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ARIZONA DEPARTMENT OF MINES AND MINERAL RESOURCES AZMILS DATA

PRIMARY NAME: OLD GLORY MINE

ALTERNATE NAMES:

SARGENT
ESPERANZA
BLAINE LEDGE
OPHIR

SANTA CRUZ COUNTY MILS NUMBER: 63A

LOCATION: TOWNSHIP 23 S RANGE 11 E SECTION 7 QUARTER SE
LATITUDE: N 31DEG 26MIN 07SEC LONGITUDE: W 111DEG 15MIN 21SEC
TOPO MAP NAME: ORO BLANCO - 15 MIN

CURRENT STATUS: PAST PRODUCER

COMMODITY:

GOLD
SILVER
LEAD
COPPER
ZINC

BIBLIOGRAPHY:

INDEX OF MINING PROP. IN SANTA CRUZ CO., AZBM
BULL. 191, P. 65
SANTA CRUZ CO. RECORDER'S RECORDS
ADMMR OLD GLORY MINE FILE
PRIVATE RECORDS
BLM MINING DISTRICT SHEET 604
AZBM BULL. 137, P. 188
2 THESIS - SEE FILE - ADMMR

OLD GLORY MINE

REFERENCES

SANTA CRUZ COUNTY

ABM BULL.191 p. 65

MILS Sheet sequence number 0040230071

BLM Mining District Sheet 604

Thesis: Structure & Mineralization of the Oro Blanco Mining District,
Santa Cruz County, AZ By Dr. Louis H. ~~Knite~~^{Knight}, Jr. 1970 pp. 133-137 Geology File

Thesis: A Report on the Field Work, Prospecting & Geology of the
District Contiguous to the Montana Mines, Ruby, AZ by F. E. Gregory,
Sept. 1935, Geology File

ABM Bull. 137, p. 188

Arizona Mining Journal January 1910 p. 42

See: Oro Blanco Mining District (file)

OLD GLORY

SANTA CRUZ

MG WR 7/26/85: According to Mr. Bob Johnson (c), the Golden Concord Mining Corp. did complete a preliminary feasibility study of the Margarita/Old Glory properties in Santa Cruz Co. during 1984. The name of the firm has been changed to Crossland Industries Corp., 305, 8200 Pacific Place, Denver, Colorado 80231.

MG WR 7/26/85: Mr. Bob Johnson of Apache International Mining Co (c), reports that he is attempting to interest U.S. mining companies in the Old Glory mine (Santa Cruz County), and 10 adjacent unpatented claims. He believes that the Old Glory has a smaller ton than the nearby Margarita property but higher gold values.

MG WR 8/16/85: Visited the Old Glory mine (Santa Cruz Co.) Robert & Nancy Fricchione, P.O. Box 287, Arivaca, Arizona 85601, live on this property and take care of it for Mr. Bob Johnson. Mr. Fricchione showed me around the large quartz vein and the hematite zones that apparently carry the highest gold values. Some drilling was done in 1985 using air track equipment.

MG WR 10/3/86: Mr. Bob Johnson reports that Mr. James Sorrell (c) a nephew of Mrs. Ted Wallace, has sued him concerning the Margarita Mine in Santa Cruz Co. Mr. Johnson has counter-sued Mr. Sorrell. Mr. Johnson believes he has someone who would be seriously interested in the Margarita and the Old Glory (Santa Cruz Co.) if the properties were available together.

MG WR 10/3/86: Mr. Bob Johnson is still seeking interest in the Old Glory mine (Santa Cruz Co). He hopes something will be done on the property by next summer.

Do Not Copy

OLD GLORY MINE

SANTA CRUZ COUNTY

GWI WR 1/7/67: Three patented claims belong to W. E. Culbertson of Continental. There are the remains of an old 30 stamp mill.

GWI WR 5/6/67: Visited the Old Glory Mine - No activity.

MG WR 5/21/82: Mr. Bob Johnson of Apache International reports he is still lessee of the Margarita Mine. He is also Lessee of the nearby Old Glory mine. Homestake apparently sampled the two properties together and spend about \$25,000 in their evaluation recently and then dropped their interest. Mr. Johnson believes a surface mine could be developed on the two properties. He believes there is a minimum reserve of 500,000 to 600,000 oz. Au.

MG WR 9/24/82: U.S. Bureau of Mines reported production from the Oro Blanco Mining District, Santa Cruz County for the Old Glory Mine. In the following years 1911, 1926, 1935-36, 1938 and 1940 711 tons were reported. Produced were 152 pounds of copper, 490 pounds of lead, 868 ounces of silver, and 206 ounces of gold.

