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Item 7

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REPORT OF A. SYVERSON ON THE

MOORE MINING COMPANY AND THE

BUCKSKIN CONSOLIDATED MINES COMPANY.

(Now the Moore Mining Company)

A. Syverson, M. E., who examined these properties and made the attached report is connected with the Dae Lantz Syndicate, and the International Appraisel Ass'n, locayed in the Rosevelt Building of this city.

His record shows some twenty odd years intensive mining work, mostly with large companies, and for five years was chief engineer for the United Verde Extension Mining Company, of Jerome, Ariz.

Mr. Syverson's reports are accepted in miming circles as being very carefully made, efficient and reliable.

R E P O R T

on the

MOORE, SOUTH JACKSON AND BUCKSKIN MINES

PROPERTIES OF THE

MOORE MINING COMPANY

JACKSON, AMADOR COUNTY, CALIFORNIA

by

A. SYVERSON
Mining Engineer
612 St. Paul Avenue
Los Angeles, California

R E P O R T

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PROPERTIES OF THE

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JACKSON, AMADOR COUNTY, CALIFORNIA

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BUCKSKIN MINE

LOCATION

The property is situated sixteen miles southwest of Yerington, in the Buckskin Mining District, Douglas County, Nevada, embracing a portion of Sections 12-18, R. 23 E., Tp. 13 N., M. R. 24 E., Tp. 12 N.

ACCESSIBILITY

The distance to the mine from Ludwig, the terminus of the Nevada Copper Belt Railroad, a branch of the Southern Pacific, is some four miles, over a fair automobile and truck road with easy grades, and is passable for heavy hauling during the entire year. A good automobile road connects with the State Highway via Nevada Hot Springs, which gives convenient access to the property by automobile from Los Angeles, Reno and other cities.

MINING CLAIMS

The property consists of the following claims:
Rava, Red Top, Red Top No. 1, Red Top No. 2, Red Top No. 3, Red Top Fraction and Buckskin Lode, which are patented under Survey No. 327792, and Radio, Radio Nos. 2 and 3 and Copper King Nos. 1 to 7 inclusive, which are held under location, a total of thirteen full claims and four fractional, containing one hundred and twenty-five acres of patented and one hundred and seventy-five acres held by right of location, a total of three hundred acres of mineralized land in a contiguous group, with perfect titles and no adverse claimants.

HISTORY

The Buckskin Mining District is said to have been discovered in the year 1904 by an old prospector by the name of Kennedy, who rode a Buckskin horse at the time, from which the district derived its name.

The claims located by Kennedy became known as the "Kennedy Gold Mine", and the strike of rich gold ores in these claims created considerable excitement, attracting miners and prospectors from Virginia City, Tonapah and other mining districts. Due to this influx, a town sight was laid out, buildings and stores were erected, and the town also had a Chamber of Commerce to its credit.

The Kennedy or Buckskin gold claims were staked out in leases 100 feet square, resulting in a number of shallow shafts, trenches and prospect holes on various parts of the property.

However, the principal workings on the Red Top Claim led to the discovery of copper sulphide ores below the oxidized gold bearing zones. Most of the work was done during the years of 1904 to 1907. As far as can be learned, the panic of 1907, together with transportation difficulties, high cost of mining and no smelter facilities led to discontinuance of operation. The mine was evidently considered a meritorious one as several transfers were made, ranging in price from $150,000.00 to $300,000.00. During the latter years and until the time the Buckskin Mine was organized, about eighteen months ago, small shipments of gold ores have been made by leasers. The company has established a camp, pumping plant and partially completed the construction of a 100 ton metallurgical plant. For the purpose of verifying the value of the copper sulphide ores from the 130 foot level, two car loads, some 100 tons, were shipped to the International Smelting Company at Salt Lake City, Utah. These shipments averaged $14.00 per ton in copper and $1.00 per ton in gold.

CLIMATE

The elevation at the mine is 5000 feet above sea level, with certain portions of the property ascending to an elevation of 5600 feet. The Buckskin Lode, Red Top No.1 and Mava patented claims embrace part of the Smith Valley, which lies at an elevation of 4800 feet. The climatic conditions are most favorable for continuous operation during the entire year as the snow fall is light and of short duration.

