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Put in Mine file with reports

CARLOTTA MINE

April 1937

According to Alexander, partner of Howard Fields in Prescott. Mine is just beyond Pinto Camp in Pinto Valley near Globe.

Has developed a positive tonnage of 50,000 tons of 5% copper ore and probable tonnage an additional 50,000 tons of similar grade.

All ore is carbonate (malachite) and would require leaching. Mine is 4 miles from road and 8 miles from railroad and there is plenty of water within 1000'. Ore body is 20' wide and can be worked by adits. If equipped with 100 ton leaching plant copper should be produced for 8½¢ per pound.

- Carlotta Mine file

NOTE RE CARLOTTA MINE 12/2/42

According to Jaqways of B. of Mines John Alexander is now working this mine and shipping about 1200 tons per month of the better grade oxidized ore with about 5% copper and he is making a good profit but wants to sell out his half interest for $30,000.

Mine is supposed to have a large tonnage of 3% ore partly oxidized which could be treated by leaching and from which copper could be produced for 8½¢ per pound.

(Statements would have to be checked.)

Alexander operating & shipping then

43 & into 44

CARLOTA MINE

LOCATION

This property known as the Carlota Mine is located about eight miles west of Miami, in Pinto Valley, Gila County, Arizona. It is also about 12 miles N. E. of Superior, Arizona. It adjoins the Pinto Valley Development Co. Property on the North and East.

CLAIMS

The property consists of one and a fraction claims, namely: Brewery and Clipper mining claims. The area is approximately thirty acres.

OWNERS

The property is controlled by John L. Alexander of Phoenix, Arizona.

TRANSPORTATION

The property is located about five miles from the Miami-Superior Highway and is reached by a road branching off this road about five miles from Miami. This road is maintained by the County in excellent shape. The mine is about ten miles by road from Miami, the nearest shipping point and about fifteen miles from Superior. All but about five miles of this road is oil surfaced and the entire road is passable at all times.

During the last six months operation of the property by the Carlota Copper Co., a careful hauling cost record was kept and during this period, through the use of their own trucks, a hauling cost of $1.00 per ton to Miami, and $1.50 per ton to Superior was easily maintained. This figure included the entire amortization and depreciation of their trucks over a period of one year. The road is now in better condition that it was during this time.

WATER

The 300' tunnel level makes sufficient water for mine and domestic uses and it is claimed that sufficient water can be developed here to furnish a fifty ton leaching plant. However, it is my opinion that water for leaching purposes must be had from Pinto Creek. Sufficient water can be had here for a large plant by drilling wells. The distance would be about a 1/4 mile with a lift of approximately 200'. A claim would have to be either bought or leased here for this purpose. By pumping water a distance of about a mile, a claim could possibly be located which would furnish ample water.

MILL SITE

Due to extent and location of the orebody a claim to the northeast should be secured for mill site and tailings disposal. There are claims which can be either bought or leased for this purpose, which would make an excellent mill site, being lower than the lowest level of the present workings. It is possible to secure one claim that would supply both a mill site and a water supply.

GEOLOGY

The orebody occurs along a contact of lime and diorite, striking about north 60 degrees east. The ore occurs mostly as a malachite and in one stope on the 300' level there was found some chrysocolla. There is no more than a trace of sulphide in any of the ore to the lowest level. It is my opinion that this condition will exist until the water level is reached which should be about 200' deeper than the lowest present workings.

EQUIPMENT

At the time the property was closed down in the winter of 1929, the property was fully equipped for mining operations and also for housing and feeding some twenty five employees. Since this time all equipment has been removed and this must be replaced before an operation can be gotten under way.

DEVELOPMENT AND PRODUCTION

The orebodies have been opened by three tunnel levels to a vertical depth of 188'. These orebodies have been opened by numerous drifts, crosscuts, raises, and also by two winzes from which a sub-level has been driven. The main ore body is opened to a length of 150' and to a maximum width of 50' at the junction of the north and south orebodies, which ore showing in most faces, and in all faces to the East. Other orebodies may be opened with additional work, as there are very good indications both underground and on the surface.

A shaft was sunk several years ago to a reported depth of 350' below the present workings and a crosscut driven to the South. This is reported on good authority to have encountered an orebody 60' wide which averaged 3.5% cu. The collar of this shaft is now caved and it has been impossible to examine these workings during the past few years. This was without doubt one of these orebodies at present partially developed near surface by tunnel levels.