MG WR 12/31/82: Visited the Margarita and Old Glory mines in Santa Cruz County, leased to Mr. Bob Jounson. The waterman told me that about 3600' of rotary drilling (maximum hole depth - 400 feet) was done on the two properties during the summer of 1982.

MG WR 7/15/83: Mr. Bob Johnson of Apache International reports that he has a joint venture agreement to explore and develop the Margarita - Old Glory properties in Santa Cruz County. Air-trac drilling is to begin July 18. The joint partner is Golden Concord Co, Vancouver, B. C., Canada.

MG WR 3/29/85: Have received report that Glamis Gold Ltd., 1155 W. Georgia St. Vancouver, B.C. V6E 4A2, Canada, has taken an interest in the Margarita and Old Glory properties (Santa Cruz Co). Mr. Bob Johnson of Apache International is still primary lessee.



MARGARITA G...
INSPECTOR
NOV 15 1983

Office of State Mine Inspector

705 West Wing, Capitol Building
Phoenix, Arizona 85007
602-255-5971

NOTICE TO ARIZONA STATE MINE INSPECTOR

In compliance with Arizona Revised Statute Section 27-303, we are submitting this written notice to the Arizona State Mine Inspector (705 West Wing, Capitol Building, Phoenix, Arizona 85007) of our intent to start stop (please circle one) a mining operation.

COMPANY NAME Sonora Exploring & Mining Co.

CHIEF OFFICER Robert A. Johnson

COMPANY ADDRESS Sascha Star Rt, Box 45-C, Tucson, AZ

COMPANY TELEPHONE NUMBER 602-398-2106

MINE OR PLANT NAME Margarita - Old Glory

MINE OR PLANT LOCATION (including county and nearest town, as well as directions for locating by vehicle)

Santa Cruz county - 11 miles south of
Arivaca on Ruby road, 3 miles N on
California Gulch road

TYPE OF OPERATION Exploration PRINCIPAL PRODUCT Gold + Silver

STARTING DATE Present CLOSING DATE _____

DURATION OF OPERATION Ten years ??

PERSON SENDING THIS NOTICE Robert A. Johnson

TITLE OF PERSON SENDING THIS NOTICE Managing Director

DATE NOTICE SENT TO STATE MINE INSPECTOR 11 Nov, 1983

PLEASE NOTE: Any operation found operating, without having sent this notice to the Arizona State Mine Inspector, will be charged with a petty offense.

ARIZONA DEPARTMENT OF MINING RESOURCES

Mineral Building, Fairgrounds

Phoenix, Arizona

1. Information from: Mr. Robert Johnson (Phone: 398-2106)
Address: Sasabe Star Route - Box 45-C, Tucson, AZ 85736
2. Mine: OLD GLORY 3. No. of Claims - Patented 2
(Santa Cruz Co.) Unpatented _____
4. Location: Approx. 1/2 mile west of Ruby, take California Gulch road south & west 2
miles to property.
5. Sec 7 (S. Center) T_p 23S Range 11E 6. Mining District Oro Blanco
7. Owner: Old Glory #1: Mr. Warren Culbertson Old Glory #4: Anamax Mining Co.
P.O. Box 437 P.O. Box 127
8. Address: Amado, AZ 85640 Sahuarita, AZ 85629
9. Operating Co.: Apache International Mining Co. (Phone: 398-2106)
10. Address: Sasabe Star Route - Box 45-C, Tucson, AZ 85736
11. President: _____ 12. ~~Gen. Mgr.~~ Managing Partner: Robert A. Johnson
13. Principal Metals: Au-Ag 14. No. Employed: 2
15. Mill, Type & Capacity: _____
16. Present Operations: (a) Down (b) Assessment work (c) Exploration
(d) Production (e) Rate _____ tpd.
17. New Work Planned: Mr. Johnson is negotiating with several interested parties to
continue development. He believes the combined reserves of the Old Glory and
adjacent Margarita properties are 8,000,000 tons @ 0.07 oz Au/ton.
18. Miscl. Notes: This property is south of the Margarita and is characterized by
similar geology. Recently the Homestake Mining Co. ran an extensive rock chip
sampling program on the property but discontinued their investigation. Mr.
Johnson believes the Old Glory has a reserve of about 3,000,000 tons @ 0.07
oz Au/ton.

Date: May 26, 1982

(Signature)

R. W. Greeley

(Field Engineer)

RECEIVED

JAN 21 1982

DEPT. MINERAL RESOURCES
PHOENIX, ARIZONA

Report upon the Mining and Milling operations at the Old
Glory Mines, Oro Blanco district, ^{Santa Cruz} Pima Co., Arizona.

