Hunt-Arnold Coll.

1630 0029

(168)

ITEM 35

REPORT ON HORSESHOE MINING & MILLING COMPANY'S MINES.

The property of this Company consists of six patented, and two unpatented mining claims; a 100 ton milling plant, an extensive water system, cottages, boarding-house, offices, lodging-house, and all necessary buildings and equipment for modern, economical mining.

LOCATION.-- This property is siatuated at Fay, in the Eagle Valley Mining District, of Lincoln County, Nevada; seventeen miles West of Modena, Utah, a station on the San Pedro, Los Angeles & Salt Lake Railroad; 507 miles North of Los Angeles.

FAY. -- The town is situated on Company property, and has a population of about 150. There is a store and postoffice, a meat market, a school house, a barber shop, and three saloons. Among professional men, there are located here a physician, a dentist, a judge and a deputy sheriff.

TITLES. -- The title to this property is perfect. Abstracts are on file at the Company's office.

TRANSPORTATION. -- There is a daily stage line from Modena to the mines; stage leaves Modena at 1 P.M., arriving at Fay at about 5 P.M. The stage leaves Fay at 8 A.M., and arrives at Modena at 11:30 A. M. Fare $2.00; Freight rates, $5. per ton.

CLIMATE. -- The altitude of the mine is about 7000 feet above sea level. The altitude prevents excessive heat in summer; the latitude extreme cold in winter.

TIMBER. -- The mountains are well timbered with pinon and cedar; wood is delivered for $3.50 per cord, and mine timbers at a reasonable price.

WATER. -- There is an abundance of water for mining, milling and townsite purposes. In the mountains, four miles distant, where the Company's supply is now obtained. The water system consists of a two-inch pipe-line, four miles in length. The daily supply is 25,000 gallons. The water runs through the pipes by gravity to the mines. The supply is obtained from a spring and tunnel, on which 350 feet of timber

ed development has been done. The present supply could be largely increased ~~with 100 feet more development.~~ There is a 12,000 gallon enclosed reservoir on the line one-half mile from the mill, which gives a pressure of 100 pounds per inch on the works.

THE MINES. -- The patented property of this Company consists of the Horseshoe Nos. 1, 2, 3, and 4, the Bryan and the Bryan Extension, and two unpatented claims, which are valuable for both mineral and water. These are situated near a tunnel and pipe-line, at about the same altitude.

EQUIPMENT OF MINES. -- The equipment consists of a complete air-pipe system, which supplies compressed air to all the working places; the mine is operated with machine drills; no hand drilling being done. There are four new Ingersoll-Sargent, 3 & 1/4 inch; six Murphy air hammers, and two Rand, 3 & 1/4 inch air drills; there are nine steel ore cars; iron track; in fact everything constituting a well-equipped mine.

MILL BUILDING. -- The mill building is a massive structure, constructed of heavy, well framed timbers and corrugated iron; it contains 110 windows; there are rock and concrete foundations. The size of the two crusher floors and ore bins, 17 x 30;

Engine Room, 30 x 36;

Boiler Room, 37 x 47;

Mill Room, 86 x 38;

Leaching Room, 50 x 140;

Carpenter and Machine Shop, 58 x 38;

Clean-Up Room, 14 x 16.

EQUIPMENT OF MILL. -- In the mill, there are three 60 horse power, and one 35 horse-power boilers; water heater and filter; two boiler feed pumps; two Rand air compressors; one Bates-Corless engine; one air receiver; two grizzlies; two Gates rock crushers; two plunge feeders; two 6-foot Monadnock mills; four centrifugal pumps; one vacuum pump; three cone classifiers; four agitating vats; nine 90-ton boiler-steel leaching vats, besides fifteen tanks of various sizes, which are used in connection with mine and mill; two 12,000 gallon agitating vats are being installed. There are three distributors; five zinc lines; a completely equipped assay office and clean-up room. This mill is thoroughly equipped and first-class in every respect.

COST OF MINING. -- The cost of mining and delivering the ore into the mill, including development, is $2. per ton. Forty-six men can supply the mill with 100 tons of ore daily.

COST OF REDUCTION. -- Actual tests have demonstrated that the cost of milling 100 tons or more daily is only $1. per ton.

ORE IN SIGHT. -- At this date, August 1st, 1906, there is in the mine 2300 tons of broken ore, and 10,000 tons practically in sight.

DEVELOPMENT OF MINE. -- The mine is developed by a neat, substantially timbered shaft, 5 x 9 feet in the clear; 400 feet deep. The skip is fitted with guides and a safety-clutch which prevents accidents in the event of steel rope breaking. There is a well-laddered manway, through which air and water pipes pass. Commodious stations are cut on the 100, 200, 300 and 400 levels. A heavy friction hoisting engine handles the pruduct of the mines.

GEOLOGY, MINERALOGY AND METALLURGY. -- There are three well-defined veins on this property, occurring in altered trachyte; they are wholly, or in part, veins of infiltration. These veins are parallel, and expose consider surface ore and good cropping values. The veins have a Northerly and Southerly strike, and an average dip, to the West, of about 70 degrees. Above the 200 foot level of the present workings, the vein dips to the East at an angle of about 65 degrees; above the true dip, the walls are not well defined, although there is a remarkable continuity of ore and values. Below the 200 foot level, the walls are well defined, while one or both usually carry a talk salvage. The average width of the vein is 4 feet. The gangue is quarts and calcite, and not infrequently a little mangniferous spar. There is a notable absence of iron pyrites. The gold is in a fine state of subdivision, hence the abandonment of amalgamation. The ore is delivered by skip into the mill, running over a grizzly to the 20,000 ~~pund~~ pound Gates coarse crusher; thence over another grizzly to the 14,000 pound Gates fine crusher, through which it passes to the ore bins and is fed by two plunge feeders into two 6 foot Monadnock mills. The pulp is then pumped with a 4 inch centrifugal pump into three cone classifiers which separates the slimes from the sands. The slimes are carried by launders into agitating vats; the sands to distributors, which evenly charge the leaching

vats. Both products are treated with Cyanide of Potassium, which dissolves the gold, which is precipitated by flowing through zinc shavings. The time required for leaching is six days; for actual agitation about 4 hours. The precipitates are treated with Sulphuric Acid to consume the zinc in the clean-up room, after which the product is melted into bars of gold. By this process, from 85 to 90 per cent gold values are saved, and about one-third of an ounce of silver to the ton of ore. The consumption of cyanide amounts to one-half pound to the ton of ore.

THE 100 FOOT LEVEL. -- The 100 foot level South is driven along the course of the vein 450 feet; chutes 10, 12 and 13 are producing good ore and values. The averages for July was over $10. per ton. The 100 foot level North extends 575 feet from the station; most of the ore on this level has been stoped.

200 FOOT LEVEL. -- The 200 foot level extends North 525 feet; most of the ore has been stoped; chute #20 is producing some of the best values in the mine. The 200 foot level South is in about 825 feet from the station; the vein is about 4 feet wide and is in part segregation. This level will penetrate some of the largest and best ore bodies in the mine, from every surface indication. Average working values for July, $48.60 to the ton. From Chute #20 North

300 FOOT LEVEL. --- The 300 foot level North is in about 200 feet, where it encounters a fault. The 300 level South has 4 feet of ore 400 feet from the station. Chutes #59, 60, 61, 70, and 71 are producing large amounts of ore and reasonably good assay values. The average values for July is between $6. and $7.

THE 400 FOOT LEVEL. -- This level is extended about 400 feet South. What is known as the "Big Stope" has 12 feet of ore which averages about $8. to the ton.

THE EAST CROSS-CUT; 200 FOOT LEVEL. This cross-cut starts from the station and cuts the formation in an easterly direction for a distance of 230 feet. Good values are obtained in all quarts and spar streaks. The East vein is a prominently cropping vein, carrying high-grade surface values. This vein extends through the Bryan and the Bryan Extension. There has been no work done on the vein.

THE WEST VEIN. -- This vein is situated on the Horseshoe Nos. 1 and 2; a shallow shaft has been sunk, exposing a vein 6 feet in

width, carrying values from $1.50 to $15.00 per ton. This is the strongest and best defined vein on the property.

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INVENTORY OF COMPANY PROPERTY.

Original cost of six, patented mining claims,	$75,000.00
Mill machinery and equipment,	75,000.00
Cost of mine shaft,	10,000.00
Equipment of mine,	6,000.00
Company buildings,	10,000.00
Horses, Harnesses, Wagons, Saddles, Etc.,	300.00
The water system and pipe line,	10,000.00
Mill buildings,	48,550.00
Total,	$234,850.00

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CONCLUSIONS. The estimate on this property is not only conservative, but low. It could not to-day be duplicated for the money. The mine is little more than a prospect, although about 50,000 tons of ore has been mined and milled. It is a great mine and should be worked as such. The shaft should be sunk to the 1000 foot level, the drifts extended to the end lines; while cross-cuts should extend to the side lines. By adapting these methods, there is no reason why this mine should not pay a dividend on all capital invested. With the ore bodies on this property opened, the capacity of the mill doubled, the minimum expense of mining and milling on this property would have been reached. The methods which have hitherto been adapted, has been to stope the ore as soon as developed, hence the limited amount of ore in sight. A test run of 41,154 tons of ore, gave an extraction of $267,953.88 in Gold, and $17,442.20 Ounces in Silver. This milling was done at the rate of 90 tons per day, and the cost was $1. $\frac{105}{1000}$ per ton. With present equipment, from 100 to 120 tons can be milled daily. Had this ore been mined and milled under existing conditions, the profit would have been on a 100 ton basis, over $370.00 per day; with mining at $2. a ton, and milling at $1. With aggressive management this mine should pay dividends. These conclusions are not based upon fancies, but facts, which are susceptible of demonstration and have been fully proven.