WATER

At a distance of 5000 feet from the mine, in Smith Valley, the company controls twenty acres of water rights on which a 130 foot well has been sunk and a pumping plant installed, with a pipe line to the camp. The present supply is about thirty gallons per minute. This flow can be increased at a nominal cost, thus assuring more than sufficient water for domestic, mining and metallurgical use. Aside from this, a moderate flow of water will no doubt be encountered, perhaps a short distance below the 260 foot level in the mine, which will give additional assurance of ample water for all operating purposes.

PUMPING PLANT

VEGETATION

The property is practically void of vegetation. The easterly portion of the claims embrace a few acres of tillable land in the Smith Valley that may be utilized for truck gardening, thereby supplying the boarding house with fresh vegetables at a low cost.

LABOR

Experienced miners may be obtained from the old mining centers, such as Goldfield, Tonapah and Reno, at the prevailing wage scales. If suitable accommodations at the mine are provided, profitable and amicable relations between capital and labor are assured.

ORGANIZATION

The company maintains a general office at 923 Balboa Building, 593 Market Street, San Francisco, a branch office at 409 Western Mutual Life Building, 321 West Third Street, Los Angeles, and mine offices at Jackson, California, and

the Buckskin Mine, Douglas County, Nevada.

H. E. Wollrich, a well known business man and mine operator of Los Angeles, and San Francisco, is President and General Manager.

Finlay Cook, who has been engaged in mining for a number of years and has been Secretary of the Moore Mining Company since its organization, is Secretary and Treasurer.

Operations at the mines are planned and directed by L. E. Snider, a mining engineer who has had a number of years of experience in engineering and operating in different parts of the country. It is my opinion that the work done at the Buckskin Mine under his direction has been carried out efficiently and economically.

EQUIPMENT AND BUILDINGS

	Mill Building, size 26' by 72' - 75 per cent completed
1	Allis-Chalmers Rock Crusher, size 10" by 7"
1	Economy Crusher, size 6" by 12"
1	Standard Concentrating Table
1	Fru Vanner
1	Classifier
1	8' by 5' Copper Plate
210	Ft. Leather Belting 8"
125	Ft. Rubber Belting 3"
4	Drive Shafts
6	Pulleys
1	Ore Bin, 65 Ton capacity, Steel lined
3	Sets Chain Blocks
44	Ft. 30-50 Mesh Copper Screen
3	Galv. Water Tanks, 2500 Gal. capacity
500	Ft. 1½" pipe
5000	Ft. 1" Pipe
2400	Ft. 12 Lb. Rails
2500	Ft. 8 Lb. Rails
1	3" Deep Well Water Pump
1	Tripple Booster Pump
1	50 Gal. Gas Tank
1	Drill Press
1	Pump House, Corrugated Iron, size 18' by 12'
3	1 Ton Ore Cars
1	Complete Blacksmith Shop Outfit
1	5" Cameron Sinking Pump
1	Cochise Jackhammer, with air and water hose
1	Water Pressure Tank, with fittings
40	Pcs. Hand Steel
20	Pcs. Jackhammer Steel
1	Eclipse Centrifugal Pump 1½"
1	Eclipse 4 H. P. Gas Engine
1	6"by 6" Air Compressor
1	6"by 18" Air Compressor
1	18 H. P. Gas Engine
1	32 H. P. Fairbanks-Morse Gas Engine
1	18 H. P. Novo Hoist
1	18 H. P. Novo Gas Engine
1	Headframe
1	Hoist House, Frame and Corrugated Iron
1	Combination Boarding and Bunk House, frame, with cooking utensils and dishes; beds, and mattresses sufficient for accommodation of twelve men.

Aside from the above listed equipments, there are shovels, pick axis, saws, miners lamps, gasoline torches, lanterns, wheelbarrows, carpenters and machinists tools. Machinery and other equipment have had good care and appear to be in working order.

GENERAL VIEW - BUCKSKIN MINE

The combination boarding and bunk house and engine room are in fair condition. A working force of ten to twelve men may be accommodated, but under somewhat crowded conditions.

GEOLOGY AND TOPOGRAPHY

The are within the boundaries of the company's property is characterized by rolling hills ascending west some eight hundred feet above the camp and traversed by several smaller arroyos. The general drainage is to the east into Smith Valley.

