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ARIZONA DEPARTMENT OF MINES AND MINERAL RESOURCES AZMILS DATA

PRIMARY NAME: SWALLOW

ALTERNATE NAMES:
DOBLER
WHIM VIEN
GOLDEN WONDER SHAFT

YAVAPAI COUNTY MILS NUMBER: 356

LOCATION: TOWNSHIP 8 N RANGE 2 W SECTION 6 QUARTER SW
LATITUDE: N 34DEG 03MIN 28SEC LONGITUDE: W 112DEG 30MIN 41SEC
TOPO MAP NAME: MORGAN BUTTE - 7.5 MIN

CURRENT STATUS: PAST PRODUCER

COMMODITY:
GOLD LODE
COPPER OXIDE
QUARTZ CRYSTAL
CALCIUM CALCITE
FLUORINE FLUORSPAR

BIBLIOGRAPHY:
USGS MORGAN BUTTE QUAD
ELEVATORSKI, E.A. ADMMR AZ FLUORSPAR 1971 P38
REPORT TO THE GOVERNOR OF AZ 1899 P 102
ADMMR SWALLOW MINE FILE & COLVO FILE
BLM AMC FILE 26727
LINDGREN, W. ORE DEPTS JEROME & BRADSHAW MTN
QUADS USBS BULL 782 1926 P 184
COMMO ALSO INCLUDES SPECULARITE

03/20/90

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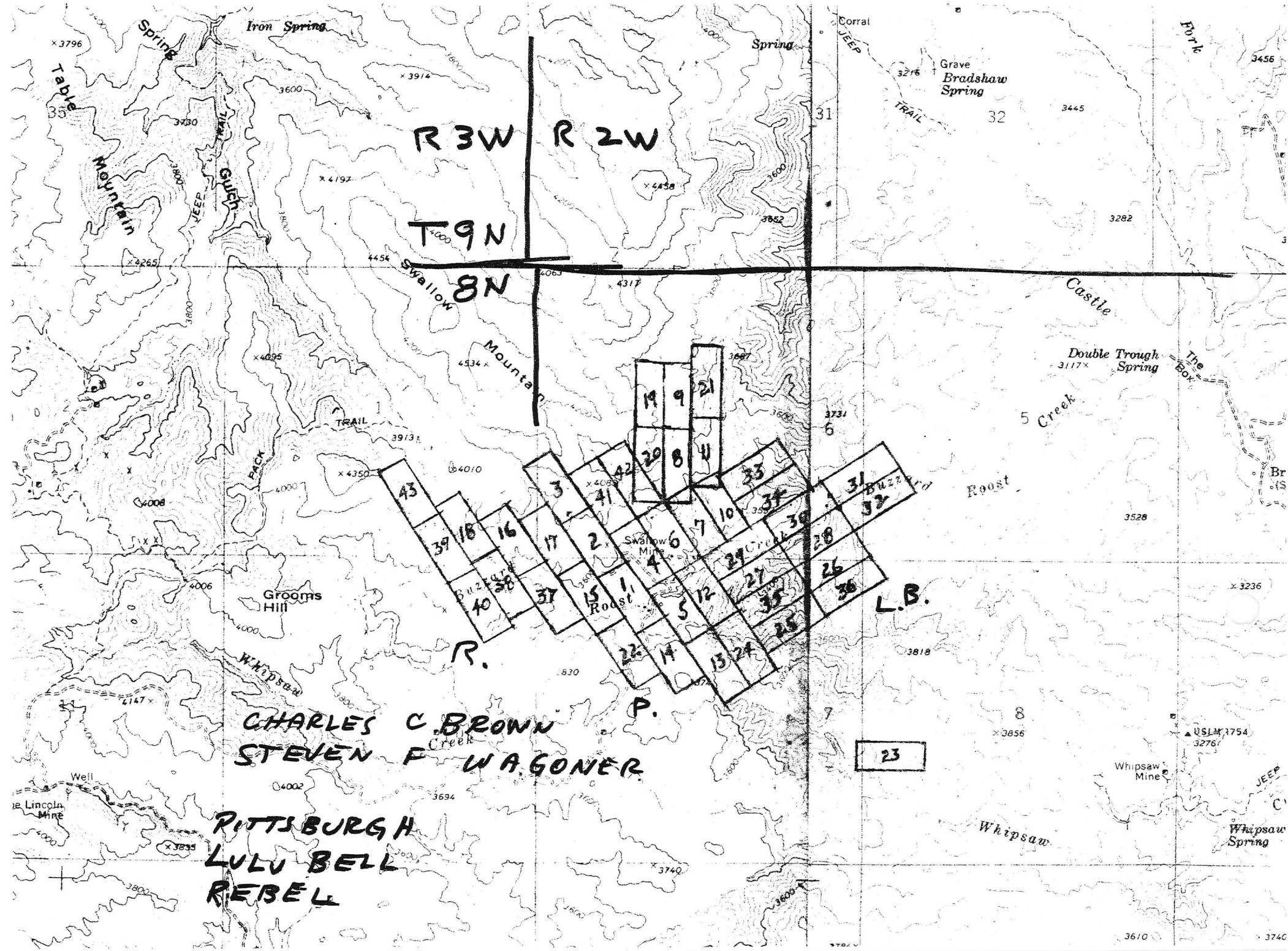
SWALLOW MINE

YAVAPAI COUNTY
T8,9N R3,2W

MILS Yavapai Index #356

Colvo. file

Assay reports from samples taken by Energy Reserves Group, 1982, included in file.


R3W
R2W
T9N
8N
Iron Spring
Table Mountain
Jeep Trail
Gulch
Swallow Mountain
Corral
Jeep Trail
Grave
Bradshaw Spring
Fork
Castle
Double Trough Spring
The Box
5 Creek
Buzzard Roost
Swallow Mine
Grooms Hill
Whipsaw
Creek
Whipsaw Mine
Whipsaw Spring
USLM 1754
Well
Lincoln Mine
CHARLES C. BROWN
STEVEN F. WAGONER
PITTSBURGH
LULU BELL
REBEL
L.B.
R.
P.
23

vein of copper-bearing ore. The vein averages in width from 20 to 100 feet along its strike, and runs for 2 miles on the Copperopolis property. The vein is a typical iron-copper vein, carrying bunches or bands of copper ore in the iron caps. The vein stuff shows a uniform value in gold of $8 to the ton. The proposed development is to work through the capping or gossan to the water level and open the mine at the sulphide base.

The Jones group of mines are situated on the Copperopolis vein, and extend for 7,500 feet on the west extension of the vein. These mines are being worked by a separate company, and are at a depth of 350 feet, producing some fine copper and gold ore.

The Swallow group, located on a tributary of the Castle Creek, have been in the past worked for gold, and have produced gold in paying quantities. They are now being worked for copper, it having been determined that the mines are copper mines as well as gold, the gold of the vein being so far obtained by milling the gossan of a copper mine. It is proposed to install machinery at an early day for working the copper ores.

A third group of copper and gold mines is the Whipsaw group, located at the head of the Whipsaw Gulch. These mines have recently been partially opened and show very rich values. It is said by competent experts that there are now exposed 5,000 tons of copper ore that will average 15 per cent copper and $10 gold to the ton. A complete smelting plant is now being built to the Colorado Iron Works for this group of mines.

In the Buckhorn Range some very fine prospects are being worked for copper. It is now practically assured that the Castle Creek mining district will soon occupy a prominent place among the various copper-producing districts of Arizona.

THE COPPER DEPOSITS OF COPPER BASIN, ARIZONA, AND THEIR ORIGIN.

[From the transactions of the American Institute of Mining Engineers. New York meeting, February, 1889.]

Copper Basin, in Yavapai County, Ariz., about 10 miles southwest of Prescott

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PHOENIX ARIZONA

B Buzzards Roost Group
Yava Pai Co.

INVESTMENT REPORT ON BUZZARD'S ROOST GROUP OF MINING CLAIMS.

Messrs. Luplow & Kent,

Phoenix, Arizona.

Gentlemen:

In accordance with your instructions of recent date, I have examined the Buzzard's Roost Group of Mining Claims, situated in the Castle Creek Mining District, Yavapai County, Arizona, and beg to report thereon as follows:

CHARACTER OF VEIN:

The vein is of the contact-fissure type, with a N. W. - S. E. strike and a dip of 70° or 75° to the northeast. Judging from a cursory surface examination, and also from various workings visited, the vein varies in width from three to ten or twelve feet. Evidences of post-deposition movement are apparent in the somewhat brecciated condition of the vein filling and occasional slickensiding exhibited, principally on the footwall. The massive outcrops and extensive horizontal continuity of the lode furnish strong evidence of its vertical persistence, while the extensive mineralization of the vein matter leads naturally to the conslusion that ore chutes of satisfactory dimensions and profitable values, in addition to the two at present exposed in the Swallow and Moonlight shafts, will eventually be encountered.

METHOD OF ORE DEPOSITION, ETC.:

It is very probable that the ores owe their origin to super-heated mineral-bearing solutions ascending and

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circulating in the fissure under hydrostatic pressure, their mineral contents being gradually precipitated through the chemical reaction set up by contact with certain of the enclosing rock-elements, and also by a greatly decreased temperature of the solutions as they reached and circulated through the higher levels of the fissure.

A moderate amount of leaching of the copper content has occurred in the ores at present accessible, which consist of the green carbonate (malachite) and the red and black oxides of copper (cuprite and melaconite). Ore in workable quantities being in evidence at the present levels reached by development, there is reasonable assurance on which to base the conclusion that a like economic condition will be found to obtain at lower levels wherein similar agencies of precipitation and deposition have been equally active. To this favorable conclusion must be added the reasonable certainty that a zone of secondary enrichment will be found to exist at some point above the permanent water level; that is, that part of the original copper content leached from the ores of the upper levels will be found to have been redeposited at a lower level within the vein walls, thus enriching the ores of the zone within which redeposition has taken place.

ASSAY VALUES OF SAMPLES, ETC.:

The probable existance of one or more ore bodies of profitable dimensions and value having been conceded, it remains for us to ascertain, as accurately as the data at hand will

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permit, the average amount of profit per ton to be expected from the mining and milling of the ore bodies sampled by me.

In order to arrive at a consertative estimate it is necessary to use as a basis of calculation the general average value per ton, and the general average width of the ore faces sampled, which are as follows:

	Copper	Gold	Width Sampled
Sample #1,		$ 11.60	2 feet
" #2,	$ 41.28	4.40	2 feet
" #3,	23.04	4.60	5 feet
" #4,	16.32	10:20	3 feet
	80.64	30.80	
		80.64	
		$ 111.44	

Total value per ton of four samples,	$111.44
General average per ton,	27.86
Average width of ore bodies,	3 feet

An average sample taken across five feet of ore in the Moonlight stope assays $23.04 copper and $4.60 gold - a total value of $27.64 per ton. Considering the width of ore sampled the above values are very satisfactory.

Estimated cost of operation,	Per Ton
Mining (including hoisting, timber & supplies)	$ 4.50
Transportation to mill,	.50
Crushing and concentrating,	1.50
Superintendence, office, etc.,	.50
Freight to R. R., as concentrate,	1.50

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R. R. to Smelter,	$ 2.00
Smelting,	1.50
Total cost per ton	13.00
Average value per ton,	27.86
Less estimated loss in concentration, 30%,	8.35
	19.51
Total cost operation per ton,	12.00
Estimated profit per ton,	$ 7.51

Estimated twenty-four-hour-day duty of ten stamps crushing to 30-mesh screen, 3 tons per stamp - 30 tons.

Estimated daily profit, 30 tons at $7.51 per ton, $225.30.

The above estimates are based on what should be a maximum of operation costs and loss of values in concentration, under proper methods of management and operation, for the grade and character of ore under consideration.

CONCLUSIONS:

The physical features of the property, judged from an economic standpoint, and likewise taking into consideration the very liberal terms on which you have been offered an interest, amply justify an investment of the amount necessary to acquire the holding offered to you. As I see it, the future success of the enterprise depends almost entirely on the executive ability of those in charge of operations. Given intelligent, energetic and businesslike methods, together with adequate technical knowledge of economical and efficient mining and reduction processes, I can perceive no present reason why the group should not enter the list of profitable producers in the very near

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future. This is one of the very few prospects I have ever seen in which the amount required for initial operations may be regarded as a safe and profitable investment rather than a precarious speculation. I must repeat, however, that the success of the undertaking depends very largely on the methods of management and operation pursued, and this remark applies particularly to the limited capital available for the inception of the enterprise.

Very truly yours,

F. A. Clifford

Mining Geologist.

Phoenix, Arizona,
April 9, 1915.

Kindly return this report.

COPY

PRELIMINARY REPORT

ON THE GROUP OF MINING CLAIMS OWNED BY

STATE COPPER COMPANY

YAVAPAI COUNTY ARIZONA

LOCATION OF PROPERTY

A group of mining locations, comprising fifteen lode claims located within, and being a part of Sections Six and Seven, Township Eight North, Range Two West, Gila and Salt River Principal Meridian of Arizona, is the subject of this report.

This property is located in the extreme south end of Yavapai County, thirty-two miles south and three miles east of Prescott, the County Seat. In other words, forty-two miles north and twenty-four miles west of Phoenix, the State Capitol.

The nearest railroad point is the small mining town of Wickenburg, twelve miles west and seven miles south of the property. The immediate territory is served by the Atchison Topeka & Santa Fe Railroad. A branch line extending from Wickenburg to Phoenix and from Wickenburg to the main line at Ash Fork, or west to the main line by way of Parker and Cadis. From this description the exact location of the property may be found on any map of the State.

MINING DISTRICT

The property is a part of what is organized as the "Castle Creek Mining District." The area is drained on the south and east by the Aguai Fria River, and on the north and west by the Hassayampa river. The better known mines in the immediate vicinity of this property are numerous. I will mention the Copperopolis, Constellation, Keystone, King Solomon, Monte Cristo, Abe Lincoln and the Vulture. All are, or have been producers.

TOPOGRAPHICAL FEATURES

The district is mountainous in all directions. The Bradshaw mountains to the east; the Wickenburg mountains to the south; the Vulture mountains to the west and the Weaver mountains to the north. Swallow mountain, comprising part of the group, reaches an elevation of 4400 feet above sea level. Most of the work on this group is between the elevation of 3400 and 3500 feet above seal level. The mountains are not rugged nor abrupt for the most part and roads and trails are easily made.

ROADS

From Wickenburg to your property is a distance of seventeen miles by the present road. The eleven miles out from Wickenburg is not a bad road, but one would have to draw on the imagination to some extent to call the last six miles a road. This, however, is not a very serious handicap as a good road could be built on easy grades from your property for a distance of about eight miles at a moderate cost. The most serious drawback at the present time is on account of the high cost of hauling fuel oil and supplies over the road in its present condition. A proposed State highway connecting Morristown and Prescott, by way of Minnehaha Flat, if built as proposed will pass over or very near to your property. The town of Wickenburg is connected with Phoenix on the south, and Prescott to the north by a splendid State highway.

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TIMBER

For practical mining purposes there is no timber on the property, and timber for building purposes or underground use would have to be brought in. The south end of the Prescott National Forest Reserve starts six miles north of the property, and timber may be obtained at a reasonable price.

