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J. Carlton Bray
Mining Engineer and Geologist
Kingman, Arizona.

Report of the Iowa Mine.

Location

The Iowa Mine is a group of nine patented claims forming an area four claims long by two claims wide and containing 140 a cres, more or les s. The mine lies three miles south of the town of Oatman, in the Boundry Cone section of the San Francisco Mining District, Mohave County, Arizona. It lies in sections 34 and 35, Township 19 North , Range 20 West, Gila River Base and Meridian. U. S. Highway 66 runs within 1-½ miles of the mine, and a fair dirt road connects the Mine with the highway.

HISTORY

The mine was located by Moore, Roberts and Hunt in 1902. It was bonded to Hymer and Wood in 1904 and was worked by them for three or four years. It passed to the Iowa Gold Mining Comp any in 1910 or 1911, but no serious attemp t was ma de to produce ore, as the p rop erty was to far from water and power, and too low grade with gold at $20.67 per ounce.

The Iowa Gold Mining Co. seemed to be fully aware that better ore could be found at depth and so proceeded to sink the sha ft from the 200 foot level to 400 feet depth. They were financing this work by the sale of treasure stock of non-assessable shares. From 1911 to 1916 it was easy to sell treasure stock on mines in the Oatman district, due to the discovery of large bodies of rich ore at dep th in the United Eastern and Big Jim mines, But on the outbreak of world war No. 1. the cost of labor, powder, lumber, and other supplies rose rapidly but there was no rise in the price of gold. It also became impossible to sell or maintain the price of mining stocks. So the Iowa Company did the only logical thing they could do, which was to p atent the mining claims and await better days. In the period 1916-1932 the principal stockholders died and the surviving stockholders had such small holding s that they did not p ay the taxes or corporate fees, so the property was sold by the state for taxes, finally coming into the present hands.

DEVELOPMENT:

The mine is opened by a 400 foot shaft and a tunnel 119 feet long. The tunnel mouth is 500 feet West of the shaft, it runs 119 feet West on the vein. The shaft has a drift 16 feet long at the 65 ft. level, running West from the shaft. The 100 Foot level has a drift running west, 34 feet, and a crosscut 16 feet long, 10 feet West of the shaft. The East drift is 75 feet long. The 200 foot level is 173 feet long West of the shaft and 223 feet long East of the shaft. A small crosscut runs South from the shaft 8 feet, and two small cross-cuts run North from the drift, into the foot wall. These workings are worth $ 25.000.00

There is no record of any lateral work below the 200 foot level. although the shaft is known to be 400 feet deep. It is closed about 30 feet below the 200 foot level by fallen timber. There is some water at the bottom of shaft. The amount is small, but unknown. There is a small spring about 1 mile North East of the shaft which produces not over 1 gallon per minute, and it was formerly piped to the mine for domestic purposes. Large amounts of water, sufficient for a mill, can be had from the Black Range and Nellie Mines about 2-½ miles to the South.

GEOLOGY:
The group of claims covers 6000 feet of the Iow a vein. This vein is about a mile long and joins the Iowa canyon vein on the East and the Lazy Boy vein on the West. The Iowa vein runs nearly East and West and the Laz y Boy and Canyon veins runs Northwest and Southeast. All three are fissure veins. The Iowa vein is really a double vein with foot wall and hanging wall veins seperated by a " horse" of country rock, with many small stringers paralelling the main vein. The shaft is sunk on the foot-wall vein and all work has followed this part of the vein, except the small crosscut on the 100 foot level. West of the shaft, near the West end of the Iowa claim, the total width of the whole vein matter is over 50 Ft The foot w all streak, or vein proper is from three to ten or twelve feet in width and the hanging-wall vein is 6feet wide, seperated by 9feet of country rock. The dip of the vein is 75 or 80 degrees South.

The country rock is named " Esperanzaa Trachyte" by the U.S. Geological Survey. It is really a potash-rich Andesite, is very fine grained and dense, with small crystals of feldspar visible in a stony ground-mass. It is over-lain by the "Oatman Andesite" on the East and under-lain by the "Earky Andesite" on the West, its dep th at the Iowa Mine is unknown but is several hundred feet. The "Early Andesite" is estimated to be 3000 feet thick under this area. Both rocks are cut by dikes and stocks of Rhylite, and dikes of Andesite, which closely resembles the "Esperanza Trgchyte." No distinct dikes can be distinguished on the Iowa ground. All of these rocks are hard and solid and stand without timbering. This fact and the nearly vertical dip of the veins, together with the large widths, make for low mining costs.

REASONS FOR EXPECTING PROFITABLE ORE BODIES IN IOWA MINE

The reasons for exp ecting payable ore in the Iowa Mine vein divide into (1) Geological studies and (2) practical results of work done mainly by leasers on the low grade ores of the district since 1902. The Geology of the Oatman district was first worked by Schrader in 1909, and Ransome and Lawson in the early development of the district.Since then, and especially since 1932, many details of the ore disposition have been worked out, and a much better understanding of the low grade ores is now available. It is evident that all the commercial ore bodies were deposited by the 4th and 5th stages of mineralization, and this ore was always rich. In low grade ores, small pockets of very rich ore are scattered through the fukl width of the vein and often are missed by hand sampleing. It has long been known that the broken ore assays better than the face samples, but no studies had been made to find the reason until after 1933. At that time, the writer opened up the Pilgrim mine, and S. C. Weeks opened up the Tyro Mine, demonstrating that large bodies of ore which had sampled less than $..25 per ton would mill from $5.00 to $9.00 per ton. Similar results were obtained at the Arabian and Portland mines by Clyde Becker. The p roduction to date from these mines is more than $ 3,000,000, and is still continuing. Similar result s were obtained on the Pioneerxxxxx and Vivian Mines, near the Iowa Mine. Boiled down, this new information is as follows:

(1) All ores above water level have been leached of part of their gold and the p art that is left is inside of the hard er , more dense quarts that protected it from leaching, and better values are to be found below the water level, where no leaching has occurred.