Active operations were begun upon the property the last weeks of June-96, preparing site for the installation of a new 30 stamp mill. The new plant arrived during the months of July and August, and on October 21st-96 the mill was completed and ready for milling. The new mill is a complete, modern, up-to-date stamp mill of the most approved type, it consists of six batteries of 5 stamps each (950 lbs. to stamp), eight Triumph Concentrators, one Russell Engine, 100 H-P, two boilers, 150 H-P, two rock-breakers, one Gates, and one Hercules, with a complete equipment of tools, lamps, supplies etc.

The mill as it stands to day represents an out-lay of over \$65,000 and could hardly be replaced for that sum.

Mines and Mining Operations.

The Old Glory Mine occupies the south-easterly end of a mountain spur forming a sugar loaf hill 600 feet above the surrounding region and terminated by a flat top or plateau about 220 feet wide and 700 feet long. On the eastern and south-easterly sides the slopes are very precipitous.

Along the crest or summit are the massive quartz out-croppings that are the distinguishing characteristic of this mineral zone. As exposed, forming an escarpment or wall above ground, and denuded by weathering and erosion, the out-croppings of quartz(all mineralized to a greater or lesser extent) will average six feet high and from ten to fifteen feet in width, while in many places are reefs or cliffs six feet high, seventy to one hundred feet long and of an unknown breadth or thickness, so that the entire hill may be very well and truthfully described as a mass of uplifted reefs or cliffs and overthrown and imbedded quartz masses or layers.

Ore Characteristics.

Massive and homogeneous quartz, where undecomposed, very hard but where decomposition of the iron pyrites has taken place, very porous and friable.

The quartz carries gold in free granulations, often very finely divided, and combined with the iron pyrites.

Traces of silver occur with all the gold in the proportion of about one part silver to forty parts gold in value.

No bases are found in the ores, its sole constituents are free gold, iron pyrites carrying gold and the quartz matrix or vein matter. Of the fire assays values per ton, from 50 to 60% is free gold, the remaining percentages gold combined with the iron pyrites.

Development Work.

The principal development work until the resumption of operations in August-96 was prosecuted along the western crest of hill. As a detailed description of the former work has already been made in a former report it will not be repeated here, it will be sufficient to state that, while there are very many places where large ore extraction can be economically accomplished on the western slopes, it was believed that ores could be mined even more advantageously upon the eastern slopes, and, at same time, develop and explore the mine in a new locality, thus adding to its value, and to the knowledge of the ore reserves. Accordingly all work has been confined to the eastern slopes.

The locality selected was determined by the need to secure a grade for ore track to the ore bins at south end of hill. At the point where work was begun the slopes are fully sixty degrees and about sixty-five feet below crest line of hill; as at first the station cut out was very narrow much ore was necessarily lost by being carried beyond the station, and down the steep slopes by the blasting. This difficulty lessened as work progressed, and the base of station widened, and we now have abundant space for storing ores without loss, but it is a low estimate to claim that we lost 750 tons of good milling ores over the steep slopes.

In opening up the ores at this point much dead work was done,

a careful estimate of cost of dead or development work is \$1450.00 in labor, and \$174.50 in tools, powder, steel, etc., or \$1624.50 in all.

Mine Expenditures.

August 1st, 1896 to Jan. 31st, 1897.

LABOR		OTHER ITEMS.	
August	\$ 304.37	Tools and coal	\$264.34
September	855.50	Steel.	111.02
October	1006.32	Powder, fuse & caps	310.30
November.	1276.81		
December	974.63		
January	<u>399.60</u>		
Total labor	\$4817.23	Other items, total	\$685.66
			<u>4817.23</u>
Total of mine expenditures on all accounts.			\$5502.89
Invoice value of tools, steel & supplies on hand and already charged to mine a/c			<u>545.00</u>
Actual cost of all mining and dead work.			\$4957.89
Deducting cost of dead work including tools etc.			<u>1624.50</u>
Actual cost of mining ores exclusive of dead work.			\$3333.39

Tonnage of Ores Mined.

Tons milled from Oct. 21st to Dec. 17th-96.	2500	
" in ore bins at mill.	250) Now on hand
" in ore bins at mine	150)
" piled at mines.	<u>400</u>) 800 tons
Total tonnage of milling ores.	3300	
Tons lost over steep slopes (estimated)	<u>750</u>	
Total tons ores mined.	4050.	
Cost per ton including all dead work	\$1.50	
" " " excluding all dead work.	\$1.01	
" " " including all dead work and loss of 750 tons.	\$1.22.	
" " " excluding all dead work but not loss of ore	.82.	

It has seemed but just to reckon the tonnage lost, since the conditions that caused this loss have ceased.

