

## THE SWALLOW MINE.

Feb. 1959.

### Location:

The Swallow Mine is located about twenty-five miles easterly from Tickenburg, Arizona, and in the Castle Creek mining District which is in the southern part of Yavapai County. It is reached by one road over desert and mountain terrane from that city.

### Topography: Rocks:

The area passed over to the mine has a similar look all the way. Its highest elevation is below 5,000 feet and its minimum is over 2000 feet. Apparently it was an old peneplained section that was elevated since early Tertiary time, then deeply dissected which has left sharp ridges and Vee-shaped gulches. The rocks are precambrian granites and aplites, some of which are metamorphosed showing blocky and shistose structure, and are light colored. Very few basic dikes occur in this area near the mine, and no sedimentaries are seen at all. For ample reasons not presented here these granites are considered cover rocks, overlying the early Tertiary magma, which is so prolific in copper in Arizona.

The cover rocks as viewed from the air are dotted with hundreds of reddish cappings, none of which are exceptionally long but often occurring rudely as several in a line or as perimeters of imaginary earth blocks. These occur over an area of about twenty square miles, which is the usual size of an intrusive stock, and from which solutions for ore deposition are derived. The excessive number of cappings is a measure of the depth of erosion, and the consequent thinness of the cover rock, and nearness to the magma.

The ore-shoots are all thought to be secondary concentrations in the weathered shoot area of the veins or in later opened spaces. The richest ore is found no doubt where the veins reached highest in the cover rock, or were richest. The minerals subject to oxidation or hydration are definitely secondary, nor are there any signs of relict sulfides, yet hypogene copper minerals are invariably sulfides and are accompanied by pyrite.

The main economic minerals contain copper and gold with subordinate silver. The main gangue minerals are specularite and quartz and subordinate magnetite. The economic ore-shoots being secondary concentrations are shallow but very rich. This fact is very important since it effects the type of prospecting. The Swallow was semi-lense shape open at the surface but reaching to a depth of about 190 feet and containing 10,000 to 15,000 tons of very rich ore. The dump on the Golden Wonder indicates a similar deposit. A new shoot on the extension of the Swallow vein has now been intercepted by diamond drilling which may prove to be another important ore deposit.

### Progress for the year 1958:

The procurement and installation of a Diesel motor, compressor and light plant at the mine plant, and piping and lighting back to the working faces some eleven hundred feet away, and the procurement of diamond drill equipment designed to handle AX starter bits and Ex finishing bits. Two diamond drill holes were run from the so called Swallow face, one of which penetrated forty feet horizontally in a northeasterly direction, but which was blank. The other was directed eleven degrees northwest and horizontally. It intercepted a new low grade ore-shoot at forty feet and continued in the shoot up to ninety feet at which point a heavy flow of water was encountered.

The hole was continued to a depth of 150 feet without further interest. As soon as the flow of water was encountered it was noted that the water leaving the shaft some 400 feet to the south suddenly diminished. This fact indicates that both are on the same open fracture (see Plate I.), and since the Swallow shoot to the south was so prolific it is also possible that the shoot to the north may be valuable. The outcrop for this new ore-shoot is about 150 feet to the west and 350 feet vertically upward, giving an angle of dip similar to the Patterson vein.

A second diamond drill hole was driven from the face about four feet north of Station 14 on the Survey underground, and was directed horizontally toward the Whim ore-shoot for a distance of 170 feet. Nothing was intercepted, therefore the need for an accurate survey was paramount. See the map.

#### Mapping:

In order to correlate the present underground workings with known outcrops, a more accurate transit survey using stadia was made. These were superimposed on the map. All foresights and backsights underground were checked by the magnetic needle which showed great variations at certain areas due to magnetite concentrations.

On the surface a straight line was run to Sta. 4, then to the saddle for Sta. 5, then to the Blow-out point for Sta. 6. Stations 3, 4 & 5 were tied to the bolt on the southeast corner of the south concrete pair near the shaft; Stations 4 & 5 were tied to the post or stake north-east of the shaft; and Sta. 6 was tied in to Sta. 1.

A second tangent survey was made as a check, going due west from Sta. 1 to Sta. 4 then turning due north to Sta. 6 (on the underground survey). From the latter point the bolt, stake and Sta. 5 on the first survey were tied in, then the underground points 14 and Sw face were set off and the distances determined by stadia.