(2) The pay ore occurs in well defined shoots which were formed only where the main fissure was either offset by a fault, or joined by diagona l stringers (or "cutters") in either xxxxx foot or hanging wall.

(3) That the leached ores must be sampled by milling 20 to 100 tons before correct values can be obtained.

The writer personally examined the Iowa and its surroundings, both on the surface and in all available working s. The Iowa vein is over 6000 feet long and terminates on each end by joining similar veins which it meets at angles less than 30 degrees. A very large shoot of ore is positively indicated west of the fault which displaces the vein 325 feet west of the main shaft. The outcrop rapidly increases in size going west beyond the fault, shows more manganese and better values for over 600 feet. Small veins join the main vein from both the foot and hanging wall sides. A small tunnel showes values up to $18.00 per ton in the spot. It is too bad that the broken ore was not sampled as this tunnel was run. But, nevertheless, all of the conditions for an ore shoot of the bett er class are present, and developement of these conditions has never yet failed to produce ore in this particular district.

ORES.

The vein filling consists of white and green quartz, adularia and calcite, together with and included silicified wall rock. Red and yellow iron oxide is abundant in the oxidized part of the vein. Gold occurs alone, without silver, copper, lead, or zinc. This gold is very fine and seldom visible, It is an ideal cyanide ore. It is difficult to sample, due to uneven distribution of the gold through the gangue.

ORE SHOOTS

Since the location of the Iowa claims in 1902, over $50,000,00 0 fifty millions worth of these ores has been mined at Oatman. The ore always occurs in large seperate ore bodies or "shoots", with short barren zones between them. All of these ores shoots have been found below the water level, usually under barren outcrops. The water level at the Iowa is somewhere above the 400 foot level, so it is reasonable to expect that the commercial ore bodies in this mine will be found on that level. It is true that 25 tons of $8.50 ore was shipped froma point 65 feet below the collar of the shaft, and equally good ore is in evidence in the tunnel, 600 feet West of the shaft, but most of the area above the 400 foot level will probably run less than $5.00. The good ore that exists above the water level lies in narrow, finger-like chimneys rising from the ore bodies below. Such ore is better mined and followed from below.

The Iowa vein contains better values near the surface than the United Eastern, Tom Reed or Western Mines. It contains the same " Green Quartz" that makes the better ore bodies of this Oatman district, and is as large as the outcrops of the successful mines of the district. It has often been noted that the richest ore shoots occurbbeyond the intersection of a cross fault. Such a fault is in evidence at a point 325 feet West of the shaft. There the vein is thrown South, 50 feet, as you look West. About 50 feet West of the fault, the foot-wall vein makes a very bold outcrop, from five to ten feet wide and 300 feet long. The tunnel is run in this section of the vein. It is the best surface showing on the property, and can be reached by drifting west from the bottom of the shaft. There is another ore shoot indicated to the East of the shaft.

There is every evidence that the gold has been leached out of the vein above the water level, in the zone above the water level, Thi s leaching was not suspected in this district until very recent years, and has been proven by Clyde Beckeron the Portland Mine. and by W. G. Mellier at the Moss Mine. The chemical reasons are obscure, but intense leaching has occured in the presence of abundant calcite. The evidence at the Iowa Mine is much more striking, As the oxides of iron were derived from pyrite, which furnished abundant sulphuric acid in its decomposition. Calcite was scarce in these veins. The gold that remains above the water level has been protected from the oxidizing solutions in spots where the vein was not crushed.

Forty-five samples were taken on the 65 foot level, 100 and 200 foot levels in the main shaft. They assayed from .01 to 1.08

gold per ton in widths of from 4 to 5 feet. A shipment of twenty tons from the 65 foot level milled $8.50 per ton, and 13½ tons milled $5.25. Three assays from the tunnel ran from $3.75 to $18.40 in 4 foot widths. A section of 2½ feet of the hanging wall section of the vein, 30 feet long and 30 feet East of the shaft showed an average of $11.22 per ton. As all of the present workings are East of the main ore shoot , these results are similar in every way to those taken in the successful mines.

RECOMMENDATIONS

The Iowa Mine, at present, is a particularly attractive property. The developement work was stopped at the point where results should begin, and all of this work is avalible at present. This work alone, is worth $25,000, and costs much more originally. The shaft is deep enough to get below the leached zone. The writer recomends that the shaft be cleaned and re-timbered to the bottom and that the vein be drifted toward the West for at least 600 ft. Crosscuts should be run at advisable points to the real hanging wall. Drifting to the East should proceed equally far. This work will prove conditions at water leveland justify sinking to greater depth.

In 1932, the price of gold was" raised" 75%. Also, mining costs were lowered by the advent of cheaper power from Boulder Dam and improved milling practice. The change is illustrated by the following:

> Ore running two-tenths ounce of gold per ton was worth $ 4.00 per ton, and it cost $7 .00 per ton to mine and mill it even in the larger mines, so the lowest value that could be handled was $8.00 per ton, or four-tenths ounce per ton. At the present time two-tenths ounce ore is worth $7.00 per ton, and is being mined and milled at a profit not only in the Goldroad Mine, but by the leasers in the Vivian and Pioneer Mines. Total costs of less than $5.00 per ton easily obtainable on vein widths exceeding four feet at present in this district.