In regard to dead work, as a certain amount of dead work should be estimated in conservative calculations, it is believed that an allowance of 10 cents per ton will be a very safe and even excessive estimate for dead work required for continued and systematic mining extending over longer periods than the present one of but six months. We then would have as the cost per ton of mining, including delivery to the mill, 92 cents.

As a result of the experience gained in mining over 4000 tons I believe that the result of a years mining will show an average cost for mining ores under 75¢. In the present condition of mine development but little dead work will have to be done, all work will be in ores ready with but slight assorting to go to the ore bins.

Milling.

Milling began October 21st and ceased December 17th through failure of water. The run was an exceptional one, we started with new machinery and did not lose one hour from any cause due to the machinery, everything worked smoothly and perfectly.

A careful record was kept of all stops for cleaning plates, loss by water being short etc., and it was found that the actual milling days of 24 hours each was just 50. An equally careful record was kept of ores crushed, with a result of an average of 2-1/2 tons per stamp per 24 hours.

When shoes and dies were new we crushed some days over 3 tons per stamp-head, again when they were well worn, in the days just before renewing them, we fell to 2 tons per stamp-head. It should also be stated that, owing to small capacity of the rockbreakers, they were set to crush very coarse, thus throwing extra crushing work upon the stamps, with larger rock-breakers, permitting finer

crushing, the average per stamp-head can be raised to close upon 3 tons per 24 hours.

Milling Expenditures by Items
During Milling Period .

October Labor.	\$ 471.58
November.	1009.23
December	552.49
Lights at 68¢ per night, Oct. 21st to Dec. 17th	38.08
Oil, Waste etc.	22.50
Quicksilver loss	26.00
Shoes and dies, wear, 9¢ per ton, 2500 tons.	225.00
Wood 5 cords per day at \$3.50 per cord.	<u>875.00</u>
Total cost of milling 2500 tons	\$3219.88
Cost per ton, milling.	<u>1.28</u>
Total cost of mining and milling including all dead work at mines.	2.78
Add salaries, office expenses etc, reduced to cost per ton,	<u>.18</u>
Actual cost of mining and milling per ton.	\$2.96

This tonnage cost of \$2.96 is the actual cost during the milling period of the ore treated, and will be basis used in analyzing the results of milling.

It should be remembered that the mill labor with but 20 stamps in operation, is the same as with 30 stamps, as the consumption of 5 cords of wood gave an excess of power, it is safe to say that 6 cords of wood per day will suffice for the 30 stamps, so that upon the actual expenditures during milling period, with 30 stamps in operation there would have been crushed 1250 more tons at an additional cost of but the extra cord of wood per day, this would give 3750 tons at a cost of \$3394.88, or but 91¢ per ton.

It should also be stated that with the present two, small rock-breakers, the labor item was as follows;

2 laborers feeding rock-breakers, 14 hrs. shifts each	\$1.75	\$3.50
3 " shovelling in ore bins, each	\$1.50	<u>4.50</u>
		\$7.50

With one large rock-breaker the labor required will be as follows:

1 Feeder, 12 hours	\$1.50	
1 Shoveller,	1.50	<u>\$3.00</u>
Saving per day		\$4.50

Or a saving of, 06¢ per ton on a basis of 75 tons per day. So that I feel perfectly safe in asserting that all milling can be kept well within an outside cost of \$1.00 per ton under our present system of plates and concentrators.

The cost of concentration per ton is placed at, 10¢.

Should we be able to do away with our concentrators there will be 10¢ per ton saved that can be applied to lessen the cost of the methods of treatment that we shall adopt. At the outset of milling, instructions were given to an expert Concentrator man produced from California, to operate the eight concentrators without any regard to grade of concentrates made, but to simply see how low a tailing we could make with our ores; this plan was rigidly followed for ten days, thus giving us results from 500 tons, carefully taken samples were made each hour of concentrators headings and tailings; as a result it was found that the tailings loss could not be reduced below 90¢ per ton, with a maximum of \$1.10, with these tailings the corresponding values for the concentrates made was from \$46.50 to \$48.50.

An examination of the tailings showed very finely divided free gold and heavy black iron very finely divided, and hardly a trace of any iron pyrites. Attempts were made by hand-panning to separate

the gold from the black iron with no satisfactory results. So that I am thoroughly of the opinion that our work, showing an average tailings loss of \$1.00, cannot be improved upon by concentration.

Bullion and Concentrates Produced.

OZS.	GOLD.		BULLION SILVER.		TOTAL VALUE GOLD & SILVER
	AVERAGE FINENESS	VALUE	AVERAGE FINENESS	VALUE	
404,59	587.	\$4949.04	384.	101.01	\$5050.05
Average in gold per ounce of bullion.				\$12.27	
" silver " " "				<u>.25</u>	
Total value per ounce of bullion				\$12.52	
2500 tons milled, average yield per ton from plates \$2.02.					