During development work about 1925-26, a hanging wall orebody was encountered which was from 2 to 20 feet wide and about 175' long on the 300' level. Several cars were shipped from mostly development, however, some stoping was done

here, these cars averaging about 5.57% cu. The drift into this orebody is now caved and is impassable.

This same orebody was encountered on the 200' level in later work as shown on attached maps along drifts No. 200 and No. 215.

No work has been done on the downward extension of the South orebody below drifts #104 and #106. This is very good ore and should be opened up from the lower levels.

The East face of the North orebody along drift 108 is still in ore and should be driven ahead to prospect this area to the East.

The East and West faces of the footwall section of the North Orebody along 214' drift are in ore and both should be extended to the limits of the orebody on this level. The same is true along 303' drift, faces being in ore of excellent grade with very little work having been done on this level.

The East face of 215' drift is in ore and should be driven ahead to determine the eastward extension of the hanging wall section of the North orebody.

There is unquestionably a downward extension of these orebodies below the 300' level and ore of a similar grade and character should be expected for at least another 200'.

DEVELOPMENT AND PRODUCTION (continued):

There has been a total of about 5000 tons shipped mostly from development work, from all parts of the mine, which averaged 5.011% Cu. As this came from all parts of the mine it may be considered a very fair average for the entire mine. The attached sheets give smelter returns on this ore. No sorting of any nature was done on any of the cars of ore shipped:

SMELTER DATE	LOT #	WEIGHT TONS	CU. %	A.G. OZ	SIO2. %	AL. %	FE. %	CAO. %	S %	NET VALUE PER TON
1923										
I.S.C.	12105		4.43	.51	62.1	10.3	5.6	1.2	.7	$-----
"	12137		3.83		65.2	10.0	3.4	1.4		
"	12163		3.49		66.2	11.0	4.3	1.0		
"	12164		3.78		66.2	11.0	4.3	1.0		
"	12184		4.00		61.9	11.4	5.2	1.3		
"	12195		3.28		64.2	11.3	4.4	1.6		
1924										
S.P.S.W.	1290	35.3	6.37							12.00
"	1342	44.7	6.80							12.50
"	3554	36.9	5.32							11.85

SMELTER DATE	LOT #	WEIGHT TONS	CU. %	AG. OZ	SIO2 %	AL. %	FE %	CAO %	S. %	NET VALUE PER TON
1925										
E.P.S.W.	293	37.3	5.32							11.40
"	376	41.9	5.97							12.79
"	477	40.0	5.51							11.68
"	636	45.1	5.55							11.99
"	644	46.2	5.13							11.08
1928										
MAGMA	529	47.1	6.55		41.0	16.0	9.6	6.5		10.67
"	534	47.5	6.70		41.4	12.4	13.7	6.1		11.00
1929	4	46.1	6.60	.20	42.0	12.8	6.1	6.2	.20	12.78
Magma	6	45.9	5.10	.10	44.2	15.2	10.0	5.2		9.37
"	11	50.6	5.68	.20	41.8	15.0	9.0	5.0		11.34
"	19	30.9	5.60	.40	39.4	14.4	11.6	6.0		8.83
"	26	49.4	4.80	.20	42.0	16.0	9.8	6.4		14.56
A.S. & R.	99	46.2	5.80							14.56
"	105	51.4	5.50							13.99
MAGMA	27	32.7	4.86	.10	45.2	15.0	11.0	4.2		9.24
A.S. &R.	131	46.6	4.30							10.97
"	130	49.9	5.00							

