a sparse development of pyrite, rarely in stringers, generally disseminated in certain zones in the andesite. These zones are related to certain faults, apparently of small displacement, or series of them. The gold solutions have come up these faults, depositing the pyrite and gold but without having deposited the quartz, calcite, and adularia which are the typical gangue minerals of the district.

From present information, the faults to which mineralization is related may be grouped in three classes: (1) The northwest striking, generally steep northeasterly dipping (sometimes steep southwesterly, series; (2) The west striking, steeply northerly dipping series. These generally strike a few degrees north of west; (3) The flat northerly dipping series with strike irregular and frequently rounded as though dragged by series #1. As a matter of fact, however, at least some of these quite definitely appear to be branches of the #1 series. These generally have but little gouge along them and have been subjected to less movement than the stronger breaks of the previous two series. There are slips of other strikes and dips at the Tin Cup and it is entirely possible that gold has been introduced along them, but this is at present indefinite whereas I regard mineralization along the systems outlined above as definitely proven, to wit:

Series 1 (Northwesterly striking, steep dip. This is the attitude of the principal productive veins of the Oatman district.) Sample T 26, 65 level, in crosscut SW, 32 feet from the shaft, yielded 0.45 ozs. gold across 2.4 feet. Sample C 15, 27 feet southwest of the above yielded 0.42 ozs. gold across

3 feet with more of the same green chloritized andesite yet to be crosscut. Samples T 37 B and T 38 yielded values of 0.85 and 0.56 ozs., 25 level, 15 feet northeast of the incline shaft. The values at each of these localities are distinctly related to northwesterly striking faults or slips.

Series 2: (Westerly striking, steep north dip). The values obtained in samples T 18 and T 20 inclusive, 65 level, 70 feet northerly of the shaft are in part, at least, due to seams of pyrite which strike westerly and dip north. Part of the values here, however, may be due to flat dipping fault of series 3 indicated on the accompanying plates. However, sample T 31, 65 level, crosscut NE, 32 feet from the shaft, yielded 0.40 ounces and must be related to the west striking fault in the hangingwall of which the sample was cut, as are the values obtained in the winze below the 65 level.

Series 3: (Flat northerly dippers) The values obtained in samples T1 to T5, 65 level, seem to be principally related to this series. Vertical sample T 39 A, 25 level, 10 feet northeast of the incline shaft, was separated from T 39 B below by a tiny slip of this series.

Present development on the 65 level indicates the mineralized zone to be a somewhat pipe-like affair with a rather flat northwesterly plunge. The better values appear to occur along the hangingwall, northwest surface of the pipe, but development is inadequate to indicate how far the better values may penetrate southeasterly from this surface into the core of the pipe, nor whether they continue around the southeasterly footwall perimeter of the pipe. They certainly come back along the western periphery for 40 feet and along the eastern periphery for 20 feet with development insufficient to definitely indicate how much further in either instance nor what is to be found in the core.

In the 25 level to surface workings, the better grade material seems to have assumed an irregular flat northwesterly plunging trend somewhat resembling a couple of structural steel channels placed flange to flange with webs up, the webs representing a flat northwesterly dipping sheet-like mineralization, the flanges representing the greater vertical mineralization along the steep dipping slips. The intermediate flange is represented on the 25 level by the T 37 B - T 38 - C 25 - C 40 northwest striking "vein" Zone, 20 feet NE of the shafts.

Any attempt to assign any regular geometric pattern to the better grade zone is made difficult not only because of its irregularity but also due to the presence in the ore zone of occasional horses of nearly barren or low grade rock. It is

possible that the gold mineralization is too irregular to fit into any fixed pattern but I believe that the above generalized conception will be of some assistance in exploration, development and clean mining.

The change from the above described form on the 25 level to the pipe or U form shown on the 65 level merely means that the lateral flanges of the former have grown somewhat more pronounced with a tendency to converge.

This correlation of form of the ore zones on the two levels implies, and I believe correctly, that the ore zone on the 65 is the same as that on the 25 level. Further, I believe the 65 level to be of a better grade than the 25 level. This increase of values with depth is, of course, most gratifying.

The extent of the more altered zone containing the better values seems to me to be fairly well delimited considering development work on the 25 level and surface exposures. It extends from the vicinity of the incline shaft collar around the north and east sides of #1 glory hole, from where it extends southerly to near the south edge of #2 glory hole, from where it tails out apparently as a relatively narrow zone to pass through the cut 40 feet southeasterly of #2 glory hole. See Plate III. Some alteration is discernable along this trend to the southeast of the cut for over a hundred feet, but is not well exposed because of overburden. The southwest limit of the more altered andesite approximates the position of the northwest striking fault which cuts along the southwest side of glory hole #2. This more intensely altered zone at the surface has horizontal diameters of about fifty and sixty feet with a tail-like zone extending off to the southeast for forty feet and possibly further.