WATER

The water supply is limited during a short portion of the year, especially the summer months, and the small creek that crosses your property becomes a "dry wash" during this part of the year. During the dry season the only source of water is to sink wells along the creek channel where considerable water may be obtained. The mine workings make considerable water which could be conserved and used for milling purposes. During the winter and rainy months water is plentiful for milling or other mine uses.

CLIMATE

The climate is very hot and dry during the summer months with only an occasional shower. During the fall, winter and spring months the climate is said to be very delightful. There is very little or no snow fall during the winter. Climatic conditions at the mine would be considered very favorable.

HISTORY

The history of this property is not unlike that of many others in the remoter mining districts of the west. Discovered and located by a prospector of very limited means; held by him and worked in a crude way through the best efforts he could put forth without funds. Later through his own resources and the help of friends, a small five stamp mill, and still later another more modern stamp mill. Still later, during the war period of high copper prices, leasers mined and shipped crude, a considerable tonnage of copper ore. The property has been worked intermittently, mostly for its gold values, for a number of years. The local reports of the total production is in excess of $150,000. I have no way of judging the correctness of these figures. However, it is apparent that considerable ore has been mined and milled, and I presume it produced the money used in the development of the property, at least the greater part of it, and possibly more. It is very plain that the ore must have carried good values to pay the cost of mining, handling and milling, or marketing in the crude way it was done.

TITLE TO GROUND

Practically all of the Public Domain, not on Indian Reservations, that is known or thought to be mineral bearing, is open to mineral locations by citizens of the United States, who comply with the statutes of the Federal Government and the State of Arizona. This ground is held by right of location and compliance with the laws of the United States and the State of Arizona. It is my understanding that this ground has been held for a long period of years. The more recent records were made for the purpose of perfecting title, and on January 1st, 1920, eleven of the claims were relocated. Four of the claims were located on July 3rd, 1923, by the State Copper Company.

It is my opinion that there are no conflicting areas with the adjoining claims and there is no litigation effecting title or rights. The question of ownership is clear and undisputed. The mineral character of the land can never be questioned, and it is almost safe to say that the Federal Government will not claim the timber or water, so long as the annual assessment work is performed, and Federal and State requirements complied with, title to unpatented mining ground is absolutely safe.

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SURFACE EQUIPMENT

Present surface improvements consist of two small bunk houses or sleeping quarters for men, a small kitchen and boarding house, shown to advantage in pictures No. 1-2-3. A small office building shown at the right in picture No. 3.

A shallow well for a domestic water supply from which water is pumped to a tank and piped to the different buildings. Other buildings comprise the stamp mill building shown in picture No. 4, and the engine and compressor building, with annexed blacksmith shop shown in picture No. 6. While the buildings are not elaborate, they serve the purpose for which they are intended. The housing of a small crew.

MINING EQUIPMENT

The principal machinery constituting the present mine equipment is housed in a frame building 36' x 40' at the portal or entrance to the main cross cut or lower working tunnel. The engines and all the machinery are well installed on concrete foundations, and it is rather pleasing to note that the machinery is cared for by men who are interested in seeing that every piece of equipment performs smoothly except the clock, for which they seem to have no regard. The equipment for the most part consists of:

One-60 Horse Power Foos gasoline engine
One-60 Horse Power Commercial gasoline engine
One-50 K.W. General Electric generator
One-10' x 12' Sullivan compressor complete
One-Electric Hoist at shaft station
One-Electric Sinking pump
One-Electric Light installation complete
Blacksmith and other necessary tools

For drifting or tunnel work the equipment is sufficient for the present needs of the property, but it is not so well adapted for shaft sinking. Power is rather expensive on account of the cost of truck transportation of fuel oil from Wickenburg over the road in its present condition.

The stamp mill is rather antiquated but it is my opinion that it could be overhauled and used to advantage. The equipment consists of five stamps installed. A battery installed for five additional stamps which are on the ground but have never been put in place. There is also a Wilfley concentrating table which is in good condition. There is also a small crusher which is usable. There is too on the ground a 22 horse power Fairbanks-Morse gasoline engine which was used to run the stamp mill, but is now at the Swallow shaft.

MAPS

I have prepared a number of maps to use in connection with this report. While these maps were made hurriedly they are reliable and are made from actual surveys on the ground. All the information was obtained from reliable government information. Each map is designated by a letter as "Map-A" or "Map-B" and they will be so referred to throughout this report. Instead of long descriptions which are tiresome as well as confusing I will depend largely on the maps. I will, therefore, ask that the attached maps, either bound with this report, or in the pocket, be considered a part of the report. Following is a short description of each map:

COPY

"Map-A" shows on a scale of 600 feet to the inch, Sections 6 and 7, Township 8 North, Range 2 West, and the relative position of the fifteen mining locations embracing the group.

The tabulated statement following "Map-A" gives the names of the claims, date of location, date of recording, name of locator and other information relating to the ground.

"Map-B" is a portion of the "Congress Quadrangle" of the United States Geological Survey, and shows accurately the topographical features of the surrounding country as well as the ground embraced within the claims.

"Map-B-1" is a small portion of the "Congress Quadrangle" enlarged six times and shows the contour lines and elevation of the ground embraced, and that to the west. It also shows roads, trails, water courses and some of the surrounding mines.

"Map-C" is a plan showing the underground workings of the "Swallow Shaft" with its different levels, drifts and cross cuts.

"Map-D" is a sectional map of "Map-C" made looking in the direction of the dip of the vein, or looking N. 51 degrees E.

"Map-E" shows the underground works in connection with the "Swallow Shaft" and their relation to the surface. It also shows the location of the "Whim Shaft" and the "Golden Wonder Shaft" and their relation on the surface to the "Swallow Shaft." Also the calculated relation of the "Whim Vein" on the level of the main crosscut tunnel.

"Map-F" shows a plan and section of the "Moon Light Shaft" and tunnel. This shaft is approximately S. 45 degrees E 3350 feet from the "Golden Wonder Shaft."

"Map-G" shows a plan and section over the crosscut tunnel. These maps together with the 30 and 50 foot maps already sent you should make clear the general conditions of the property.

SURFACE DEVELOPMENT

It is very seldom that I see a mining property that has so many shallow surface cuts, shafts and short tunnels. Each of the fifteen claims have from one to ten or more of these small openings and the amazing thing about it is the fact that they all contain more or less ore. Nor are these shallow openings confined to the fifteen claims, but as far as I can determine they prevail in all directions from the group owned by your Company. To describe each of these, or even the more important ones, would require space prohibited in this report. I pass them with the remark that I have never examined a copper property that had such a display of high grade copper ore. Ore if found at practically all places where the veins outcrop to the surface.

DEEPER DEVELOPMENT

The deeper and more important development on the "Whim Vein" consists of the "Golden Wonder Shaft" sunk on the foot wall of the vein for an inclined distance of something near 100 feet. This shaft is on the "Treasure Vault Claim" and in point of elevation is the highest on the property. Elevation of Collar is 3799.67 feet. See upper dump in picture No. 6 station 69 on larger maps.

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DEEPER DEVELOPMENT (Continued)

The next shaft of importance is the "Whim Shaft" on the "Whim Vein" 380 feet southeast of the "Golden Wonder Shaft." This shaft is also on the foot wall and is sunk an inclined distance of 100 feet. Both shafts dip from 55 degrees to 60 degrees, or practically the same as the "Swallow Shaft." I did not go down either of these shafts for the reason that I did not consider the timber in the "Whim Shaft" safe, and the "Golden Wonder" had no timber nor ladders.

While these two shafts are the main workings on the "Whim Vein" the vein is developed on the surface for several hundred feet north of the "Golden Wonder Shaft" and also to the south of the "Whim Shaft".

Also a tunnel from near station 68, follows the vein to the northwest and connects with the "Golden Wonder Shaft". The tunnel is filled near the portal by material washed down the gulch and was not entered by me.

SWALLOW SHAFT

This is a two-compartment inclined shaft sunk on the foot wall of the "Swallow Vein" for an inclined depth of 232.90 feet to the tunnel level, and on September 11th, an additional inclined depth of 57.00 feet below the tunnel, making 289.90 feet on the incline. The dip varies from 68 degrees at the collar for a short distance to 50 degrees, and the average is 56 degrees -- 58' from the collar to the tunnel level. From the tunnel level down the dip is 60 degrees from the horizontal. The total vertical distance from collar to bottom is 243.36 feet. Horizontal distance 154.69 feet. Strike of horizontal distance N. 51 degrees - 07' E. The elevation of the collar is 3600.93 feet.

At a vertical distance of 67.02 feet below the collar a drift has been extended along the course of the vein a total of 319.5 feet in a northerly direction. At a point 204.50 feet from the shaft a crosscut was extended to the west a distance of 72.00 feet to the "Patterson Vein". On this vein a drift was extended to the south 65.00 feet, and a drift to the north 131.00 feet.

From the shaft station a tunnel connects with the surface at a distance of 170 feet southeasterly from the shaft. Elevation of portal, floor level 3531.92, station 55 surface map.

On this level is a total of 881.5 feet of drift and 72.00 feet of crosscut, or 953.30 feet of work.

At a vertical distance of 153.30 feet from the collar of the shaft a drift has been extended to the north a distance of 169.00 feet. At a distance of 83.00 feet from the shaft a crosscut was extended to the east a distance of 62.00 feet. At a point 131.00 feet from the shaft a crosscut was extended westerly a distance of 127.00 feet to a vein. On this vein a drift was extended to the south a distance of 56.50 feet, and to the north a distance of 65.00 feet. The crosscut continues west a distance of 30.00 feet.

On this level a total of 290.50 feet of drift and 219.00 feet of crosscut, or 509.50 feet of work.

The above constitutes the work that was done in the shaft from the surface working as a shaft or incline.

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MAIN WORKING CROSSCUT TUNNEL

After acquiring the property the State Copper Company moved the engines and compressors from the collar of the "Swallow Shaft" to the location selected for the crosscut tunnel. A building was erected to house the equipment, the machinery was installed and the tunnel was driven some 900 feet in a northwesterly direction with the idea that the vein would be reached near where the shaft would be, if extended downward. Work on the tunnel was then suspended until early in the present year. When work was resumed, within a few feet the tunnel broke into the sump of the "Swallow Shaft." The crosscut was then continued along the vein as a drift for a distance of 234.03 feet. When this drift was completed a station was cut at the shaft, the vein crosscut, an electric hoist installed and in August of this year sinking was commenced on a double compartment shaft, it being a continuation of the "Swallow Shaft". At the time I left the property, this shaft was down a distance of 57.00 feet.

In order that this work may be properly understood, let us reverse the order and view it from the standpoint of a working tunnel:

We enter the mine by a diagonal crosscut tunnel 913.21 feet to the shaft station. We then have 61.00 feet of crosscut across the vein at the station, 25 feet of this being in foot wall country. We have 234.03 feet of drift on the vein. A crosscut to the left 20.00 feet and a crosscut to the right 12.00 feet. In other words we have 1242.24 feet of work on the tunnel level.

From this level we have a winze 57.00 feet deep and at 47 feet we have a drift 20 feet and 30 feet of crosscut. Or below the tunnel we have 107.00 feet of work.

THE MOON LIGHT TUNNEL AND SHAFT

The portal of the "Moon Light Tunnel" is about 1600.00 feet to the southeast of the portal of the "Swallow Tunnel". The elevation of the floor at the portal is 3547.01 feet. The tunnel is run in a southwesterly direction a distance of 183.00 feet. It then turns sharply to the left and continues in a southeasterly direction for a distance of 91.00 feet, where a vein is encountered, upon which a short drift was extended. From this drift a raise was put up a short distance and a winze was sunk to a depth of 38.00 feet.

The main tunnel was continued in a southeasterly direction 66.00 feet to a point where the second vein was intersected. On this vein some drifting was done; a small amount of sinking and a connection was made with the shaft to the surface. The shaft is an incline and has a length of about 180 feet. The elevation of the collar being 3690.28 feet. This tunnel, while it does not seem to go any place, is interesting because it shows an immense wide mineralized area, somewhat different from anything else on the property. A rather large stope would indicate that considerable ore had been removed along the course of the shaft and above the tunnel. Total length of tunnel and drifts 502.80 feet. Incline shaft 180.00 feet.

Altogether, I have described 469.90 feet of shaft and 3547.94 feet of tunnel. I would estimate that the small shafts and tunnels on the property would bring the aggregate to about 600.00 feet of shaft work and 4000.00 feet of tunnel.

VEINS AND VEIN SYSTEM

If we take the average strike of the "Swallow Vein" as indicated on the tunnel level at N. 23 degrees - 00' W., then the diagonal crosscut tunnel actually crosscut 720 feet of your ground at right angles to the vein system. Your ground is six claims, or 3600 feet wide. Therefore, it would require the equivalent of five such tunnels to crosscut your ground at right angles to the veins. Including the "Swallow Vein" this tunnel intersected and crossed five separate and distinct veins. I have no basis to

COPY

VEINS AND VEIN SYSTEM (Continued)

to figure, other than to say, that if you intersect five veins in 720 feet, you certainly have reasons to expect that you would intersect 25 veins in 3600 feet. This is not merely a case of arithmetic because on the ground you have the evidence to show that this number of veins might even be increased.

Station 10, near the discovery cut of the "Maud S" claim is on one of the best veins on the property. Station 13, near station 10, is the only transit point where I have ever set up a transit on copper ore in place extending above the surface of the ground. This vein can be traced by ore on the surface for 800 feet. It is entirely east of any work I have described or will cover in this report. Your claims to the northeast, in my opinion have surface showings far more promising than anything near where the deeper work has been done. Further remarks on this subject seems unnecessary at this time.

I have traced and will attempt to describe and locate three of these veins on the surface.

First, in my opinion, is the "Whim Vein" the apex of which is covered by the "Treasure Vault" on the north, then passing in a southeasterly direction through the "Speculator" "Old Homestead" and "Crystal" claims.

One can walk on the foot wall of this vein from a point 400 feet north of the "Golden Wonder Shaft" to station 81 near the boarding house. A distance of 2600 feet. Refer to surface map, 200 feet to the inch, and note the location of transit points No. 84-69-68-67-79-78-77-81. These points represent approximately the foot wall of this vein. They are not merely transit points, but are actual surface exposures of the vein. In at least five cases the actual wall of the vein.

The second is the "Swallow Vein", marked on the north and bya surface exposure at station 57, where the vein comes to the surface and is visible and exposed through to Stations 58-59 and 60. Station 59 represents the collar of the "Swallow Shaft". Station 58 and 60 represents the north and south end of stopes that come to the surface. The vein is again exposed at the portal of the tunnel, Station 56, elevation 3531.92. From this point on south to Stations 30-44 and 39 on the south hill.

The third vein is represented on the surface, only approximately in some cases, by Stations 80-70-52-44-33-20-16-32. This is the No. 4 vein in the "Swallow" or main crosscut tunnel. It is the same vein that the stamp mill building is sitting on. It is exposed by the creek tunnel just south of the mill building, and the immense blowout south of the creek marked by Station 32. It is also one of the "Moon Light" tunnel veins.

Call this a vein system or whatever you wish. It is a mineralized area over 3600 feet wide, and extends beyond your end lines in either direction.

GEOLOGY

The eleven days spent on the property would not permit me to devote much time to a study of geology.

I consider this of the utmost importance. The preceding description of the vein system would indicate a complex geological condition that cannot be worked out in a few days. It is especially important that this subject be gone into very thoroughly before any deep or permanent work is undertaken.

