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C. G. Clifton (1)

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John Flanagan

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Item 179

- FOREWORD -

The following information is not the opinion of any engineer, or engineers, but was compiled from the old company records, such as superintendents' reports, old assay and bullion books, underground working maps, and considerable other authentic information, also up-to-date engineers' reports which cover the subject in great detail, which the company has in their files, and which anyone who cares to check will find unimpeachable, if they will take time to thoroughly investigate.

The potential possibilities of the property have been only slightly mentioned, and no attempt to estimate its potentialities has been made, although it is known that there are better than fifteen hundred feet on the strike of the lode, which continues to considerable depth, that is known to contain values, and varies in thickness from thirty to fifty feet. Also, in compiling the facts and figures regarding the blocked out ore and the stope fills, just the actual footage in ore penetrated is estimated, and no attempt has been made to make any intangible additions, even when it is absolutely known that the vein matter actually continues in width for considerable footage in the exact locality being discussed.

For a basis of calculation, gold has been figured at $20.00 per ounce and silver at 30¢ per ounce. However, if one wants to take the world market for gold, which is certain to come in the very near future, and the present price of silver, considerable difference will be noticed in the following figures.

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THE PROPERTIES

The properties of the Woodville-Justice Mining Company comprise the Justice, Woodville, West Justice, Blaine, Memphis and Tarto mines, situated in the Silver Hill District of the Comstock Lode, Storey County, Nevada.

These holdings cover 2100 feet on the strike of the Comstock Lode. In the south end area, where these properties are located, the lode strikes two VALUABLE ore bodies, or veins, one on the hanging wall known as the "WHITE VEIN," and one on the foot wall known as the "DARK VEIN," because it contains manganese. Practically all past production was from the white vein.

Woodville Shaft 822'

The main working shaft, known as the Woodville shaft, is 1000 feet deep, vertical, three-compartment and located within 500 feet of the south end line of the property. It is about 3000 feet from the railroad station

of GOLD HILL. A State Highway leading to Reno and San Francisco passes through the property near the shaft. Transportation and working conditions are excellent.

Water in abundance for all purposes is available at a cost of 10 cents per mill ton. Mining and construction timber is landed on the property at a delivered cost of $23.00 per M board feet. Labor conditions are excellent at $4.25 to $5.25 per day, all living in own homes locally. Electric power is also available at a cost of $54. per H.P. year. Transportation costs of concentrates to Salt Lake City smelters by rail $60 per ton, by auto truck $20 per ton.

PAST PRODUCTION

The past production from these properties, practically all from the south 500 feet of the 2100 feet of lode territory within their end lines, aggregates upwards of $15,000,000, of which about 80% in value was gold and 20% silver. This all came from the hanging wall or white vein above the 1350 level in the extreme south end of the property. There remains, therefore, 1500 or more feet on the strike of the lode up to the north end line, which, with the exception of a comparatively small area north of the old workings between the 490' and the 822' levels, is practically virgin undeveloped ground, but known to contain ore of commercial value under the present day conditions of cost and metallurgical treatment. The Justice Mine was one of the largest producers on the Comstock Lode.

HISTORICAL

At the period of this past production, which was prior to the driving of the Sutro Drainage Tunnel, and during the days of Pan Amalgamation, pumping, mining, and milling costs were extremely high, and the recovery of values by the then prevailing metallurgical process of Pan Amalgamation was extremely low-averaging 67.5% of contained gold and silver values. Hence, any ore of less than $45. per ton in value could not be worked at a profit, and enormous tonnage of the lower grade ores were used as stope fills, the latter being from 30 to 50 feet in width timbered with square sets, and many sets in height. The loss in treatment is illustrated by the record of 21 mills operating on Comstock Lode ores during the period under consideration.