It is far from definite that other mineralized ground may not be found outside of what is herein considered the more altered zone or pipe, though present indications make it probable that such material will be of low grade. A concrete example of same is shown on the 25 level in the southwest crosscut from the vertical shaft, the first 23.4 feet of which averaged 0.063 ozs., equivalent to \$2.20 with gold at \$35. See Plate III. While it is perfectly true that there are at present no concrete indications of sufficient tonnages to make material of this grade commercial ore, yet such is one of the possibilities of the property which should be given some consideration in future development plans. Sample C57, in SW crosscut from #2 glory hole, which yielded 0.28 ozs. across 5.7 feet and sample C 53, 6.1 feet wide across the back 1 foot NW. of the face of the SE drift from #2 glory hole, which gave 0.06 ozs. are further rather startling examples of terrible looking rock containing sufficient values to be highly important provided enough tonnage of such material can be demonstrated.

Regarding the rhyolite glory holes Nos. 3 and 4: Hearsay indicates that some very good ore was encountered in Glory Hole #3. This was evidently mined to or below the 25 level as the 25 level crosscut is filled with broken rock at its indicated face. See Plate I or III. Hearsay indicates that the good gold values petered out at comparatively shallow depth. My sampling of the rhyolite in the 25 level crosscut, samples T 47 to T 51 inclusive, and across the east end of Glory Hole #4 indicated only low values. The rhyolite is not much altered but is decidedly broken and fractured and contains numerous little kaolinized seams. It is possible that it was mined principally to obtain grit to facilitate grinding of the altered, rather clayey, andesite. However, if this is the case, the inference is that the andesite contained as much more gold than the average recovered as the rhyolite contained less.

I believe a little further prospecting of the rhyolite is warranted but regard this as less promising than other exploration recommended in a later section.

#### SAMPLING

So many slips and small faults occur that it is something of a problem to take samples that are truly representative. In general my samples were cut so as to be as nearly as possible at right angles to what appeared to be the predominating local structure, but this was varied as much as was necessary so that in all cases all visible slips and fractures were crosscut to some extent. No sample was cut along or nearby and parallel to any exposed slip or fracture, except three experimental samples which were purposely cut along such slips to show what their possible effect might be. Such an indicator sample was taken along little seams of pyrite crosscut by sample T 1 C which assayed 0.98 ozs. Au. The selected sample ran 0.64 ozs. gold. A special sample was taken from little streaks and seams of pyrite found in sample T 18 B which assayed 2.95 ozs. gold. The selected sample assayed 1.02 ozs. gold. Apparently then, these particular seams of pyrite are not predominating contributors of gold to the representative samples taken. On the other hand, between samples T18 A and T 18 B, see plate V, the wall of the drift was blanketed by a slip along which there was a little half oxidized pyrite. A selected sample of this material yielded 10.84 ozs. gold per ton. This slip was omitted in the representative sampling as it is representative of less than one-half inch of width.

Plates V and VA show the details of the sampling of perhaps the most difficult (from a theoretically correct sampling viewpoint) portion of the 65 level as well as other miscellaneous samples which are somewhat clarified by being shown in section.

The sample widths indicated thereon are measured at right angles, as nearly as possible, to the local structure. On Plate IV, plan of the 65 level, the same samples shown in section on plate V, and part of those shown on plate VA, have been projected, insofar as possible, to a horizontal plane at an elevation of four feet above the track. This throws many of the footwall samples, actually taken down the side of drift to, or nearly to, the floor, outside of the drive. See plate IV. The widths shown on this plate are the projected horizontal widths rather than the projected right angle widths indicated on plates V and VA.

Plate III is an attempt to show the manner of sampling in #2 glory hole. The sections give a somewhat panoramic view of the sampling on the south, east, and north sides of this working. Here, as in other localities, vertical samples were cut where flatslips or variations in the character of the rock were predominant, horizontal sampling was used where steeply inclined or vertical slips and seams were present.

The sampled section was subdivided not only at points of change of material but in general in accordance with the physical shape of the working being sampled. To avoid absurd refinements, an attempt was made to vary the amount of sample cut per foot sampled with minor changes in the shape of the surface sampled. For instance, in cutting sample T4B, see Plate V, an effort was made to cut approximately twice as much material, per unit of length sampled, from the upper half of the sample as from the lower half which was inclined more with the local structure.

The T samples were assayed by the United Verde Copper Company, Clarkdale, Arizona; the C samples by R. C. Jacobson, Kingman, Arizona.