COPY

GEOLOGY (Continued)

For the following reason, if you had no other:

West of, and on the west side of your claims the veins dip to the northeast from 50 degrees to 60 degrees from the horizontal. As you go east on your property the dip becomes greater until they are vertical, or approximately so. Further east, say from one-half to one mile, the veins dip to the northwest. The strike also changes in this respect: Standing at the "Moon Light Shaft" the veins on the west strike, we will say N. 45 degrees W., assume the "Whim Vein" strikes N. 35 degrees W., the "Swallow Vein" N. 25 degrees W., the No. 4 vein in the crosscut tunnel, strikes N. 15 degrees W. The "Bell of The South" vein strikes true north, others to the east would strike to the northeast. In other works, fan-like, with the handle at the "Moon Light" Shaft. This may not be a technical description, but it describes conditions that should not be overlooked.

Getting to the Geology proper: Your country rock is granite, and it is found in all its stages of alteration. I would say that your property is in a schist belt, and that there are local areas of granite. The older volcanic rocks are also represented, and it would require a rather detailed study of the rocks to attempt anything like a correct classification. The veins are well defined, in respect to the foot wall. The hanging wall is a gradual alteration into the country rock. The vein filling is largely hematite iron. The copper is very closely associated with the specular iron. The country is cut by numerous white quartz veins and veinlets; also heavy spar veins up to two feet wide. The copper ore is entirely the oxides and carbonates. There is no trace of a sulphide copper either on the surface or at the deeper workings. The iron oxidation has altered the wall rock, more especially the hanging wall a considerable distance from the vein.

SURFACE ORE

I do not know just what constitutes a real surface showing of copper in Arizona, but there are fifty or more showings that would be considered excellent prospects in copper countries where I have mined. It is impossible for me to conceive of such a showing as you have that would not lead to a deposit of copper with sufficient depth. I do not see that any long discussion in this report on the manner as to how this copper got there would be of any benefit. You have the copper and you have the rocks, or formations that copper is known to occur in Arizona and in other parts of the world, and I know of no reason why it should not continue to depth.

From the general nature of the country, it is my opinion that the effects of erosion and surface waters, the sulphide zone will be deep on this property.

ASSAYS

My sampling of the property is entirely preliminary. I did not deem it necessary to make a complete sampling for the purpose of this report. The samples taken gives me the information I was most anxious to have. I attach hereto duplicate assay certificate which I have had checked and found to be correct.

Sample "L-1" was taken to represent a wide area in the stope in the Moon Light tunnel. To determine if possible to obtain a large tonnage of low grade leaching ore.

"L-2" represents the face of the west drift on the 67 foot level from the Swallow shaft. Taken to determine gold content. This covers three feet across the face.

COPY

ASSAYS (Continued)

"L-3" - End of stope up, north of shaft, 67 foot level, five feet wide. Taken for gold determination.

"L-4" - At station "P" minus 5 feet, drift on tunnel level. Sampled five feet wide.

"L-5" - At station "I" plus 12 feet, drift on tunnel level. Sampled 10 feet wide.

"L-6" - At station "J" minus three feet, drift on tunnel level. Sampled five feet wide.

"L-7" - At station "L" plus, across crosscut, drift on tunnel level. Sampled 12 feet wide.

"L-8" - At station "G" minus 24 feet, foot wall at left of shaft station, tunnel level. Sampled 2 feet wide.

"L-9" - North of station 58, surface. At end of old stope to surface near Swallow shaft. Vein rock in place backfilled below.

"L-10" - Picked gold ore. Along north drift. West vein 153 foot level. Width 2 to 6 inches.

"L-11" - North face of west drift, 153 foot level. Sampled three feet wide across face.

"L-12" - Taken 32 feet back from North face, west drift 153 foot level.

"L-13" - Taken 12 feet south of station "G-1" west drift, 153 foot level.

"L-14" - Picked sample, along tunnel level, covering 100 feet from shaft station.

"L-15" - Ore sorted from drift at bottom of shaft. Taken out September 10th.

Check Assay by Sill & Sill, Los Angeles:

L-10	Gold	1.50	Ounces	$31.00
L-11	Gold	0.18	Ounces	3.72
L-12	Gold	0.10	Ounces	2.06
L-13	Gold	0.64	Ounces	13.23
L-16	Gold	0.64	Ounces	13.23

RECOMMENDATIONS

It is my opinion that the permanent enriched copper zone that will be found immediately above the sulphide zone is deep, and that this zone will not be reached for several hundred feet.

It is my further opinion that you have a good chance of finding several important bodies of the copper oxides and carbonates near the surface, that could be made commercial by a leaching plant on the ground.

Further, that you have very excellent chances for opening large bodies of commercial gold ore near the surface, or above your tunnel level.

COPY

RECOMMENDATIONS (Continued)

I do not consider your vein system explored above the tunnel level. The "Whim Vein" in my opinion, the best vein on the property, is not explored to any extent above the tunnel level. From the standpoint of a gold property, I believe you have veins between the "Swallow Vein" and the "Whim Vein" that are more important than either of these veins.

These points may all be determined very quickly, and with a reasonable amount of money.

A very short crosscut makes it possible to drift on the "Whim Vein" and explore it to a vertical depth of 428 feet, and this depth will do more than the same amount of money spent in sinking, or continuing the present "Swallow Shaft".

I, therefore, recommend that the drift be continued on the "Swallow Vein" until opposite a point corresponding to the "Whim Shaft" be reached, and then a direct crosscut be driven to the "Whim Vein" by the shortest course.

In other words, acquire depth by extending your present working tunnel into "Swallow Mountain" rather than by sinking. Your veins extend into and through "Swallow Mountain" and it is possible to acquire over 1000 feet on the dip of your veins by this means.

This, I think, should be done in preference to sinking at the present time. I fail to see any change in the shaft that would warrant sinking to a depth of less than 600 feet.

I would even prefer to see the same amount of money spent in diamond drill work below the tunnel level. In fact, I would very strongly urge a considerable amount of diamond drilling before beginning the sinking of a permanent working shaft.

CONCLUSIONS

I arrived on your property on September 1st, this year, and spent eleven days on the ground, and have devoted my entire attention to the work from that date.

I would not feel that I had done justice to your property without acknowledging the kindly treatment received at the hands of Mr. P. L. Woodman. A man who has spent years in the service of the mining industry in Arizona. A man who spent twenty-three and a half years as underground superintendent of one of the greatest copper mines the world has ever known. A man who knows every district and camp, mine and prospect, in the State. His judgment alone should be sufficient in the case of the State Copper Company's property, and as an Engineer, it would be perfectly agreeable to me to erase all that I have written and merely say: "Give Mr. Woodman what he needs and let him make another Copper Queen. Yes, another Bisbee, if you please."

I do not necessarily mean that you should give Mr. Woodman, two or three Million Dollars, to do this work with. In fact, I think his better judgment would dictate another course.

You always have the South African method of developing a mining property. That is, to draw the diagonal lines covering your property boundaries, then sink a shaft two thousand feet deep where they intersect, and if IT is not there sink another shaft.

COPY

CONCLUSIONS (Continued)

Before suggesting that method or procedure, I would want to see your lines extended to cover four square miles of country. You have other and better means of developing your property which may be worked out by your Company without the expenditure of a stupendous sum of money.

First, you should give attention to a policy of continuing work along modest lines until you are warranted in the installation of a reasonable sized plant, sufficient to take care of the tonnage that I believe could be developed above your present tunnel. This could be done without any mill or treatment plant until such time as warranted.

I have in mind and propose the following course which I believe can be worked out to advantage and will involve but a very modest sum of money.

You have on your property at the present time ten stamps. Not the most modern machinery in any sense of the word, and not what I would buy and haul in to the property, but they are on the ground and they are paid for. In fact, you have engine, crusher, concentrating table, stamps and battery and mill building.

The mill building could easily be moved to a location near the portal of the present tunnel. To this mill you could bring the ore from any part of the "Whim" or "Swallow" veins at a minimum cost. You could haul ore from any other parts of the property by truck at a small cost per ton.

In connection with this small mill I would install a small copper leaching plant to take care of the copper ore that is now available, and that will be made available as development work progresses.

In considering this plan keep in mind that this property has been worked by a prospector without financial means; that it has been high graded and worked by leasers and chloriders, and the tonnage of ore that is immediately available is limited.

Also keep in mind that it was formerly worked by shaft, and that hoisting and pumping of water, and hauling the ore off the hill from the different shafts and tunnels was expensive, and interfered with the net returns. Whereas, in its present condition with a working tunnel, making a vast tonnage of ore available at much less expense, conditions are more favorable.

I do not believe that you have large bodies of thirty or forty dollar ore, but I do believe you have and can very easily and cheaply develop large bodies of ten or twelve Dollar ore which should be mined and milled at a good profit to your Company, and should furnish the funds necessary to carry on your work of developing another "Copper Queen."

This plan of proceedure as outlined above calls for the expenditure of a very small amount of money, and the expenditure would not be a loss regardless of what the future policy of the mine might be. The mill could be used as a small pilot mill, and the cost is justified if used for no other purpose than as a means of sampling the mine.

This is a preliminary report in that I would require at least six months more time to spend on the ground before making a final report, preparatory to advising you, provided, you cared to proceed with this property in a large way.

My limited knowledge of what constitutes a sufficient showin in Arizona, prompts me to proceed slowly, and yet I do not hesitate to cheerfully recommend the expenditure of the sums necessary to carry out the work I have just outlined.

COPY

CONCLUSIONS (Continued)

For the larger expenditures, I ask for more time to consider, and would likely ask that I be given the assistance of other talent.

Respectfully submitted,

(signed) HENRY M. LANCASTER

Signed in Triplicate Oct. 22, 1925. Mining Engineer.

THE SWALLOW MINE. Feb. 1959.

Location:

The Swallow Mine is located about twenty-five miles easterly from Wickenburg, 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 shistoze 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 fourty 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 fourty 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 and 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 it was thought 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 peir 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. I.

A second tangent survey was made as a check, going due west from Sta. I 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 inaccessable, 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.

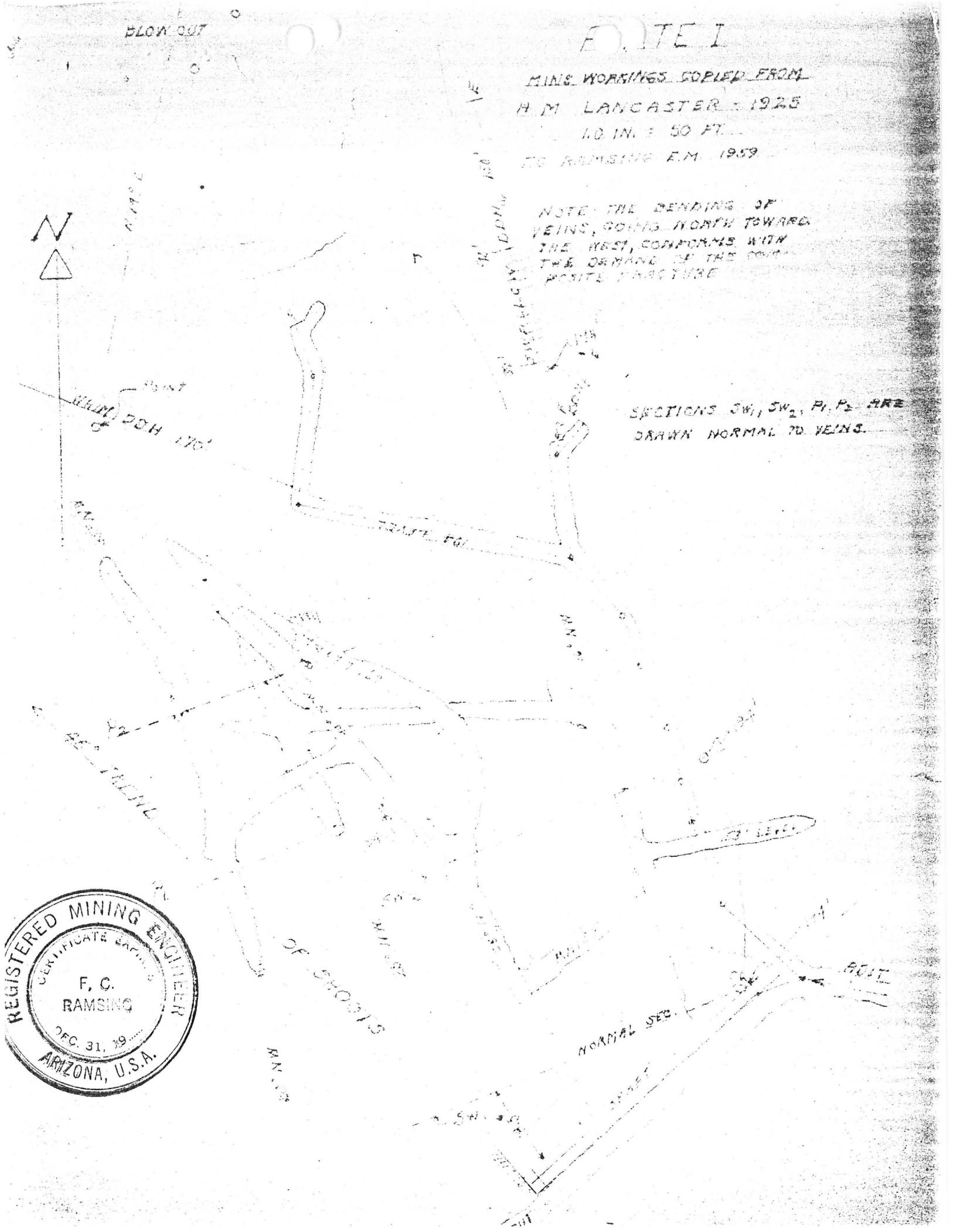

BLOW OUT
ROUTE I
MINE WORKINGS COPIED FROM
H. M. LANCASTER - 1925
1.0 IN. = 50 FT.
TO RAMSING E.M. 1959
NOTE: THE BENDING OF VEINS, GOING NORTH TOWARD THE WEST, CONFORMS WITH THE DRAG OF THE POSTE FAULTURE
SECTIONS SW1, SW2, P1, P2 ARE DRAWN NORMAL TO VEINS.
N
ROUTE
NORMAL SEC.
REGISTERED MINING ENGINEER
CERTIFICATE EXPIRES
F. C. RAMSING
DEC. 31, 19
ARIZONA, U.S.A.

PLATE 2

SWALLOW MINE VEIN DIPS.

DETERMINED BY SECTIONS

SEE PLATE V

by F. C. RAMSING E.M. 1959.

10 IN. = 50 FT.

LOOKING WITH THE VEINS.

SHAFT COLLAR ELEVATION

167' LEVEL

153'

192' EAST LEVEL

PRATT FAULT

SWALLOW

P_1 P_2

SW_1 SW_2

65° 63°

65° 47°

REGISTERED MINING ENGINEER
CERTIFICATE
F. C. RAMSING
DEC. 31, 19
ARIZONA, U.S.A.

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.

Wilbur E. Sweet, Jr.

CYPRUS

INTRODUCTION

Purpose of Report

This report was made for Mr. Robert C. Bogart, General Manager, Cyprus Bagdad Copper Company, at the request of Mr. P. K. Medhi, Superintendent of Exploration-Development, Chief Geologist. The property was submitted by Mr. Grover Rubash of Yarnell, Arizona, acting as the owner's agent. Mr. Wilbur E. Sweet, Jr., Ore Control Engineer, examined the submitted material and, based on the recommendation that an investigation of the property be made to determine if a significant Cu-Su mineralized zone existed, examined the property on November 1 and 2, 1975.

