



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.

## RECONNAISSANCE OF THE A. B. EXTENSION CLAIMS

### IN THE SUNRISE MINING DISTRICT

Situation And Accessibility. The A. B. Extension Claims comprise a group of three unpatented lode mining claims and a wedge shaped fractional claim as is shown on the accompanying plate. Situated in the Sunrise Mining District (also called the Vulture Mining District) the claims are about 18 miles westerly of Wickenburg and ten miles easterly of Agulla, Arizona, a station on the Santa Fe railroad. An improved road leads south from Highway 60 near Ferpaw service station to the Sunrise mine and a branch road to the right, this side of the mine a short distance, leads south to the Extension claims. The distance to both places from the highway is about two and one-half miles.

The claims adjoin the southern end-boundary of the Sunrise mining ground, the dividing line being approximately 1400-feet from the Sunrise working shaft.

Topography. In this district the relief is moderate, the hills have gentle slopes and but few rise more than 200-feet above the valleys and flats. These hills are part of the western extension of the Vulture Mountains, the most conspicuous part of which, lies south of the area being described. The hills immediately south of the Sunrise mine and A. B. Extension claims are capped by dark colored igneous dike rocks and are more prominent than the other hills.

Drainage in this district is northwestward onto broad wash-plains. The dry-washes are shallow and expose the bed-rock only where they run down the slopes before reaching the sediments in the valleys. Piedments have formed at the bases of the lava-capped hills to the south and eroded material from these hills covers much of the ground south and west of the A. B. Extension claims.

Geology. Granitic rock of medium but somewhat variable texture is the basal and oldest rock of the district. Proper analysis may show that this rock is monzonite or quartz-monzonite. In its present form or condition both on the surface and as observed underground at the Sunrise mine, the ferromagnesian minerals have almost completely been altered with more or less silicification. The soda-lime feldspars show alteration to hydrous silicates like chlorite and sericite especially in zones of fracturing.

The effects of compressive stresses in the granitic rocks are evident in the immediate vicinity of the Sunrise and A. B. Extension ground. The granitic rocks are traversed by more or less regular joint systems with the most pronounced movement and fissuring in northeast-southwest lines. The fissures dip northwest. Although there is no positive evidence yet, it is believed that the fracturing is conjugated.

Compressive stresses have recrystallized the granitic rock in places giving it a finer, sometimes porphyritic, texture and rocks of this finer texture are found forming the hills and ridges. A softer, coarser grained granitic rock occupies the lower areas and may be noted at a few points where erosional forces have uncovered it.

Small areas of schist-like materials are found at varying intervals in the district. The schist seems to be recrystallized rock that has resulted from closely spaced joint systems which formed slaty cleavages and along which

ascending hydrothermal solutions traveled. The invading solutions altered the areas to their present schist-like form characterized by both fine and coarse crystalline textures and fine laminations. The rock is gray-green color and weathers on exposure to a shiny brown and black appearance. It is found in various transitions into slaty cleavages and is usually tough and fairly hard. Quartz occurs in veinlets and small irregular masses with white and some ferriferous calcite, in the schist. The laminations prevail in a northeast direction although at one place they were observed striking southeast. The quartz stringers in general follow the schistosity.

A few porphyry intrusions are to be noted in the northeastern part of the A. B. Extension ground. The porphyry seems to be intruded in sheet-like form with a pronounced cleavage which seems to be parallel with the strike. The rock has a pinkish appearance and seems to be eroded more rapidly than the granitic rock. Fragments of the porphyry found in this section indicate by position that the igneous rock has intruded the granitic rock along fractures northeast and southwest.

The Sunrise Mine. The vein extends along the side of a hill on a south slope and may be traced from northeast to southwest for a distance of about 900-feet. The dip is northwest into the hill at about 40 to 45 degrees. The outcropping is not prominent. It consists of gray-green, finely laminated schist which is occasionally stained brown and reddish brown and barren looking white quartz which in places has a pinkish stain. Some brown and white carbonates are found along the outcrop in a few places.

In prospecting the Sunrise vein the fissure was comparatively barren and unproductive to depths less than fifty feet. With greater depth heavier mineralization was encountered with increasing gold values.

Development consists of two incline shafts sunk on the vein at points about 300-feet apart. The northeast shaft was sunk to a depth somewhat over 200-feet. The second shaft is employed in the present development and is about 330-feet deep and is connected by a drift with the 200-foot incline. This drift is on the 200-foot level and it has been extended southwest from the working shaft a distance of about 400-feet. A small amount of drifting exposes part of the vein on the 240-foot level and the 330-foot level includes about 160-feet of drifts.

The vein is irregularly fractured with abundant slickensides. The filling between granitic walls consists of schist with rudely lenticular masses of quartz. The schist is commonly stained brown to reddish brown and contains stringers of quartz and iron carbonates. In isolated spots the schist may appear greenish. The filling, which is a stockwork, is from 5 to 20-feet wide and contains gold values irregularly distributed through the schist and quartz. The ore bodies seem to pitch to the southwest and are wider, in regard to the quartz, where the vein flattens somewhat. Wall-rock alteration consists of silicification, sericitization and carbonatization. The sericite is medium to fine grained.