#### DEVELOPED ORE

It is perhaps rather poor practice to hazard a guess as to ore developed, in a deposit which contains so many unusual features, until the structure outlined above has been positively proven. However, assuming same, and assuming that the ore continues between the 65 and 25 levels with the strength shown at these levels, present exposures indicate there being present a minimum of 1,000 tons having an average grade of 0.65 ozs. per ton.

The exposed dips on this ore on the 65 level and in the underhand stope just below the 25 level are slightly too steep to connect and it is possible that this ore is displaced a few feet by the east striking fault which occurs at the winze on the 65 level. If so the ore will be a few feet higher to the north of this fault than to the south of it.

The ore zone on the 65 level indicated on Plate IV, excluding the little patches indicated at samples C15 and T 16 B, has a horizontal area of 473 square feet, equivalent to 40 tons per vertical foot. The average grade is 0.71 ozs. gold per ton. at \$35 gold this is the equivalent to \$24.85 per ton. The average horizontal width is 4.8 feet, the aggregate length 98 feet. It should be emphasized that neither the full width nor length of this ore is probably indicated by the present workings.

#### EXTENSION WITH DEPTH

This deposit may be geologically classified as having been formed under conditions of relatively low temperature and pressure. Such deposits do not usually persist to depths greatly in excess of a thousand or fifteen hundred feet and may have much less persistence depending, for one thing on the amount of ore shoot which has been removed by erosion. So far as available data go, the 65 level looks very much better than the 25 level probably looked before any mining had been done. However, it is not certain that the 25 level is even yet completely explored and if further good ore is found on this level the improvement with depth may be more presumed than real. However, as matters stand the showing on the 65 level is most satisfactory.

I do not believe that the values on the 65 level can have been appreciably affected by any conceivable type of secondary enrichment, viz. by cold descending solutions which have dissolved gold from higher portions of the orebody precipitating them at the 65 level. There is some oxidation of the pyrite on this level but very good samples were obtained from material showing no trace of oxidation. Only traces of manganese were observed in the mine.

As previously mentioned there are numerous faults and slips which appear to have small displacements on them. Possibly most of even this movement is pre-mineral. Post-mineral faults are very common in the Oatman district but the character of the mineralization at the Tin Cup makes the relative age of faulting to mineralization determinable with only the most favorable exposures. Should the orebody continue its trend for 700 to a thousand feet to the northwest it would approach a rhyolite dike. These dikes are known to occupy faults, in part at least, pre-mineral but post-mineral faults might well be expected to be found closeby. The present information is too vague to warrant any pessimism regarding such condition at this time.

I know of no specifically discouraging nor limiting features in regard to considerable continuation with depth at the Tin Cup.

### CLAIMS AND TITLES

No investigation of these features was made. There are said to be four unpatented, more or less full sized, mining claims: (1) Tin Cup, trending northwesterly (the main workings are said to be near the NE side line and towards the SE end of the claim) (2) Water Wich, side lining the Tin Cup to the northeast; (3) Tin Cup #2, end lining the Tin Cup on the southeast; (4) Tin Cup #3, side lining Tin Cup #2 to the northeast. It is said that these locations are probably older than any other nearby locations.

### RECOMMENDATIONS

I recommend performing the exploratory work indicated in dashed lines on the accompanying plate 1A. I believe such work is essential in order to fully outline the rather complicated structure before attempting to explore the orebody at much greater depth. After most or all of the indicated work has been performed, the orebody should be explored at an additional 75 or 100 feet of depth. If this work responds favorably it is probable that the necessity for a new shaft will be indicated at a point some hundreds of feet northwesterly from the present site. It would appear desirable to delay, if possible, any considerable additions to the mill, with the intention of locating any improved mill adjacent to the new shaft.

There is probably more ore in the footwall of the little underhand stope below the 25 level.

Some surface cuts or trenches would throw some additional light on the possibilities for considerable tonnages of low grade outside of the central better grade zone. Present evidence points to the NW, SW and Se of the present workings as the more favorable areas for such work. In general trenches should bear SW to crosscut the prevailing NW trend. This work may justify more comprehensive plans for underground work directed towards the same end.

Because of the abundance of slips and seams, along some of which there are known to be high values, the usual type of channel sampling offers certain definite possibilities for error. Further, the evidence indicates erratic distribution of the gold. Some pannings from near the surface show rather coarse gold. Under these circumstances it is desirable to do some large scale sampling with the mill. This will necessitate careful cleanups after each run and the keeping of careful records. If the prospecting for low grade shows further encouragement the expense of such tests will be well worth while as they will be the fundamental data on which to justify the large capital outlay which will be required for the exploitation of such low grade orebody.