SMELTER DATE	LOT #	WEIGHT TONS	CU. %	AG. %	S102 %	Al %	FE %	CAO %	S %	NET VALUE PER TON
MAGMA	116	49.2	3.20	.20	52.8	11.7	10.0	4.5		5.04
"	123	44.7	3.68		54.0	12.8	6.0	3.8		6.50
"	124	34.0	3.74	.20	50.2	11.2	10.0	5.5		6.69
A.S. &R	138	58.6	3.70							7.25
MAGMA	132	46.9	3.74	.20	48.0	12.8	8.6	4.9		6.69
"	136	37.6	3.32	.40	53.4	11.7	12.8	4.5	0	5.42
"	141	38.5	4.42	.30	53.0	12.7	5.6	4.8	0	8.65
"	144	46.6	4.90	.20	49.6	13.2	15.6	5.0	0	9.97
"	154	49.9	3.93	.20	47.6	13.4	10.4	5.3	0	7.46
"	176	41.9	5.12	.30	43.4	14.4	9.8	6.0	0	11.88
"	180	47.0	4.39	.20	44.2	14.2	10.0	3.9	0	9.69
"	189	37.7	4.72	.20	42.0	12.4	12.4	4.6	0	10.68
"	213	48.4	30.8	.10	46.0	13.8	6.2	5.3	0	6.48
"	230	50.0	3.87	.10	44.0	13.2	9.6	5.8	0	9.42
"	232	48.0	3.87		48.2	13.6	12.6	4.9		9.42
"	421	50.7	3.85		47.2	16.4	6.6	3.3		11.05
"	331	44.2	4.97	.10	44.2	16.0	8.0	4.6		10.16
"	343	34.6	4.83	.25	45.4	14.5	9.6	3.6	0	9.78
"	360	49.7	5.67	.30	43.0	16.0	7.6	3.8	0	12.08
"	370	34.3	5.28	.60						11.01
"	376	41.6	4.89	.20	42.6	16.0	8.4	5.0	0	9.94
"	379	37.1	4.90	.30	42.4	15.0	7.6	5.3		9.97
"	386	29.5	5.60	.20	42.0	14.4	6.4	5.1	0	11.89
"	408	46.3	5.24	.40	42.4	14.0	6.3	4.1	0	10.90
"	414	49.9	5.38	.30	43.0	15.2	6.7	4.5		11.29
"	420	41.9	5.18		45.2	16.0	6.5	4.8		10.75
"	428	37.0	6.26		45.4	16.2	10.8	3.1		13.71
"	442	50.6	6.07		44.0	16.0	9.6	4.2	0	13.18
"	451	45.0	7.15		45.0	15.8	7.8	2.7	0	16.15
"	467	49.2	4.73		44.6	16.3	10.0	4.0	0	9.50
"	447	42.9	4.14		42.6	16.1	7.2	4.0		7.88
"	487	49.3	5.12		43.4	17.0	7.1	3.0	0	10.57
"	493	43.2	4.68		43.4	17.8	7.7	3.8	0	9.36
E.P.S.W.	1486	47.0	5.72	.60			6.4	2.1	.2	11.94
MAGMA	504	50.4	4.75		42.0	17.6	8.1	4.2	0	9.03
"	511	47.1	4.56		44.0	18.4	6.7	3.7	0	9.03
E.P.S.W	1538	43.9	5.41				7.8	1.9	.6	10.53
"	1588	45.2	6.28							12.81
MAGMA	520	51.8	4.51	.10	44.4	16.6	10.6	3.4	0	8.53
"	529	48.2	4.03	.10	44.2	17.1	7.6	4.0	0	7.25
"	451	52.1	4.01		40.8	19.2	12.6	4.3	0	7.20
"	549	49.7	3.89		43.8	18.3	7.8	3.9	0	6.85
E.P.S.W.	1718	50.0	4.35							7.56
"	1717	54.7	4.91							7.17
MAGMA	562	53.4	4.29		43.4	18.5	7.7	3.2	0	7.95
"	569	48.9	4.84		45.2	15.6	7.8	2.8	0	9.42
E.P.S.W.	1747	48.9	3.32							4.68
MAGMA	583	45.8	4.90	.10	44.0	15.4	6.6	3.7		9.58
"	593	41.8	4.48		43.2	16.9	8.4	2.5	0	8.45
"	601	48.6	5.82		44.0	14.2	8.4	2.9		12.03
E.P.S.W	1829	48.7	4.45							7.84
MAGMA	611	43.6	6.43		42.2	15.2	7.4	2.6	0	10.38
E.P.S.W	1873	51.4	4.65							8.40