The point Blow-out transit stadia survey was made in 1958 and this was used to point out the various old shafts and outcrops away from the Swallow workings.

The stadia horizontal and elevation distances have an accuracy of 99 plus percent. These are indicated on the large map.

In addition to the above map two smaller sketches were made and identified as Plate I & 2 respectively. They are intended to show where the Swallow veins intercept the Adit level plane. The first sketch is a copy of the old workings now inaccessible, made in 1925 by H.M. Lancaster, the engineer. From this it was obvious that the shaft was not normal to the vein structure, therefore new sections were constructed normal in order to determine accurate dips. Plate No. I. also indicates that the Swallow vein on the lowest level (153'), where it was followed, had a strike of 16 degrees northwest, and this direction is in a general way the strike of the new shoot and in line with the Swallow vein and indicated on the map.

#### Recommendations:

I have set forth the belief that the economic ore-shoots in this area are secondary concentrations in open spaces derived from preexisting primary shoots of leaner protore which have been eroded to the present level. All work in the area indicates shallow depth but unusually rich stopes. Therefore drilling from low levels may miss them. It is recommended that drifting should proceed to tap the new shoot on the Swallow fracture, then raise to the economic level on this shoot.

*F. C. Ramsing*  
F. C. Ramsing, Reg. E.M., Ariz.

BLOW-OUT

# PLATE I

MINE WORKINGS COPIED FROM  
H.M. LANCASTER - 1925  
10 IN. = 50 FT.  
TO RAMSING E.M. 1959

NOTE THE BENDING OF  
VEINS, GOING NORTH TOWARD  
THE WEST, CONFORMS WITH  
THE DIRECTION OF THE COM-  
POSITE STRUCTURE

SECTIONS SW<sub>1</sub>, SW<sub>2</sub>, P<sub>1</sub>, P<sub>2</sub> ARE  
DRAWN NORMAL TO VEINS

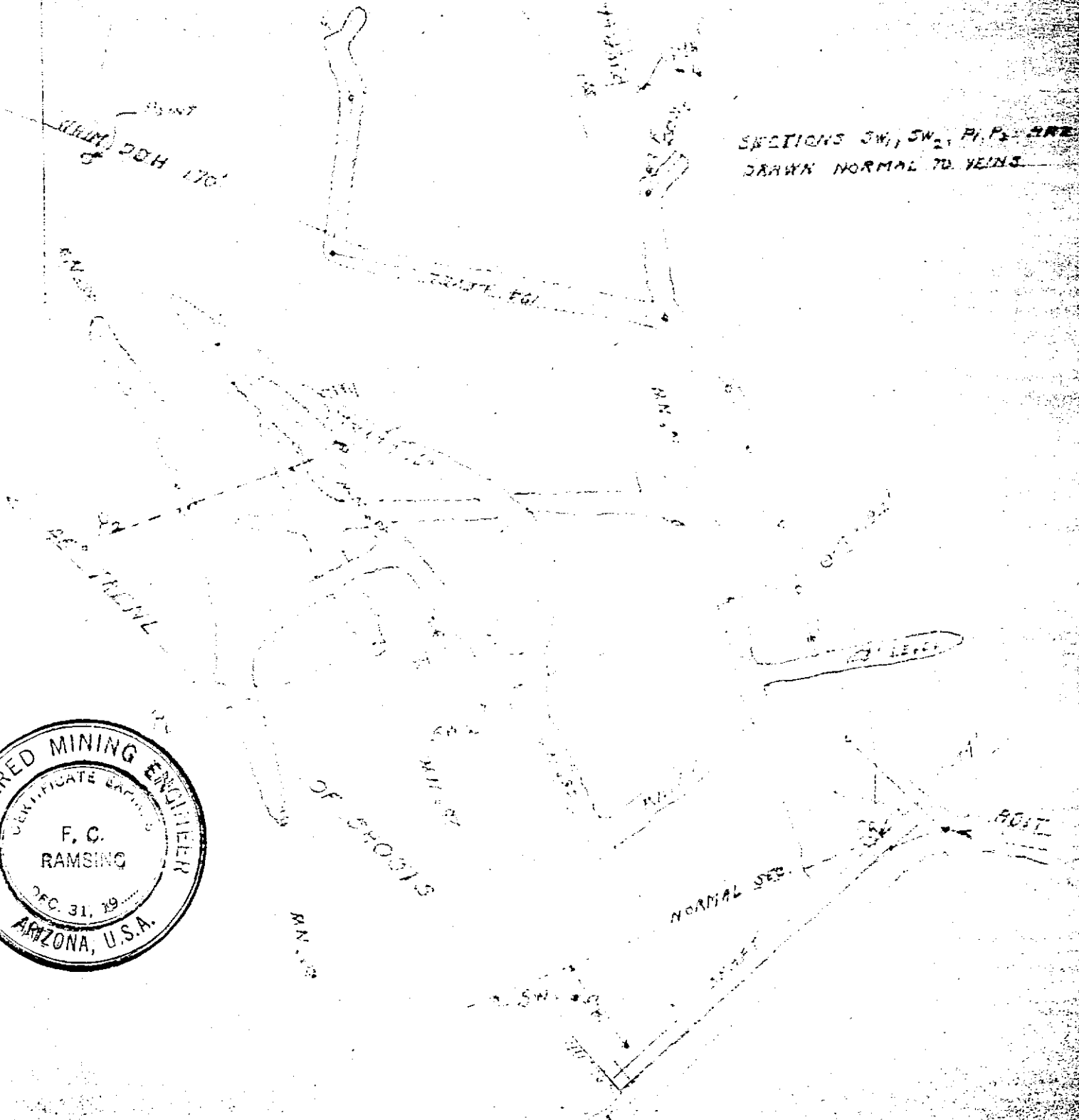
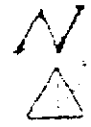