The rocks in the vicinity of the mine are of the Tertiary type as a metamorphosed andesite, with sheared zones of an east and west strike, and dipping to the south. There are several quartz porphyry dikes exposed in various places, the most prominent dike traversing the Copper King Claims in a northerly and southerly direction. These dikes may be a Rhyolite-Pelsite. However, they are decidedly porphyritic in character and show slight indications of mineralization and leaching.

The most prominent and strongest mineralization occurs in the sheared and altered zones in the andesite within the limits of Red Top and Red Top No. 3 patented claims. (See Claim Map accompanying this report.) In these sheared zones, and parallel to the shearing, occur lenses or veinlets of iron stained and strongly oxidized quartz from which high grade ores have been extracted and shipped. These outcrops are cavernulous, rusty and more or less crumbling in character. Assays show 0.1 per cent copper, which indicates the former presence of iron pyrite and other sulphides. The chalcopyrite ore body already developed on the 130 foot level, below the oxidized zone, seem to indicate that the outcrops formerly contained sulphides of copper. There are a number of shallow shafts, prospect holes and trenches on the different outcrops. These workings are well mineralized, but do not show ore in commercial quantities. Trenches have been dug for 100 feet in length across the auriferous andesite shear zone, with assay results indicating an average of $1.00 in gold per ton.

The most prominent and strongest mineralization occurs in a quartz outcrop, beginning in the vicinity of the Portal of the Upper Tunnel. (See Plan and Longitudinal Section) The surface cuts, from one to eleven inclusive, have been sampled by Snider, the company's engineer, and assay results obtained from samples taken by the writer agree very closely with his records.

The cuts have exposed well mineralized gold-bearing quartz, varying in width from three to six feet, having a value of from $4.00 to $10.00 per ton in gold. However, after averaging the combined value of ores exposed in Tunnel and Surface, there appears to be 10,000 tons of practically proven gold ores, valued at $6.00 per ton. The so-called quartz vein is not a true fissure vein, but the quartz occurs in irregular lenses in the andesite and shear zone, resembling a somewhat linked vein system of a series of branching and perhaps reuniting fractures.

Due to limited development, such as crosscuts and raises in the oxidized zone, no valuable generalization as to possibilities of developing a large tonnage of low grade ores in this zone can be formulated at this time. However, contemplated development of the existing chalcopyrite ore shoot on the 130 foot level will, no doubt, disclose valuable information as to extent and grade of the overlaying oxidized gold ores.

MINE DEVELOPMENT AND ORE OCCURRENCES

Total development to date as follows:

Main Shaft, 2 Compartment, 10" by 10" Timbers, 6" by 8" Dividers, Hoistin Compartment, size 4'6" by 4'. Manway, 3'6" by 4'6" in clear	260 ft.
Air Shaft, 1½ Compartment, partly timbered	150 ft.
Miscellaneous Shallow Shafts	750 ft.
Tunnels and Crosscuts - Gold Zone	550 ft.
Drifting - 130 Foot Level	1105 ft.
Crosscuts	1230 ft.
Total Development	4045 ft.

The Upper and Lower Tunnels are in andesite, somewhat blocky, altered and sheared, with concentration of iron oxidized quartz in the shear and fractured zone. The mineralization is rather irregular in character as may be seen from accompanying maps. The first 200 feet have an average value of $6.00 per ton. From this point to the face, the mineralization is less pronounced, no doubt due to the fact that the tunnel, for some reason, did not follow the mineralized fractures of fissures, but was driven in a practically barren andesite.

The writer took sixteen samples from these tunnel workings, and the average results obtained (calculated by the foot-ounce method) check with the sampling previously done by Snider.

It is my opinion that, due to limited development work, size and character of the vein system in these tunnel workings, 10,000 tons of $6.00 gold ore is about the maximum tonnage that may be realized between the tunnel level and the surface. However, if the tunnel had followed the ores, the proven tonnage might have been somewhat greater. Since this work was done by former operators, it is no reflection on the present management. The probabilities for commercial gold ores below the tunnel level can only be determined by future development work from the 130 foot level off the Main Shaft.

BUCKSKIN MINE
HEADFRAME, MAIN SHAFT, BUILDINGS AND MILL TRESTLE

The main working shaft is located on the south side of the mineralized surface outcrops, and was sunk vertically to a depth of 260 feet. It has one hoisting compartment, size 4' by 4' 6", one manway, size 3' 6" by 4' 6" in the clear, timbered with 10" by 10" and lagged tight. Platforms have been installed at 30 foot intervals, with vertical ladders. It is equipped with a suitable headframe, sheave wheel, shaft guides, 350 feet of 3/4" steel hoisting cable, one 18 H. P. Novo Gasoline Hoist and a steel single deck cage with safety catches.