The highest values occur in the quartz associated with limonite, hematite and pyrite. Some of the quartz is honeycombed showing remnants of pyrite and containing grains and flakes of gold while other of it is hacky and contains flakes of gold with pinkish hematite and limonite and possibly some pyrolusite. A green stain may occasionally be noted indicating the presence of some copper. The schist contains carbonates that contain fine metallic gold and sometimes hematite and limonite that is very rich in gold. Specimens of ore from the 330-foot level show more pyrite, much of

which is altered to hematite, and it is quite probable that with increasing depth the vein will contain more quartz with free gold and auriferous simple sulphide minerals. The ore contains practically no silver.

Production prior to 1934 was in small lots of ore sent to the Vulture mill. From March 1st to May 16, 1934 about 600 tons of ore averaging \$24 in gold per ton were shipped to custom smelters. Since May 16th a 25-ton mill near Wickenburg has been treating the Sunrise ore and it is quite probable that some what more than 2000 tons of ore has been treated by this plant todate. Reports from the mill indicated that the ore was averaging 35 dollars per ton in gold.

The mill employed amalgamation and table concentration and it is doubtful if an economical and good recovery was made on the ore treated. The mill was shut down during the past few days. It is reported that a new mill will be constructed at the property.

Veins on the A. B. Extension Ground. Three veins have been discovered on the Extension ground and shallow prospect holes have revealed the outcrop characteristics of each. The approximate positions of these veins are shown on the plate. There are particularly favorable showings on the A. B. Extension No. 1 and No. 3 claims.

The prospect shaft adjacent to the discovery hole on No. 1 claim discloses a fissure dipping northwest and striking southwest. The vein has the same characteristic fine laminae of schist with veins and stringers of quartz and ferriferous calcite that is evident in the Sunrise vein outcrop. This vein dips about 25 degrees northwest and has a width of about 7-feet. The granitic foot-wall contains inclusions of schist and shows silicification and sericitization. Some of the vein filling will pan a small amount of fine gold.

The discovery shaft on No. 3 claim is in green-stone. In places the schist shows fine laminations. The quartz is disseminated in small nodules and occurs in stringers and is mostly unmineralized. Some iron carbonates stain both schist and quartz. To the east of this discovery about 300-feet a shallow trench discloses lead matter 18-inches or more wide. The same vein apparently outcrops, but inconspicuously, northeast at a point about 400-feet from the trench and here outcrop material may be traced a hundred feet or more. From the small amount of trenching done, this vein seems to dip southeast and in which case, conjugated fracturing would be apparent. The vein material often pans some gold and consists of quartz in schist between granitic walls. The quartz is strongly mineralized containing massive amounts of iron carbonates and some hematite with a slight stain of copper here and there. Much of this material is identical in appearance with the schist and quartz carbonate ores of the Sunrise mine.

The quartz vein of the No. 2 and A. B. Extension claims seems to strike N 15 E. The true strike may be more toward the northeast, since the dip of this vein is low to the northwest. It seems likely that a quartz outcrop, located on a hill side N 35 E about six or seven hundred feet from the A. B. Extension claim discovery, is one and the same vein.

Where this quartz vein is exposed at the A. B. Extension discovery, small masses and stringers of quartz occur in granitic rock. At this point the hanging-wall is coarse textured while the foot-wall is porphyritic. Some of the quartz is barren looking and other of it is stained pinkish and contains iron carbonates. On the No. 2 wedge claim the quartz is platy and white with little stain. The quartz outcrop, referred to in the preceding paragraph, is composed of quartz that contains more or less massive iron carbonates. A few schist fragments indicate that the quartz occurs in the schist.

Recommendations. The veins on the A. B. Extension ground have not been fully determined as to strike and dip. Outcrops are exposed at a few places and at others shallow holes show the surface conditions of the veins. In general the ground is covered by detritus.

The veins should further be prospected by trenching to determine more accurately strikes and dips. The general characteristics of the fissures would be determined and more intelligent selections of points for sinking prospect shafts would be possible.

The No. 1 vein should be trenched in both directions at 25 foot intervals over distances of a few hundred feet. This would tell whether the vein is a separate fissure or the same fissure as that exposed in the No. 2 and A. B. Extension discovery holes which could be the case but does not appear likely now. A good site for a shaft could be located from the information revealed by the trenching. It would be economical in the long run to similarly trench the No. 3 vein before attempting to locate a shaft site.

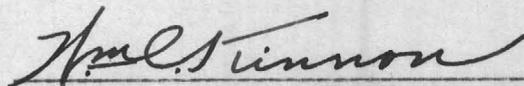
Where the veins dip less than 30 degrees, vertical prospect shafts would be more economical than inclines. The veins could be intersected at points far down on their dips by shafts following relatively short vertical components. Where the veins have steeper dips, inclines to follow the fissures would be more practical.

In development work it is quite possible that ore-shoots will be encountered at depths of 50 or 60 feet, as may be observed at the Sunrise mine. In believing that this may be the case it would not be wise to sink shafts of too small dimensions. The rectangular area should be sufficient for working depth to 200-feet or more.