Tons of Ore	Average Mill Heads	Average Yield per Ton	Per Cent Yield Per Ton of Ore
56,656	$56.62	$38.27	67.5%
Loss in milling by Pan Amalgamation		18.35	32.5
		$56.62	100.0%

Hence, at that period, an ore of $45 in value produced very little, if any, profit as indicated by the following figures of average costs:

Gross assay value of ore as stated			$45.00
Loss in milling by Pan Amalgamation	32.5%	$14.62	
Cost of mining - average.....		12.80	
Cost of milling "		14.00	
Cost of wagon haul to mill, per ton.....		3.00	44.42
Apparent profit per ton of ore.....			$ 0.58

Eight years later, during the Justice Company's bonanza period, when ore was stoped from 30 to 50 feet in width, ranging in value from $50 to as high as $12,000 per ton, costs had been reduced somewhat, and recovery had increased to 75% of contained value, but even then $35 ore could not be mined and milled at a profit. In consequence, while the Justice Company had been milling as high as 450 tons of pay ore per day, employing as high as 600 men, it was found necessary to suspend work of mining on December 1st, 1877.

Following this suspension of mining, development work was carried on in search of a grade of ore that would pay a profit in face of high costs and low recovery of values, although the latter had been increased to 75% of the contained values. Several attempts were made up to the year 1890 to stage a "come back," but this failed because of the failure to develop a sufficient tonnage of ore averaging better than $25 per ton in the old area at the south end of the lode within the property lines.

This is illustrated by the Justice operations for three months ending December 31st, 1890, as follows:

Tons of Ore	Bullion Recovery	Working Cost	Loss	Net Yield Per Ton
2,399	$41,478.00	$48,606.00	$7,128.00	$17.29
	Add milling loss of 25% by pan amalgamation			5.76
	Indicated gross assay values of ore - average			$23.05

This ended a profitable mining by the Justice Company from the south end of their lode territory, although it is obvious that ore of the average value indicated would, under present day low costs and modern metallurgical treatment, be highly profitable. There are many thousands of tons of such ore now developed ready to mine and mill by modern methods and cost, plus 150,000 to 200,000 or more tons of such ore averaging around $15 to $20 per ton in the old stope fills, of which 75% to 80% in value is gold, the balance silver.

From 1891 to 1898 the Justice Company carried on a development campaign by driving north on all its lower levels from the early day stoped

area at the south end of the property. Some of these drifts were driven nearly 1000 feet north, the 600 level was driven farther north. Raises, winzes and crosscuts were made, and the various new levels connected. All of this work was confined to the hanging wall or white vein. In this manner large individual blocks or ore were developed and remain intact today.

Values in these blocks were determined by sampling and assaying as development work progressed, and later by milling the ore extracted from the drifts, winzes and raises. Records were kept of these assays and are available.

There was no stoping of ore, so the ore developed and blocked out is still intact and immediately available for mining and milling by modern methods and low costs. All told, between 1100 and 1200 assays of samples from this new area north of the old workings were taken, none of which assayed below $20 per ton and up to $30 per ton, figuring silver at 30 cents per ounce.

BLOCKED ORE VALUES

This lies between the 490' and 822' levels. The Company records show that the first 250 FEET OF DRIFTS north of the shaft were in ore "too low in grade to mill" under the then existing conditions. From that point on values increased and the records show the assay values. The 490' level was driven 275 FEET NORTH OF THE 250 FOOT point above noted. A raise 50' above the level was entirely in $30 ore. A winze connects the 490' levels. Good ore was extracted from the 622' level far north of this winze. Ore extracted from this work aggregated 2209 tons which was milled, the recovery average being $24.11 per ton. Figuring loss in milling at 20%, the average assay value of $28.93 per ton is indicated.

The block below, from the 622' to the 822' level, with a sub-level at 762', produced 7590 tons of ore, from which, by milling, bullion of the value of $160,761.62 was recovered, an average of $21.18 in bullion per ton of ore. Figuring the milling loss at 20% of contained values an average assay value of $25.41 per ton is indicated.