Judging from the rocks on the old dump, the shaft was sunk through a slightly mineralized andesite. At the 90 foot level, a crosscut was driven north, but no ore encountered. At the 130 foot level, a station was cut and another crosscut was driven to the north, wher chalcopyrite ores were encountered, 80 feet from the shaft. From this point, the crosscut went through 30 feet of $9.00 ores. (See Sample No. 1 on Map showing Mine Workings and Assay Values.) The crosscut was continued through the porphyritic dike and into the andesite for a distance of 240 feet. No commercial ores were encountered on the north side of the porphyritic dike, but the andesite is slightly impregnated with iron sulphides.

Starting off the west crosscut, the 130 foot level east is in ore to crosscut marked "E-2" on the map. Sample No. 29, taken at this point over a distance of 15 feet, gives a gross value of $9.25 per ton. From here the drift continues in ores to crosscut E-3. Sample No. 26, taken over a width of 10 feet, gives a gross value of $8.64 per ton. Thence the drift continues in ore for 10 feet and enters oxidized and leached material carrying chalcopyrite stringers and copper sulphides in impregnated form. This condition exists throughout the drift to the face. Samples 27-28 were taken from points shown on the map over a width of 15 feet, and show a trace of copper. The conditions in this drift, from the ore intercept to the face, leads one to believe that copper sulphides will be found underneathe this oxidized zone and that the ore shoot will have an easterly pitch, with excellent possibilities for commercial ores on the 260 foot level.

Starting from north crosscut, the 130 foot level west is in commercial ores to the porphyritic dike. Sample No. 31, taken from back of stope over a distance of 22 feet, show a gross assay value of $11.58 per ton. The ore comes in again on the west side of the dike and continues to crosscut W-1. Sample No. 32, 20 feet wide, shows a gross assay value of $12.34 per ton. The drift continues in ore to crosscut W-2. Sample No. 33, 15 feet wide, shows a gross assay value of $9.10 per ton. The undampled portion of the crosscut and drift is also in commercial ore of an equal value. From W-2 the drift continues in ore for 20 feet, where it enters andesite impregnated with copper sulphides, but evidently of a rather low grade. This condition continues until the ores are agin intercepted in crosscut W-4, where sample No. 34, 15 feet wide, shows a gross assay value of $10.29 per ton. From this point to the face, the drift passed through a blocky and altered andesite heavily impregnated with chalcopyrite of a somewhat lower grade. Sample No. 33, taken from across the face over a width of four feet, gives a gross value of $7.81 per ton.

Since no raises have been driven, the vertical extent of the ores above the 130 foot level cannot be determined by actual tape line measurements. However, the actual dividing line between the oxides and the sulphides is exposed on the 75 foot level in Shaft No. 2. The ores at this point are 10 feet wide and of commercial grade. (The accompanying Longitudinal Section illustrated this more clearly. It also shows the out lines of proven and probable ores.)

At the time of the writer's visit to the property, the 260 foot level was submerged and could not be examined, but I have learned from sources which I beleive to be reliable that Chalcopyrite ores of commercial grade were encountered in the west drift, a short distance from the 260 foot station.

The edges of the old mine dump, which contains the rocks that came from the 260 foot level, show strong mineralization in the form of chalcopyrite identical in character to the ores exposed on the 130 foot level. This would bear out the fact that the statement made regarding the ores on the 260 foot level is not entirely without foundation. Development to date on the 130 foot level has proved the existing chalcopyrite ore shoot for a distance of 375 feet in length, with its apex exposed on the 75 foot level in No. 3 Shaft. The crosscuts driven through the ores indicate an average stoping width of 20 feet.

ORE RESERVES

Taking the block of ore on the 130 foot level in triangular forms (See Longitudinal Section) and following dimensions:

60 by 260 by 20 - 312,000 cub. ft.
60 by 115 by 20 - 138,000 cub. ft.