Source of Information

Inadequate base maps are available for the area, and no government reports were available. Several engineer's reports, maps, and smelter returns utilized were made available by Mr. Grover Rubash.

ACCESS AND LOCATION

The Swallow Mine is located in Sections 6 and 7, T 8 N, R 2 W (G & SRM), Castle Creek Mining District, Yavapai County, Arizona, about eighteen miles by dirt road from Wickenburg, Arizona.

CLIMATE AND TOPOGRAPHY

The mine is located in a typical semi-arid mountain desert environment on the southeast slope of Swallow Mountain. Topographic relief is about 600 feet northwest along the strike of the vein from the wash running east into the southeastward-flowing Castle Creek from the property, which dissects the district. Elevation ranges from 4000 to 2500 feet.

FACILITIES

Supplies are brought in by vehicle from Wickenburg, and a small amount of water is available on the property. Power is provided by a small electric generator, and three small buildings are on the property in addition to the old blacksmith shop at the main tunnel. The property is littered with old, obsolete mining and milling equipment. No timber is available locally.

HISTORY AND PRODUCTION

The Swallow Mine has produced approximately 8,300 tons of ore containing 2,640 ounces of gold and 3,800,000 pounds of copper between 1915-1916 and 1937-1939. Production was from the oxidized and residually enriched portions of the Swallow vein. The Castle Creek District had a total recorded production of $350,000 in 1936, and Lindgren estimated that about $500,000 was the maximum production (gold).

OWNERSHIP

The property is owned by Mr. Stephen F. Wagner, 1637 East Turney, Phoenix, Arizona (265-9527) and Mr. Charles Brown (address unknown). There are two patented claims in the group, and reportedly several unpatented claims are held, although the validity of these is questionable as they have not been surveyed and the location and corner monuments are in disrepair or are nonexistant. The only valid lode claims are along the strike of the Swallow vein. No information is available on any outstanding liens or mortgages, leases, or previous contracts, litigation, etc.

TERMS OF SUBMITTAL

No purchase or lease terms were discussed, as the property was examined to determine if any further interest or a complete follow up examination would be necessary.

GENERAL GEOLOGY AND ORE DEPOSITS

From the Arizona Bureau of Mines Bulletin 137, revised 1967: "This region is made up mainly of Yavapai schist and Bradshaw granite, locally intruded by dikes of diorite and rhyolite-porphyry and largely mantled on the south by volcanic rocks. The ore deposits, which occur only in the Pre-Cambrian rocks, have been grouped by Lindgren as follows: Pre-Cambrian gold-quartz veins,

represented by the Golden Aster or Lehman Mine; post-Tertiary gold-copper veins, exemplified by the Swallow, Whipsaw, Jones, and Copperopolis properties; and lead veins."

The Swallow Mine is along a mineralized reverse fault zone striking N45W 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 xenoliths of Yavapai schist to the south. Primary mineralization was probably hematite with regional metamorphism converting the hematite to specularite. The gold-copper values were probably introduced during a period of subsequent faulting and brecciation of the Swallow vein. Subsequent complementary transverse faulting displaced the vein into at least seven or eight segments, giving the area the appearance of a large mineralized shear zone with several paralleling veins. Subsequent development and prospecting based on parallel veins resulted in the expenditure of considerable work by the mine owners. Fairly high gold values (0.25 oz/ton average) in the oxidized zone are as the result of residual enrichment. Ore at depth averages 0.09 oz/ton. Vein width rarely exceeds four feet, and along the vein, supergene copper has been noted to occur and resulted in considerable production.

DEVELOPMENT

Development of the Swallow Mine has been limited to an access tunnel on the3800 foot level and numerous shafts and adits on the upper levels that were used to stope-out the oxidized ore that contained high grade gold values. The

attached map that accompanies this report was compiled from old reports and assays.

SAMPLING

The underground workings were sampled by previous engineers and the assays are noted on the mine map. A program of geochemical sampling was conducted to determine if any widespread mineralization was evident with negative results. The geochemical assays are listed in this report on page , and a sketch map shows the relative sample locations to the transverse faults that displaced the Swallow vein.

MAPPING

The available mine map is good, but a transit-stadia or plane table surface geology map would be invaluable for future development of the mine by a small operator. No small scale maps are available of the area. Difficulty was experienced during the examination due to the lack of a topographic base map.

ORE RESERVES

There are no proven or indicated ore reserves; however, possible reserves based on geologic inference may exist on the 3800 level northwesterly of the main shaft station. No tonnage or grade estimate can be made without a complete surface geology map keyed to the 3800 foot level.

MINING METHODS

The property is currently being ineffectively prospected by open-cutting with the use of a gasoline powered slusher by the caretaker. If reopened, it would be necessary to extend a development drift under the old workings to the northwest on the 3800 foot level and mine the vein using a cut and fill method using gob or waste fill in the stopes. Previous development on the 3800 level was to the southwest and did not take into account the fault displacement on the vein.

PROCESSING

The ore may be amenable to a modified cyanide leaching process, although the copper in the ore will interfere and retard the precipitation of the gold, and will have to be precipitated first. No milling and processing costs or a flow sheet indicating potential recovery is available. Typical mill recovery in 1938 was:

Concentrate	1.00, 1.08 oz Au/ton
Tails	0.03 oz Au/ton
Heads	0.10 oz Au/ton
Recovery	70% Indicated

ECONOMIC SITUATION

The market price for gold is currently about $145.00/oz, but the high freight rates and lack of a nearby smelter make shipping ore uneconomic at this time.

APPENDIX

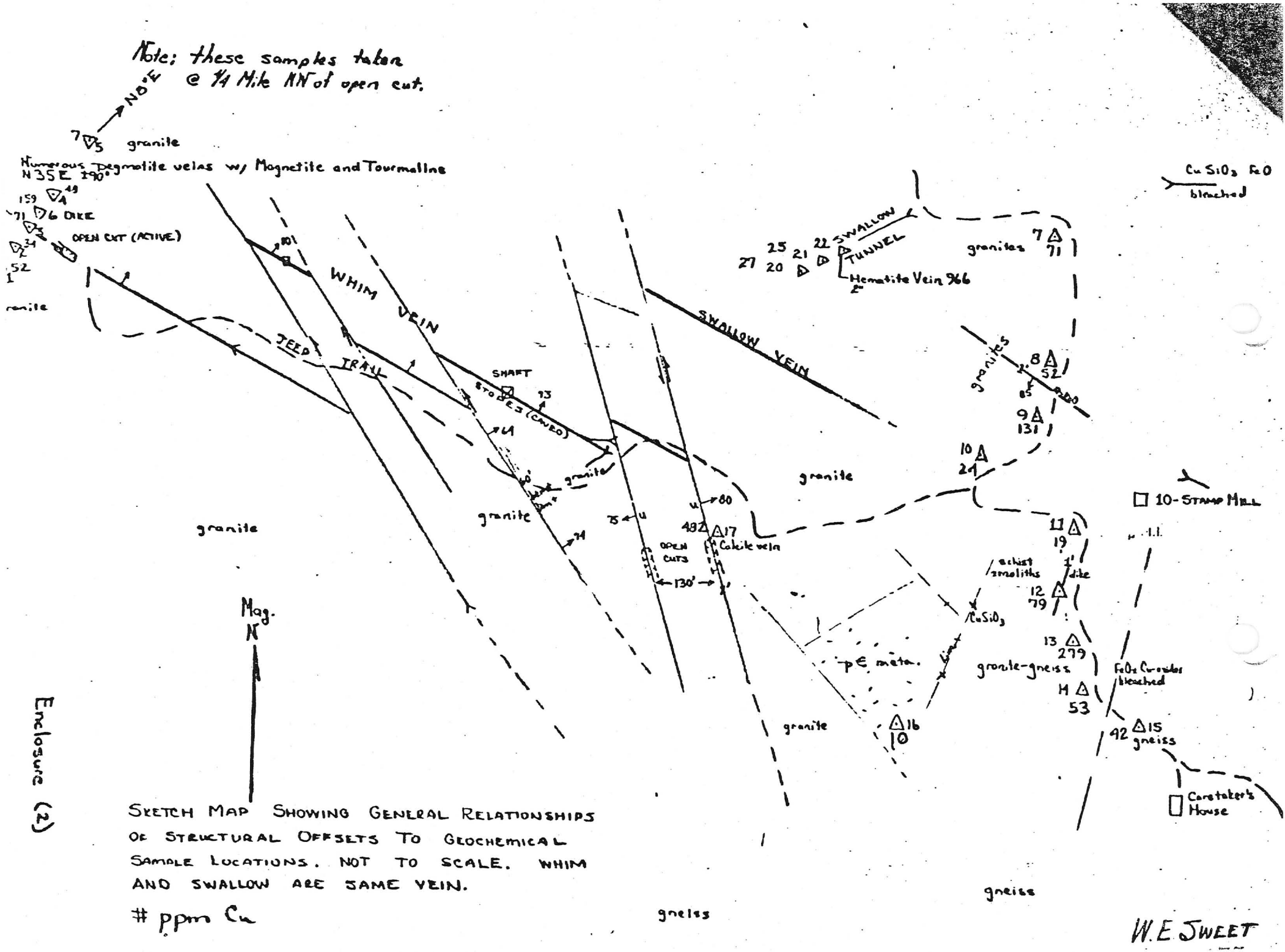
The following are attached to this report:

(1) Underground Mine Map Showing Previous Assays

(2) Geochemical Map

(3) Geochemical Assay Sheet

(4) Rough Location Map


Note: these samples taken @ ¼ Mile NW of open cut.
NO. 4
7 V5 granite
Numerous Pegmatite veins w/ Magnetite and Tourmaline
N35E 190°
159 V4 49
71 V6 DIKE
OPEN CUT (ACTIVE)
52
granite
WHIM VEIN
JEEP TRAIL
SHAFT
STOPES (CAVED)
granite
granite
granite
SWALLOW VEIN
SWALLOW TUNNEL
Hematite Vein 966
25 21 22
27 20
granites
7 71
granites
8 52
9 131
10 21
granite
CuSiO3 FeO bleached
10-STAMP MILL
11 19
1' dike
schist xenoliths
12 79
CuSiO3
13 279
granite-gneiss
Fe2O3 Crusher bleached
14 53
42 15 gneiss
Caretaker's House
granite
16 10
p€ meta.
granite
gneiss
gneiss
482 17 Calcite vein
OPEN CUTS
130'
Mag. N
SKETCH MAP SHOWING GENERAL RELATIONSHIPS OF STRUCTURAL OFFSETS TO GEOCHEMICAL SAMPLE LOCATIONS. NOT TO SCALE. WHIM AND SWALLOW ARE SAME VEIN.
ppm Cu
W.E SWEET

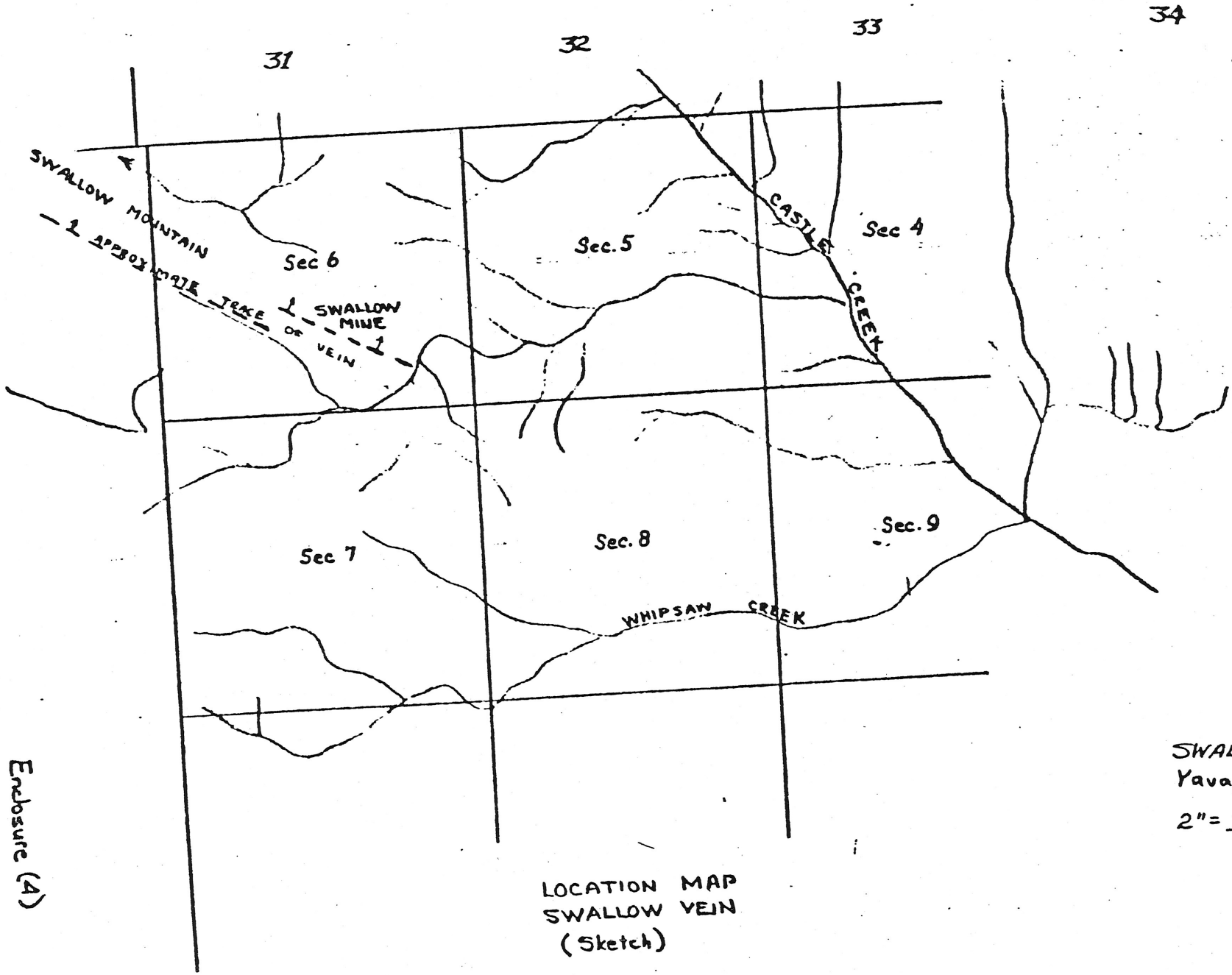
Enclosure (2)

ASSAY SHEET

GEOCHEMICAL SURVEY - SWALLOW MINE

Sample No.	Values in p.p.m.					Rock Type
	Cu	Mo	Zn	Pb	Ag	
1	52	<2	24	7	<2	gr
2	34	<2	20	2	<2	gr
3	71	<2	6	3	<2	vein zone
4	48	<2	26	5	<2	gr
5	7	<2	28	4	<2	gr
6	159	<2	35	14	<2	mafic dike
7	71	<2	15	5	<2	gr
8	52	<2	14	3	<2	gr
9	131	<2	17	4	<2	gr
10	24	<2	24	5	<2	gr
11	19	<2	33	3	<2	gr-gn
12	79	<2	49	8	<2	mafic dike
13	279	<2	40	7	<2	gn
14	53	<2	10	3	<2	gn
15	42	<2	56	7	<2	gn
16	10	<2	12	4	<2	pC meta.
17	482	<2	21	36	2	Calcite vein
20	27	<2	18	4	<2	gr
21	25	<2	54	6	<2	gr
22	966	<2	15	8	6	FeO vein