This three level block of ore, 275' in length on the lode, 510' deep on the lode dip of 40 degrees, and 6 feet in width (which was the width of the drifts), equals 841,500 cu. ft., which divided by 13 (the Comstock Lode factor for ore in place) equals 64,730 tons, less 9,799 tons extracted in development, leaves 54,931 tons of ore now available in this one block. The average assay value, based upon 80% mill recovery at that period, is $27.17 per ton, or a total gross value of $1,492,475.27 for the ore in this block now available for mining and milling.

It must be noted that - (a) the width of ore stated as six feet in this block is the width of the drifts only, whereas, according to the Company

the 490', 622' and 822' levels in the old workings at the south end, stoped ore in widths from 30 to 50 feet. Therefore, the tonnage in this block when mined to its full pay width, may be greatly in excess of the tonnage stated above; (b) the lode above the 490 level in this new area up to the surface is all virgin ground and is believed to contain, or is likely to contain, bonanza ore bodies comparable to those mined in the early days at the south end of the lode; (c) there is also 400 or more feet of unexplored lode to the north end line from the surface down to the lowest levels extended north, in which area there is potential ore tonnage of unknown quantity and value; and (d) the foot wall, or dark ore vein, which, throughout the whole length and depth of the property is developed only to a slight extent in the upper levels at the south end. These all constitute potential possibilities of great future value.

HANGING WALL VEIN

As an illustration of ore values in the old upper workings of the white vein, the results from leasing in 1897 and 1898 are cited as follows:

In 1897 four leases produced 1048½ tons of ore, producing bullion by pan amalgamation valued at $36,537.04, or a bullion of $34.86 per ton of ore. As this represented at that period a 75% recovery of value, the assay value would approximately average $46.50 per ton of ore. The Justice Company received in royalty $5,808.02, or about $5.50 per ton of ore.

In 1898 one lease produced 75 tons of ore the assay value of which was $168.38 per ton, $128.50 being gold and $39.78 being silver, in ratio about 80% gold and 20% silver.

Since 1905 leasing has been continued on the 370 foot level, working through a shaft put down for that purpose. In very recent years one lease one this level produced $150,000 in money value, mainly from ore ranging from $40. to $60. per ton, although some of the ore ran from $25. to $30. per ton. Records of these are available.

Recent lots of ore mined by leasors from this same area assayed $24.60, $85.30 and $102.65 per ton.

The above leases are all in the south 500 feet of the lode territory covered by this property, and are all subject to cancellation at short notice.

FOOT WALL VEIN

This is usually referred to as the "dark ore" vein because of its dark color as contrasted with the "white ore" of the hanging wall vein. Because of its manganese content it was impossible by pan amalgamation to recover

over 50% of its gold-silver value, which fact prevented the profitable working of its ores during the early period of operations on the Justice property, hence very little development work has been done on this vein, nevertheless, leasors who have worked these ores in the upper levels, and know their values, state emphatically that this vein contains the larger ore body of the two veins, and that it is of better average width than the "white vein."

After abandoning work on the 490, 622 and 822 levels on the "white vein," the Justice Mining Company did some development on the "dark vein" in the Blaine claim by driving a tunnel on the vein from a point north of the old Justice incline shaft. The ore was found to contain sufficient manganese to make extraction of values non-commercial by pan amalgamation at that period, and for that reason only it was left largely undeveloped. Leasors, however, are still working it today in the upper levels.

As an evidence of values the results of one leasor are cited. He mined and shipped to a smelter 4000 tons of this dark ore, his smelter settlement being based upon $15. average value for gold and silver. The extraction of large amounts of this ore by leasors from the Blaine and Drain levels of the foot wall vein leads to the conclusion that this ore should be developed and worked on the lower levels extended north, as it can easily be done by crosscutting therefrom, and hoisted through the three-compartment Woodville Shaft which is the main working shaft of the property, thus concentrating all production at the collar of the shaft close to the mill site.

Modern methods of flotation practice, using proper reagents, indicate that a recovery of gold and silver values of 91.99% to 95.69% as per to flotation tests made on foot wall ore for the Arizona Comstock Corporation operating the Savage, Hale & Norcross and Chollar-Potosi Mines on the Comstock Lode.