450,000 cub. ft. - 37,500 tons
12

of proven ores of the following composition:
Copper 2.5 per cent, gold 0.055 ounces, insoluble 60 per cent, iron 13 per cent, sulphur 8 per cent, and lime less than one per cent, giving a gross value of $10.13 per ton.

PROBABLE ORES

260 by 88 by 20 - 447,200 cub. ft.
170 by 50 by 20 - 170,000 cub. ft.

617,200 cub. ft. 50,000 tons
12

The gross value per ton of probable ore is, of course, problematic, but is assured- $10.00 per ton

Hence: 37,500 tons @ $10.13 - $379,800.00
50,000 tons @ 10.00 - 500,000.00

Estimated value, proven & probable ores 879,800.00

The submergence of the 260 foot level and the limited amount of development work makes it rather difficult to formulate a generalization as to the relative size and continuity in depth of the present ore shoot. Therefore, any attempted estimate of possible ores would be merely a prediction based on insufficient data. However, judging from the mineralization in the neighboring districts, as well as the structural and geological conditions on the 130 foot level, it is evident that the continuity of the ore shoot, perhaps in an overlapping arrangement, will extend to a depth of from 600 to 700 feet below the collar of the Main Shaft.

The ore shoot, as far as developed, is in the form of a lenticular mass of pyrite and chalcopyrite in a silicious gangue, partially replacing the andesite. The ore shoots are separated by a narrow porphyritic dike which appears to be premineral. There is evidence of slight faulting in crosscuts E 3-4. These faults probably accompanied the intrusion of the porphyry dike and were followed by ascending metalliferous solutions which formed the present ore shoots. The minor slips and fractures occurring in the ore shoots appear to be due to the influence of gravity. At least, I did not find any evidence of marked displacement on the 130 foot level.

According to U. S. G. S. Professional Paper No. 144 by Adolph Knopf, Pg. 7: "The Yerington district, which next to Ely is Nevada's most productive copper district, is in the west Central part of the State, fifty miles southwest of Reno. Before 1912 it did not produce largely, but since then, to the end of 1917, it has produced 16,200,000 lbs. of copper." The Nevada Douglas Copper Company, situated some four miles north east of Buckskin, produced during the years 1911-1914 125,689 tons of ore averaging six per cent copper. A 250 ton leaching plant for treatment of the oxidized ores was built during 1915. This plant was not a success. Although the mine is said to have a large tonnage of commercial ore blocked out, no mining has been done since. However, the workings are being kept unwatered.

The Mason Valley and Bluestone Mines have been the principal producers in the district for a number of years, until 1929, when their ores became too low grade for profitable operation. However, the company's records show that ores carrying

as low as 1½ per cent copper sulphides, with negligible precious metal value, were treated at a profit on an operating basis of 1000 tons per day.

BUCKSKIN MILL UNDER CONSTRUCTION

In view of the preceding, ti would seem reasonable to assume that the Buckskin Mine, with 2½-3 per cent in copper and from $1.00 to $2.00 in gold per ton, should show a substantial profit from the operation of a 50-100 ton concentrating plant. (Later the plant may be enlarged in proportion to future increase in ore reserves.)

SAMPLING AND ASSAY RESULTS

Determinations of the metallic contents, which were made by Baverstock & Payne, Industrial Chemists, at 552 South Figueroa Street, Los Angeles, are as follows:

Sample No.	Width	Gold per Ton oz.	Value	Silver per Ton oz.	Value	Copper per Ton %	Value	Gross Value per Ton
1	4 ft.	None		None				
2	1 ft.	0.09	1.85					1.85
3	36 ft.	0.24	4.95					4.95
4	36 ft.	0.18	3.70					3.70
5	4 ft.	None						
6	44 ft.	0.31	6.40					6.40
7	3 ft.	0.31	6.40					6.40
8	2 ft.	0.02	0.40					0.40
9	18 f	0.62	12.80	0.50	0.25			13.05
10	20 ft.	0.01	0.20					0.20
11	10 ft.	0.13	2.70					2.70
12	10 ft.	0.29	6.00					6.00
13	30 ft.	0.05	1.05					1.05
14	30 ft.	0.20	4.15					4.15
15	35 ft.	0.14	2.90					2.90
16	18 ft.	0.23	4.75					4.75
17	18 ft.	0.06	1.25					1.25
18	50 ft.	0.11	2.25					2.25
19	50 ft.	0.02	0.40					0.40
20	18 ft.	0.09	1.86					1.85
21	6 ft.	0.31	8.05	0.80	0.35	0.1		8.40
22	5 ft.	0.19	3.95	1.80	0.80	0.1		4.75
23	5 ft.	0.39	8.05	1.40	0.60	0.1		8.65
24	3 ft.	0.06	1.25					1.25
25	Tunnel Dump	0.06	1.25					1.25
26	10 ft.	None				2.4		8.64
27	15 ft.	None				0.1		0.36
28	15 ft.	None				0.1		0.36
29	15 ft.	0.10	2.05			2.0	7.20	9.25
30	30 ft.	None				2.5	9.00	9.00
31	22 ft.	None				3.2	11.52	11.52
32	20 ft.	0.18	3.70			2.4	8.64	12.34
33	15 ft.	0.18	3.70			1.5	5.40	9.10
34	15 ft.	0.34	7.05			0.9	3.24	10.29
35	4 ft.	0.10	2.05			1.6	5.76	7.81