August 1st, 1906.

E.T. Miner E.M.

WORKING ASSAY VALUES, FOR THE MONTH OF JULY, IN THE HORSESHOE MINE; THIS INCLUDES ALL ORE MINED, MILLED, AND THE 2300 TONS BROKEN IN CHUTES IN THE MINE. --

100 FOOT LEVEL

Chutes Nos. 10,	12,	13
$7.00	$7.60	$1.60
6.40	6.00	3.00
5.40	40.60	7.20
5.00	16.80	3.40
3.40	14.90	10.20
8.70	5.20	12.20
9.30	10.20	20.00
12.80	23.20	16.40
8.80	32.20	15.40
17.20	39.00	2.40
	17.50	1.60
od	11.20	13.00
	6.80	4.80
	6.20	19.60
	51.40	20.80
	10.60	25.60
	14.80	56.80
	29.40	7.20
	12.20	2.90
	16.20	11.80
	17.20	24.20
		43.20
		7.80
		9.80
		19.40
		8.40
		5.80
		8.20
		15.20
		7.00
		6.20

200 FOOT LEVEL

Chutes Nos. 20,	39,	48
$20.40	$4.60	$7.20
34.60	4.20	5.60
16.20	11.20	2.40
201.60	5.00	5.80
120.40	6.40	8.20
37.00	6.20	5.80
23.00	4.60	1.60
13.80	4.80	4.20
7.60	10.60	11.20
24.00	4.60	15.40
70.40	4.80	20.80
14.20	10.60	14.80
	4.60	
	4.40	
	8.20	
	8.20	
	3.20	
	11.40	
	6.20	
	11.60	
	14.20	
	5.00	
	10.40	
	5.40	

For 300 and 400 foot levels, see next page --------

(300 and 400 foot levels, continued)

300 FOOT LEVEL					400 FOOT LEVEL
CHUTES Nos. 59,	60,	61,	70,	71	
$	$8.20	$13.40	$5.10	$4.00	$26.60
2.80	12.80	8.40	1.20	3.40	6.80
5.00	6.80	16.60	3.60	5.40	6.80
6.00	4.00	2.80	2.40	3.90	6.40
3.20	5.80	6.60	5.80	5.80	8.60
2.40	3.40	6.40	2.60	10.10	7.40
2.40	9.60	11.40	7.40	2.40	5.60
3.60	6.40	5.80	4.40	9.30	2.80
2.80	2.60	3.80	2.40	4.80	1.00
2.70	2.00	4.60	9.00	4.60	2.80
6.20	5.40	13.20	3.00	6.80	3.50
7.00	7.40	26.60	5.20	3.60	8.40
2.50	3.20	6.60	17.00	5.20	17.00
2.80	17.20	5.80	4.60	2.00	2.40
5.00	4.60	4.80	2.80	6.60	5.60
4.20	2.60	8.80	12.20	3.60	4.80
8.80	4.60	3.60	6.20	2.60	7.60
5.40	5.40	9.60	9.80	3.80	9.40
7.60	8.40	5.60	5.20	3.40	9.20
4.40	7.80	4.40	9.80	3.80	13.40
5.60	3.80	3.60	8.80	3.20	18.00
7.60	2.60	7.60	8.40	3.80	12.80
2.70		4.40	4.10	4.80	39.40
2.30		19.40	7.20	3.80	13.60
4.20		11.80	4.40		11.20
2.40		3.40	29.20		6.60
2.60		8.80	3.60		11.80
5.20		5.00	8.20		4.20
4.80		11.60	5.40		4.60
11.60		19.20	5.20		
17.00		4.20	5.80		
10.40		8.20	4.60		
9.00		4.80	4.40		
9.80		9.20	5.80		
5.80		8.40	31.20		
11.40		9.20	15.60		
5.00			4.60		
2.60			16.80		
5.60			13.60		
			10.80		
			3.60		
			7.40		

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These assays were copied from the "Assay Book," the dates not being given. They are, however, on file in the Company's office, where dates and full information can be obtained.

° SUPPLIMENTARY REPORT ON HORSE SHOE MINES-

Water level in the Horse Shoe Mine is 350,below the surface,there is at this datethe maximum hight to which water raisees in the mine. Under working conditions this water is used for milling purposes and is handled by a skip,which is more economical than pumping.

The water system of the town of Fay,is the propertyof the Horse Shoe Mining and Milling Company and is supplied from springs before mentioned. Since making the above Reporton the mines of this Company,they have purch--ased a large store and some tenament buildings.

The rents for the month of JulyI906 amounted to $I47.50.

With the mine in active operation,the rent list should be:

Store building	$60.00
Boarding house and lodging house	75.00
Five cottages	70.00
Six small buildimgs from two to three rooms each	36.00
Ground rent	I5.00
Water	50.00
Total	$39I.00

Much of the machinery in the mill is of recent installation and practically as good as new; there is about $30.000.oo worht of ma-ohinery recently installed in the mine and mill.

Nearly all the company buildings are painted and in a fair state of repair and preservation.

The water supply of the mine would be largely increased by sinking the main shaft, in fact enough water can be developed near head of the pipe line to mill several hundred tons per day.

The HORSESHOE property is owned by Stokes brotners of Pasadena, California, and Watertown, South Dakota, and is free of all incumbrances.

This has been a very severe winter for Southern Nevada, with an unusual amount of snow, but under these conditions it does not interfere with mining operations.

Los Angeles, California.

January Ist., I907.

Signed _____

THE HORSESHOE MINE.

Fay, Nevada.

This statement is made up from extensive reports made on the mine by E. T. Miner, E. M. under date of August 1, 1906, by John Rooke-Cowell, E. M. under date of May 1, 1910 and from statements made by the owners.

LOCATION.

This property is located in the Eagle Mining District, Lincoln Co., Nevada, 17 miles by wagon road from Modena, a station on the S. P., L. A. & S. L. R. R. at an elevation of 7500 feet. It consists of 6 patented mining claims.

HISTORY.

The claims were located in 1900 and sold in 1902 to A. W. McEwan, who in the next two years netted over $300,000.00 from the surface ore, but becoming interested in what appeared to him to be a bigger proposition he turned it over to G. Pray Smith. The latter, after re-equipping the mine and mill at great expense and doing a little development work on the lower levels, made a mill run of 41,154 tons, cleaning up everything in sight. By this time the mine was badly tangled up financially and the operators made away with the proceeds of the mill run, about $280,000.00, and left everything to the creditors. Stokes Bros., the present owners, bought it in at sheriff's sale, their first and only mining venture. After considerable poorly planned development work the mill was started and about 1000 run through before the first clean up was made. This only produced about 60% of what the mill assays showed it should have produced and they shut the mine down, concluding that they had gained enough mining experience. Later investigations showed that a small tank of solutions which had not been thrown out contained several hundred dollars in gold and explained the difference between the bullion and the assays.

In 1909 the mine was bonded to E. E. Fuller, who transferred it to John Rooke-Cowell. After a few months systematic development work the latter was forced to drop the project on account of difficulties from other quarters and nothing further has been done on the mine.

GEOLOGY.

The ore bodies are true fissure veins cutting through a porphyry country rock. There are 7 distinct veins on the property, on four of which work

has been done. The ore is quartz and calcite, carrying very finely divided free gold. No sulphides have ever been found in any part of the mine.

WORKINGS.

The mine is worked by means of a 5 x 9 foot inclined shaft, 420 feet deep on the Horseshoe vein, dipping 60° from the horizontal. From this shaft the vein has been drifted on for a distance of over 1000 feet, with a total of over 3500 feet of workings. Stopes show the ore to have been from 18 inches to 12 feet in width.

From the 300 foot level a cross-cut 75 feet to the east cuts the Barbara vein and 100 feet of drifting has been done on it, showing 4 feet of milling ore, some of which has been stoped. On the Olney vein, 50 feet to the west, a 100 ft. drift shows 5 feet of milling ore. There is also a 40 foot shaft on the West vein, 250 feet to the west of the Horseshoe vein, showing 4 feet of ore and a cross-cut has been started from the 200 foot level to tap it, following a rich stringer. Water was struck at the 360 foot level and enters the mine at the rate of 5000 gallons per day. The ground stands well and requires very little timbering.

EQUIPMENT.

The mine is equipped with a steam hoist and skip, compressor and drills, steel ore cars and track. The ore is delivered directly to a well built mill containing Gates rock crushers, two 6 foot Monadnock mills, classifiers, slime agitation and sand leaching cyaniding plants. Power is furnished by 4 steam boilers and a 125 h. p. Bates-Corliss engine. Total cost about $140,000.00. Besides the water produced by the mine the property controls a 4 mile gravity pipe line and water supply developing 25,000 gallons per day in the dry season. There are also bunkhouses, boarding house, office, store and other buildings.

VALUE OF THE ORE.

The surface ore was high grade and as far as developed has all been worked. There are no detail records in regard to the value of this ore. Under the Smith management 41,154 tons were milled in one mill run. The old records show the extraction of this to have been $6.51 in gold, $0.21 in silver, a total of $6.72 per ton.