Experience in this district shows that the ore bodies usually run from $12.00 to $35.00 per ton. Lower values are caused by dilution with wall rock, which is unavoidable in stringer veins.

The writer predicts that good ore from $12.00 to $23.00 per ton in gold will be found in this proposed drift, and it will occur for the full width of the vein. This prediction is based on seven years experience in this district, where the writer predicted the shoots in three mines, now developed. It must be remembered that mines in this district are very profitable and last longer than most gold mines. The district is thoroughly proven and little chance is taken in development if the work is well advised.

(J. Carlton Bray)

J. Carlton Bray, Mining Engineer

Oatman, Arizona
September 27th, 1941

W.M. SNOW
MINING ENGINEER
PHOENIX, ARIZONA
JULY 25, 1938.

MESSRS: CAMERON AND PERKINS,
324 ELM STREET,
LONG BEACH, CALIF.

GENTLEMEN:

PURSURANT TO YOUR REQUEST, HERE WITH SUBMIT REPORT TO THE IOWA GOLD MINES COMPANY GROUP OF CLAIMS.

INTRODUCTION THE GROUP OF CLAIMS CONSIST OF NINE PATENTED CLAIMS AS FOLLOWS: GOLDEN GEM, MISSING LINK, WASHBURN, IOWA EXTENSION, IOWA ANNEX, IOWA, SUNLIGHT, GOLD CUP, AND GOLD NUGGET AS SHOWN ON PATENT SURVEY PLAT ATTACHED HERETO.

THE FIELD WORK CONSISTED OF A GEOLOGICAL STUDY AND THE TAKING OF 21SAMPLES ALONG THE OUTCROP AND IN THE VARIOUS WORKINGS TO DETERMINE THE CHARACTER OF MINERALIZATION AND THEREBY THE ADVISABILITY OF FURTHER DEVELOPEMENT.

LOCATION -- THE GROUP OF CLAIMS IS LOCATED IN THE ~~SAN-FRAN~~SISCO MINING DISTRICT, MOHAVE COUNTY , ARIZONA, IN SECTIONS 34 and 35 TOWNSHIP 19 NORTH, RANGE 20 WEST G& SRM. IT IS 4.3 MILES BY AUTO ROAD IN A SOUTHERLY DIRECTION FROM OATMAN.

GEOLOGY AND VEIN SYSTEM --- THE COUNTRY ROCK CONSISTS OF A DENSE GREENISH TO REDISH BROWN PORPHYRITIC ANDESCITE IN PLACES CONTAINING AMYGDULES OF CALCITE. THIS FORMATION IS IN CONTACT WITH MORE ACID INSTRUSIVES. THE VEIN, FREQUENTLY IN CONTACT WITH THESE VARIOUS FORMATIONS, IS A TRUE FISSURE WHICH DIPS ABOUT 83 DEGREES TO THE SOUTH. ITS STRIKE IS APPROXIMATELY S 85 W. AT VARIOUS POINTS THE ACID ROCK FILLS MINOR FISSURES IN THE ANDESITE, THESE SMALL DIKES TAKING A GENERAL STRIKE OF N 60 W. WHEN THE VEIN FILLING IS PRINCIPALLY QUARTZ THE OUTCROP SHOWS BOLDLY ABOVE THE SURFACE. AT OTHER POINTS WHERE THE VEIN FILLING IS LESS RESISTANT TO EROSION PROBABLY DUE TO BRECCIATION AND MORE OR LESS CALCITE FILLING, IT IS MARKED BY A DEPRESSION AT THE SURFACE. THIS IS PARTICULARLY TRUE WHEN THE VEIN CROSSES THAT HIGHER RIDGES.

THE VEIN CAN BE FOLLOWED FOR THE ENTIRE LENGTH OF THE CLAIMS VARYING IN WIDTH FROM A FEW FEET TO PERHAPS 100 FEET. THE WALLS ARE GENERALLY NOT WELL DEFINED DUE TO SILICIFICATION OF THE COUNTRY ROCK.

DEVELOPMENT ---- FIVE HUNDRED DOLLARS WORTH OF WORK WAS DONE ON EACH CLAIM PREIOUS TO PATENT CONSISTING OF VARIOUS SHAFTS AND TUNNELS MOST OF WHICH WERE NOT EXAMINED IN DETAIL AS THEY WERE NOT PARTICULARLY PERTENANT TO THE OBJECT IN VIEW.

THE AREA SAMPLE (SEE PATENT SHEETS NO. 1 & 2) CONSISTED OF TUNNEL NO. 1 AND SHAFTS NOS. 2. 3. and 4 ON THE IOWA CLAIM AND TUNNEL NO. 4 AND SHAFT NO. 5 ON THE GOLD CUP CLAIM. TUNNEL NO. 1 OF THE IOWA CONSIST OF A CROSSCUT 40 FT. IN LENGTH WHICH CUTS A 12 FT. QUARTZ VEIN. THE VEIN IS WELL DEFINED AND THE FOOT WALL COUNTRY ROCK IS WELL EXPOSED.

SHAFT NO. 2 IS ABOUT 5 FT. DEEP AND THE VEIN THERE IS EXPOSED NOT CORRESPOND TO THE VEIN CUT IN TUNNEL NO. 1 IN EITHERLOCATION OR CHARACTER OF MINERALIZATION AS THE ORE IN THE SHAFT SHOWS MUCH RED IRON AND MANGANESE.