These calculations are based on the following metal prices: Gold $20.67 per oz., Silver $0.44 per oz., Copper $0.18 per lb.

The samples were taken from different workings in large quantities, broken down to the desired size. Hence, I am satisfied that the yield is a true average of the ore exposures sampled.

The rejects from the samples were placed back in the sacks and will be held by Baverstock & Payne until further notice. Therefore the assay results listed may be verified if desired.

REALIZABLE PROFIT PER TON

This will be effected in direct proportion to the percentage of the gross value in the ore that may be recovered by whatever treatment or combination of treatments adopted. However, on a concentrating ore, having an average value of $10.00 per ton and based on 100 tons per day, would show profit as follows:

Mining and development work	$2.50	per ton
Loss of values in treatment	1.50	per ton
Milling and marketing	2.00	per ton
	$6.00	per ton
Gross value of ore	$10.00	per ton
Cost of mining, milling, etc.	6.00	per ton
	$ 4.00	per ton
Total profit on 100 tons daily.		$400.00

RECOMMENDATIONS, EQUIPMENT AND DEVELOPMENT

There are 37,500 tons of proven chalcopyrite pay ores available for stoping on the 130 foot level. The wide and persistent mineralization and the apparent absence of marked displacement throughout the ore body seem to justify the expectation that the area between the 130 and 260 foot levels contains at least 50,000 tons of probable ores similar in character and metallic content to that already developed.

In view of the preceding and in order to prepare for continuous operation, suitable housing facilities for miners and staff must be provided. A larger hoist and 350-400 cubit foot compressor should be installed. The 40,000 volt power line traverses the country at a distance of less than a mile from the mine, and electric power can be installed at a nominal cost. Machine drills, drill sharpeners, drill steel and mine cars must be provided. It is my opinion that the unwatering of the shaft from the 130 to the 260 foot levels should be deferred until heavier equipment is installed. A suitable compressor, hoist, motors and other miscellaneous equipment can be transferred from the company's property at Jackson, the only expense being haulage and installation.

The mill, although not completed, was designed for the purpose of treating the low grade oxidized gold ores. Since the copper ore reserves are much greater and of a higher value per ton than the gold ores, it is my opinion that the mill should be changed into a concentrating plant for treatment of the copper sulphide ores. The present crushing units may be suitable for the new design, but all the othermachinery will probably have to be replaced.

The copper ores are well suitable for concentration and will probably have a ratio of 6-1. However, it is recommended that tests be made of ores taken from different parts throughout the ore body so that the actual composition of the ores will be represented in the tests.

In order to carry out this work as rapidly and economically as possible, capital required for camp improvements, machinery, installation and development work is estimated as follows.

Camp improvements	$ 5,000.00
Installation of machinery and hauling	$ 5,000.00
Installation of electric power	2,000.00
Unwatering and repairing shaft	1,500.00
Mine cars	1,000.00
12 lb. rails and switches	1,000.00
Ore skip, gates and pockets	1,500.00
Ventilation pipes, fans, etc.	500.00
Machine drills and steel	2,000.00

Steel sharpener	$ 1,200.00
Mine tools, machine and blacksmith shop equip.	$ 1,000.00
Water system	800.00
Mine timbers, lagging, etc.	500.00
1½ ton truck	1,500.00
Automobile	800.00
	$25,300.00