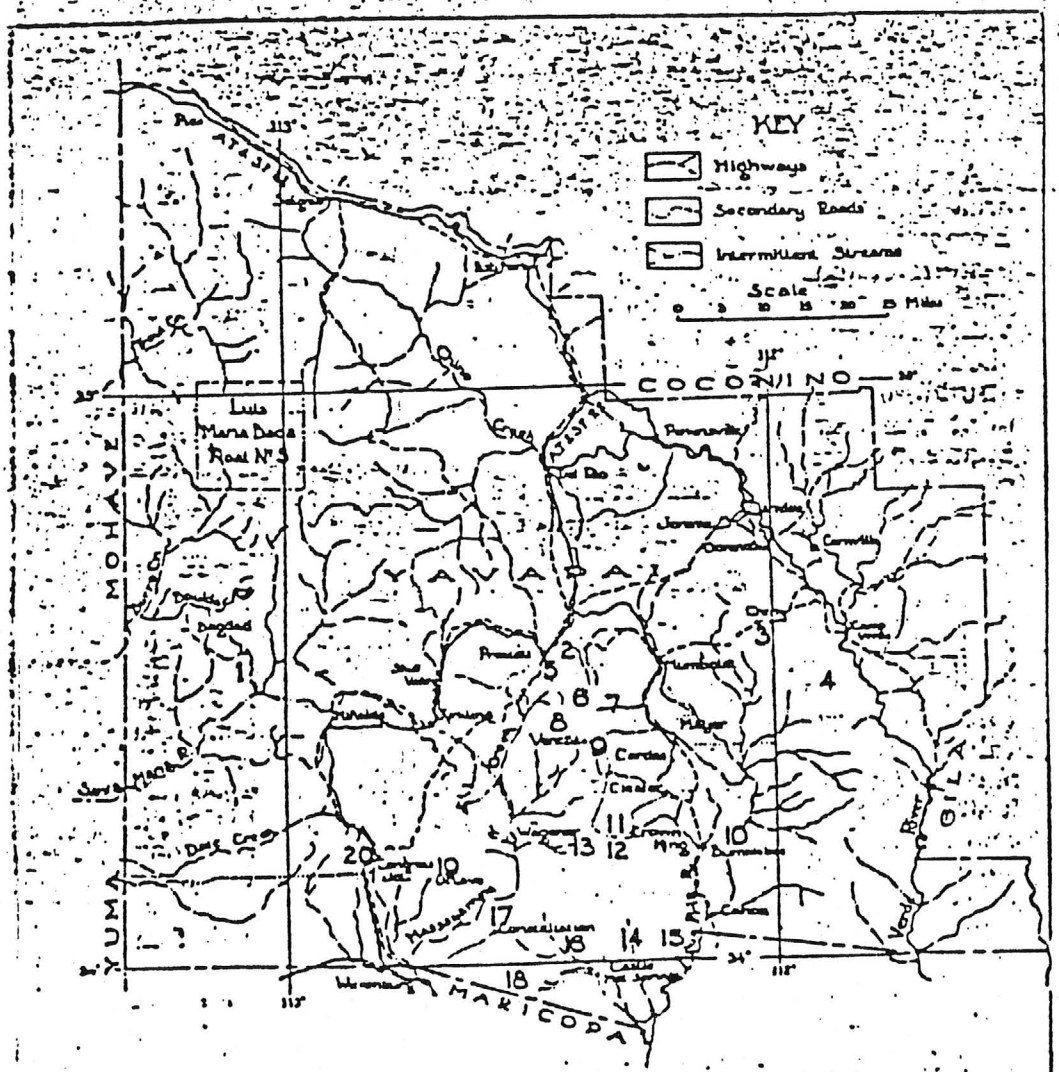
Enclosure (3)



LOCATION MAP
SWALLOW VEIN
(Sketch)

SWALLOW MINE
Yavapai County, A
2" = 1 MILE

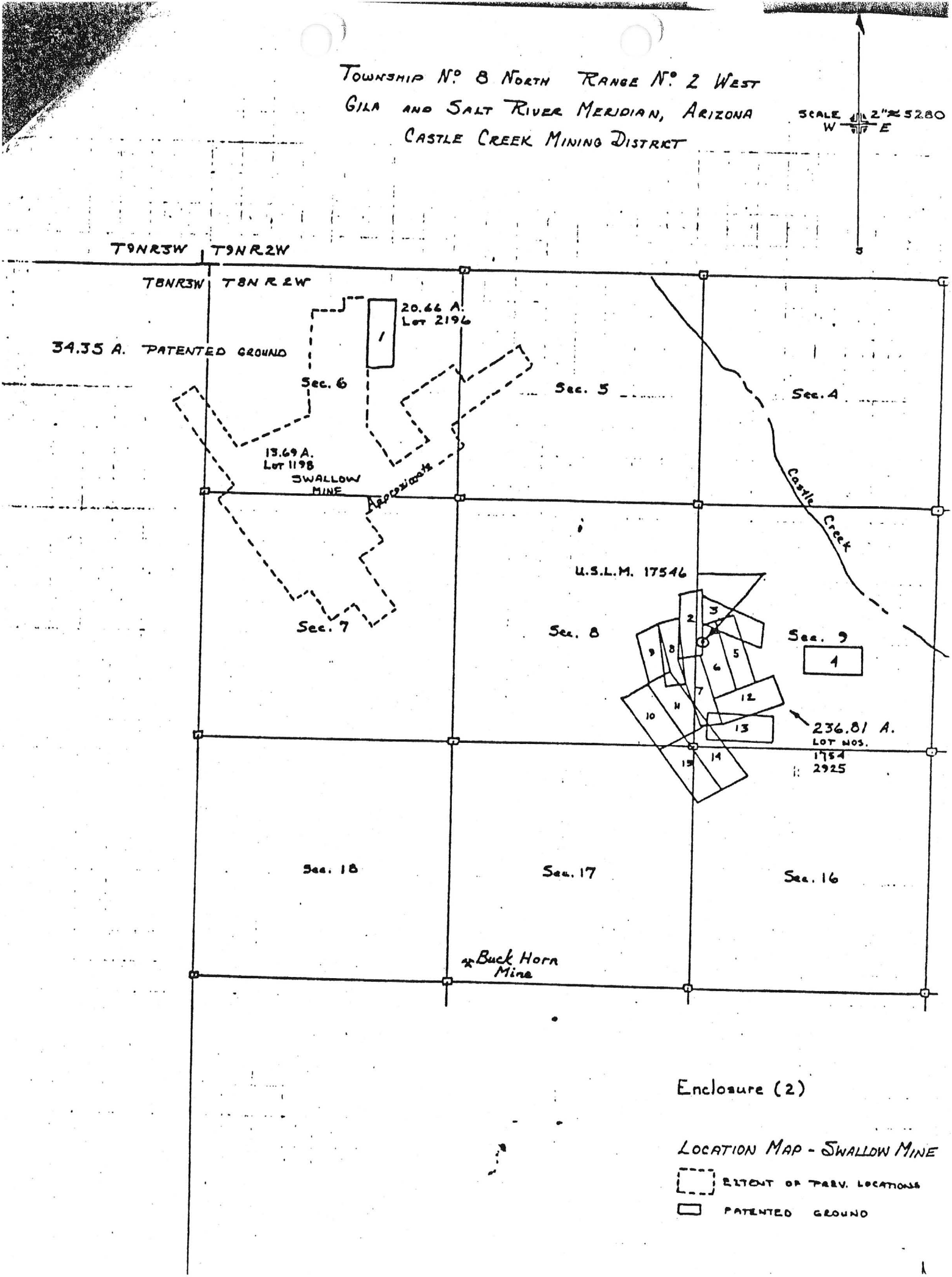
Enclosure (4)



—Map showing location of lode gold districts in Yavapai County.

1	Eureka	11	Peck, Bradshaw
2	Prescott	12	Pine Grove, Tiger
3	Cherry Creek	13	Minnehaha
4	Squaw Peak	14	Humbug
5	Groom Creek	15	Tip Top
6	Walker	16	Castle Creek
7	Bigbug	17	Black Rock
8	Hassayampa	18	White Picacho
9	Turkey Creek	19	Weaver
10	Black Canyon	20	Martinez

Enclosure (1)


TOWNSHIP Nº 8 NORTH RANGE Nº 2 WEST
GILA AND SALT RIVER MERIDIAN, ARIZONA
CASTLE CREEK MINING DISTRICT
SCALE 1" = 5280
W
E
S
T9NR3W
T9NR2W
T8NR3W
T8NR2W
34.35 A. PATENTED GROUND
20.66 A.
LOT 2196
1
Sec. 6
Sec. 5
Sec. 4
13.69 A.
LOT 1198
SWALLOW
MINE
Approximate
Castle Creek
U.S.L.M. 17546
Sec. 7
Sec. 8
Sec. 9
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
236.81 A.
LOT NOS.
1754
2925
Sec. 18
Sec. 17
Sec. 16
Buck Horn
Mine
Enclosure (2)
LOCATION MAP - SWALLOW MINE
EXTENT OF PREV. LOCATIONS
PATENTED GROUND

COPY

DOUBLER MINES

The property known as the Swallow Group of mines located in Castle Creek mining district, Yavapai County, Arizona, was located by Gideon Roberts, a prospector from Trinidad, Colorado, about the year of 1890.

At that time the entire Group consisted of 32 Quartz claims, and the principal mine was named the George R. Swallow after the man who was at that time the Treasurer of the State of Colorado.

This mine had a heavy cropping and was a stony ledge of Iron and Phorphyry Ore rich in free gold.

The entire group was sold for the sum of ($20,000) Twenty Thousand Dollars cash to William E. Gray, J. N. Large, and Judge Strong of Denver, Colorado. They repaired a five stamp mill three miles distant on Castle Creek, added five more stamps, and commenced operation. At this time I was hired as an amalgamator to run one shift at the mill. The first 1,000 tons we ran plated ($60.00) Sixty Dollars per ton on the plates. We were forced to hang up the stamps every six hours and clean the plates in order to keep the amalgamator from scuffing and losing the gold.

The deeper we went down on the ledge the more leached the ore became and carrying lower values in gold though the ledge became wider and the filling softer, composed of a combination of Iron and Porphyry with a strong showing of Copper.

After running the mill for about two years it was closed down and I took charge of the work at the mine, sinking the shaft to water. I have forgotten the exact depth but I believe it was about two hundred and twenty-five feet.

At this time an engineer from Denver by the name of Berlingame made an examination and sampled the mine. I remember his assays across the ledge at water level gave a return of($21.00) Twenty-One Dollars in gold.

About this time I quit the employment of the Company. I understood that Berlingame did not take over the property because the Company asked for too large a payment in cash to start with.

Afterwards the property was leased to a man by the name of Large, a nephew of J. N. Large, one of the original owners. He undertook to sink the shaft deeper but had too small a pump and could not handle the flow of water. He took out and shipped considerable ore from the Moonlight Mine lying south of Buzzard Roost Gulch, a south extension of the Swallow Mine, that ran high in copper and ($22.00) in Gold.

After Large returned to Denver, the property fell into the hands of John Doubler, who moved a five-stamp mill to the property and worked out considerable gold from different parts of the property, and I have understood that while he was in control that a long tunnel was run to connect with the ledge below the bottom of the shaft, but they gained no great depth and the tunnel was a failure as far as developing the ledge.

My opinion of the mine has always been that at a depth there would be found large bodies of copper ore carrying high values in gold and silver. In my judgment the vein is leached to quite a depth. This also was the opinion of Burlingame, the Denver expert, as his plan of future work was to sink the shaft to the 800 foot level or until he reached the sulphide zone, then crosscut and drift N and S on the ledge especially North under the Phorphyry dike or cropping.

The formation encasing the ledge is a disintegrated granite. The ledge is from 10 to 15 feet wide with two slick walls with a clay gouge on each wall. Wherever there was one of these gouges, it ran from $50.00 to $60.00 in gold but was hard to mill as it was inclined to form in flakes in the battery and had to be mixed with rock or quartz to cause it to disintegrate.

This is the history and my observation of the property to the best of my knowledge and recollection.

Respectfully submitted,

(Signed) EMERY W. FISHER

ARIZONA TESTING LABORATORIES

A DIVISION OF CLAUDE E. McLEAN & SON LABORATORIES, INC.
817 WEST MADISON ST. PHOENIX, ARIZONA 85007 PHONE 254-6181

For Mr. Charlie Brown
11067 Pleasant Valley Road
Sun City, Arizona 85351

Date September 6, 1974

Sample of Ore

Received: 9-4-74

Submitted by: same

ASSAY CERTIFICATE

Gold figured at $ 200.00 per ounce

Silver figured at $ 5.00 per ounce

LAB. NO.	IDENTIFICATION	GOLD		SILVER		PERCENTAGES	
		OZ. PER TON	VALUE	OZ. PER TON	VALUE		
7671	No Mark	2.75	$550.00				

Respectfully submitted,

ARIZONA TESTING LABORATORIES

Claude E. McLean, Jr.

COPY OF ORE SETTLEMENT SHEETS

3-29-37

El Paso, Texas Smelter Lot #841

Elements	Assay per Ton 2000 lbs.	Net Paid For	Rate	Amount per Ton
Gold	0.485 oz.	0.485 oz.	$32.31825	$15.67
Silver	0.1 oz.			
Lead				
Copper	7.65 %	137.75 lbs.	0.134	$18.13
				$34.13

Paid on 27.1575 dry tons Total less Smelter Charges $831.83

10-8-37

Hayden, Arizona Smelter Lot #412

Elements	Assay per Ton 2000 lbs.	Net Paid For	Rate	Amount per Ton
Gold	0.32 oz.	0.32 oz.	$32.31825	$10.34
Silver	0.12 oz.			
Copper	2.95 %	48.45 lbs.	0.09692	$ 4.70
				$15.04

Paid on 54.847 dry tons Total less Smelter Charges $619.22

10-30-37

Hayden, Arizona Smelter Lot #489

Elements	Assay per Ton 2000 lbs.	Net Paid For	Rate	Amount per Ton
Gold	0.175 oz.	0.175 oz.	$32.31825	$ 5.66
Silver	0.12 oz.			
Copper	3.72 %	63.08 lbs.	0.0915	$ 5.77
				$11.43

Paid on 55.6875 dry tons Total less Smelter Charges $433.81

2-18-39

El Paso, Texas Smelter Lot #386

Elements	Assay per Ton 2000 lbs.	Net Paid For	Rate	Amount per Ton
Gold	0.57 oz.	0.57 oz.	$32.31825	$18.42
Silver	0.1 oz.	0.095 oz.	0.64125	$ 0.06
Lead				
Copper	12.10 %	222.3 lbs.	0.082275	$18.29
				$36.77

Paid on 12.49 dry tons Total less Smelter Charges $391.81

Fe 9.8

Alumina 3.2

150.18 .32 Au 0.11 Ag 4.85% Copper

Charles C. Brown
11067 Pleasant Valley Rd
Sun City, Az
85351

IRON KING ASSAY OFFICE

ASSAY CERTIFICATE

BOX 247 — PHONE 632-7410
HUMBOLDT, ARIZONA 86329

REGISTERED ASSAYER
CERTIFICATE NO. 12078
WALTER GLUCK
STATE OF ARIZONA, U.S.A.