SHAFT NO. 3 IS 18 FT. DEEP AND SHOWS VEIN FILLING FOR THE ENTIRE DEPTH. SHAFT NO. 4 IS NOW ABOUT 6 FT. DEEP BEING PARTLY FILLED. IT HAS THE APPEARANCE OF WHAT MAY BE THE HANGING WALL OF A MINERALIZED AREA 140 FT. WIDE OF WHICH SHAFT NO. 3 IS THE FOOT WALL. THE AREA BETWEEN THE SHAFTS APPEARS TO BE NEAR THE INTERSECTION OF AT LEAST 3 VEINS. IT IS IMPOSSIBLE TO DETERMINE THE EXTENT OF MINERALIZATION ON THE SURFACE DUE TO OVERBURDEN BUT WOULD BE A VERY INTRESTING AREA TO EXPLORE AT DEPTH. BOTH SHAFT NO. 3 and 4 ARE ON A RIDGE AND THE AREA BETWEEN THEM IS SHOWN IN TOPOGRAPHY BY A DEPRESSION INDICATING A CRUSHED AREA CONTAINING CALCITE WHICH FREQUENTLY OVERLIE ORE BODIES IN THIS DISTRICT.

TUNNEL NO. 4 ON THE GOLD CUP CLAIM IS 130

FT. LOM G. IT GAINS IN DEPTH RAPIDLY FROM THE PORTAL TO THE FACE. THE AVERAGE DEPTH OF THE TUNNEL FROM SURFACE IS ESTIMATED AT 85 FT. AT 70 FT. FROM THE PORTAL THE VEIN FILLING IS ACCOMPANIED BY RED IRON QUARTZ GANGUE COMING IN FROM THE HANGING WALL SIDE (SEE SKETCH NO. 1) THE VEIN IN THE FACE CONSIST OF HANDS OF QUARTZ AND ALTERED COUNTRY ROCK.

THE MAIN WORKINGS ARE AT SHAFT NO. 5 OF THE GOLD CUP CLAIM. THIS SHAFT IS REPORTED TO BE FROM 400 TO 500 FT. DEEP. IT IS SUNK 7x8 FEET . IN SOLID VEIN MATERIAL AND AS FAR AS COULD BE OBSERVED IT'S STANDING PERFECTLY. IT INCLINES A FEW DEGREES TO THE SOUTH. RECENTLY A BULKHEAD WAS PUT IN THE SHAFT AT THE 65 FT. LEVEL AND A HEADFRAME , LADDERS AND SKIDS INSTALLED. BELOW THIS POINT THERE IS NO TIMBERS IN EVIDENCE.

TO RECLAIM THIS SHAFT ALL THAT WOULD BE NECESSARY WOULD BE THAT TIMBERS BE PUT IN FOR LADDERS AND SKIDS WHICH. DUE TO THE EXCEPTIONAL CONDITION OF THE WALLS COULD BE DONE AT A NOMINAL PRICE.

IT IS DIFFICULT TO OBTAIN INFORMATION ON THE VALUE OF THE ORE IN THIS SHAFT. IT IS REPORTED TO HAVE "PANNED WELL" FOR ITS ENTIRE DEPTH. THE VEIN IS 14 FT. WIDE AT THE COLLAR OF THE SHAFT AND AS NO CROSSCUTTING IS IN EVIDENCE IT IS NOT KNOWN DEFINITELY THAT THE SHAFT IS ON THE MORE FERTILE PORTION OF THE VEIN.

"MINERALIZATION" THE DEPOSIT WOULD BE CLASSED AS THE CHARACTERISTIC EPITHERMAL DEPOSIT WHICH SO FREQUENTLY OCCURE IN REGIONS OF TERIARY VOLCANIC ACTIVITY. THERE ARE MANY TYPES OF IGNEOUS ROCKS THROUGH WHICH THE VEIN PASSES AND IN WHICH ORE SHOOTS HAVE BEEN FOUND THE EFFECT OF THE WALL ROCK BEING PHYSICAL RATHER THAN CHEMICAL. THE STAGES OF MINERALIZATION THAT COMPOSE THE VEIN FILLING OF THESE DEPOSITS HAVE BEEN CAREFULLY WORKED OUT BY THE ARIZONA BUREAU OF MINES AND THE PHYSICAL PROPERTIES AS WELL AS THE ASSAY RETURNS PROVE THAT THE 4th AND 5th STAGES OF MINER-- ALIZATION PRODUCTIVE OF ORE BODIES ARE PRESENT IN THIS VEIN.

TWENTY-ONE TEN TO FIFTEEN POUND SAMPLES WERE TAKEN TO ROUGHLY DETERMINE THE DISTRIBUTION OF VALUES. (SEE ASSAY SHEET) THESE SAMPLES PROVE THAT IT IS IMPOSSIBLE TO BE GOVERNED IN SAMPLING BY THE USUAL THEORY OF HANGING AND FOOT WALL ENRICHMENTS BUT RATHER BY CRUSHED AREAS THROUGH WHICH RUN STRINGERS OF QUARTZ OF THE 4th and 5th STAGES OF DEPOSITION. AS THIS QUARTZ IS NOT EASLY DISTINGUISHED BY PHYSICAL PROPERTIES , THE GOLD CONTENT AND RATIO OF SILVER TO GOLD AS DETERMINED BY ASSAY IS THE MOST RELIABLE CRITERIAN.