Raising from 130 foot level,	200' @	$18.00	3,600.00
Drifting from 130 " "	500' @	15. 00	7,500.00
Drifting from 260 " "	700' @	15.00	10,500.00
Raising from 260 " "	600' @	18.00	10,800.00
Crosscutting, 130 & 260 "	400' @	15.00	6,000.00
Enlarging Main Shaft	260' @	40.00	10,400.00
Completing Mill			30,000.00
Development fund for South Jackson Property			35,000.00
			$139,100.00

There are many unknown factors in connection with future development work and plant construction that cannot be determined beforehand which may increase the cost. I therefore recommend that $15,000.00 be provided as a working capital for the combined mines.

This amount will be sufficient to place the Buckskin Mine on a producing basis and leave surplus for preliminary exploration on the South Jackson property.

The Buckskin ore bodies appear to be adaptable to shrinkage or cut and fill stoping system, and mining and milling cost should not exceed $6.00 per ton, leaving a net profit of $4.00.

MOORE AND SOUTH JACKSON PROPERTIES

LOCATION AND ACCESSIBILITY

The South Jackson Shaft is situated near the southeast boundary of the town of Jackson. The Moore Shaft is 2200 feet farther to the southeast. Both mines are within a short walking distance from town, two miles from the Martel railroad station and only one and one half miles south of the well known Kennedy and Argonaut gold mines.

The company has title to some 570 acres of patented agricultural and mineral bearing land, embracing portions of Sections 27, 28, 33 and 34, Tp. 6 - N R. 11 E., M. D. B. M. A good automobile road connects the mine with the town of Jackson. Paved highways give quick and convenient access to the properties from all principal cities in California and Nevada.

CLIMATE, VEGETATION, WATER, POWER AND LABOR

The properties are situated at an elevation of 1400 feet above sea level. The hills are more or less rounded and grassy, sparsely covered with oaks and pines.

Power and water are obtainable from the Pacific Gas & Electric Company, varying in rates in proportion to amounts used. Skilled miners and other mine labor can be secured from Jackson, as well as other mining centers on the Mother Lode, at prevailing reasonable wages. The properties are under the same management previously described on page three of this report.

HISTORY

The Zeila Mining Company, which adjoins the Moore Mining Company's South Jackson property on the north, was closed down in 1914, after thirty years of operation, and has since been

idle. According to U. S. G. S., Folio 63: "The vein is essentially a stringer lead in amphibolite schist and has a general dip of 50° to 60° E. It is separated from the black calaverous slate formation of the footwall by a heavy gouge. The width of the vein where stoped is 40 to 50 feet, but the general average is somewhat less. The ore is low grade-less than $4.00 per ton. Pyrite is the principal sulphide, but there is sometimes a little molybdenite, and small quantities of galena. Zinc blends are said to occur and to indicate good ores. Calcite is abundant, both as stringers and crystalized with the quartz."

According to Report No. 23 of California State Mining Bureau: "The shaft was sunk 1750 feet on an incline of 65°. The 1570 foot level drift was run north 3000 feet, and on that end a winze was sunk 458 feet, with levels at 157 and 295 feet which were also drifted north, the latter 450 feet. At the time of closing it was stated that the mine contained 360,000 tons of ore averaging less than $4.00 per ton. It was stoped out from the 1200 foot level to the surface, north of the shaft, where the ore shoot was 600 feet long and averaged 20 feet wide.

The average expense of mining and milling was about $3.00 a ton in 1900. The mill contained 40 stamps weighing about 800 lbs. each and crushing four tons per stamp daily through No. 16 brass wire screen; finer crushing was said to save a little more free gold, but resulted in greater loss in sliming the concentrate. The free gold was only 35 per cent of that recovered. The sulphides formed 2½ per cent of the ore and contained $100.00 gold per ton. The total production according to W. H. Storms must have been in excess of $5,000,000.00."

SOUTH JACKSON PROPERTY

The mine workings are at present submerged to within 50 feet of the shaft collar. Regarding development and ore occurrences, Jeffrey Schweitzer, former engineer and manager of the property, describes as follows: "Active sinking of the three compartment vertical shaft began the end of June, 1912, and was put down to its present depth of 577 feet by the middle of November.