Under the Stokes management careful assays were taken from all working faces giving the following results:

100 ft level							
Chute #10,	29	samples	$1.40 to $29.80	Average	$9.18	18 in.	ore
" 12	36	"	2.00 to 51.40	"	15.70	24 "	"
" 13	32	"	1.60 to 56.80	"	13.05	28 "	"
200 ft level							
Chute #20	13	samples	$7.60 to $201.60	"	56.20	42 "	"
" 39	24	"	3.20 to 14.20	"	7.92		
" 48	12	"	1.60 to 20.80	"	8.58	20 "	"
300 ft level							
Chute #	106	"	2.30 to 26.60	"	6.64	32 "	"
" 70	56	"	1.20 to 31.20	"	7.90	54 "	"
" 71	33	"	2.00 to 10.10	"	4.72	48 "	"
400 ft level							
350 south	4	"	6.20 to 9.20	"	6.45	8 ft	ore
350 north	29	"	[illegible] to 39.40	"	9.26	8 "	"

During the time the mill was in operation under this management, about 26 days, the average of the daily mill heads was $6.50 in gold. At the time the Stokes Bros bought the mine 75 samples were taken which averaged $13.79 per ton.

ORE IN SIGHT.

As is to be expected from the history of the mine there is very little ore blocked out in the mine. At the time of ~~the~~ Mr Rooke-Cowell's examination he estimated 4600 tons and very little work has been done since then. However the faces of all workings show ore of about the same average value as that which has been milled. The chute which it is claimed produced the be best ore on the 100 and 200 foot levels has not been cut by the 300 or 400 foot levels as yet. Everything about the records of the mine indicate that large bodies of milling ore can be developed by extending the present workings.

WORKING COSTS.

It is claimed that the ore has been mined and delivered to the mill for $2.00 per ton, including the cost of development work and that the milling has cost $1.10 per ton, both under expensive management. Mr. Rooke-Cowell estimates that the ore should be mined for 88 cents per ton and milled for t the same amount, a total of $1.76 per ton. The cost of development is given as $6.00 per foot. The mill as at present arranged has been operated with a capacity of 90 tons per day but can be enlarged with a little expense to handle 150 tons. The extraction is given at from 85% to 90% of the assay value.

TAILING DUMP.

There is between 50,000 and 60,000 tons of tailings below the mill. Two sets of samplings have been made on these which gave values of $1.90 and $2.08 per ton respectively. It is estimated that these can be worked for 32¢ per ton, (Rooke-Cowell) with better than 80% extraction. There is a 150 ton plant for this purpose on the ground but was barely started with it when Mr. Rooke-Cowell was forced to stop operations.

Possibility of putting the mine in shape for sale or operation based on the Rooke-Cowell figures.

Tailings	60,000 tons assaying $2.00 per ton----------	$120,000.00
	with 80% extraction, gross value----------	96,000.00
10% royalty to owners----------	$9,600.00	
Cost of extraction at 32¢ per ton----------	19,200.00	
Cost of putting plant in operation----------	2,500.00	
15 months superintendency at $300.00 per mo.	4,500.00	
Total cost of working		35,800.00
Net from tailings----------		$60,200.00

About 70,000 tons have been milled from 3,500 feet of development work or about 20 tons of ore for each foot of development work. The cost of development work is given at $6.00 per foot which equals 30¢ per ton of ore.

Say that $10,000.00 of the net from the tailings is necessary to put the mine in shape for work, leaving $50,000.00 for development work. At 30¢ per ton this would develop 167,000 of ore. An average of 228 assays from the last ore worked from the 300 and 400 foot levels is $7.00 per ton. 90% extraction on this is $6.30 per ton. On 167,000 tons this would giv a gross value of $1,052,100.00.

If a value of $400,000.00 were to be placed on the mine, divided with $100,000.00 on the mill and $300,000.00 on the mine and taking a little greater working costs than the Rooke#Cowell report calls for the total working costs per ton could be put as follows:

Mining	$1.00
Development	.30
Milling	1.00
Depreciation	.34
Amortization	.50
General Expense	16
Total	$ 3.30

This leaves a net value of $3.00 per ton, which on 167,000 tons gives the value of the mine as $500,000.00.

(signed) A. M. Strong.

Horseshoe Mine Hunt.-Arnold

100 Level

Chute 10 stope

Average width of vein 18 in.

Date		Silver oz.	Gold.
May 22	" " "		$ 5.00
"	" " "		8.00
"	" " "		13.60
"	" " "		6.60
June 2	" " "	5.46/100	2.40
10	" " "	3.60/100	6.00
10	" " "		13.80
12	" " "		29.80
15	" " "		2.40
15	" " "		10.60
16	" " "		24.40
16	" " "		7.80
16	" " "		4.00
18	" " "		5.50
18	" " "		6.80
22	" " "		8.30
29	" " "	1.60/100	10.20
29	" " "		1.40
July 2	" " "		7.00
3	" " "		6.40
5	" " "		5.40
5	" " "		5.00
6	" " "		3.40
7	" " "		8.70
8	" " "		9.30
8	" " "		12.80
19	" " "		8.80
27	" " "		17.20
Aug. 1	" " "		15.80

Chute 12 stope

Average width of vein 24 in.

Date		Silver oz.	Gold.
June 2	" " "		8.40
2	" " "		10.80
10	" " "		14.00
12	" " "		6.60
13	" " "		5.20
15	" " "		7.00
15	" " "	.70/100	6.80
16	" " "	1.42/100	2.00
18	" " "		11.60
19	" " "		5.20
22	" " "	11.56/100	51.00
24	" " "	1.60/100	9.80
29	" " "	1.80/100	5.00
29	" " "	1.40/100	11.50
July 2	" " "	1.30/100	7.60
2	" " "		6.00
2	" " "		40.60
4	" " "		16.80
5	" " "		14.90
6	" " "		5.20
5	" " "		10.20
7	" " "		23.20

100 Ft. Level

Chute 12 stope

Date		Gold
July 7	" " "	$32.20
9	" " "	39.00
9	" " "	17.50
10	" " "	11.20
11	" " "	6.80
11	" " "	6.20
12	" " "	51.40
13	" " "	10.60
14	" " "	14.80
19	" " "	29.40
26	" " "	12.20
28	" " "	16.20
29	" " "	17.20
Aug. 1	" " "	21.60

Chute 13 stope

Average width of vein 28 in.

Date		Gold
July 3	" " "	1.60
4	" " "	lost
5	" " "	3.00
5	" " "	7.20
5	" " "	3.40
6	" " "	10.20
6	" " "	12.20
7	" " "	20.00
8	" " "	16.40
8	" " "	15.40
9	" " "	2.40
10	" " "	1.60
10	" " "	13.00
11	" " "	4.80
12	" " "	19.60
13	" " "	20.80
13	" " "	25.60
14	" " "	56.80
15	" " "	7.20
16	" " "	2.90
16	" " "	11.80
17	" " "	24.20
18	" " "	43.20
19	" " "	7.80
22	" " "	9.80
26	" " "	19.40
28	" " "	8.40
29	" " "	5.80
29	" " "	8.20
30	" " "	15.20
31	" " "	7.00
31	" " "	6.20
Aug. 2	" " "	7.40

Date		200 Ft. Level	Gold
		Chute 20 stope	
June	24	" " "	$146.40
July	2	" " "	20.40
	2	" " "	34.60
	2	" " "	16.30
	2	" " "	201.60
	3	" " "	120.40
	3	" " "	37.00
	4	" " "	23.00
	4	" " "	13.80
	4	" " "	7.60
	5	" " "	24.00
	6	" " "	70.40
	8	" " "	14.20
		Chute 39 stope	
	9	" " "	4.60
	11	" " "	4.20
	12	" " "	lost
	13	" " "	11.20
	14	" " "	5.00
	15	" " "	6.40
	16	" " "	6.20
	17	" " "	4.60
	18	" " "	4.80
	19	" " "	10.60
	20	" " "	4.60
	21	" " "	4.40
	22	" " "	8.20
	23	" " "	8.20
	24	" " "	3.20
	25	" " "	11.40
	26	" " "	6.20
	27	" " "	11.60
	28	" " "	14.20
	29	" " "	5.00
	30	" " "	10.40
	31	" " "	5.40
Aug.	1	" " "	20.60
	2	" " "	8.40
	3	" " "	6.80
		Chute 48 raise	
July	12	" " "	7.20
	12	" " "	5.60
	15	" " "	2.40
	16	" " "	5.80
	16	" " "	8.20
	17	" " "	5.80
	18	" " "	1.60
	18	" " "	4.20
	19	" " "	11.20
	22	" " "	15.40
	31	" " "	20.80
Aug.	1	" " "	14.80

Average width of 42" FILLINGS 3 tons per shift.