SAMPLE NO. 1 WAS TAKEN ON THE FOOT WALL OF 12 FT. OF VEIN FILLING. IT IS POSSIBLE THAT OTHER SECTIONS OF THE VEIN MAY HAVE BEEN MORE FERTILE. NO.2 WAS OF CHARACTERISTIC SUGAR QUARTZ. NO. 3 WAS CHIPPED FROM AN OUTCROP OF QUARTZ 5 FT. IN WIDTH. NO. 4 WAS FROM A HOLE DUG ON AN IRON- MANGANESE STAINED VEIN. THE ORE WAS OF A NATURE THAT HAD SURFACE RESIDUAL GOLD BEEN PRESENT, HIGH VALUES WOULD HAVE BEEN EXPECTED. OBTAINING OF NEGATIVERESULTS INDICATE THAT THE LEACHING OF THE GOLD IN THE PRESENCE OF MANGANESE MAY HAVE TAKEN PLACE.

NOS. 5 and 6 ARE TAKEN ON THE HANGING AND FOOT WALL EXTREMES OF A WIDE VEIN AREA IT BEING IMPOSSIBLE TO SAMPLE THE AREA BETWEEN BECAUSE OF OVERBURDEN. NO. 7 ISANOTHER FOOT WALL SAMPLE ON THE VEIN.

SAMPLES NOS. 8 and 16 INCLUSIVE WERE TAKEN IN TUNNEL NO. 4 OF THE GOLD CUP CLAIM. HERE THE TUNNEL IS STARTED ON THE FOOT WHICH AGAIN DOES NOT SHOW MUCH VALUE AS IT ADVANCES, ITAPPROACHES THE HANGING WALL AND UPON CUTTING AN IRON STAINED FORMATION ENTERS ORE OF COMMERCIAL GRAD. UNDER THE IMPRESSION THAT THE VALUES WERE IN THE IRON ONLY, THE IRON STAINED SAMPLES WERETAKEN FROM THIS POINT ON WITH THE EXCEPTION OF SAMPLE NO.14, WHEREA SAMPLE OF QUARTZ WAS TAKEN WHICH SHOWED THE HANGING WALL QUARTZ TO BE EQUALLY FERTILE. THIS QUARTZ EXTENDS ON TOO AND IS IN THE FACE OF THE TUNNEL AND IF SAMPLED MAY ADD MATERIALLY TO THE WIDTH OF THE ORE.

THE CALCULATED AVERAGE OF SAMPLES 11 TO 16 INCLUSIVE GIVES 3.4 of $8.50 ORE. NO. 17 WAS TAKEN FROM A

HOLE DUG ON THE VEIN BETWEEN TUNNEL NO. 4 AND SHAFT NO. 5 WHERE CONSIDERABLE RED IRON IS APPARENT.

THE BEST SAMPLE OBTAINABLE FROM THE 65 foot LEVEL OF THE SHAFT IS THE COPY OF THE ATTACHED MILL REPORTS. THE ASSAYS ARE: 10.77 tons $ 7.35 and 2093 tons $ 8.40. FROM THE SMALL EXCAVATION MADE FOR THESE SHIPMENTS PRACTICALLY ALL THE ORE BROKEN WAS SHIPPED. NO. 18 WAS TAKEN HIGHER UP ON THE VEIN NEAR THE FOOT WALL. NO. 19 WAS TAKEN DIRECTLY IN THE FACE OF THE DRIFT AND CHECKS WITH THE MILL RETURNS. NO.20 REPRESENTS THE FOOT WALL FILLING ON WHICH THE SHAFT IS SUNK AND NO. 21 IS A XHIP SAMPLE AT THE COLLAR OF THE SHAFT WHERE THE VEIN SHOWS 14 FT. IN WIDTH, IN A POSITION CORRESPONDING TO THE SHAFT.

CONCLUSIONS: THE VEIN IS STRONG AND PRESISTENT IN STRIKE AND NEARLY VERTICAL. IT FREQUENTLY CONSISTS OFA LARGE NUMBER OF STRINGERS OR VEINS OF VARIABLE WIDTH XXXXX SEPERATED FROM EACH OTHER BY COUNTRY ROCK. THE VALUE OF THE ORE DEPENDS UPON THE STAGE OF QUARTZ DEPOSITION RATHER THAN HANGING AND FOOT WALL ENRICHMENTS. THE 4 and 5th STAGES OF DEPOSITION ARE THE LATER ONES AND THEIR ENRICHMENT OF THE VEIN DEPENDS UPON THE PERMEABILITY OF THE VEIN WHICH IN TURN, DEPENDS UPON THE OPEN SHATTERED OR FRACTURED CONDITION OF THE VEIN WHICH MAY OCCUR ANY PLACE WITHIN IT.

FOR THIS REASON THE PRESENT DEVELOPMENT ACCOMPLISHED PRIOR TO A KNOWLEDGE OF THE ORE DEPOSITION MAY HAVE BEEN IN A LESS FERTILE PORTION OF THE VEIN. THE MAIN SHAFT IS SUNK IN THE VEIN FILLING NEAR THE FOOT WALL AND WHILE SOME GOLD VALUES ARE OBTAINED FOR THE ENTIRE DEPTH, THERE IS NO EVIDENCE OR RECORDSOF CROSSCUTTING HAVING BEEN DONE TO DETERMINE THE ORE IN OTHER PARTS OF THE VEIN.