Test A	Heads - Gold 0.49 ozs @ $20 per oz.....	$ 9.80
	Silver 10.50 ozs @ $.30 "	4.95
	Value of ore.....	$14.75

Ratio of concentration 124 to 1 through 80 mesh

Value of Concentrates			
Gold	59.20 ozs @ $20	$1,184.00
Silver	2050.8 ozs @ 30¢	615.24
Recovery	91.99%	$1,799.24

Test B	Heads - Gold 0.76 ozs @ $20.00 per oz.....		$15.20
	Silver 22.83 @ .30 " "		6.85
	Value of ore.....		$22.05
	Rate of concentration 46.5 to 1 through 120 mesh		

Value of Concentrates

Gold	34.20 ozs @ $20	$684.00
Silver	970.88 ozs @ 30¢	297.26
Recovery	95.69%	$981.26

The higher recovery in the last test is due to a difference in the reagents used, plus finer grinding. The average head value of the two tests is $18.40, which is comparable to the $17.00 smelter value of the 4000 tons of foot ore shipped from the Justice property as above noted.

STOPE FILLS

It was the practice in the South End mines, including the Justice, to fill the stopes with ore of too low grade to show a profit at that time, and with scab ore from the walls; no waste rock was used for stope filling because it was too expensive to procure, due to the extremely hard formation and the cost and time required to hand drill it (this was before the days of power drills, all mining was done by hand drilling). Stope widths were frequently and quite generally 30 to 50 feet, timbered with square sets. It is conservatively estimated that the tonnage of ore now in stope fills will exceed a total of 150,000 to 200,000 tons of what today is a very profitable grade of milling ore.

As an illustration of the average value of the class of ore, the following figures are cited:

	Ozs.Gold	Value	Ozs.Silver	Value	Total
(1) Sample of Fills, cut 5 ft. wide, 71' from shaft..	0.27	$ 5.40	14.40	$ 4.32	$ 9.72
(2) 2 ft. cut on foot wall 75 ft. S.W. of Shaft.....	0.41	8.20	22.60	6.80	15.00
(3) 3 ft. cut under Windisch Stope 150' from Shaft.....	0.415	8.30	5.70	1.71	10.01
(4) 5 ft. cut in ore under Windisch Stope 140' from Shaft	1.185	23.70	17.00	6.50	30.20
(5) 4 ft. cut back of Windisch Stope 130' from Shaft.....	0.27	5.40	2.00	.60	6.00

	Ozs.Gold	Value	Ozs.Silver	Value	Total
(6) 2 ft. cut Scab foot wall 50 ft. from the Shaft...	1.23	$ 24.60	33.50	$ 10.05	$ 34.65
(7) 1 foot cut opposite.....	8.42	168.40	45.30	13.59	181.99
(8) Sample cut across fills between No. 6 & 7.....	0.375	7.50	6.50	1.90	9.40
(9) Fill sample 50' S.W. from Shaft (hand sample).....	0.09	1.80	1.50	0.45	2.25

Average of 8 samples (not including No. 7) Gold $10.62 - Silver $4.10.
Total average value $14.72 for 8 samples. 1 high grade $181.99

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List of 42 samples of Stope Fills, taken by the Justice Company as shown by their records from the 490 foot level in 1899.