Concentrates.

FIRST SHIPMENT.			SECOND SHIPMENT.		
Net Weight.	Gold per ton.	Silver per ton	Weight.	Gold	Silver
35.350 lbs	3 ozs.	15,7. ozs	44.668	3,40	14,6
Value per ton, gross \$68.23			Value per ton, gross \$75.28		
" " " net \$54.73			" " " net 61.78		
Value gross of shipment \$1205.96			Value gross \$17981.00		
" net " " 967.35			" " " 1379.79		

Uniting the two shipments we have:

Gross value of 80.018 lbs. concentrates	\$2986.96
Smelter charges (R.R. ft. and treatment	<u>639.86</u>
Net proceeds of settlement with smelter	\$2347.14
Packing to railway at \$8.00 & \$9.00 per ton)	\$373.20
88.542 lbs. gross (including moisture)	
Other labor, filling & sewing sacks etc.	70.74
Cost of canvas sacks	<u>110.00.</u> <u>553.94</u>
Actual net value of concentrates.	\$1793.20

The items: smelter charges \$639.86, packing to R.R. \$373.20. and other labor etc. \$70.74, make a total of \$1083.76 to this we will

add ten cents per ton on 2500 tons milled for concentrating, giving \$1333.76 or 54¢ per ton as the cost of concentrating, marketing concentrates etc., The average daily weight of dry concentrates made for fifty milling days was 1600 lbs, as there was an average loss from moisture of 8-1/2 %, the daily yield of concentrates as sacked wet was about 1750 lbs.

Percentage by weight of dry concentrates to whole 2500 tons milled 1.60%

Total value of bullion produced	\$5050.05
" " concentrates	<u>2986.96</u>
Gross yield of 2500 tons	\$8037.01
Gross yield per ton	3.21
Actual cost of mining and milling per ton	\$2.96
Add cost of marketing concentrates 54¢	.44
less 10¢ already included in \$2.96	<u> </u>
Actual cost per ton	\$3.40
Actual yield per ton	<u>3.21</u>
Loss per ton mining and milling 2500 tons	.19 .1

So that during this milling period we actually lost about \$475.00 It is but fair to call attention that the \$2.96 includes everything expended, dead or development work, ores lost in blasting etc. On page 6 of this report it is explained that, as a result of an experimental test of ten days with 500 tons, we turned out concentrates running from \$46.50 to \$48.50 per ton with a tailing loss of practically \$1.00.

Low concentrates make low tailings, and the reverse, as we have no plant for home treatment of concentrates we were forced to make high concentrates for shipment to smelters at a distance, so that our loss in tailings went up to an average of \$2.00 per ton, the highest being \$2.20 and lowest \$1.80. Adding therefore \$2.00 per ton for loss in tailings to the \$3.21 actual value of bullion and cont

concentrates, and we will have \$5.21, as the actual yield per ton of ore for 2500 tons. It seems proper to state here that during a period of two weeks while the writer of this report was recovering from the effects of an attempt to poison him, and consequently unable to make his usual daily visits to the mine, the then Mine Foreman became very careless and sent waste rock and barren quartz to mill, our battery headings fell to \$2.00 per ton, so that about 650 tons of ore was milled at a loss of fully \$1.40 per ton.

A new Mine Foreman took charge December 1st, but seventeen days before mill shut down, he took the mine with not a pound of ore in reserve, kept mill supplied with 50 tons per day that averaged \$6.50 per ton and employed six men per day less than the former Foreman. I am confident that had it not been for this bad run of two weeks the average yield per ton would have very nearly touched \$6.00. However this may be, it is thought best to make \$5.00 as the gross yield or value per ton of the Old Glory ores as sent to mill. It is clearly evident from the actual results here set forth that we have to make a very radical change in our milling processes. We have, apparently, practically an inexhaustible supply of low grade gold ore that we can safely put at \$5.00 per ton gross yield. With our present system of combined plate amalgamation and concentration we have absolutely demonstrated that we can not reduce the loss in tailings below \$1.00, this is 20% or 1/5 of whole value per ton. Again we make tailings of but \$1.00 we have concentrates too low in value to ship away to distant smelters. Hence the question is resolved into this proposition; viz: shall we submit to the continued loss of \$1.00 and install a process merely to treat our low grade concentrates, or shall we adopt a process that will do away with all concentration and treat our whole product as it comes away from the battery plates?