THERE IS MUCH EVIDENCE OF CRUSHING AND RECEMENTING WITHIN THE VEIN BRECCIATION BEING APPARENT AT MANY PLACES. THERE ARE ALSO AREAS SHOWING BLACK MANGANESE AND IRON STAINS WITH GOLD VALUES WHICH SHOULD BE PROSPECTED AT DEPTH BECAUSE OF THE POSSIBILITY OF STRIKING A SUPERGENE ENRICHMENT OF GOLD.

THE SHAFT IS A DISTINCT ASSET TO THE PROPERTY AS IT CAN BE CHEAPLY RECLAIMED AND DEVELOPEENT RESUMED AT DEPTH ON THE VEIN.

FROM THE ABOVE I CONCLUDE THAT THE PROPERTY IS WELL WORTHY OF SPENDING A CONSIDERABLE SUM IN WELL DIRECTED DEVELOPMENT WORK WITH THE CHANCES IN FAVOR OF OPENING UP A PROFITABLE PRODUCING MINE.

RESPECTFULLY SUBMITTED

(SIGNED) ---W.-M-SNOW----------

UNITED STATES

DEPARTMENT OF INTERIOR
GENERAL LAND OFFICE
PUBLIC SURVEY OFFICE

PHOENIX, ARIZONA.
MARCH 14, 1939.

MR. R. N. HETZEL,
640 PACIFIC AVE.,
LONG BEACH, CALIF.

SIR:

REFERENCE IS MADE TO YOUR LETTER OF MARCH 13;

THE FIELD NOTES OF MINERAL SURVEY NO.3310, ON FILE IN THIS OFFICE, AS APPROVED JULY 5, 1937, RECORD THE FOLLOWING WORKINGS FROM A 310 FT. INCLINE SHAFT ON THE GOLD CUP LODE. WHICH BEARS FROM THE WEST END CENTER S. 76o 40' E. 655FT.;

" AT A DEPTH OF 100FT. A DRIFT RUNS N. 70o W. 27 FT., AND A CROSS CUT FROM SAID DRIFT AT 7 FT. FROM THE SHAFT RUNS S. 20o W. 12 FT. ALSO FROM SHAFT A DRIFT RUNS S. 80o E. 117 FT. TO FACE.

AT A DEPTH OF 200FT. A DRIFT RUNS N. 80o W. 172 FT. THENCE N. 20o W. 6FT. TO FACE. AT 18 FT. FROM SHAFT, A WINZE 4 x 6 FT., 8FT. DEEP, AND AT 42 FT. FROM SHAFT A CROSSCUT RUNS N. 20o W. 15FT. ALSO A DRIFT RUNS S. 87o E. 215 FT. AND AT 12FT. FROM SHAFT, A CROSSCUT N. 25o E. 60 FT. TO FACE.

ALSO STARTING AT SOUTH SIDE OF SHAFT, A CROSSCUT RUNS S. 20o W. 12 FT. TO FACE. AT A DEPTH OF 285 FT. A DRIFT RUNS N. 80o W. 87 FT. TO FACE. FROM SAID DRIFT, AT 25 FT. FROM SHAFT, A CROSSCUT RUNS SOUTH 10 FT. AND AT 70 FT. FROM SHAFT A CROSSCUT RUNS S. 20o W. 18 FT. ALSO FROM SHAFT A DRIFT RUNS S. 80o E. 32 FT. TO FACE. AND AT 10 FT. FROM SHAFT, CROSSCUTS ARE RUN SOUTH 6 FT. AND NORTH 4 FT. RESPECTIVELY."

VERY RESPECTFULLY,
PUBLIC SURVEY OFFICE

SHERMAN C. FISKE (SIGNED)
OFFICE CADASTRAL ENGINEER.

T

UNITED STATES GEOLOGICAL SURVEY
BULLETIN 397

MINERAL DEPOSITS OF MOHAVE COUNTY, ARIZONA
BY
F. C. SCHRADER 1906-7

IOWA MINE (SAN FRANCISCO DIST.)