Date 1899	Description	Gold	Silver	Total Value
Jan.28th	Old fills, fines	$ 41.32	$ 7.80	$ 49.14
" 30th	" "	6.20	2.46	8.66
Feb. 1st	" "	2.07	2.46	4.53
" 7th	" "	8.27	3.24	11.51
" 27th	Fine fills	4.13	5.84	10.01
Mch. 1st	" "	4.13	2.52	6.85
" 4th	" "	8.27	6.96	15.23
" 8th	Coarse fills	57.88	12.96	70.84
" 10th	Fills	8.27	6.60	14.87
" 10th	Fine fills (box)	8.27	18.00	26.27
" 10th	" " "	12.40	13.44	25.84
" 10th	Coarse fills	20.67	12.72	33.39
" 17th	Fine fills (box)	5.17	5.40	10.57
" 17th	Coarse fills "	18.60	26.82	45.42
" 21st	Fine fills "	6.20	3.90	10.10
" 23rd	Coarse fills "	57.88	30.66	88.50
" 23rd	Fine fills "	8.27	5.76	14.03
" 24th	" " "	6.20	3.50	9.50
" 25th	" " "	4.13	2.88	7.01
" 27th	" " "	4.13	3.00	7.13
" 28th	" " "	12.40	7.44	19.84
" 28th	Coarse fills	41.34	40.92	82.26
" 29th	Fine fills (box)	8.27	2.88	11.15
" 31st	" " "	4.13	1.80	5.93
Apr. 1st	Coarse fills "	49.61	20.76	70.37
" 1st	Fine fills "	6.20	3.30	9.50
" 3rd	" " "	8.27	2.88	11.15

Date 1899	Description	Gold	Silver	Total Value
Apr. 5th	Fine fills (box)	$ 12.40	$ 9.72	$ 22.12
" 5th	" " "	8.27	8.76	17.03
" 6th	" " "	4.13	3.96	8.09
" 7th	" " "	4.13	4.08	8.21
" 8th	" " "	20.67	15.60	36.27
" 10th	" " "	4.13	4.32	8.45
" 8th	Coarse fills "	53.75	38.28	92.03
" 10th	" " "	4.13	3.72	7.85
" 14th	Fine fills "	4.13	5.04	9.17
" 15th	" " "	6.20	3.78	9.98
" 17th	" " "	4.13	5.16	9.29
" 18th	" " "	4.13	2.28	6.41
" 14th	" " "	21.14	7.52	24.86
" 15th	Fills "	19.92	12.56	32.48

General average, after cutting the five high grade samples in half, Gold $11.03 - Silver at 30 cents an ounce $3.69; Total $14.72 per ton.

Value of Blocked Ore and Stope Fills now ready to mine and mill on basis of the average values indicated herein as follows:
Ore $27.17 - Stope Fills - $14.72

Blocked Ore as per Page No. 4 -	54,931 tons	@	$27.17 -	$1,492,475.27
Stope fills as per Pages 7 & 8-	150,000 "	@	14.72 -	2,208,000.00
Total gross assay value of....	204,931 "	@	.....	$3,700,475.27
Less Mining and Milling cost at $4.50 per ton			.....	942,439.50
Net Mine Value.....				$2,758,035.77
Net Mill Recovery Value at 94% recovery by flotation.....				$2,536,007.25

The above figures represent the net Mill Value of blocked ore and stope fills at the Mill, in the form of flotation concentrates. This concentrates will be shipped by auto truck to Salt Lake City smelters for smelting and final recovery of values and payment thereof, less costs. Concentration will be effected at the Company's flotation mill of approximately 100tons per day ore capacity, the ratio of concentration will be about 100 tons of ore into 1 ton of concentrates.

The average gross value of ore and stope fills, based on the above figures, approximates $20 per ton, therefore the value of one ton of flotation concentrates will approximate $2000 less loss in concentration.

The following figures represent the approximate net operating profit per ton of ore and fills treated based upon the average value of $20 per ton:

Concentration of ore and fills at 100 to 1 at average of $20 per ton, less 6% loss..... 1 ton of concentrates		$1,880.00
Trucking to Salt Lake Smelter - 1 ton concentrates	20.00	
Smelting charge.....	8.00	
Loss in smelting 5% of $1880.00.....	94.00	122.00
Net smelter value of 1 ton concentrates.....		$1,758.00

Net smelter value 1 ton of ore.....		$ 17.58
Less Mining and Milling costs of 1 ton ore and fills	4.50	
Less Contingencies.....	1.58	6.08
Net operating profit per ton and fills.....		$ 11.50

ESTIMATED OPERATING RESULTS

100 tons of ore per day @ $11.50 per ton Net Profit	$ 1,150.00
Net Operating Profit per month of 30 days.....	34,500.00
Net Operating Profit per year of 300 days.....	345,000.00

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