Width of vein 20"

Date		300 Ft. Level Boys	Stope	Gold
June	2	"	"	$ 3.60
	2	"	"	13.60
	2	"	"	11.20
	2	"	"	8.60
	2	"	"	lost
	2	"	"	6.00
	8	"	"	2.40
	10	"	"	4.20
	15	"	"	13.00
	24	"	"	5.00
	29	"	"	4.20
July	1	"	"	2.80
	"	"	"	5.00
	"	"	"	6.00
	2	"	"	3.20
	"	"	"	2.40
	"	"	"	2.40
	3	"	"	3.60
	"	"	"	2.80
	"	"	"	2.70
	"	"	"	6.20
	"	"	"	7.00
	4	"	"	2.50
	"	"	"	2.80
	"	"	"	5.00
	"	"	"	4.20
	5	"	"	8.80
	"	"	"	5.40
	6	"	"	7.60
	"	"	"	4.40
	7	"	"	5.60
	"	"	"	7.60
	8	"	"	4.60
	9	"	"	2.70
	"	"	"	2.30
	"	"	"	4.20
	10	"	"	2.40
	"	"	"	2.60
	"	"	"	5.20
	11	"	"	4.80
	12	"	"	11.60
	13	"	"	17.00
	"	"	"	10.40
	14	"	"	9.00
	"	"	"	9.80
	"	"	"	5.80
	15	"	"	11.40
	"	"	"	5.00
	"	"	"	2.60
	"	"	"	5.60
	16	"	"	8.20
	"	"	"	12.80
	"	"	"	6.80
	17	"	"	4.00
	"	"	"	5.80
	"	"	"	3.40

Average width of vein 32 in.

Date		300 Ft. Level Boys	Stope	Gold
July	18	"	"	$ 9.60
	"	"	"	6.40
	19	"	"	2.60
	"	"	"	2.00
	"	"	"	5.40
	"	"	"	7.40
	20	"	"	3.20
	"	"	"	17.20
	"	"	"	4.60
	21	"	"	2.60
	"	"	"	lost
	"	"	"	4.60
	"	"	"	5.40
	22	"	"	8.40
	"	"	"	7.80
	"	"	"	3.80
	"	"	"	2.60
	23	"	"	13.40
	"	"	"	8.40
	"	"	"	16.60
	"	"	"	2.80
	24	"	"	6.60
	"	"	"	6.40
	"	"	"	11.40
	"	"	"	5.80
	25	"	"	3.80
	"	"	"	4.60
	"	"	"	13.20
	"	"	"	26.60
	26	"	"	6.60
	"	"	"	5.80
	"	"	"	lost
	27	"	"	4.80
	"	"	"	8.80
	"	"	"	3.60
	28	"	"	9.60
	"	"	"	5.60
	"	"	"	4.40
	29	"	"	3.60
	"	"	"	7.60
	"	"	"	4.40
	30	"	"	19.40
	"	"	"	11.80
	"	"	"	3.40
	31	"	"	8.80
	"	"	"	5.00
Aug.	1	"	"	11.60
	"	"	"	19.20
	"	"	"	4.20
	2	"	"	8.20
	"	"	"	4.80
	3	"	"	9.20
	"	"	"	8.40
	"	"	"	9.20

Average width of vein 32 in.

Date	300 Ft. Level Chute 70 Stope	Gold
June 16	" " "	$ 4.80
18	" " "	3.40
18	" " "	5.40
19	" " "	3.40
20	" " "	lost
"	" " "	
July 9	" " "	5.10
10	" " "	1.20
11	" " "	3.60
"	" " "	2.40
12	" " "	5.80
"	" " "	2.60
13	" " "	7.40
"	" " "	4.40
14	" " "	2.40
15	" " "	9.00
"	" " "	lost
16	" " "	3.00
"	" " "	5.20
17	" " "	17.00
18	" " "	4.60
19	" " "	2.80
"	" " "	12.20
20	" " "	6.20
21	" " "	9.80
"	" " "	5.20
"	" " "	9.80
22	" " "	8.80
"	" " "	8.40
23	" " "	4.10
24	" " "	7.20
"	" " "	4.40
25	" " "	29.20
26	" " "	3.60
"	" " "	8.20
"	" " "	5.40
"	" " "	5.20
27	" " "	5.80
"	" " "	4.60
"	" " "	4.40
"	" " "	5.80
28	" " "	31.20
"	" " "	15.60
"	" " "	4.60
29	" " "	16.80
30	" " "	13.60
"	" " "	10.80
"	" " "	3.60
31	" " "	7.40
"	" " "	15.20
Aug. 1	" " "	13.20
"	" " "	5.20
"	" " "	9.80
"	" " "	16.00

Average width of vein 4½ Ft.

Date	300 Ft. Level Chute 70 Stope	Gold
Aug. 2	" " "	$ 4.20
"	" " "	9.20
"	" " "	11.80
3	" "	4.00
"	" " "	7.20
	Chute 71 Stope	
June 8	" " "	4.00
"	" " "	5.80
"	" " "	3.40
"	" " "	7.20
"	" " "	6.40
16	" " "	7.40
18	" " "	6.60
19	" " "	3.80
"	" " "	2.20
July 5	" " "	4.00
6	" " "	3.40
"	" " "	5.40
7	" " "	3.90
8	" " "	5.80
9	" " "	10.10
10	" " "	2.40
"	" " "	9.30
11	" " "	4.80
12	" " "	4.60
13	" " "	6.80
"	" " "	3.60
14	" " "	5.20
"	" " "	2.00
15	" " "	6.60
"	" " "	3.60
16	" " "	2.60
17	" " "	3.80
18	" " "	3.40
"	" " "	3.80
19	" " "	3.20
20	" " "	3.80
21	" " "	4.80
22	" " "	3.80

Average width of vein 4 Ft.

Date		400 Ft. Level			Gold
		350 Stope South			
May	21	"	"	"	$ 9.20
June	8	"	"	"	4.00
	12	"	"	"	6.40
	24	"	"	"	6.20
				North	
	29	"	"	"	9.20
July	1	"	"	"	26.00
	2	"	"	"	6.80
	5	"	"	"	6.80
	"	"	"	"	6.40
	6	"	"	"	8.60
	7	"	"	"	7.40
	8	"	"	"	5.60
	9	"	"	"	2.80
	10	"	"	"	1.00
	"	"	"	"	2.80
	11	"	"	"	3.50
	12	"	"	"	8.40
	13	"	"	"	17.00
	14	"	"	"	2.40
	15	"	"	"	5.60
	16	"	"	"	4.80
	17	"	"	"	7.60
	18	"	"	"	9.40
	19	"	"	"	9.20
	20	"	"	"	13.40
	21	"	"	"	12.80
	"	"	"	"	39.40
	"	"	"	"	13.60
	22	"	"	"	11.20
	23	"	"	"	6.60
	24	"	"	"	11.80
	25	"	"	"	4.20
	26	"	"	"	4.60

Average width of vein 8 Ft.

Horseshoe Mining

Date	100 Level			Silver oz.	Gold.
	Chute 10 stope				
May 22	"	"	"		$ 5.00
"	"	"	"		8.00
"	"	"	"		13.60
"	"	"	"		6.60
June 2	"	"	"	5.46/100	2.40
10	"	"	"	3.60/100	6.00
10	"	"	"		13.80
12	"	"	"		29.80
15	"	"	"		2.40
15	"	"	"		10.60
16	"	"	"		24.40
16	"	"	"		7.80
16	"	"	"		4.00
18	"	"	"		5.50
18	"	"	"		6.80
22	"	"	"		8.30
29	"	"	"	1.60/100	10.20
29	"	"	"		1.40
July 2	"	"	"		7.00
3	"	"	"		6.40
5	"	"	"		5.40
5	"	"	"		5.00
6	"	"	"		3.40
7	"	"	"		8.70
8	"	"	"		9.30
8	"	"	"		12.80
19	"	"	"		8.80
27	"	"	"		17.20
Aug. 1	"	"	"		15.80
	Chute 12 stope				
June 2	"	"	"		8.40
2	"	"	"		10.80
10	"	"	"		14.00
12	"	"	"		6.60
13	"	"	"		5.20
15	"	"	"		7.00
15	"	"	"	.70/100	6.80
16	"	"	"	1.42/100	2.00
18	"	"	"		11.60
19	"	"	"		5.20
22	"	"	"	11.56/100	51.00
24	"	"	"	1.60/100	9.80
29	"	"	"	1.80/100	5.00
29	"	"	"	1.40/100	11.50
July 2	"	"	"	1.30/100	7.60
2	"	"	"		6.00
2	"	"	"		40.60
4	"	"	"		16.80
5	"	"	"		14.90
6	"	"	"		5.20
6	"	"	"		10.20
7	"	"	"		23.20

Average width of vein 18 in.

Average width of vein 24 in.

Date	100 Ft. Level			Gold
	Chute 12 stope			
July 7	"	"	"	$32.20
9	"	"	"	39.00
9	"	"	"	17.50
10	"	"	"	11.20
11	"	"	"	6.80
11	"	"	"	6.20
12	"	"	"	51.40
13	"	"	"	10.60
14	"	"	"	14.80
19	"	"	"	29.40
26	"	"	"	12.20
28	"	"	"	16.20
29	"	"	"	17.20
Aug. 1	"	"	"	21.60
	Chute 13 stope			
July 3	"	"	"	1.60
4	"	"	"	lost
5	"	"	"	3.00
5	"	"	"	7.20
5	"	"	"	3.40
6	"	"	"	10.20
6	"	"	"	12.20
7	"	"	"	20.00
8	"	"	"	16.40
8	"	"	"	15.40
9	"	"	"	2.40
10	"	"	"	1.60
10	"	"	"	13.00
11	"	"	"	4.80
12	"	"	"	19.60
13	"	"	"	20.80
13	"	"	"	25.60
14	"	"	"	56.80
15	"	"	"	7.20
16	"	"	"	2.90
16	"	"	"	11.80
17	"	"	"	24.20
18	"	"	"	43.20
19	"	"	"	7.80
22	"	"	"	9.80
26	"	"	"	19.40
28	"	"	"	8.40
29	"	"	"	5.80
29	"	"	"	8.20
30	"	"	"	15.20
31	"	"	"	7.00
31	"	"	"	6.20
Aug. 2	"	"	"	7.40

Average width of vein 28 in.