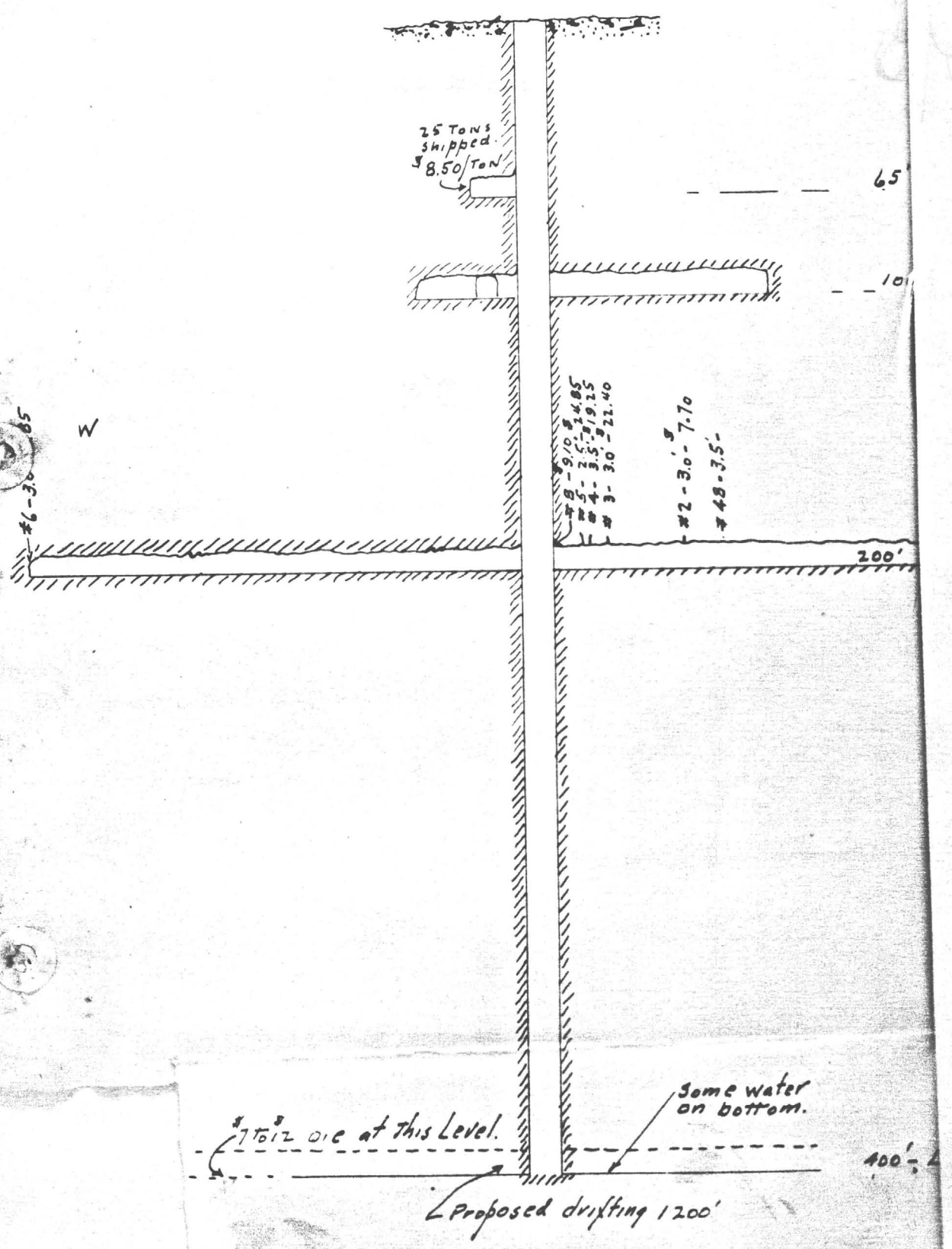
THE IOWA MINE, WHICH IS THE MOST EXTENSIVELY DEVELOPED, IS SITUATED IN THE NORTH EASTERN PART OF THE DISTRICT AT ABOUT 2670 FEET ELEVATION, NEAR THE TOP OF A NEARLY EAST- WEST RIDGE, ABOUT 140 FEET ABOVE A TRIBUTARY GULCH ON THE NORTHEAST THAT LEADS NORTHWARD INTO BOUNDRY CONE WASH. IT IS ABOUT 3½ MILES SOUTHEAST OF VIVIAN, THE PRINCIPAL SUPPLY POINT. WITH WHICH IT HAS A GOOD WAGON ROAD CONNECTIONS. THE PROPERTY COMPRISES THREE PRINCIPAL CLAIMS, THE IOWA, GOLD CUP, AND GOLD NUGGET, KNOWN AS THE IOWA GROUP, IT WAS LOCATED BY MORRE, ROBERTS, HUNT IN 190 2, WHO STILL OWN IT. SINCE 1904 IT WAS BONDED TO C. E . HYMER AND S. W. WOOD. IT IS DEVELOPED PRINCIPALLY BY A 200 FOOT SHAFT AND ABOUT 100 FEET OF DRIFTS AND CROSSCUTS, DISTRIBUTED ON THREE LEVELS AND IS EQUIPPED WITH A SIX HORSE POWER, GASOLINE HOIST.