Acquisition of a little additional ground to the north-  
west is desirable as favorable opportunity may present itself.

Yours very truly,

P. C. Benedict (signed)

P. C. Benedict,  
Mining Geologist,  
Jerome, Arizona.

*Write letter Smith*

*Tin Cup file*

Tucson, Arizona  
November 19, 1936

Mr. G. M. Colvocoresses  
1102 Luhrs Tower  
Phoenix, Arizona

Dear George:

Received your letter of the 17th regarding the Tin Cup Mine.

I am sorry to inform you at this time that the Tin Cup Mine is still in litigation. The case was tried in Phoenix September 17 before Judge Niles, and he has not handed down his decision as yet. However, when this decision is rendered, and if it is in our favor, there is no one that I would rather see handle the property than you. I will notify you as soon as we hear the decision.

The Tin Cup property looks very good. I cut samples across the ledge every five feet for a total of 30 feet and the average gold contents was \$8.80. Gohring afterwards sampled the same ~~prospect~~ <sup>prospect</sup> and checked with me. I have taken one sample out of the bottom of the shaft. This sample went \$11.50. This was also checked by Gohring.

Hoping this finds you well, with kindest regards and best wishes, I am

*Thos. Fraser*  
Very truly yours

Thomas Fraser

P. S.  
As Maine goes so goes Vermont.

The first time you are in Tucson call me up or come around.

*1045 E 6th St*

TIN CUP MINE

*Put in.*

(see mine file)

6/11/37

Located in RiverRange, about 7 miles north of Oatman, and one mile northeast of Secret Pass. 24 miles by fair road from Kingman. Domestic water from well, camp buildings for ten men, compressor, hoist and about 10 ton flotation and gravity mill in which about 5000 tons of ore are said to have been treated with recovery of about \$5.00 per ton (old price) and tailings carried about \$1.20 (old price)

Have a very complete report by P. C. Benedict, April 30, 1934, but assay maps and other exhibits are not attached.

Country rock is mainly Oatman andesite resting on gneissic quartz diorite and granite, with intrusions of rhyolite. Best ore probably contained in the more acid phase of the andesite.

Ore is found in veins and disseminated zones in the andesite associated with small amount of pyrite and with gangue of quartz, calcite, and adularia as at Oatman.

There has been considerable faulting in various directions.

There are surface pits and small glory holes in the rhyolite from which good ore is said to have been taken and which merit further prospecting.

The shaft had levels at 25' and 65' in '34 and has since been sunk considerably deeper. The faulting and irregular and pockety occurrence of the ore made it difficult to estimate tonnage but Benedict estimated a minimum of 1000 tons developed with average grade of 0.65 oz. (\$22.75) and much larger tonnage of indicated ore of similar grade and with width confined to less than 5'. Fraser and Gohring sampled a much greater width (apparently 30') and get an average of \$8.80

They also took samples from bottom of the shaft (depth and width not stated) which ran \$11.50 per ton.

Benedict concludes that a small zone of good ore is definitely proven with indications of a much larger but indefinite deposit of lower grade material and recommends further development.

Fraser and Gohring also think very highly of the property and it appears to hold excellent promise of developing into a profitable producer on a small or medium sized scale.

Litigation has prohibited any further progress since 1935 and the present status of this should be determined as soon as possible.

July 7th, 1937

Mr. James M. Hall  
144 East Third St.  
Tucson, Arizona

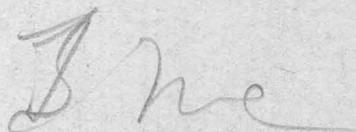
RE: TINCUP MINE

Dear Sir:

Thank you for your letter of June 29th from which I note that the Tin Cup Mine is still involved in litigation and that a final decision may not be handed down for some little time.

If the parties with whom you are dealing in Montana have the first call on this property I presume that there will be no opportunity for me to negotiate any further on this matter, but otherwise I shall be very glad to hear from you whenever you are in a position to do business.

Yours very truly,



GMC:DF

144 East Third Street  
Tucson, Arizona.  
June 29, 1937.

Mr. George M. Tolvocoresses  
Luhrs Tower,  
Phoenix, Arizona.

A. 7/7.37

Dear Sir:

My absence in Mexico has delayed my answering your favor of the 11th, regarding the Tin Cup mine.

As you no doubt know we are still tied up in litigation but we are expecting a decision which will be final, within the next few months.

For over a year we have been tied up by an option to Montana parties who have become rather impatient regarding the litigation, and it is quite possible that they may at any date release us from the option.

As soon as the final decision has been rendered I would be glad to hear from you, and will then be able to tell you more definitely just what we can do in regards to entertaining a proposal from you.

Sincerely yours,

*James M. Hall*  
James M. Hall