But two processes need to be considered, viz: the chlorination and cyanogen, a most careful and extended system of laboratory work for over four months have confirmed the decisions reached by expert metallurgists in Denver and San Francisco to whom my predecessor sent large samples of the Old Glory ores, that this ore is perfectly adapted to either process. As the first cost of either process of sufficient capacity to treat the product of our 30 stamps will be about the same, viz: \$5000.00 and, as the cost of treatment (including roasting for the chlorination process) per ton will be about the same, the argument seems to be entirely with the cyanogen process. I am quite convinced that the Old Glory ores or pulp as it flows from battery tables or aprons can be treated at a cost per ton of not to exceed \$1.00 including all royalties, by the cyanide process, and that this process will reduce our tailings loss to 50¢ per ton: or to 10% instead of 20% on a basis of \$5.00. So that we shall save, 50¢ per cost as the cost of running the concentrators, another important saving will be less direct, but still an actual one, that is that with the cyanide process without concentration, we can ^{use} coarser screens in our batteries, and so crush more ore per stamp per 24 hours. So that with proper rock-breakers, and with coarser screens at the battery discharge, we may easily and conservatively reckon upon an out-put of 90 tons per day of 24 hours. In the following estimate showing what will be the results after we shall have installed the cyanide process with the Ladd-Chittenden Leaching Troughs, the cost of mining will be put at \$1.00 per ton, of all milling, that is simply crushing ores to proper sized pulp for the cyanide treatment, at, 85¢, and \$100 per ton for the final cyanide treatment:

One ton of ore, assumed average gross yield.	\$5.00
Maximum loss in tailings by cyanide process.	<u>.50</u>
Actual saved gross value per ton.	\$4.50
Mining per ton.	\$1.00
Milling, all cost save cyanidation.	.85
Cyanidation, including all royalties	1.00
All other expenses, general management, office etc	<u>.15 3.00</u>
Clear net per ton.	\$1.50
90 tons per day at \$1.50 per ton net	\$135.00

Calling 26 days for the month, and there is no reason why full time crushing can not be made since there will be no lost time cleaning plates, we will have a net per month of \$3510.00. Allowing the odd \$510.00 as a betterment and maintenance fund there will be a clear \$3000.00 per month or \$36,000.00 per annum. The estimates of operating are rather above what my experience with this property leads me to suppose will be the actual figures, the mining should be kept under 90% and perhaps as low as 75%. The item of 15% per ton for all expenses outside of mining and milling is very high, as it exceeds \$400.00 per month; and it is also believed that the 85% for all milling outside of cyanidation, can be brought down to 60%. The larger figures have been preferred from an abundance of caution. In conclusion I wish to say that this report (assuming honesty and competency on the part of the writer) should have more weight and confidence given it than former reports because it embodies the results of nearly a year of actual management of the property during which time a complete new 30 stamp mill was erected and 2500 tons of ore milled. As in a former report a very extended description of the mine was submitted, it has not been thought necessary to go in to more detail. Unless the conclusions reached as a result of almost a daily study of the Old Glory hill or rather mountain, are all

erroneous, it is believed that even now the vertically placed vein that was the true source and origin of the enormous quartz beds that are the distinguishing characteristics of the Old Glory hill, is uncovered and definitely located. Even should this most valuable discovery remain still in doubt, we know that the hill shows great quartz beds that will require many years to mill.

Ores of gold yielding much lower per ton than the Old Glory ores are now being successfully worked, notably the Treadwell in Alaska and the Deadwood mines in Dakota, in both of these world famous mines the margin of net per ton is lower than it is believed the Old Glory ores will show with the application of the cyanide process and milling upon a large scale.

I cannot but feel that every circumstance connected with the operating of this property upon the lines indicated in this report, gives sure promise of gratifying results.

Respectfully submitted.

The Old Glory Mines, Pima Co., Arizona. Eugene Fechet.

February 22nd 1897.

MINING

Notes on report on OLD GLORY MINE? RUBY/DISTRICT, Sta. Cruz Co., Arizona, by F. B. Weeks,

LOCATION: The Old Glory mine is located 35 miles s.w of Amado, Sta Cruz Co., Arizona, a station on the S.P. RR. between Tucson and Nogales.

Claims and area, five unpatented lode mining claims, 100 acres owned by James D. Culbertson, Santa Paula, Calif.

Location ~~and~~ notices and proofs of annual assessment work in proper form & recorded in Sta. Cruz. Co. as shown ~~by~~ abstract of title brought down to date.