ASSAY MADE FOR
GROVER RUBASH
P.O. Box 2175
Wickenburg, Az. 85358

May 27, 1979

Ref no.	DESCRIPTION	oz/ton Au	oz/ton Ag		% Fe	% Pb	% Zn	% Cu
95-24-1	Top road, 1st run	.116	0.06					
95-24-2	Top Hole, "	.100	Tr					
95-24-3	East Pile "	.122	0.06					
95-24-4	West pile "	.144	Tr					
95-24-5	Top Road, Special run	.166	0.61					
95-24-6	Top Hole " "	.160	Tr					
95-24-7	East Pile " "	.614	Tr					
95-24-8	West Pile " "	.572	Tr					

CHARGES $58.00

ASSAYER

ATI
AMERICAN TESTING INSTITUTE

6695 CONVOY COURT SAN DIEGO, CALIFORNIA 92111 (714) 292-4181

DATE: April 1, 1980

A.T.I. NO.: 0-3-0492

Quasar Enterprises
623 Aldwich
El Cajon CA 92020

Report to: George Azar

LABORATORY TEST REPORT

	Gold	Silver	Copper		
#1 Bucket of ore	0.233 troy oz./ton	0.175 troy oz./ton	170 troy oz./ton	9.69 lbs/ton	
#2 Large rock with blue streaks	0.408 troy oz./ton	0.146 troy oz./ton	484 troy oz./ton	27.57 lbs/ton	

Factor

troy oz/ton × 0.057 = lbs/ton

Respectfully submitted,

Douglas Bassett

Douglas Bassett
Director of Chemistry

AMERICAN TESTING INSTITUTE

8995 CONVOY COURT SAN DIEGO, CALIFORNIA 92111 (714) 292-4181

DATE: April 15, 1980

A.T.I. NO.: 0-4-0569

Quazar
623 Aldwych St.
El Cajon, Ca 92020

Report to: John Murray

Report on: Gold Rock #1 - #12

LABORATORY TEST REPORT

	Gold	Silver	Copper		
Gold Rock	12 ppm	1 ppm	96 ppm		
troy oz./ton	.350	.029	2.80		

Respectfully submitted,

Douglas Bassett
Director of Chemistry

IRON KING ASSAY OFFICE

ASSAY CERTIFICATE

BOX 247 — PHONE 632-7410
HUMBOLDT, ARIZONA 86329

REGISTERED ASSAYER
CERTIFICATE NO.
2978
WALTER G.
STATLER
Date Signed
ARIZONA, U.S.A.

ASSAY MADE FOR

VERNON PERRY
c/o Grover Rubash
P.O. Box 2175
Wickenburg, Ariz. 85358

June 25, 2979

SAMPLE DESCRIPTION		Gold oz/ton	Silver oz/ton			
Dan, Heads	#4	.438	0.22			
"	#5	.528	0.17			
"	#6	.140	0.06			
"	#7	.138	0.50			
"	#8	.140	0.06			
"	#9	.162	0.30			
"	#10	.114	0.19			
"	#11	.124	0.08			
Dan, Tails	.~~&&X~~ #4	.066	0.10			
"	#5	.074	0.13			
"	#6	.107	0.08			
"	#7	.063	0.14			
"	#8	.063	0.08			
"	#9	.090	0.13			
"	#10	.115	0.10			
"	#11	.052	0.10			
"	#12	.026	Tr			
Dan (N Solns.	#4	.045	Tr			
"	#5	.028	0.02			
"	#6	.032	2.48			
"	#7	.032	0.55			
"	#8	.030	0.03			
"	#9	.091	0.10			

Average .223

CHARGES_____

ASSAYER_____

May 27, 1957

SWALLOW MINE
Formerly "DOBLER"

YAVAPAI COUNTY

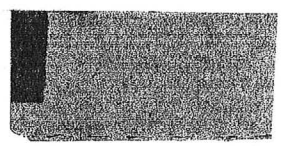
This property inactive.

MARK GRIVILL

SEE: A. B. M. BULL. #137, p. 62-(8-15-34)

U.S.G.S. Bulletin # 782 pp 184-85,25,28,48,
Plate 15, 183

Report of the Governor of Arizona 1899
Page 102



STATE COPPER CO.

Cu

Yavapai 13 - 7 S 6 & 7, T 8 N, R 2 W

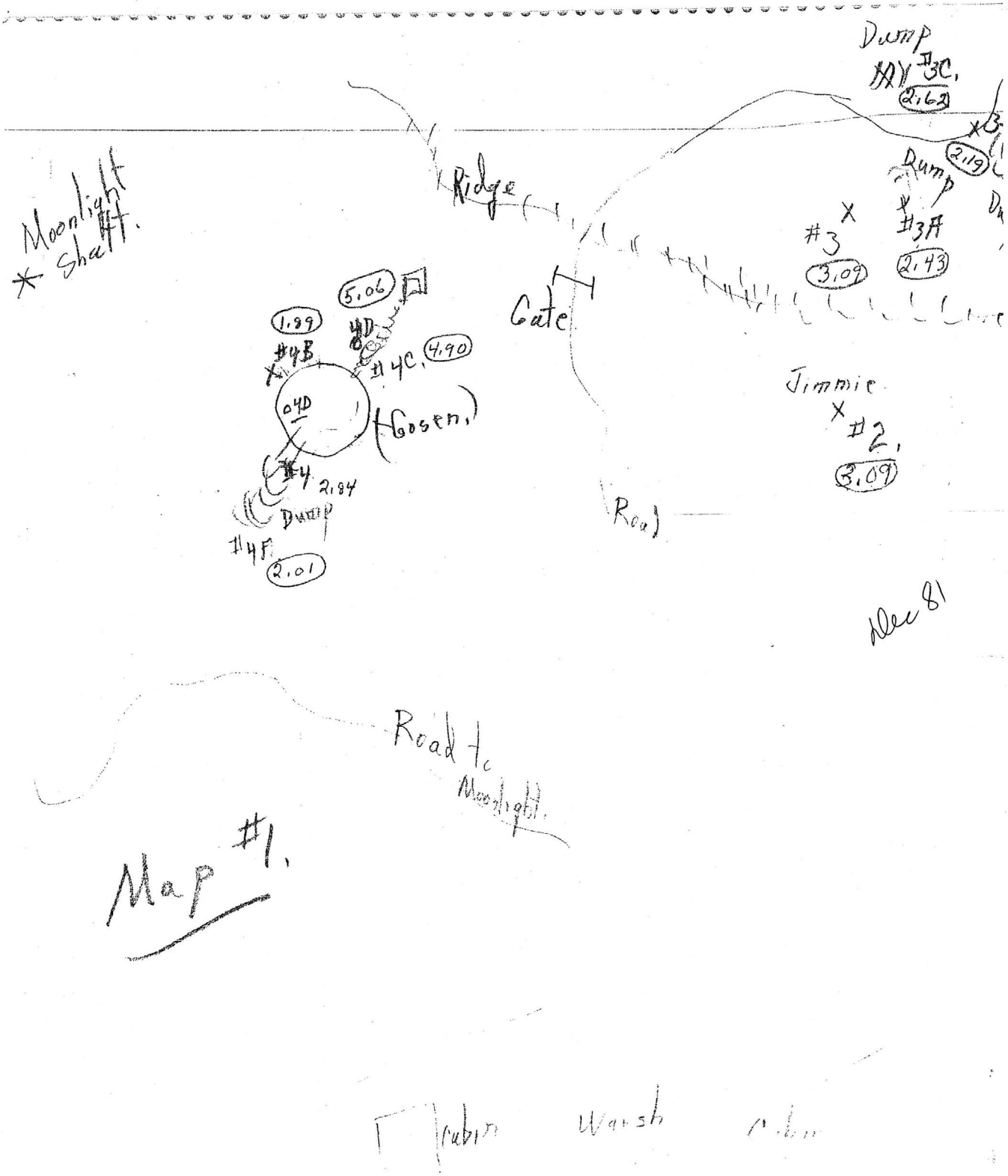
State Copper Co. '42

3/8/47

Pay Dirt Min. g Company

Incorporated May 1, 1946. Burnet E. Marks, Phoenix Attorney, is Statutory Agent. William Fox of San Francisco, President and Edward Ornstein, Secretary, Heard Bldg., Phoenix. In good corporate standing.

Asked Tibbles & wrote up
3-8-47


Dump
#3C.
2.62
Moonlight
Shaft.
Ridge
#3
3.09
Dump
#3A
2.43
5.06
1.99
#4B
#4C.
4.90
Gate
(Gosen)
Jimmie
#2.
3.09
#4
2.84
Dump
#4A.
2.01
Road
Dec 81
Road to
Moonlight.
Map #1.
Tubin
Wash

Map #1

#2 - Jimmie - Blowout 20ft across - face - Below Cate West of Road.

#3 - South extension of Jimmie. - Over saddle South west of Cate above road. 25ft blow out -

3-A - Dump West side of blow out (Crovey #22)

3-B - ✓ N-W - 100ft from #3 on Cross ledge Est #3A & 3B - 1,000 Tons.

3-C. Dump - 100ft south #3 - Est 200 Tons.

#4 - Goosen Blow-out - above Road 500 ft west of Moonlight shaft.

4-A. - Dump at Cosen Blow out.

4-B - South side of Cosen blow out.

4-C - N-W - Corner of Cosen blow out - Check for Sinabar (Gold & silver.)

4 D - Picked rock to check Iron & silver (For Information only)

Dec 81

Map #2.

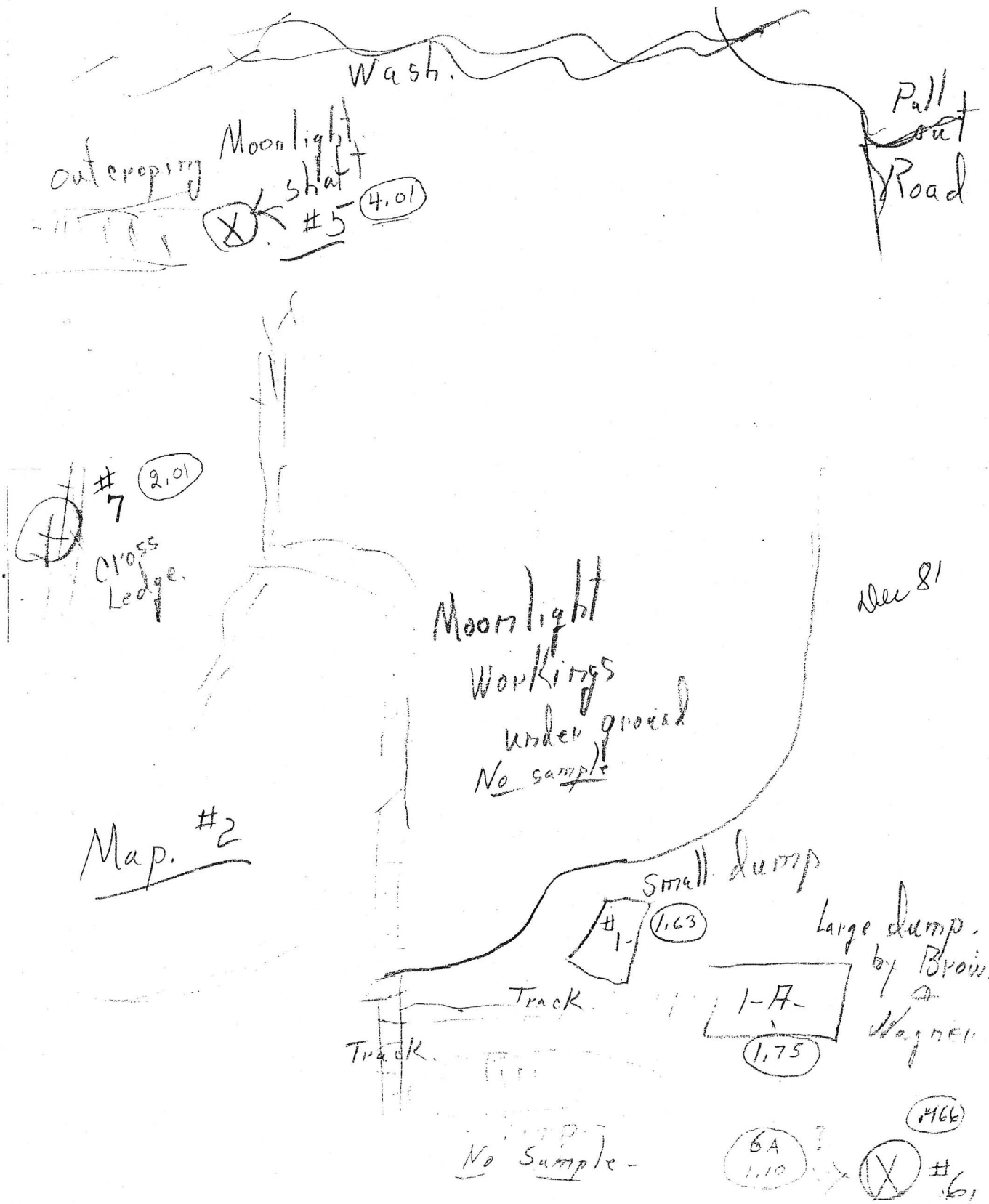
#1 - Moonlight - Dump at Road - 100 Ton -

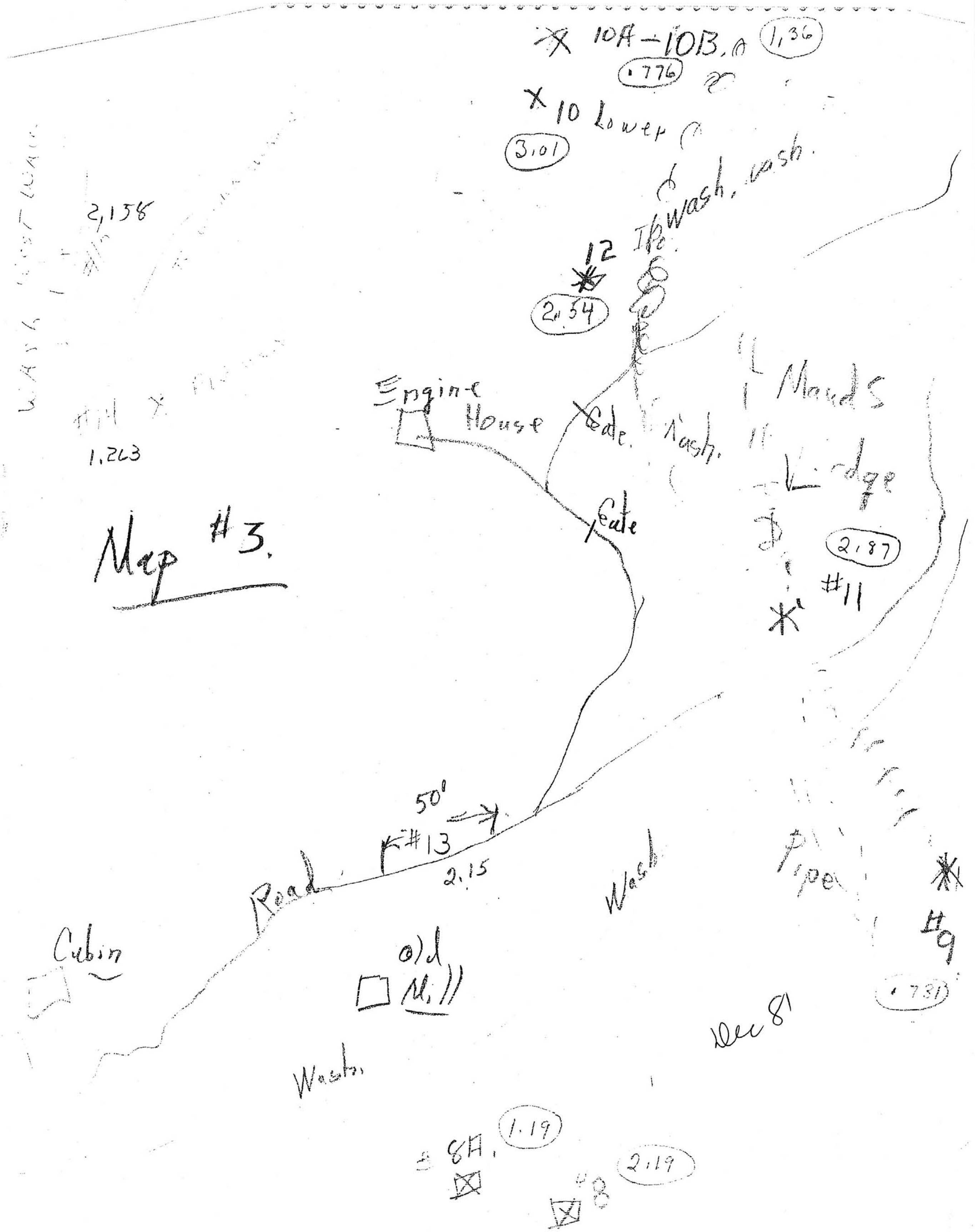
#1A - ✓ - ✓ North end below #1 - 5,000 Ton -

#5. ✓ At & south of shaft. (Blowout.) Est 10,000.