Date		200 Ft. Level	Gold
		Chute 20 stope	
June	24	" " "	$146.40
July	2	" " "	20.40
	2	" " "	34.60
	2	" " "	16.30
	2	" " "	201.60
	3	" " "	120.40
	3	" " "	37.00
	4	" " "	23.00
	4	" " "	13.80
	4	" " "	7.60
	5	" " "	24.00
	6	" " "	70.40
	8	" " "	14.20
		Chute 39 stope	
	9	" " "	4.60
	11	" " "	4.20
	12	" " "	lost
	13	" " "	11.20
	14	" " "	5.00
	15	" " "	6.40
	16	" " "	6.20
	17	" " "	4.60
	18	" " "	4.80
	19	" " "	10.60
	20	" " "	4.60
	21	" " "	4.40
	22	" " "	8.20
	23	" " "	8.20
	24	" " "	3.20
	25	" " "	11.40
	26	" " "	6.20
	27	" " "	11.60
	28	" " "	14.20
	29	" " "	5.00
	30	" " "	10.40
	31	" " "	5.40
Aug.	1	" " "	20.60
	2	" " "	8.40
	3	" " "	6.80
		Chute 48 raise	
July	12	" " "	7.20
	12	" " "	5.60
	15	" " "	2.40
	16	" " "	5.80
	16	" " "	8.20
	17	" " "	5.80
	18	" " "	1.60
	18	" " "	4.20
	19	" " "	11.20
	22	" " "	15.40
	31	" " "	20.80
Aug.	1	" " "	14.80

Average width of 42" FILLINGS 3 tons per shift.

Width of vein 20"

Date	300 Ft. Level Boys	Stope	Gold
June 2	"	"	$ 3.60
2	"	"	13.60
2	"	"	11.20
2	"	"	8.60
2	"	"	lost
2	"	"	6.00
8	"	"	2.40
10	"	"	4.20
15	"	"	13.00
24	"	"	5.00
29	"	"	4.20
July 1	"	"	2.80
"	"	"	5.00
"	"	"	6.00
2	"	"	3.20
"	"	"	2.40
"	"	"	2.40
3	"	"	3.60
"	"	"	2.80
"	"	"	2.70
"	"	"	6.20
"	"	"	7.00
4	"	"	2.50
"	"	"	2.80
"	"	"	5.00
"	"	"	4.20
5	"	"	8.80
"	"	"	5.40
6	"	"	7.60
"	"	"	4.40
7	"	"	5.60
"	"	"	7.60
8	"	"	4.60
9	"	"	2.70
"	"	"	2.30
"	"	"	4.20
10	"	"	2.40
"	"	"	2.60
"	"	"	5.20
11	"	"	4.80
12	"	"	11.60
13	"	"	17.00
"	"	"	10.40
14	"	"	9.00
"	"	"	9.80
"	"	"	5.80
15	"	"	11.40
"	"	"	5.00
"	"	"	2.60
"	"	"	5.60
16	"	"	8.20
"	"	"	12.80
"	"	"	6.80
17	"	"	4.00
"	"	"	5.80
"	"	"	3.40

Average width of vein 32 in.

Date	300 Ft. Level Boys	Stope	Gold
July 18	"	"	$ 9.60
"	"	"	6.40
19	"	"	2.60
"	"	"	2.00
"	"	"	5.40
"	"	"	7.40
20	"	"	3.20
"	"	"	17.20
"	"	"	4.60
21	"	"	2.60
"	"	"	lost
"	"	"	4.60
"	"	"	5.40
22	"	"	8.40
"	"	"	7.80
"	"	"	3.80
"	"	"	2.60
23	"	"	13.40
"	"	"	8.40
"	"	"	16.60
"	"	"	2.80
24	"	"	6.60
"	"	"	6.40
"	"	"	11.40
"	"	"	5.80
25	"	"	3.80
"	"	"	4.60
"	"	"	13.20
"	"	"	26.60
26	"	"	6.60
"	"	"	5.80
"	"	"	lost
27	"	"	4.80
"	"	"	8.80
"	"	"	3.60
28	"	"	9.60
"	"	"	5.60
"	"	"	4.40
29	"	"	3.60
"	"	"	7.60
"	"	"	4.40
30	"	"	19.40
"	"	"	11.80
"	"	"	3.40
31	"	"	8.80
"	"	"	5.00
Aug. 1	"	"	11.60
"	"	"	19.20
"	"	"	4.20
2	"	"	8.20
"	"	"	4.80
3	"	"	9.20
"	"	"	8.40
"	"	"	9.20

Average width of vein 32 in.

Date	300 Ft. Level Chute 70 Stope	Gold
June 16	" " "	$ 4.80
18	" " "	3.40
18	" " "	5.40
19	" " "	3.40
20	" " "	lost
"	" " "	
July 9	" " "	5.10
10	" " "	1.20
11	" " "	3.60
"	" " "	2.40
12	" " "	5.80
"	" " "	2.60
13	" " "	7.40
"	" " "	4.40
14	" " "	2.40
15	" " "	9.00
"	" " "	lost
16	" " "	3.00
"	" " "	5.20
17	" " "	17.00
18	" " "	4.60
19	" " "	2.80
"	" " "	12.20
20	" " "	6.20
21	" " "	9.80
"	" " "	5.20
"	" " "	9.80
22	" " "	8.80
"	" " "	8.40
23	" " "	4.10
24	" " "	7.20
"	" " "	4.40
25	" " "	29.20
26	" " "	3.60
"	" " "	8.20
"	" " "	5.40
"	" " "	5.20
27	" " "	5.80
"	" " "	4.60
"	" " "	4.40
"	" " "	5.80
28	" " "	31.20
"	" " "	15.60
"	" " "	4.60
29	" " "	16.80
30	" " "	13.60
"	" " "	10.80
"	" " "	3.60
31	" " "	7.40
"	" " "	15.20
Aug. 1	" " "	13.20
"	" " "	5.20
"	" " "	9.80
"	" " "	16.00

Average width of vein 4½ Ft.

Date	300 Ft. Level Chute 70 Stope	Gold
Aug. 2	" " "	$ 4.20
"	" " "	9.20
"	" " "	11.80
3	" " "	4.00
"	" " "	7.20
	Chute 71 Stope	
June 8	" " "	4.00
"	" " "	5.80
"	" " "	3.40
"	" " "	7.20
"	" " "	6.40
16	" " "	7.40
18	" " "	6.60
19	" " "	3.80
"	" " "	2.20
July 5	" " "	4.00
6	" " "	3.40
"	" " "	5.40
7	" " "	3.90
8	" " "	5.80
9	" " "	10.10
10	" " "	2.40
"	" " "	9.30
11	" " "	4.80
12	" " "	4.60
13	" " "	6.80
"	" " "	3.60
14	" " "	5.20
"	" " "	2.00
15	" " "	6.60
"	" " "	3.60
16	" " "	2.60
17	" " "	3.80
18	" " "	3.40
"	" " "	3.80
19	" " "	3.20
20	" " "	3.80
21	" " "	4.80
22	" " "	3.80

Average width of vein 4 Ft.

Date		400 Ft. Level	350 Stope South		Gold
May	21	"	"	"	$ 9.20
June	8	"	"	"	4.00
	12	"	"	"	6.40
	24	"	"	"	6.20
				North	
	29	"	"	"	9.20
July	1	"	"	"	26.00
	2	"	"	"	6.80
	5	"	"	"	6.80
	"	"	"	"	6.40
	6	"	"	"	8.60
	7	"	"	"	7.40
	8	"	"	"	5.60
	9	"	"	"	2.80
	10	"	"	"	1.00
	"	"	"	"	2.80
	11	"	"	"	3.50
	12	"	"	"	8.40
	13	"	"	"	17.00
	14	"	"	"	2.40
	15	"	"	"	5.60
	16	"	"	"	4.80
	17	"	"	"	7.60
	18	"	"	"	9.40
	19	"	"	"	9.20
	20	"	"	"	13.40
	21	"	"	"	12.80
	"	"	"	"	39.40
	"	"	"	"	13.60
	22	"	"	"	11.20
	23	"	"	"	6.60
	24	"	"	"	11.80
	25	"	"	"	4.20
	26	"	"	"	4.60

Average width of vein 8 Ft.

Hunt -- Arnold Coll.

COPY.

REPORT ON
THE HORSESHOE MINE
Fay, Nevada,
November 1st, 1910.

LOCATION:

This property is situated in the Eagle Mining District, Lincoln Co., Nevada. It is 27 miles from the county seat of Pioche, and 17 miles from the town of Modena, on the San Pedro, Los Angeles and Salt Lake R.R. The property is connected with both these towns by good wagon roads. The railroad town of Modena is 507 miles from Los Angeles, and 273 miles from Salt Lake City.

The Altitude at the mine is 7500 feet and the climate is excellent.

MINING CLAIMS:

The property consists of 6 patented mining claims, and comprises 120 acres.

TITLES:

A perfect title to the property is vested in E. H. Stokes, F. Stokes and O. Stokes, who acquired it by direct purchase. There are no liens or incumbrances of any kind on the property.