HISTORY: Because of its large and prominent outcrop forming the summit of a ridge 2000 feet long this property was one of the first discoveries in this section. After the first arrastre operation on ~~this~~ high grade surface ores a 30 stamp mill was erected and about 75,000 tons of ore was mined from an open cut 30 x 50 x 200 feet and from a large open cut along the east side of the ridge. Later about 1912 W. R. Ramsdall of Tucson undertook to resume operations with 10 stamps, but eventually abandoned operations. No doubt the low grade of ore, small tonnage operation, poor recovery, and distance to haul and ship concentrates made the operation unprofitable.

Adjoining and other nearby properties are the Margarita mine with a 50 ton a day mill adjoins the Old Glory on the north, and is and has been operating for some time. The Tres Amigos, Oro Blanco, and Dos Amigos with a 50 ton a day mill that is now being enlarged lies about one mile south. Two miles N.E. of the Old Glory is Montana mine, at Ruby, Eagle Pitcher Co. This is an old producing property whose surface geological conditions are very similar to those of the O.G. It was worked in the old days as a gold mine. but with depth the ore turned base carrying gold, silver, lead and zinc with the lead and zinc combined that it was impossible to separate them with then known methods. By modern selective flotation it is now producing 50 tons of concentrates from 350 tons of ore mined daily. The shaft has a depth of 800 feet, with extensive underground workings and wide ore bodies. There are other promising ~~workings~~ prospects in this section, but with only shallow workings.

TRANSPORTATION: The mine is connected ~~by~~ with the state highway and the S.P.rr. by 35 miles of dirt road that is kept in good condition by the County. Much of it is over a rolling country with no long or steep grades. From the rr. this road passes thru the town of Arivaca to Ruby where the Montana mine is located and from which 50 tons of concentrates and supplies for the mine and all operations are hauled by trucks over this road. Old G. is 2 miles from Ruby.

Power: Diesel engines with fuel hauled from the RR will be required
Water: Judging from nearby operations a sufficient water supply for large operations can be had on the property. The streams carry a large quantity of water for six months of the year, and for the remainder of the year dependance must be had on the underground supply and storage, and pumping back reusing storage water. The Montana mine is able to mill continuously 350 tons of ore per day with water from the mine workings and storage.

The O.G. has two reservoirs sites, one of which is shown in photograph 4.

TOPOGRAPHY: The country lying west of the valley that connects Tucson and Nogales, is a broad elevated upland, extending for more than 30 miles to the west, this has been subjected to erosion for a long time, the result is a maze of rolling hills and ridges, with an average elevation of 4,500 ft. above sea level. Many prominent hills and ridges are found along this highland and are formed of silicified andesite or masses of quartz. This is the general characteristics of the country in and around the O.G. mine.

GEOLOGY: The general rocks of the region is andesite, often porphyritic in structure. It is a well known fact that andesite is ~~preeminently~~ preeminently the home of gold and silver ores, while surface exposures of the andesite are frequent there are no bold outcrops except where the andesite has been silicified or completely replaced by quartz, which usually carry gold and silver and vary in size and value. The andesite has been thoroly fractured in a general N.W. and S.E. direction. Over most of the area a later fracturing has taken place nearly at right angles, or in a general N.E. S.W. direction, that is quite prominent where the ore bodies have been exposed.

For a country that has been mineralized in so many places the absence of ledges and quartz filled ~~fractures~~ fissures and faults is very striking. This statement might seem to be contradictory by the occurrence of the many knobs and ridges formed of quartz and silicified andesite. But these occupy a relative small portion of the area as a whole, and constitute the centers of intrusion of the mineralization, (mineralizing waters),. Many prospects are found outside of these silicious masses, but no one has been developed sufficiently to determine their permanance in depth.

The O.G. property has been formed by andesite that has been intruded by mineralizing waters forming a ridge 2000 feet in length by 500 feet in width in which are four separate quartz ore bodies from 40 to 150 ft. in width and separated by andesite with seams and stringers of quartz, this latter being ore that is probably not commercial. Where the andesite has been completely replaced by quartz the ore is of commercial grade.

ORE OCCURRENCE : The assays indicate there is about 15 oz. of silver to ~~1~~ 1 oz. of gold, or at \$35.00 per ounce for gold and 60¢ per ounce for silver there is about \$4.25 in Au. and 75¢ ag. in ore. The Au. ~~is~~ is in part free and in part associated with iron sulphide in a quartz gangue. So far as developed this ore ~~occurrence~~ occurrence is somewhat different from the usual quartz vein, in that there is no evidence of faulting or movement between the ore and andesite. The line of demarkation between andesite and quartz is generally sharp and well defined. However, the andesite may include more or less horizontal stringers of quartz.