#6. ✓ Dike 300 ft N.E. (in Gulch below Dump)

#7 - ✓ Cross Ledge Approx 100 ft east of Moonlight Shaft. Approx 500 Tons Ledge Est


Wash.
Pull out
Road
outcroping
Moonlight
shaft
#5
4.01
#7
2.01
Cross
Ledge.
Moonlight
Workings
under ground
No sample!
Dec 81
Map. #2
Small dump
#1-
1.63
Large dump.
by Brown
&
Wagner
Track
Track
1-A-
1.75
No Sample -
6A
1.10
.466
#6



10A – 10B.
1,36
.776
10 Lower
3,01
Wash. Wash.
12
2,54
2,158
Engine House
Gate.
Wash.
Mauds Ledge
Gate
2,87
#11
1,263
Map #3.
50'
#13
2.15
Road
Wash
Pipe
#9
Cabin
Old Mill
.731
Dec 81
Wash
1.19
8A.
2.19
#8

Map #3.

#8 — Blowout So Section on Moonlight ledge - Approx 300 ft above old Mill —

#8A - North section 100 ft above Mill.

#9 — Dads workings on Maud S South of wash at large pipe on Hillside 4'-6 ft ledge

Dump.

#11 Madd S Above road North of wash + Pipe on Hill -

Dump.

#10 — Dobbler workings NW of engine House Approx 800 ft.

Lower Dump.

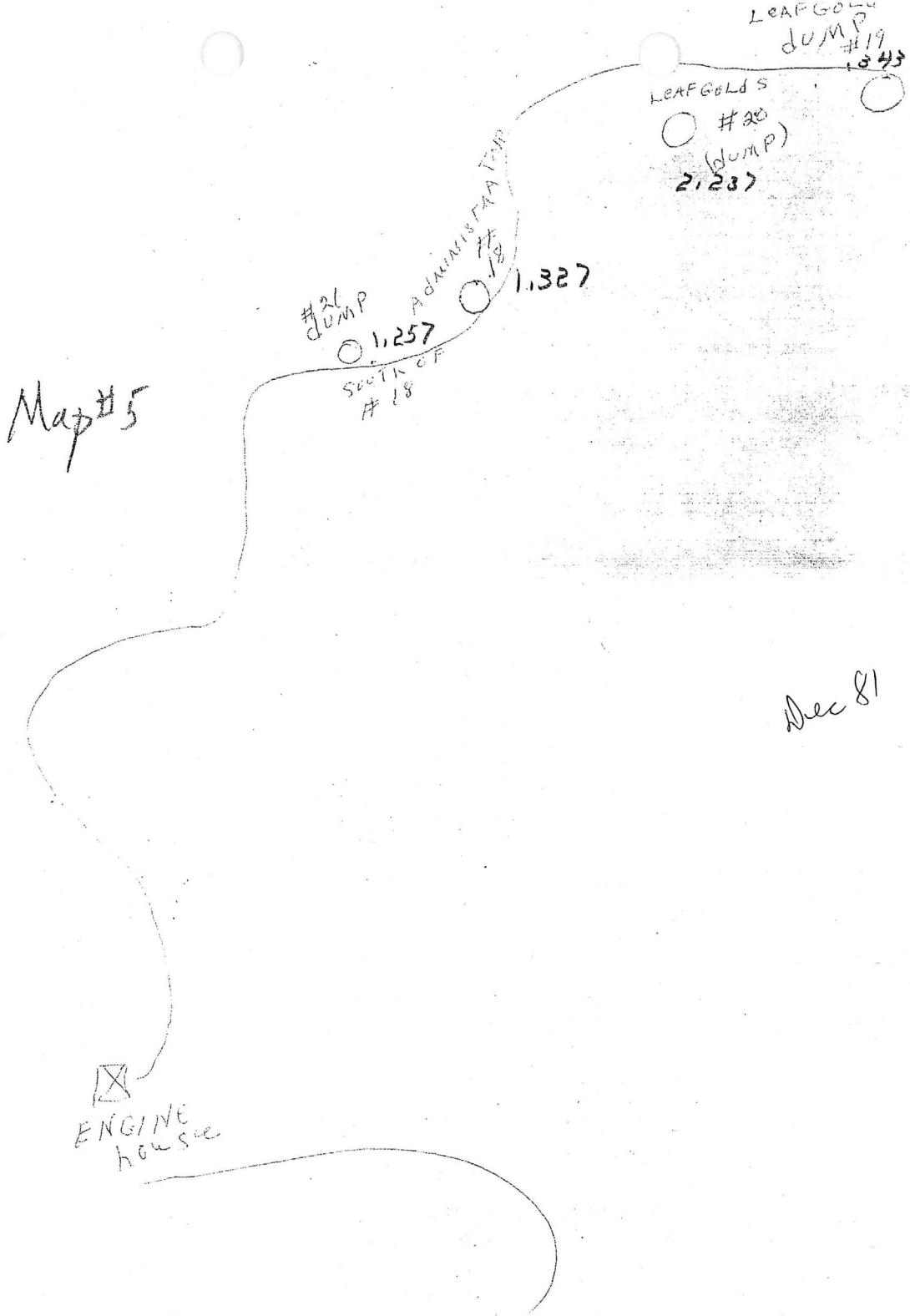
#10-A Upper Dump.

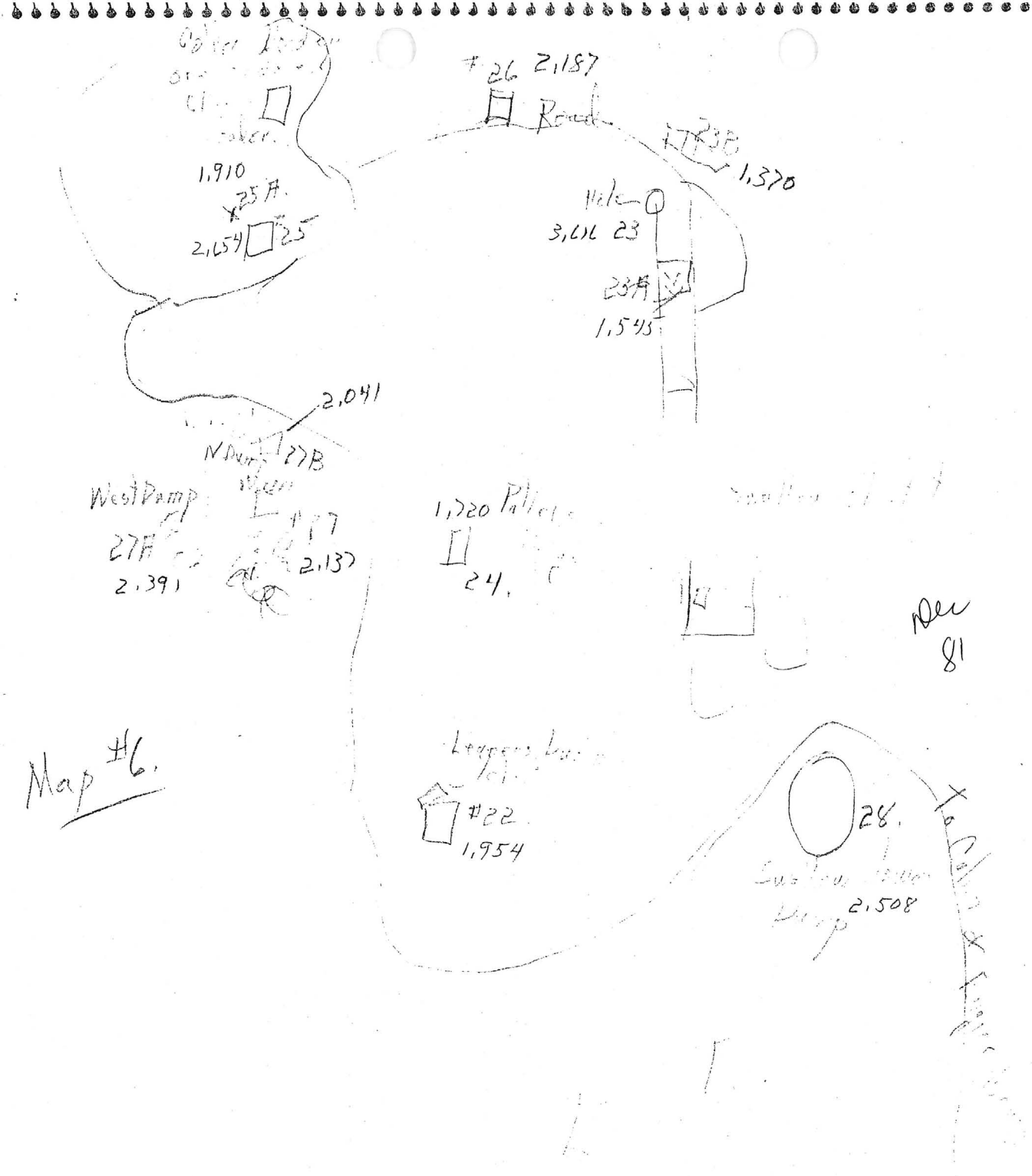
#10-B Upper out of Ledge.

#12 — Iron Blow out. Below Dobbler working North of Engine House Approx 300 ft.

#13 — 50ft Ledge at road 175 ft east of Lumber pile

Map #4
TO ENGINE HOUSE
LOWER CABIN
NORTH-EAST SLUMP #16
1,756
WASH
#17 MOUNTAIN LION TUNNEL
1,109
ROAD TO LOWER CABIN
WASH
SCOUT HOUSE
ROAD IN
Dec 81


LEAFGOLD S
DUMP
#19
LEAFGOLD S
#20
(DUMP)
2,237
ADMINISTRATION
#18
1,327
#21
DUMP
1,257
SOUTH OF
#18
Map #5
ENGINE
house
Dec 81


1,910
25 A.
2,154
25
#26 2,187
Rock
1,370
3,016 23
23A
1,543
2,041
27B
West Pump
27A
2,391
2,137
1,220
24.
#22
1,954
28.
2,508
Map #6.

Map #6.

22- Leaper Dump on Patterson above Road. So Side of Loading Short.

23- Swallow Ledge N end So of Road at Hole.

23-A. " " Blow out So of 23 picked over area of 30' in dia

23-B Swallow ledge N of 23 at road 40ft wide.

24. Patterson Dump E of Wim above road.

25. Golden Wonder dump So Side of Ridge.

25A. " " above shaft So of Ridge.

26- At Patterson ledge on road between Golden Wonder & Swallow (Leached Copper approx 30 ft wide)

27- Wim Dump - (approx 2000 Tons)

27A. Dump west of Wim (approx 500 Tons)

27B Upper Dump above Wim. second Dump below road

28- Swallow Dump So of Road-

dlw 81

Swallow - Under ground.

SW-2 - Cave. 1,161

SW-1 - 2,041 - Rock south of Cave

10-21-

Wim - Top Dump - #5 - 2,220

Swallow " 2,201

WM Dump 2,920

Swallow Road. 2,187

Wim 2,507

Golden Wonder Top Hole 1,978

" " Top Road. 1,411

" " Hole 2,106

" " Dump West side. 1,431

THE SWALLOW MINE. Feb. 1959.

Location:

The Swallow Mine is located about twemty-five miles easterly from Wickenburg, 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 shistoze 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 fourty 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 fourty 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 and 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 it was thought 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 peir 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. I.

A second surface tangent survey was made as a check, going due west from Sta. I 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 inaccessable, 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.

PLATE I

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

NOTE: THE BENDING OF VEINS, GOING NORTH TOWARD THE WEST, CONFORMS WITH THE DEMAND OF THE COMPOSITE FRACTURE

SECTIONS SW_1, SW_2, P_1, P_2 ARE DRAWN NORMAL TO VEINS.