HISTORY:

The Horseshoe mine was located about ten years ago, and although high-grade gold ore was found on the surface, very little except assessment work was done on the property until two years later, when A. W. Mc Ewan, a well-known mine operator from Montana, took over the mine. The new owner immediately began active and systematic development of the property. He opened up the mine by a 400-ft. shaft, built a fine mill and cyanide plant, installed the present water supply system and built the town of Fay. The mine paid from the grass roots and at the end of two years, McEwan had netted a profit of over $300,000.00. At the end of this period McEwan became interested in a mine in Peru, and leased the Horseshoe to G. Pray Smith. The high-grade ores of the upper levels, had already been exhausted by McEwan, who had failed to keep his development work ahead.

Smith changed the arrangement of the mill and made many costly and foolish experiments in the treatment of the ore, which resulted in his making a complete financial failure of the undertaking.

When Smith finally abandoned the property, it was so heavily encumbered with debt that it had to be sold to satisfy the claims of the creditors.

The Stokes Bros., Eastern capitalists, became the new owners of the Horseshoe. But as these gentlemen were totally without experience in mining matters, they employed men to operate the property who were either incompetent or dishonest. The result was that they lost money in the venture, and two years ago the property was closed down.

About a year ago, E. E. Fuller, a well-known and experienced mining man, took a bond on the property from the Stokes Bros., and devoted a good deal of time, money and energy to putting the mine in good shape. By an arrangement between Mr. Fuller and the Stokes Bros., the property was recently bonded to Mr. John Rooke-Cowell and is now once more in active operation. The development of the mine is being pushed ahead, and the large dump of mill tailings is being cyanided with good results. While the plant has been thoroughly overhauled with a view of again starting up the mill.

GENERAL FORMATION:

The country rock is porphyry, intersected at the Horseshoe Mine by a strong rhyolite dyke. The ore bodies traverse both the porphyry and the rhyolite, and are apparently true fissure veins, their formation being subsequent to the rhyolite intrusion. There are seven distinct veins on the property, which are evidenced by the extensive outcroppings which occur throughout the whole extent of the claims.

Most of these outcroppings yield small quantities of free gold to the pan. Exploration work has been done on four of these veins.

CHARACTER OF THE ORE:

The ore, which is identically the same in all the veins, is a white free milling quartz. So far there has been no change in the

character of the ore with depth; the same ore is found on the 400-ft. level of the mine as on the surface. The gold contents are in a fine state of division and entirely in the free state. The silver is partly free and partly in the form of horn silver. The ore contains no other metals and is entirely free from any trace of sulphides.

The ore is readily amalgamated and very amenable to cyanide treatment.

ORE BODIES:

There are seven veins on the Horseshoe property, but so far, only four of them have been explored.

HORSESHOE VEIN:

This is the principal vein and the vein on which most work has been done. It has a general strike N.N.W., with an average dip to the west of 60 degrees. It outcrops frequently and is very strongly defined on the surface and the mine workings. This vein has been explored to a depth of 420 ft. by an inclined shaft sunk on the ore body. Horizontally, it has been explored for a distance of over 1000 ft. There are over 3500 ft. of workings on this vein.

Almost all the ore developed by former operators in these workings has been found of sufficient value to be milled at a profit, and they just gutted the workings, without doing any development to a supply of ore for the future. So that with the exception of about 2000 tons between the 300 ft. and 400 ft. levels, there is practically no ore available in the present workings.

The workings to the north of the shaft are badly caved and at present inaccessible. The breasts of all the drifts to the south are in good ore, and by extending these a very large tonnage of ore could be made available in a short time at a comparatively small expense.

There is a well-defined ore chute on this vein, pitching to the south, which carries high values. This chute has been cut on the 100 ft. and 200 ft. levels and some very rich ore mined from it. The 300 ft. and 400 ft. levels have not yet cut this chute, but they will encounter it as they are extended south.

The average value of the ore exposed in the workings of the

Horseshoe vein is between $5.00 and $6.00 per ton in gold and silver. A number of assays show the proportion of values. As I have said before, the Horseshoe vein is very strongly defined, both on the surface and underground at the lowest level. And from all present indications, there is every reason to believe that this vein will continue with depth and the horizontal extensions of the present workings.

THE BARBARA VEIN:

This vein is situated 75 ft. east of the Horseshoe vein and outcrops well on the surface. It has been explored to a depth of 300 ft. by a cross-cut run from the 300 ft. level of the Horseshoe vein, and from this point a drift has been run on the Barbara for a distance of 100 ft.

This vein is almost vertical and has a strike ... . It joins the Horseshoe vein, of which it is probably a spur, at a point 500 ft. south of the shaft.

The Barbara vein has an average width of four feet, and a sampling of the ore exposed showed an average value of $7.20 per ton. A considerable quantity of ore has been milled and mined from this vein.

THE OLNEY VEIN:

This vein is parallel and 50 ft. west of the Horseshoe vein. At this point a drift has been run on the vein for a distance of 100 ft. The vein has an average width of 5 ft. No ore has yet been stoped from this vein. A general sample taken from the roof of the drift assayed as follows: Gold $5.96, silver $1.14, total $7.12 per ton. The ore in the south breast of the Olney drift is over 5 ft. in width and has the following assay value: Gold $6.39, silver $2.01; total $8.40 per ton.

THE WEST VEIN:

This vein is parallel to and 250 ft. west of the Horseshoe vein. It outcrops extensively on the surface for several miles. A shaft sunk on this vein for a distance of 40 ft. shows an average width of 4 ft. A general sample taken from this shaft assayed as follows:

Gold $4.60, silver $1.20; total $5.80 per ton.

A crosscut is now being driven from the 200 ft. level of the Horseshoe vein to cut a fifth vein, situated 400 ft. east of the Horseshoe. This crosscut, which is following a rich stringer of quartz, is now in over 300 ft. A large number of samples were taken from different parts of these veins, to determine the average value of the ore, and it is worthy of note that samples taken from almost any part of the surface croppings are found to contain gold and silver values when assayed.

The surface of the Horseshoe shows a regular network of veins which may come together with depth and form a large ore body. Indications at present point to this.

THE MINE:

Access is obtained to the mine by means of an inclined shaft sunk on the Horseshoe vein, a vertical distance of 480 ft. The different levels connect with this shaft.

WATER:

Water was encountered in the mine at a depth of 360 ft. and enters the mine at the rate of 5000 gallons daily. It is at present removed by the skip, but could be handled better by a small pump.

TIMBERING:

The formation is very solid and scarcely any timber is used in the mine.

ORE AVAILABLE:

At the present moment there are 2000 tons of ore available between the 300 ft. and 400 ft. levels, and about the same amount above the 100 ft. level of the Olney vein. There are also about 600 tons of ore broken on the 400 ft. level, making a total of 4600 tons of ore at present available. This will average $6.00 per ton in value.

MINE EQUIPMENT:

The mine is well supplied with rails and ore cars. The ore is removed from the mine by a two-cylinder 8 X 14 hoist, which raises the

ore in a skip and delivers it at a point above the mill, where it is discharged by gravity into the mill ore bin. The hoisting plant is in good condition, and has a capacity of 150 tons a day for a distance of 1000 ft.

AIR DRILLS AND COMPRESSORS.

COMPRESSOR PLANT:

The mine is equipped with machine drills, the plant consisting of--

1 Compressor 12 by 16,
1 " 10 " 12,
6 Burley drills, 3½ in.
6 Murphy stoping machines,
All air pipe, connections, etc.

This plant is in first-class working order.

POWER:

As the mine shaft is situated only a few feet from the mill, power for the hoist and drills is furnished from the mill boilers, thus effecting a great economy.

FUTURE DEVELOPMENT WORK:

I would recommend that the drifts in the present workings of the Horseshoe vein be extended south. The cost of this work will not exceed $6.00 per ft. and using machine drills, each drift should advance 100 ft. per month. This work will develop over 100,000 tons of ore in one year at a cost of less than $30,000.00. As these drifts advance south, crosscuts may be run to connect with the Barbara and Olney veins, and drifts run on these if good ore is encountered. I would also recommend the further sinking of the present shaft to a depth of 1000 ft. This could be accomplished within a year at a cost not exceeding $20,000.00. The east crosscut on the 800 ft. level should also be continued until it cuts the vein, which will be within 100 ft. The cost of this will be $500.00. A like amount should be spent in prospecting the surface.

This will make a total of $51,000.00 to be spent on the mine. With this expenditure the mine should be in a position to pay regular dividends and take care of its own future development.

TREATMENT:

As the values carried in the ore are entirely free and there is an entire absence of sulphides, sulphates or other substances which might interfere with the extraction of the values, the metallurgical treatment is a very simple matter. The ore is treated as follows: The ore is discharged from the mine skip into the ore bins above the crushers, where it is reduced to pass a half-inch mesh screen. The crushed rock is then fed automatically to two Monadnock mills, where it is ground to pass a 20-mesh screen, and thence over amalgamated copper plates. The pulp then goes to classifiers, where 22% is separated as slimes. These are conveyed to the slimes plant, where they are treated by decantation. The sands are cyanided separately.

52% of the values are saved on the plates and 38% by the cyanide, making a total extraction of 88%. (90%?)

The ore is very friable and easily crushed.

MILL EQUIPMENT:

The mill consists of the following plant:

2 Gates crushers,
Grizzlies, etc.,
2 7-ft. Monadnock mills,
Plates, classifiers, pumps, etc.

The mill is in good condition and running order, and has a capacity of 120 tons a day.