That part of the ore body in which development has been done is 400 ft. long by 150 ft. wide by 100 ft. in depth. This ore mass is a replacement of andesite by ~~silica~~ silica and in places carries iron and ~~precious~~ sulphur and precious metals of paying quantity. There are 4 other quartz outcrops on the property on which no work has been done, 2 of these are on the strike of developed ore, the other two are on parallel veins. There is commercial ore on the outcrop of each of them.

It has been found in the lower workings of the Montana mine that the ore change from quartz-gold silver ore to a base ore carrying gold, silver, lead, and zinc. It is probably that the same will occur at the O.G.

PROBABLE AND POSSIBLE ORE: Since there is no development work in ore below ~~the~~ 100 ft. from the surface it is entirely a matter of opinion as to possibilities in depth, it would be unreasonable to suppose no large lenses would be encountered below the present workings.

No other mine in this section has gone below the 100 ft. level except the Oro Blanco where the ore has been continuous to 250 ft. level and the Montana mine to 800 ft.

EQUIPMENT

There is no equipment of any kind on the property.

DEVELOPEMTN

Map no. 1 shows in a general way how the ore body has been ~~opened~~ opened. The ore on the east side of the ridge has been stripped and a large open cut has been made, part of which is shown in phopis, 2 and 2. Also an open cut about 500 ft. long with an average of 20 ft. in width and depth in the crest of the rddge. From this open cut a stope has mined below about 100 ft. long by 50 ft. on the slope and 6 ft. high, that samples indicate average \$12.00. The tunnel coming in from the east does not cut the ore body at that depth, since on its rake ~~xxx~~ to the S.E., the tunnel lies under the ore body. The tunnel does show ore but not of commercial grade. The tunnel coming in from the W. with drift and crosscut is also under the ~~main~~ orebody, but does not reach it due to the pitch of the ore to the east, it also shows low grade ore. For the purpose of minig this ore body it is planned to drive a tunnel in the direction of the dip and rake of the ore body on a level with the ~~old~~ mill and then upraise with the ore. This upraise will pass thru 150 ft. of the probable ore and serve as an ore pass from the quarry to the mill ~~walk~~ level. M

METHODS AND COSTS:

~~This 300,000~~ This 300,000 tons of ore is a quarrying proposition and the usual methods of quarrying will be employed. A tunnel will be driven in and an upraise made to connect it with level ~~shown in the~~ above. The ore as quarred will be trammed to this raise, and from ~~shoves~~ from bottom of the raise to the ore bin at the top of the mill. This tunnel and upraise will also develop the ore below the 300,000 ton now in sight, for 150 ft. in depth in the probable ore and this area may yield another 300,000 tons. The distance trammed will be from 800 to 1000 ft. depending on the ore body that is being mined. It is estimated that mining and delivery to the mill will cost 75¢ per ton. This ore mass 400 ft. by 150 ft. by 100 ft. make 500,000 tons, about 3/5 of this or 300,000 is commercial ore, the balance is waste rock or ore of non-commercial value. The latter is to be sorted in mining or on a picking belt before it passes to the fine grinding section of the mill.

MILLING: Best method to be determined by experimental work.

PRODUCTION: Mr. Weeks claims 25 or 30 years ago about 75,000 tons of \$8.00 ore was mined and milled. (No records). Later ~~found~~ 1912 to 1915 10 stamps of the old mill was put in operation (see history)

SAMPLING: 17 samples from ore in place varied from 71 cents to \$11.65 the average was \$5.05. 6 samples taken from the dumps varying from \$8.123 to \$37.10 averaged \$17.50. There are about 5,000 tons of ore on the dumps, but it is not believed that the whole will average \$17.50. 65 samples previously taken by Morris J. Elsing, an engineer of Tucson, were assayed for gold only and averaged \$4.45. Add the silver average of 76¢ per ton makes the average gold silver value \$5.21, 112 samples taken by Mr. Elsing at various places in the ore body gave an average of \$4.40 figured at the present price of gold and silver (\$3.82 Au. balance Ag.) Evidentially a number of these samples were taken of the silicified andesite to ascertain if it was commercial ore, as they were very low grade, some as low a 40¢ per ton.

VALUE OF PROPERTY: (Weeks,)

Gross val. of ore in sight	\$1,517,500.
Net recoverable val. 95% id	1,441,025.
Cost of property, mine and mill equip.	\$350,000.

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Cost of mining and milling 300,000 tons ore	\$675,000	
Net profit on ore insight		\$ 416,625.

It will take 4, 1/2 years mining and milling 200 tons per day to deplete the reserve after property is equipped. The net profit would return the investment and a profit of ? (119%).

CONCLUSION: There is satisfactory evidence that this mine has developed at this time tonnage shown as above which should yield a profit of \$2.25 per ton above the cost of property and mine and mill equipment.