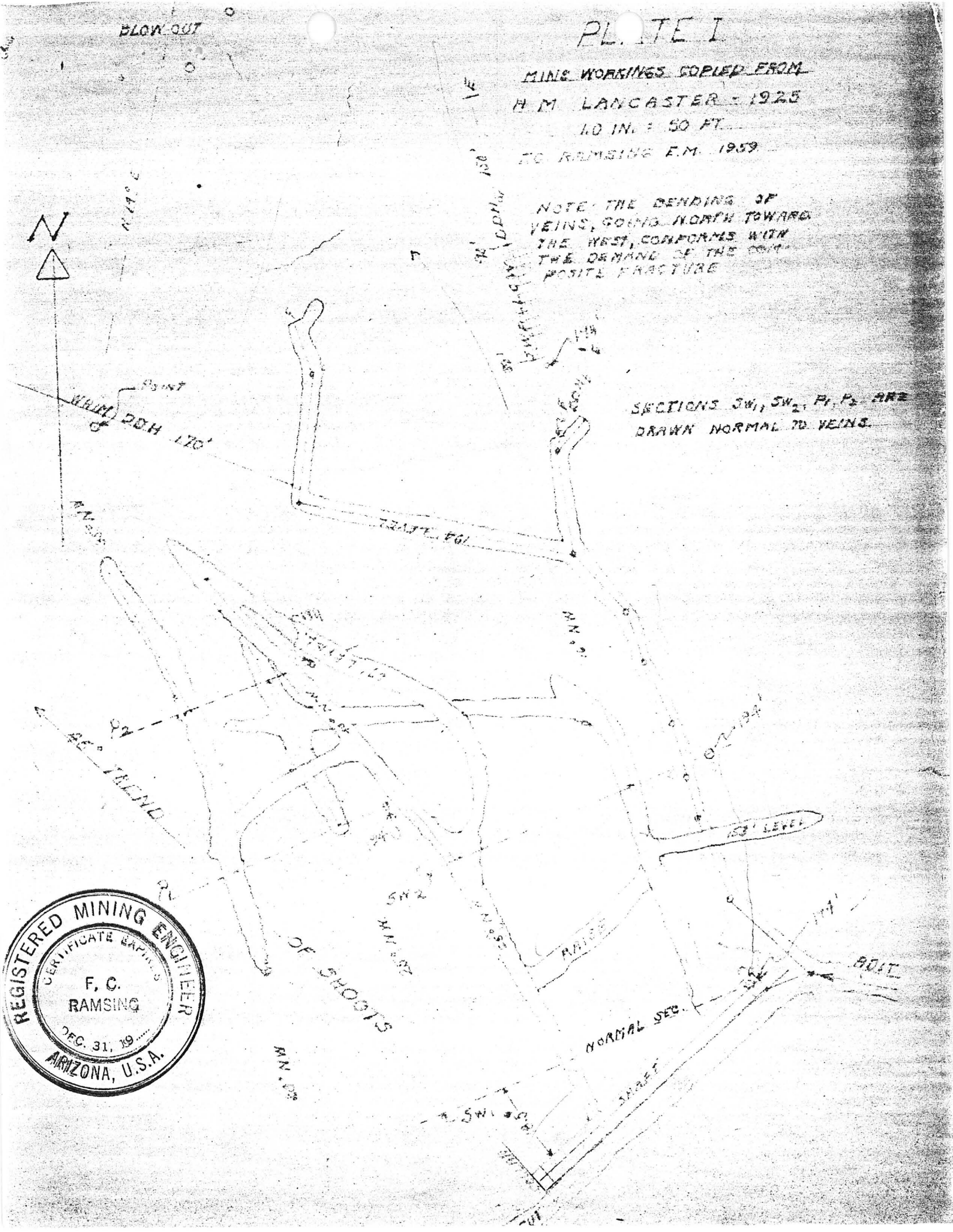


PLATE 2

SWALLOW MINE VEIN DIPS

DETERMINED BY SECTIONS

SEE PLATE 1

BY F. C. RAMSING E.M. 1959.

10 IN. = 50 FT.

LOOKING WITH THE VEINS

0' SHAFT COLLAR ELEVATION

67' LEVEL

PATTERSON

SWALLOW

153'

P_1 P_2

SW_1 SW_2

194' ADIT LEVEL

65° E-63°

53° E-47°

REGISTERED MINING ENGINEER
CERTIFICATE
F. C. RAMSING
DEC. 31, 19
ARIZONA, U.S.A.

Swallow- Under ground.

SW-2- Cave. 1,161

SW-1- 2,041 - Rock south of Cave

10-21-

Wim - Top Dump - #5 - 2,220

Swallow " 2,201

WM Dump 2,920

Swallow Road. 2,187

Wim 2,507

Golden Wonder Top Hole 1,978

" " Top Road. 1,411

" " Hole 2,106

" " Dump West side. 1,431

Dump
#3C.
2.62

Moonlight
Shaft.

Ridge

2.19

Dump
#3A
2.43

#3
3.09

5.06
#4D

1.89
#4B

#4C. 4.90

Gate

Jimmie
#2.
3.09

#4
2.84

Dump
#4A
2.01

Road

Dec 81

Road to
Moonlight.

Map #1.

Cabin

Wash

Cabin

Map #1

#2 - Jimmie - Blowout 20ft accross - face - Below Cute West of Road.

#3 - South extension - Over saddle South west of Cute of Jimmie. above road. 25ft blow out -

3-A - Dump west side of blow out (Crovey #22

3-B - ✓ N-W - 100ft from #3 on Cross ledge Est #3A & 3B - 1,000 Tons.

3-C. Dump - 100ft south #3 - Est 200 Tons.

#4 - Gosen Blow-out - above Road 500 ft west of Moolight shaft.

4-A. - Dump at Gosen Blow out.

4-B - South side of Gosen blow out.

4-C - N-W - Corner of Gosen blow out - Check for Sinabar (Gold & silver.)

4 D - Picked rock to check Iron & silver (For Information only)

Dec 81

Map #2.

#1 - Moonlight - Dump at Road - 100 Ton -

#1A - ✓ - ✓ North end below #1 - 5,000 Ton -

#5. ✓ At & south of shaft. (Blowout.) Est 10,000

#6. ✓ Dike 300ft N.E. (in Gulch below Dump)

#7 - ✓ Cross Ledge Approx 100 ft. east of Moon light shaft. Aprox 500 Tons Ledge 5ft

Wash.

Pull out Road

outcroping

Moonlight shaft

X #5 (4.01)

#7 (2.01)

Cross Ledge.

Moonlight Workings

Under ground

No sample

Dec 81

Map. #2

Small dump

#1- (1.63)

Large dump. by Brown & Wagner

1-A- (1.75)

Track

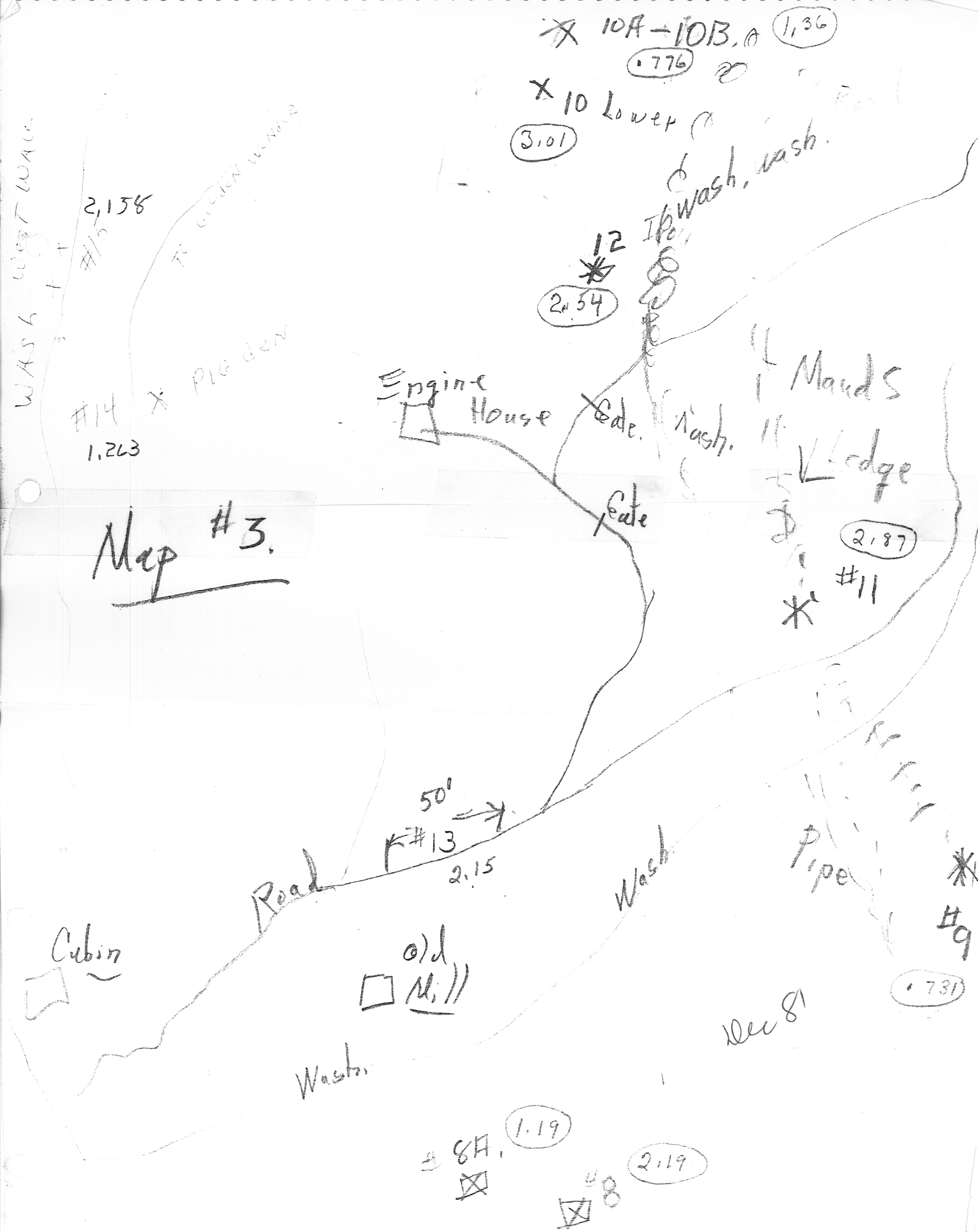
Track.

Pump Pit

No Sample -

(.466)

6A (1.10) ? → X #6


10A – 10B.
1,36
.776
10 Lower
3,01
wash. wash.
12
2,54
Mauds
Ledge
2,87
#11
2,158
#15
#14
1,263
Engine
House
Gate.
Wash.
Gate
Map #3.
50'
#13
2,15
Road
Cabin
Old
Mill
Wash
Pipe
#9
.731
Dec 81
Wash.
8A.
1.19
8
2,19

Map #3.

#8 — Blowout So Section on Moonlight ledge - Approx 300 ft above old Mill —

#8A - North section 100 ft above Mill.

#9 — Dads workings on Madd S South of wash at large pipe on Hillside 4'-6 ft ledge

Dump.

#11 Madd S Above road North of wash + Pipe on Hill -

Dump.

#10 — Dobbler workings NW of engine House Approx 800 ft.

Lower Dump.

#10-A Upper. Dump.

#10-B Upper. out of Ledge.

#12 — Iron Blow out. Below Dobbler workings North of Engine House Appr 300 ft.

#13 — 50 ft Ledge at road 750 ft east of Lumber pile

Map #4

TO ENGINE HOUSE

1.75C

NORTHERN SKY DUMP #16

LOWER CABIN

1.109

#17 MOUNTAIN LION TUNNEL

ROAD TO LOWER CABIN

Dec 81

WASH

COURT HOUSE

ROAD #17

LEAFGOLd N°
DUMP
#19

LEAFGOLd S
#20
(DUMP)
2,237

#21
DUMP

ADMINISTRATION
TOP
#18

1,327

1,257

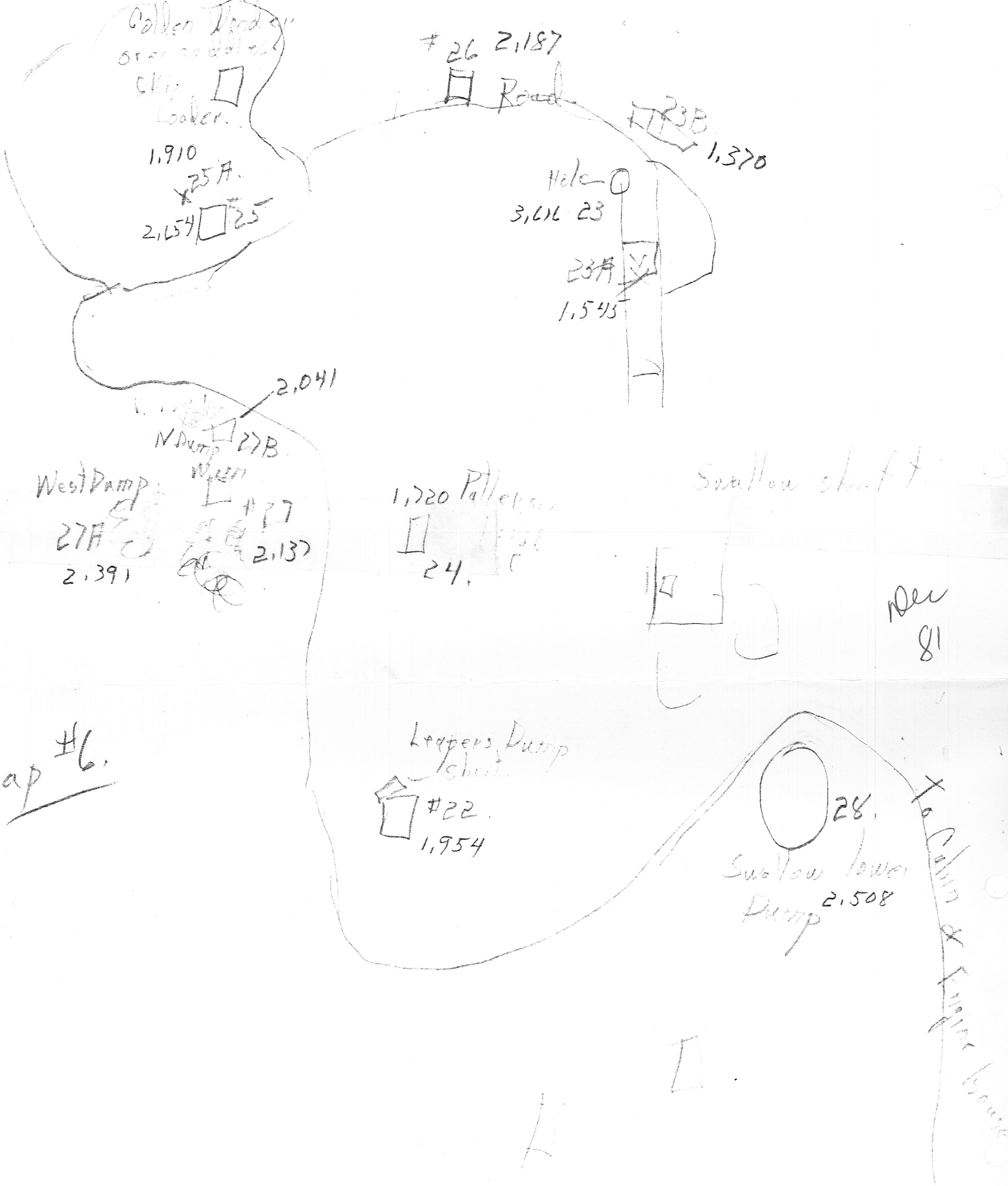
SOUTH OF
#18

Map #5

Dec 81

ENGINE
house

Map #6.


Loader.
1,910
25A.
2,154
#25
#26 2,187
Road
23B
1,370
Hole
3,616 23
23A
1,545
2,041
N Dump
27B
West Dump
27A
2,391
#27
2,137
1,720
24.
Leapers Dump
#22.
1,954
Swallow shaft
Dec 81
28.
Swallow lower Dump
2,508
To Cabin & Engine house

Map #6.

22- Leaper Dump on Peterson above Road.
So Side of Loading Shoot.

23- Swallow ledge N end, So of Road at Hole.

23-A. " " Blow out So of 23 picked over area of 30' in dia.

23-B Swallow ledge N of 23 at road 40ft wide.

24. Patterson Dump E of Winn above road.

25. Golden Wonder dump So Side of Ridge.

25A. " " above shaft So of Ridge.

26- At Patterson ledge on road between Golden Wonder & Swallow (Leached Copper approx 30ft wide)

27- Winn Dump- (approx 2000 Tons)

27A. Dump west of Winn (approx 500 Tons)

27B. Upper Dump above Winn. second Dump below road

28- Swallow Dump So of Road-

Allen 81