The cyanide plant, which also includes a slimes plant, is very complete and modern in construction. The tanks are of iron and the plant has a capacity of 150 tons a day.

THE POWER PLANT:

This consists of:

1 Horizontal tubular boiler of 60 H.P.
2 Horizontal tubular boilers of 80 H.P.
1 Horizontal tubular boiler of 40 H.P.
1 Bates Corliss engine of 185 H.P.

This plant provides power for the mill, and the air drills and hoisting plant at the mine.

It will thus be seen that there is excess power available. The consumption of fuel, when the plant is running to its full capacity

is 9 cords of wood a day.

A smaller plant, consisting of one 30 H.P. vertical boiler, and one 10 H.P. vertical boiler, supplies power to a small hoist, which is at present used in elevating tailings to the cyanide tanks, and to a 4 H.P. vertical engine, which alternately pumps solutions and saws wood for the boilers.

Steam from these boilers is also used to warm the leaching vats, and the solutions in the zinc boxes, during the cold weather.

The whole power plant is in good working order.

F U E L:

The fuel at present used at the mine is wood, nine cords being used daily when the plant is running to its full capacity. The wood, which consists of pine and cedar, costs $4.00 a cord, delivered at the mill. There is sufficient wood available close to the mine to last two years. After this, wood will have to be transported a greater distance and will cost more. The remedy will be to use crude oil as a fuel. The cost of installing oil burners for the boilers would be $500.00. The cost of crude oil, delivered at the mine, is $3.00 per barrel. Nine cords of wood, the daily consumption of the plant, is equivalent to 14 barrels of crude oil.

From these figures a comparison may be made between the costs of using wood and crude oil as a fuel at the Horseshoe mine. Cost for 24 hours, using wood--

9 Cords wood at $4.00 - - - -	$36.00
3 Firemen at $3.00 - - - - -	9.00
Total - - - - - -	$45.00

Cost for 24 hours, using crude oil--

14 barrels of oil at $3.00 - -	$42.00

This makes a difference of $3.00 a day in favor of oil as a fuel. Later on this will become an important consideration.

MINE TIMBERS AND LUMBER:

These are obtained from Modena at a cost, delivered at the mine, of $40.00 per thousand.

WATER SUPPLY:

The Horseshoe mine owns its own water right. The water, which in the driest season of the year amounts to 25,000 gallons daily, is conveyed in a pipe from a spring four miles distant from the mine, to a tank situated 180 ft. above the mill and 290 ft. above the site of the proposed new cyanide plant. The water is very pure and entirely free from any substances which would interfere with cyaniding. From the storage tank the water is distributed to the mill and the town of Fay. This supply of water is ample for the mill, the cyanide plant, and all camp purposes.

WAGES:

The following wage rates prevail in the district:

Drillers- machine men - - -	$3.50	per day.
Muckers - - - - -	3.00	" "
Firemen - - - - -	3.00	" "
Engineers - - - -	3.50	" "
Carpenters - - - -	3.50	" "
Blacksmiths - - - -	4.00	" "
Amalgamators - - -	4.00	" "
Solution men - - -	4.00	" "

Labor is plentiful in the district.

SUPPLIES:

Food supplies, horsefeed, etc., are obtained locally at reasonable prices. Mining and other supplies are obtained from Salt Lake or Los Angeles.

FREIGHT:

The freight rate between the mine and Modena is $5.00 per ton.

SHOPS, ASSAY OFFICE, ETC.

There is a good blacksmith shop and machine shop with power-driven tools; also a well-equipped assay office, bullion room, and several storerooms, in connection with the mill.

TOWNSITE:

The townsite of Fay, consisting of 110 lots, is also included in the property. Six of these lots have been sold to outsiders. The following buildings belong to the property--

1 Cottage with 4 rooms and bath,
1 Cottage with 5 rooms and bath,
1 Cottage with 4 rooms and bath,
2 Cottages with 3 rooms and bath,
1 Store, 20 X 50, known as the Fay Mercantile Co.
1 Warehouse, 12 X 40 feet.
2 Small stores,
1 Saloon,
1 Large Stable,
1 Small Stable,
1 Carpenter shop,
1 Oil House,
1 Large bunk-house for 50 men,
1 Boarding house for 50 men,
1 Office Building.

TELEPHONE:

There is direct telephone communication between the property and Modena.

MAIL AND STAGE LINE:

A stage runs daily between the mine and Modena, which carries passengers and mail. It leaves Modena daily at 1 P.M. except on Sundays.

TAILINGS DUMP:

There are between 50,000 and 60,000 tons of tailings below the Horseshoe mill, the result of past operations. These tailings have already been cyanided, but so inefficiently that they still contain considerable values in gold and silver, which can be extracted at a profit if they are properly treated. In fact, the present operators of the property are engaged in working over these tailings, treating 2000 tons a month, with very satisfactory results.

I spent several weeks testing this tailings dump, my samples being taken from a number of borings made in the dump, five feet apart. Careful assays made on these samples showed the whole tailings dump to have an average value of--

Gold.....$0.90 per ton,
Silver.....1.18 " "

Total.....$2.08 per ton.

A number of leaching tests on these tailings made in the laboratory, showed the following extraction of the values--

Gold..... 86%
Silver..... 81%

A sizing test showed the presence of 22% of slimes, which would not interfere with a successful percolation. Analyses showed the tailings to be entirely free from interfering elements. The consumption of cyanide was found to be less than half a pound per ton. The present operations of treating the tailings on a large scale are confirming these results. A very careful and systematic sampling of these tailings was made several years ago on behalf of G. Pray Smith, by two well-known cyanide experts, who spent over two months in making experiments. Their results confirm mine in almost every detail, except that they found the average value of the tailings to be $1.90 per ton instead of $2.08, as I found it.

The tailings fill up a narrow valley for a distance of 700 feet. The valley has a slope of 9%.

If these tailings are carefully cyanided under skillful operators, they will yield a profit which will more than pay all the expenses connected with the development of the property. The present method of handling the tailings, by tramming them up an incline to the vats, is an expensive one. If they are to be treated, it would be great economy to move the present cyanide plant to a point below the tailings dump, where they could be sluiced into the vats, which would be discharged by the same means.

An estimate of the cost of treating the tailings, and of the profit which would accrue from the operation, is given later.

The cost of moving and re-erecting the plant below the mill dump, as no new material of any kind would be required, would not exceed $2500.00.

This is in any case the best and most convenient location for the cyanide plant, and when the mill is running, the pulp can be conveyed to the leaching vats by a sluice, at no additional expense. As water can be delivered at this point below the dump under a head of 290 ft., the operation of filling and discharging the vats by sluicing would be a very simple and economical one.

ADDITION TO PLANT:

As there is extra power available, it would be advisable to add

another Monadnock mill to the plant. This would entail an outlay of $2500.00 and would increase the capacity of the plant to 150 tons a day. This would considerably reduce the cost of operation.

The following estimates are based on the supposition that the capacity of the plant has been increased to 150 tons a day, and that the development work on the mine, which I have laid out, has been accomplished.

They are based on a thorough knowledge of the conditions at the mine, and, I believe, are conservative.

COST OF MINING:

As the power for the air drills and the mine hoist is supplied from the mill boilers, this item has, for the sake of convenience, not been included in this estimate of mining cost.

This estimate is based on using Murphy stoping machines in 4 ft. stopes, with one operator to each machine, and on mining and delivering at the mill ore bin, 150 tons of ore daily.

Cost per day--

15 drillers at $3.50.....	$52.50
4 Trammers at $3.00.....	12.00
2 Hoist men at $3.50.....	7.00
2 Skip tenders at $3.00.....	6.00
1 Blacksmith at $4.00.....	4.00
1 Helper at $3.00.....	3.00
2 Shift bosses at $4.00.....	8.00
Powder, fuse and caps.....	30.00
Candles.....	3.00
Repairs and timber.....	7.50
Total.....	$132.00

Which makes the cost of mining $0.88 per ton.

COST OF CRUSHING & AMALGAMATING:

As there is extra power available, it would be advisable to add a third Monadnock mill to the plant. This would bring the capacity of the mill up to 150 tons a day, equal to that of the cyanide plant, and would considerably reduce the cost of operation.

Daily cost--

2 Crusher men at $3.50	$ 7.00
3 Engineers at $3.50	10.50
3 Firemen at $3.00	9.00
3 Amalgamators at $3.50	10.50
Wood, 9 cords at $4.00	36.00
Forward,	$73.00

Brot. forward,	$73.00
Repairs	4.00
Supplies	3.00
Refining and transporting bullion.....	4.00
Total	$84.00

Which is $0.56 per ton.

This also includes the power supplied to the mine.

COST OF CYANIDING THE PULP FROM THE MILL:
(Not the tailings dump)

Daily cost for 150 tons.

3 Solution men at $3.50	$ 10.50
1 Helper at $3.00	3.00
Cyanide	18.75
Zinc	4.50
Acid	6.50
Fuel and other supplies	1.75
Refining and transporting bullion	3.00
Total	$48.00

Which is $0.32 per ton.

COST OF CYANIDING THE PRESENT TAILINGS DUMP:

This estimate is based on the assumption that the cyanide plant has been erected below the tailings dump, and that 150 tons of tailings which rest on the slope of 9%, will be sluiced into the vats by a stream of water under a head of 290 ft. The vats will be discharged by the same means.