E.P.S.W.	1927	46.0	5.90							11.86
MAGMA	628	49.5	5.23		42.6	15.4	6.6	3.6	0	10.46
"	639	53.5	4.66		53.6	16.8	7.6	3.3	0	8.95
"	642	46.4	4.70	43.8	43.8	17.0	7.0	3.4	0	9.04
E.P.S.W.	1990	46.4	4.96							9.27
MAGMA	651	54.2	4.48		42.4	18.3	7.6	2.7	0	8.45
"	659	47.5	5.77		43.2	16.0	6.0	3.2	0	11.90
E.P.S.W.	2027	49.2	4.20							7.14
MAGMA	676	49.2	5.15		43.0	17.4	7.7	3.4	0	10.24
E.P.S.W	2099	44.7	5.97							12.04
MAGMA	688	46.2	5.60		42.2	16.2	8.7	3.0	0	11.44
"	593	41.9	5.35		42.4	15.3	7.1	3.2	0	10.78
"	708	53.7	5.22		44.0	16.8	5.8	3.7	0	10.43
"	712	53.6	5.56							11.34
"	724	52.2	5.56		42.0	15.0	7.3	3.0	0	11.34
"	734	51.9	4.34		40.2	14.8	12.0	2.9	0	8.16
"	746	48.7	4.22		42.0	16.0	11.1	4.7	0	7.76
"	759	52.3	4.03		43.8	16.8	6.8	6.2	0	7.25
"	767	5.13	4.68		44.0	17.0	9.4	3.5	0	8.99
"	774	49.6	6.06		44.0	16.0	7.4	3.5	0	12.67
"	784	48.6	5.17		12.6	17.0	6.2	3.6	0	10.30
"	791	48.8	6.43		42.4	14.4	713	3.8	0	13.66
"	800	50.7	5.46		44.0	14.8	11.5	4.0	0	11.07
"	808	48.3	4.98		42.6	17.0	6.5	3.0	0	9.79
"	816	58.1	4.47		44.0	14.6	6.6	3.4	0	8.43
"	823	55.0	4.64		44.4	15.5	7.0	4.0	0	8888
"	831	47.4	5.85		43.3	15.5	6.8	3.8	0	12.11
"	841	50.7	4.33		44.0	16.2	6.6	4.7	0	8.05
"	851	51.8	5.00		41.4	14.5	7.2	3.0	0	9.84
"	860	53.1	4.52		44.0	16.4	6.7	4.5	0	9.56
"	866	54.6	4.25		43.6	15.5	8.4	4.1	0	7.84

7/8/31

ESTIMATE OF ORE RESERVES
ABOVE 300 TUNNEL LEVEL
(5% Cu. Ore)

PROVEN ORE:

North Orebody No. 1 Level above 103 and 108 Drifts
(Allowing one half as lower grade and mined)

$$\frac{150 \times 40 \times 40 \times \frac{1}{2}}{14} \text{ -- } 8,570 \text{ tons}$$

South Orebody No. 1 Level above 106 Drift.
(Allowing one half as lower grade and mined)

$$\frac{90 \times 30 \times 40}{14} \times \frac{1}{2} \text{ -- } 3,710 \text{ tons}$$

South Orebody projecting 50' below 106 Drift,

$$\frac{90 \times 30 \times 50}{14} \times \text{ -- } 9,640 \text{ tons}$$

Footwall Section of North Orebody above 214 Drift,
to No. 1 Level,

$$\frac{105 \times 25 \times 80}{14} \text{ -- } 15,000 \text{ tons}$$

Hangingwall Section of North Orebody aboe 200 and 202
Drifts to No. 1 Level, (allowing one half mined)

$$\frac{120 \times 10 \times 92}{14} \text{ -- } 3.940 \text{ tons}$$

Hangingwall Section of North Orebody aboe 215 Drift
to No. 1 Level,

$$\frac{50 \times 4 \times 92}{14} \text{ -- } 1,310 \text{ tons}$$

Footwall Section of North Orebody above 303 Drift
to No. 2 Level,

$$\frac{45 \times 12 \times 68}{14} \text{ -- } 2,600 \text{ tons}$$

Total - 44,770 tons.

Additional Indicated Ore:

South Orebody No. 1 Level from 50' below 106 Drift to No. 3 Level,

$$\frac{90 \times 30 \times 100}{14} \quad -- \quad 19,300 \text{ tons}$$

North Orebody No. 1 Level, 50' East extension above 103 and 108 Drifts,

$$\frac{50 \times 30 \times 40}{14} \quad -- \quad 4,200 \text{ tons}$$

Footwall Section North Orebody, 30' East extension and 75' west extension, above 214 Drift level,

$$\frac{105 \times 25 \times 80}{14} \quad -- \quad 15,000 \text{ tons}$$

Footwall Section North Orebody, 150' West extensions, above 303 Drift level,

$$150 \times 12 \times 68 \quad - \quad 8,740 \text{ tons}$$

Hangingwall Section North Orebody, caved area above 300 Drift to No. Level (allowing 1/3 mined and lost)

$$\frac{180 \times 4 \times 55}{14} \times 2/3 \quad - \quad 1.890 \text{ tons}$$

Footwall Section North Orebody, projecting 50' below 303 Drift level,

$$\frac{195 \times 12 \times 50}{14} \quad -- \quad 8,350 \text{ tons}$$

Hangingwall Section North Orebody, projecting 50' below 300 Drift level,

$$\frac{180 \times 4 \times 50}{14} \quad -- \quad 2,570 \text{ tons}$$

Total - 60,050 tons

MILLING:

Numerous leaching tests have been made on this ore by several metallurgists and all tests show that the ore is very readily ameniable to leaching with sulphuric acid.