PLATE 2

SWALLOW MINE VEIN CURVE

DETERMINED BY SECTIONS

SEE PLATE 1  
BY F. C. RAMSING, A.M. 1889.  
10 IN. x 80 FT.

LOOKING WITH THE VEINS

DRAFT CORRECT ELEVATION

67' LEVEL

PATTERSON

SWALLOW

P2

P5M2

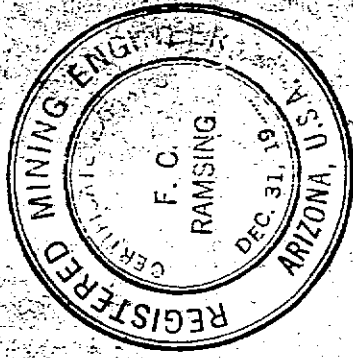
153'

134' 50 FT. LEVEL

157' ± P2-23'

157' ±

147'




FINAL REPORT

MINERAL: Gold-Copper PROPERTY: Swallow Mine  
EXAMINATION DATE: November 1-2, 1975 MINING DISTRICT: Castle Creek  
EXAMINED FOR: Cyprus Bagdad Copper Company STATE: Arizona  
EXAMINED BY: Wilbur E. Sweet, Jr. COUNTY: Yavapai  
Ore Control Engineer, Cyprus Bagdad Copper Company, P. O. Box 245, Bagdad, Az.  
SECTION: 6, T 8N R 2W, Gila & Salt River Meridian

SUMMARY AND RECOMMENDATIONS

The Swallow Mine is a series of surface cuts and underground workings along a mineralized reverse fault striking @ N60W (Magnetic) and dipping 70-80 degrees to the north. The fault lies along a contact zone between the Bradshaw granites to the north and Granite gneiss with Yavapai schist xenoliths to the south. Primary mineralization was probably hematite with regional metamorphism converting the hematite to specularite. The gold-copper values in the ore zone are as a result of secondary brecciation followed by quartz-chalcopyrite mineralization in the Swallow Vein and along a series of at least seven complementary normal strike-slip faults displacing the vein. This gave the area an appearance of being large mineralized shear zone with several parallel veins until the structural displacement was determined. The fairly high gold values associated with the property occur principally within the oxidized zone as residual enrichment. Geochemical sampling conducted of the fault zones, granites, and gneisses did not reveal any significant widespread mineralization. No vein samples were taken as previous reports list extensive and inconclusive sampling.

It is recommended that Cyprus Bagdad Copper Company not consider this property for a detailed examination or acquisition. The property currently has limited value to the owners as a source of lapidary material under the direction of the owner's representative, Mr. Grover Rubash, and it is possible a small tonnage of oxidized gold ore may be shipped at a profit from existing stockpiled material at the mine. A courtesy copy of this report should be sent to the owners and Mr. Rubash.

  
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Wilbur E. Sweet, Jr.

**CYPRUS**