Daily cost--

2 Sluice men at $3.50	$ 7.00
3 Solution men at $3.50	10.50
1 Helper at $3.00	3.00
Zinc, acid, fuel and other sup.	10.75
Cyanide	18.75
Refining and transporting bull'n	3.00
Total	$53.00

Which is $0.35 per ton.

SUMMARY OF COSTS:

Mining	$0.88 per ton,
Crushing and amalgamating ...	.56 per ton,
Cyaniding	.32 per ton,
General expense	.39 per ton,
Total	$2.15 per ton.

AVERAGE GRADE OF THE ORE:

The average value of over 100,000 tons of ore, already milled

at the mine, according to well kept records, was over $7.00 per ton. Taking this and my own sampling of the mine into consideration, I am of the opinion that we may safely rely on the ore having an average of at least $5.00 per ton.

PERCENTAGE OF EXTRACTION:

There is no record of the extractions of values made by former owners, but the present operators have milled and cyanided several hundred tons, with an average extraction of from 85% to 90% of the values.

Taking into consideration the extremely simple character of the ore, which is an ideal one for cyaniding purposes, I believe that an extraction of 85% of the values can be relied upon.

STORE:

The property includes a large store building in the town of Fay, which is at present closed owing to the small number of men employed at the mine. When the property is again in operation on a large scale, it will pay to again open the store, as besides the men employed at the mine, there would be a good local trade with other mines and neighboring ranches.

I estimate that the profits accruing from this source would amount to at least $500.00 per month.

RENTALS AND WATER RATES:

The property supplies water to the town of Fay, and rents several houses. The income from these sources amounting to $150. per month.

ESTIMATE OF PRODUCTION & EXPENDITURE FOR ONE MONTH:

This estimate is based on the understanding that the work recommended in this report has been accomplished, and that 4500 tons of ore of an average value of $5.00 per ton, are mined and milled in thirty days. And that 85% of the values are extracted in the process.

PRODUCTION:

Bullion	$18,000.00
Store profits	500.00
Rentals and water	150.00
Total	$18,650.00

EXPENDITURE:

Mining	$ 3,960.00
Milling	2,520.00
Cyaniding	1,440.00
General expense	1,775.00
Mine development	1,500.00
Total	$11,175.00

This is a net profit of $7475.00 per month, or $89,700.00 per annum. This would pay about 15% dividends on a capitalization of $600,000.00.

The values contained in the tailings dump make it a very valuable asset, which can be made immediately available. There are over 50,000 tons of tailings, which contain over $2.00 per ton in gold and silver. It will take a year to cyanide this dump, and the net profit should be $1.00 per ton, or $50,000.00 on the whole dump.

A certain quantity of ore, amounting to over 7000 tons, will be extracted from the drifts in the course of development work. This, with the ore available in the mine, will amount to 12,000 tons. This ore can be treated in the mill running one daily shift of eight hours, at a profit of $2.00 per ton, or $24,000.00 in the course of a year.

Thus, from these two sources, which are at present available, the sum of $74,000.00 can be secured.

This will more than pay the initial cost of opening up the property.

The actual amount of capital required to start operations will therefore be very small. Just enough to pay the cost of moving the cyanide plant and starting operations in the mine, will be sufficient. This amount will not exceed $6,000.00.

With this small investment, the property can be made to pay all the costs of its development, and after a year become a steady and profitable producer.

SUMMARY:

The data contained in the foregoing report was collected during an examination of the Horseshoe Mine, extending over two months. The estimates are based on a study of the conditions at the mine, and on an experience of many years of mine management. At present there is very little ore available in the mine, but this is because the former operators simply gutted the workings without a thought to the future of the mine. From the strong surface showing, the indications in the mine, and the fact that the faces of all the drifts are in good ore, there can be no doubt but that there is a very large body of ore still undeveloped on the property. And there is no reason why the grade of this should not be equal to that of the ore already extracted. If we take into consideration that the property is equipped with a fine mill, cyanide plant, hoisting plant, compressor plant, houses for the workmen, and that all the heavy preliminary expense connected with starting mining operations, is eliminated, that the property has its own water supply at the mine, and that it is close to a railroad, it will be seen that this property possesses many advantages as an investment.

The tailings dump, too, forms a valuable asset, which can be immediately realized upon, and thus only a small amount of capital will be required to begin operations.

If the suggestions contained in this report are carried out, the property will, within a year, be placed on a permanently profitable basis, and I therefore have no hesitation in recommending this property as well worthy of the attention of the investor.

Estimate of Daily Cost of Running the Mill for One Eight-Hour Shift and Milling 35 Tons of Ore Daily.

MINING AND CYANIDING.

1 Engineer	$ 3.50	
1 Fireman	3.00	
1 Amalgamator	3.50	
1 Crusher man	3.50	
1 Solution man	3.50	
1 Helper	3.00	
Supplies	1.50	
Repairs	3.00	
Wood	12.00	
Refining and transporting bullion	2.00	
Cyanide, acid, zinc, etc.	9.00	
Assaying	3.00	
Superintendence	7.00	
Total		$57.50

MINING.

1 Hoist man	3.50	
1 Blacksmith	4.00	
1 Helper	3.00	
8 Machine men at $3.50	28.00	
4 Trammers at $3.00	12.00	
1 Skip tender	3.00	
1 Shift boss	4.00	
Powder, fuse, caps, candles	11.00	
Timber and repairs	2.50	
Total		71.00
Total daily cost of mining, milling and cyaniding 35 tons and doing development work		$128.50

Assuming the ore to have an average value of $5.00, and that an extraction of 80% is obtained, this will give us bullion returns amounting to $140.00 per day, which will thus cover the cost of the development work laid out in this report. This work being confined to extending all the drifts of the Horseshoe vein south.

(Signed) John Rooke-Cowell, E.M.

Los Angeles, California,

November 1st, 1910.

(ASSAYS ON WHICH THE MINE WAS PURCHASED)

	Silver	GOLD	TOTAL
#1	$2.50	$10.60	$13.10
#2	$1.80	$5.20	$7.00
#3	$5.90	$103.00	$108.90
#4	$1.50	$6.20	$7.70
#5	$4.00	$4.80	$8.80
#6	$22.50	$2.40	$24.90
#7	$1.00	$5.00	$6.00
#8	$1.00	$4.40	$5.40
#9	$2.50	$3.60	$6.10
#10	$1.80	$6.40	$8.20
#11	$3.00	$5.30	$8.30
#12	$4.00	$8.20	$12.20
#13	$3.00	$81.50	$84.50
#14	$1.00	$8.00	$9.00
#15	$1.00	$5.20	$6.20
#16	$1.25	$4.46	$5.71
#17	$1.50	$3,920.18	$3,921.70
#18	$1.70	$7.50	$9.20
#19	$1.00	$12.60	$13.60
#20	$1.50	$10.00	$11.50
#21	$1.00	$5.20	$6.20
#22	$1.50	$3.40	$4.90
#23	$1.25	$7.70	$8.95
#24	$1.00	$8.20	$9.20
#25	$1.50	$10.40	$11.90
#26	$1.10	$8.60	$9.70
#27	$1.50	$9.00	$10.50
#28	$1.25	$7.40	$8.65
#29	$1.00	$12.40	$13.40
#30	$1.00	$9.30	$10.30
#31	$1.50	$6.60	$8.10
#32	$1.75	$9.20	$10.95
#33	$1.00	$10.60	$11.60
#34	$2.50	$12.50	$15.00
#35	$1.75	$7.36	$7.11
#36	$6.00	$12.36	$18.36
#37	$1.50	$13.59	$15.09
#38	$4.00	$14.83	$18.83
#39	$1.00	$41.20	$42.20
#40	$1.00	$10.30	$11.30
#41	$2.00	$14.42	$16.42
#42	$2.50	$16.90	$19.40
#43	$1.80	$13.39	$15.29
#44	$3.00	$6.40	$9.40
#45	$4.00	$5.50	$9.50
#46	$3.00	$8.00	$11.00
#47	$1.00	$12.77	$13.77
#48	$1.00	$8.24	$9.24
#49	$1.25	$46.14	$47.39
#50	$1.50	$6.40	$7.90
#51	$1.75	$15.00	$16.75
#52	$1.00	$2.50	$3.50
#53	$1.50	$66.33	$67.83
#54	$2.00	$8.24	$10.24
#55	$1.50	$288.40	$289.90
#56	$1.25	$4.90	$6.15
#57	$1.00	$4.94	$5.94
#58	$1.50	$3.60	$5110
#59	$1.10	$3.40	$4.50
#60	$1.50	$5.15	$6.65
#61	$1.25	$3.00	$4.25
#62	$1.00	$2.40	$3.40
#63	$1.00	$2.00	$3.00
#64	$1.50	$3.00	$4.50
#65	$1.75	$41.34	$43.09
#66	$1.00	$12.40	$13.40
#67	$1.50	$9.09	$10.59

	Silver	Gold	Total
#68	$1.10	$8.26	$10.59
#69	$1.25	$10.40	$11.65
#70	$1.00	$6.59	$7.59
#71	$1.00	$7.41	$8.41
#72	$1.50	$22.66	$24.16
#73	$1.75	$12.36	$14.11
#74	$1.50	$13.59	$15.09
#75	$1.00	$14.83	$15.83

Average for 75 assays $69.85

Average after taking out the three largest assays $13.78