Mr. Keyes, formerly of the Miami Copper Co. and now with General Engineering Co. made many tests on ores of a similar nature from an adjoining property and has stated that he has made excellent results with heap leaching.

Heap leaching on this ore has the particular advantage of high extraction coupled with low cost installation and is the system that at this time I would recommend be carefully tried out.

Tests heretofore have shown an acid consumption of approximately 3# per pound of recovered copper based on a five percent ore and an iron consumption of 1¼# per pound of recovered copper. These tests have also showed that a ninety percent extraction can be obtained. The gangue of the ore has an acid consumption of 135# of acid per ton and the copper itself averages 1½# of acid per pound of copper.

Tests employing the more common used practise of vat leaching were conducted for the Carlota Copper Corp. by Mr. Loring and showed good results with low acid and iron consumption by separation of the sands and slimes.

It is the writers opinion that heap leaching after the agglomeration of the coarse and fine particles will eliminate all possible difficulties arising from possible channeling of the acid solutions, making the separation of coarse and fines unnecessary.

Further tests to determine how low a grade of ore can be profitable leached at this property should be conducted. Particular attention should also be paid to the effect of agglomeration of the coarse and fine particles. In as much as Mr. Keyes of the General Engineering Co. is familiar with this particular district and the ore from this mine, I recommend that anyone interested have these tests conducted by him.

The ore need not be crushed finer than 3/8" and for this reason one stage crushing thru a jaw crusher would be all the grinding needed. The plats for heap leaching could be made of cement coated with asphalt with some sort of loose sides for the more compact heaping of the ore on these plats, that could be removed after leaching so that a scraper could be employed to empty the plats.

These plats could be charged either thru the use of a conveyor belt or by car and track, tramming the ore from the crusher bin and dumping directly on to the plats.

The acid solution could be sprayed on the top of the cone and drawn off thru the bottom of the plats into the precipitation vat.

For the start at least shredded tin cans could be used for precipitation the copper from the solution. This sort of iron costs approximately $20 per ton delivered at Miami. Sulphuric acid costs about $10 per ton at the same point.

In as much as the leaching of this ore is so very simple and results to date have indicated that a small heap leaching plant can be economically operated here, I think that such a plant should be built. It also guarantees a market for the copper regardless of usual smelter wants and would allow copper to be made at a price that would practically guarantee the operation of the mine for a long time.

OPERATING COST ESTIMATE

		per day ton	5% 90% #cu	
MINING:				
2 machine men	@ 5.50	11.00		
3 trammers	4.00	12.00		
1 b. s.	5.50	5.50		
1 foreman (timbers)	8.00	8.00		
1 timber helper	4.25	4.25		
1 cook	2.00	2.00		
		$42.75	.855	.0095
Supplies:				
Overhead	8.33 plus 5.00	13.33		
repairs		10.00		
timbers, 100' @ 25M		2.50		
Coal		.50		
powder		4.50		
fuse		1.00		
caps		.40		
carbide		.70		
fuel oil		3.50		
grease and lube oil		2.00		
		$38.43	.77	.0085
Compensation:	8.00	3.42	.068	.00075
DEVELOPMENT:				
1 machine man		5.50		
2 muckers		8.00		
powder fuse and caps		4.74		
		$18.24	.365	.00405
		$2.058	.0228	
Hauling to Inspriation Smelter:				
3 drivers	@ 5.00	15.00		
8 gal. gas per trip	.19 (12 trips)	18.24		
grease		1.00		
repairs		7.50		
compensation		1.20		
tires, 4 per month @ 50.00		6.66		
amortization 2400 in 12 months		6.66		
3 gal. oil		2.40		
		$58.66	1.17	.013

MILLING:

		per day	ton	5% 90% #Cu
Labor				
7 men	@ 4.00	28.00		
Supt.		7.50		
Supplies:				
Fuel		5.60		
Oil and grease		1.50		
Repairs		5.00		
Compensation		2.13		
		$ 49.73	$0.99	.011

RECAPITUALTION:

Costs per pound of copper shipping to Smelter:

Mining	$ .01875
Development	.00405
Hauling	.013
Switching	.0027
Smelter Deduction	.025
Smelting	.039
	$0.1025

The above based on 5% ore @ 50% pay by smelter.