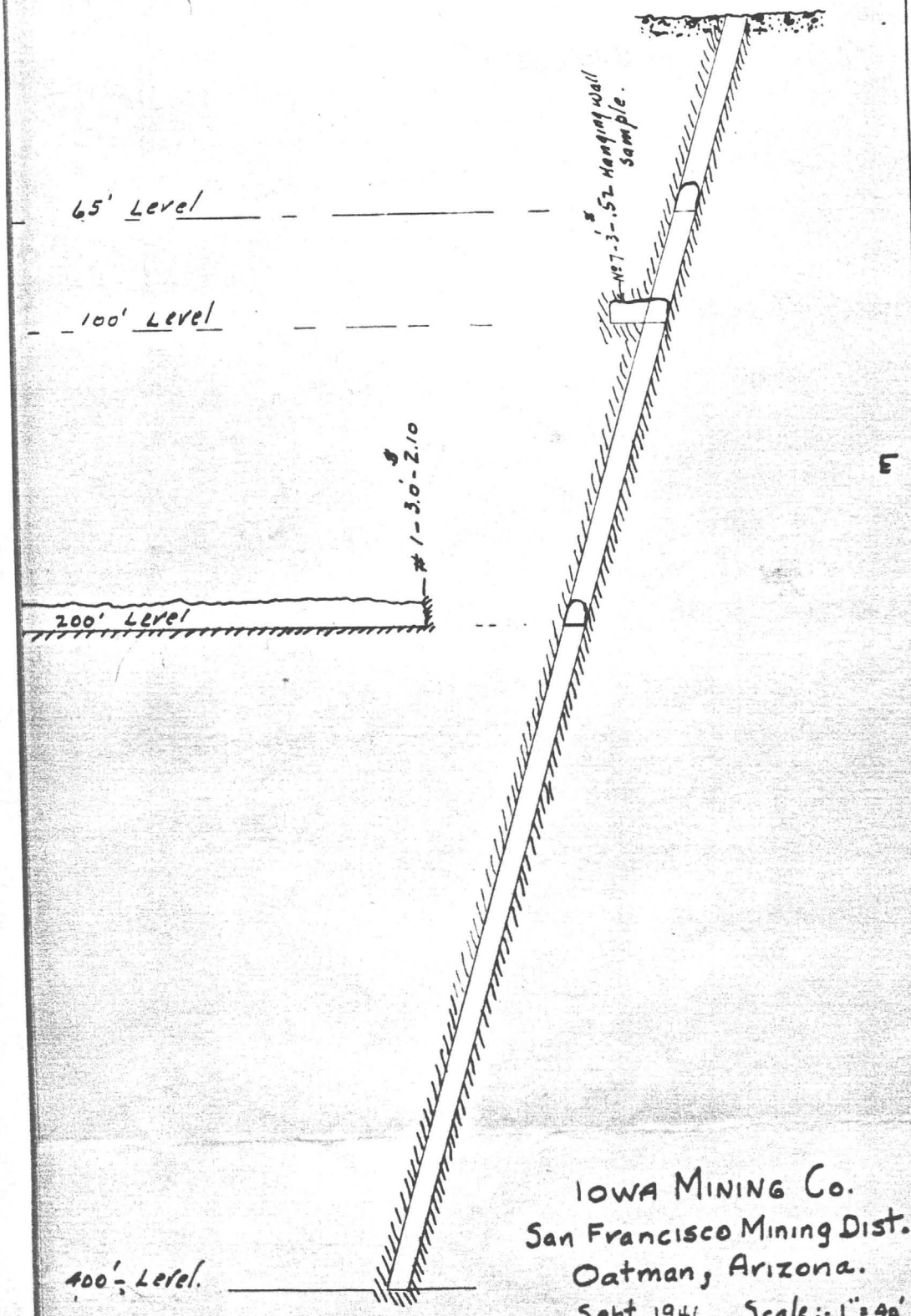
THE COUNTRY ROCK IS DENSE, REDDISH BROWN, PORPHYRITIC ANDESITE. THE DEPOSITS ARE CONTAINED IN A FISSURE VEIN, WHICH DIPS STEEPLY TO THE SOUTH AND IS EXPOSED BY THE CROPPINGS FOR MORE THAN A HALF MILE. IT RANGES FROM THREE TO EIGHT FEET OR MORE IN WIDTH AND CONSISTS PRINCIPALLY OF GREENISH BRECCIATED QUARTZ AND A LITTLE CALCITE WITH LOCALLY SOME ROCK BRECCIA, AND IS TRAVERSED BY VEINLETS OF SECONDARY QUARTZ AND CALCITE. THE VALUES, SAID TO RANGE FROM ABOUT $ 3 .00 TO $ 14.00 IN GOLD TO THE TON, ARE FOUND MOSTLY WITHIN THREE FEET OF THE HANGING WALL. SOME FAULTING OR DISPLACEMENT HAS OCCURRED ALONG THE VEIN. WHERE PRONOUNCED SLICKEN- SIDING SHOWS THE MOVEMENT TO HAVE BEEN NORMAL.

ON THE 100 FOOT LEVEL AT A POINT TEN FEET WEST OF THE SHAFT THE DRIFT, INCLUDING THE SIXTEEN FOOT CROSSCUT TO THE SOUTH IN THE HANGING WALL, SHOWS THE FOLLOWING SECTION:

SECTION ON 100 FOOT LEVEL IOWA MINE ANDESCITE, CRUSHED AND SHEARED FORMING FOOT WALL. CRUSHED AND BRECCIATED QUARTZ AND ANDESCITE WITH VEINLETS, CONTAINING FROM $ 5.00 TO $ 6.00 IN GOLD PER TON-- SIX FEET, HORSE OF COARSLEY PORPHYRITIC ANDESCITE- NINE FEET, PARTLY CRUSHED AND RELATIVELY CLEAR QUARTZ, PROBABLY WITH ANDALURIA RUNNING ABOUT $ 3 .50 IN GOLD PER TON-- SEVEN FEET. HANGING WALL OF COUNTRY - ROCK ANDESCITE.

ON THE 200 FOOT LEVEL THE CROSSCUT, EXTENDING TWELVE FEET TO THE SOUTH IN THE HANGING WALL, EXPOSES THE FOLLOWING SECTIONS: SECTION ON 200 FOOT LEVEL IN IOWA MINE ANDESCITE FOOT WALL. FINELY COMMINUTED ANDESCITE AND QUARTZ CONTAINING $"2.00 IN GOLD PER TON- TEN INCHES.
CRUSHED QUARTZ AND ANDESCITE, WHICH IS SIMILAR TO THE ABOVE, BUT ON ITS HANGING WALL SIDE BECOMES A COARSER AND PURER QUARTZ AND CONTAINS $14.00 IN GOLD PER TON-- TWO FEET.
PARTLY CRUSHED AND SHEARED SILICIFIED ANDESCITE WITH FINE STRINGERS AND VEINLETS OF CALCITE AND QUARTZ-- NINE FEET.


25 Tons shipped
$8.50/Ton
65'
10'
W
#6-3.0-.85
#8-$9.10
#5-2.5'-$24.85
#4-3.5'-$19.25
#3-3.0'-$22.40
#2-3.0'-$7.70
#48-3.5'-
200'
Some water on bottom.
$7 to $12 ore at this Level.
400'
Proposed drifting 1200'



IOWA MINING CO.
San Francisco Mining Dist.
Oatman, Arizona.
Sept. 1941. Scale:- 1" = 40'

7532942

1600.00

500.00

300.00

500.00