At the Sunrise mine the ground holds up well and there is no reason to believe that the hanging-wall of these veins would not be equally firm. Inclines should not require much if any timbering below the shaft collar to depths of two or three hundred feet. Where observed in the district the vein fillings are comparatively soft and require but ordinary amounts of dynamite in mining. The cost of sinking a 4.5 by 7-foot incline, using power drills should not exceed \$12 to \$14 per foot.

Conclusion. The veins of the A. B. Extension claims are not so well exposed on the surface as the Sunrise vein. The greater part of the ground through which these veins run is mantled by detritus and sediments. Prospecting has been difficult. Despite this condition three fissure veins have in part been exposed and their dip and direction more or less determined. On exposure these veins show the same characteristics as does the Sunrise vein outcrop. From the foregoing it is evident that there are strong possibilities of developing important bodies of gold bearing ores at relatively shallow depths.

The property is accessible over highways and a good road and any development undertaken could be performed at a minimum cost.



Mining and Metallurgical Engineer

Wickenburg, Arizona, Oct. 4, 1934.

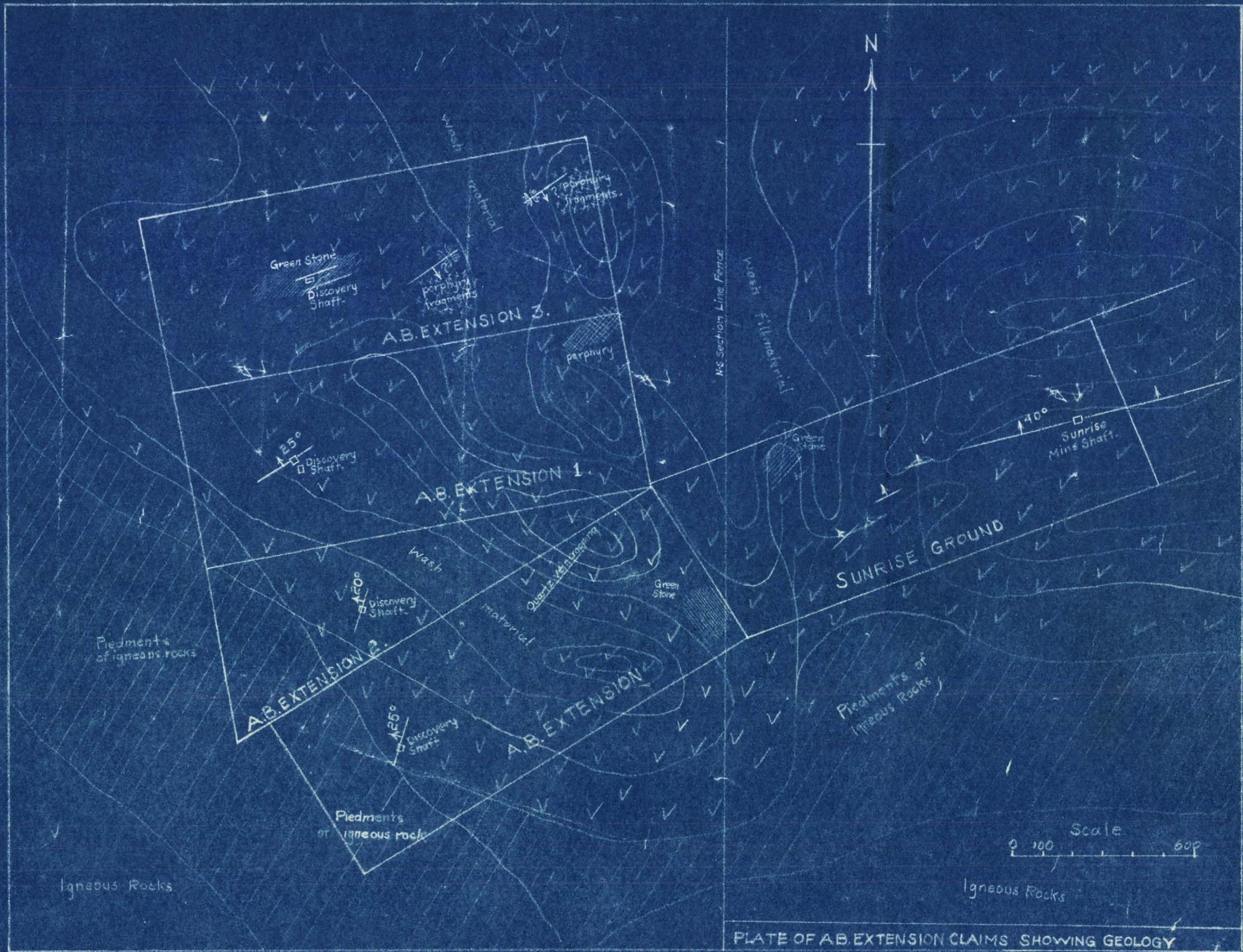


PLATE OF AB. EXTENSION CLAIMS SHOWING GEOLOGY