Costs per pound of copper leaching ore on property:

Milling	$ .011
4# acid per # Cu. @ $10.00 per ton	.02
1½# iron " " " " 20.00 " "	.0125
Smelting	.003
Mining and Development	.0028
Smelter Deduction	.015
Tax	.0029
	$0.0872

The above based on 5% ore @ 90% recovery.

Net profit per pound of copper direct shipping to smelter, quotation 2/10/37 $0.0275

Net profit per pound of copper leaching on property, quotation 2/10/37 $0.0428

Net Returns on Proven Ore;

44,770 tons of 5% Cu.

4,029,300 # Cu. (based on 90% recovery)

Gross value: 4,029,300 # Cu. @ 13¢ per #	-	$523,809.00
Total Costs: 4,029,300 # cu. @ .0872¢ per #	-	351,354.96
Proven Ore Net Returns		$172,454.04

Net Returns on Indicated Ore:

60,050 tons of 5% Cu.

5,404,500# Cu. (based on 50% recovery)

Gross Value: 5,404,500# @ 13¢ per #	$702,585.00
Total Costs: 5,404,500# @ .0872¢ per #	471,272.40
Indicated Ore Net Returns	$231,312.60
Total Net Returns	$403,766.64

CAPITAL EXPENDITURE ESTIMATE

MINE EQUIPMENT

300' compressor	$1500.00	
2 stopers	600.00	
2 jackhammers	400.00	
Hose, connections, etc.	150.00	
Bit grinder	150.00	
Bits and steel	150.00	
6 mine cars	300.00	
Mscl tools	550.00	
assay equipment	500.00	
Timber	500.00	
Repairs and cleaning up	500.00	$ 5,300.00

SURFACE

Buildings	1000.00	
Mscl.	500.00	$ 1,500.00

LEACHING PLANT

Crusher	750.00	
Motor	250.00	
Acid pumps	250.00	
50 ton bin	250.00	
Feeder	50.00	
Conveyor	700.00	
Motor	50.00	
Tugger and scraper	500.00	
Rails and timber	500.00	
Concrete tanks, leaching	500.00	
Storage tanks	2000.00	
Ore plats, leaching	1000.00	
Water pumps, pipe and connections	1000.00	
		$ 7,800.00

POWER LINE	3000.00	3,000.00

SUPPLIES (two months)

Explosives	600.00	
Carbide	25.00	
Grease and oil	25.00	
Bl Blacksmith supplies	25.00	
Mscl parts and repairs	200.00	
Timber	500.00	
Gasoline and lube oil	250.00	
Steel	150.00	
Assay supplies	50.00	
Mscl.	500.00	$ 2,325.00

WATER DEVELOPMENT	200.00	$ 200.00
TRANSPORTATION		
1 Haulage truck	2000.00	$ 2,000.00
OPERATING EXPENSES (two months)		
Power	500.00	
Acid	5400.00	
Iron	3360.00	$ 9,260.00
PAYROLL (two months)		
3 machine men @ 5.50		
3 trammers @ 4.00		
2 muckers @ 4.00		
1 timberman @ 5.50 (blacksmith		
1 timberhelper@ 4.25		
1 foreman @ 8.00		
1 truckdriver @ 4.00		
7 millmen @ 4.00		
1 assayer @ 5.00 (bookkeeper)		
1 mill supt. @ 7.50	Approximate	$6,000.00
INDUSTRIAL INSURANCE	"	480.00
Insurance deposit		$ 250.00
	TOTAL	$38,115.00

CONCLUSION:

This mine with its known ore reserves plus large tonnage of well indicated ore, together with the very probable downward extension of these partially developed orebodies and possible other unprospected ore chutes, offers an excellent opportunity for a successful mining operation.

There is sufficient ore in sight to justify the installation of a small heap leaching plant, of from 50 to 100 tons daily capacity, at this time which should show a handsome return over the entire cost of plant and mine.

Respectfully submitted,

2/10/37.

John L. Alexander.