Lateral work was then started on the 345 foot level north, where an ore body 100 feet long, averaging 11 feet in width, being 16 feet at its widest point, was opened. The first twenty feet was high grade material, being sprinkled with visible native gold. The remaining 80 feet averaged $3.15 per ton.

This ore body should be cheaply mined, the walls standing well and the ore breading easily. Seventy-five feet north from this ore body is a large body of typical Mother Lode quartz of low value. This is a splendid place to prospect-450 feet south is a lense of quartz 30 feet long and 2½ feet wide at its widest point, it is assayed $3.80 per ton. This is also a promising place to prospect.

On the 500 foot level the principal work was crosscutting west 300 feet and east 1035 feet. A drift north on Zeila vein 120 feet in length was driven without satisfactory results. On the middle vein the south drift was run 263 feet at which point the low grade ore body drifted on for 60 feet at the north end of 345 was just exposed. The (extension) of 345 ore body was not found on the 500 foot level nor any quartz of commercial value.

The ore body exposed is, therefore, on the 345 level north. Assuming that this ore body continues with the same dimensions to the surface, connecting with what is known as the North Shaft. (At the bottom of this shaft - 48 feet - 15 feet of quartz is exposed) there would approximately be 21,000 tons of ore above the 345 foot level. The low value of $3.15 would give a gross value of a little more than $66,000.00."

By the middle of 1913 the company's finances became very low, but work was kept going in a small way until the end of December, 1914, and has since been idle.

Assay values of samples taken from ores encountered during exploration are as follows:

Sample No.	3	Gold	5.68 oz.	Value	$117.40 per ton
" "	26	"	0.23 "	"	4.75 per ton
" "	27	"	0.09 "	"	1.86 per ton
" "	28	"	0.03 "	"	0.62 per ton
" "	29	"	6.23 "	"	128.78 per ton
" "	30	"	0.12 "	"	2.47 per ton
" "	31	"	0.07 "	"	1.44 per ton
" "	35	"	1.48 "	"	30.59 per ton
" "	36	"	0.16 "	"	3.30 per ton
" "	37	"	0.17 "	"	3.58 per ton
" "	38	"	0.42 "	"	8.68 per ton
" "	39	"	0.74 "	"	15.29 per ton
" "	51	"	1.09 "	"	22.53 per ton

The records from which the above were taken give no indication as to width of ores and places sampled. However, it adds additional weight to Schweitzer's statements.

THE MOORE MINING COMPANY'S PROPERTY

GENERAL VIEW-MILL AND BUILDINGS

From U. S. G. S. Professional Paper No. 157 and California State Mining Report No. 23: "The mine was first operated by the late Capt. W. A. Neville in 1885-87. The property had been idle for nearly 35 years, when the Moore Mining Company was organized and began operation in 1921.

The mine is developed by a three-compartment shaft, inclined 52°, which had at the time of suspension of operation in June 1929 reached a depth of 2291 feet, with levels at 160, 340, 440, 540, 640, 750, 800, 950, 1100, 1500, 1650, and 1800.

The mill started operation in October 1922, but the first real mill run was for 23 days in December of that year, when 2265 tons milled gave an average recovery of $6.35 per ton, with a high tailing loss. The great disparity between previously announced assay values and the recovery was also partly attributed to stopping too great a width-as much as 32 feet in width was mined on the 440 level, including considerable schist which carried sulphides and proved to be low grade. The 540 level had ore for a length of about 100 feet. On the 640 level, ore was stoped for a length of 300 feet, and width of 9-10 feet, but at one place it was 16 feet wide, where there was a sharp bend. During 1923 the mill operated 8½ months and the total production was $118,274.00. On the 800 foot level it was found that the ored body had been faulted, and a raise had to be put up and another level opened at 750 to pick up bottom of the upper section, which had a stope length of 250 feet and a width of four to twelve feet. The low grade drag material in the fault was milled. Ore was found in the shaft at 1060 feet. On further sinking it was found to be cut off at the 1200 foot level by the contact fault and work on the 950 level showed that it did not extend beyond there. Production during 1924 was $150,243.00.

From this time to the closing of the mine, in the summer of 1929, the shaft was sunk to a depth of 2291 feet and considerable work was done on the different levels-some ore was developed on the 1500, 1650 and the 1800 foot levels. A crosscut off the 1800 foot level was driven to the southwest, a distance of 1800 feet, to intercept the Kennedy-Argonaut fissure, but only a few feet of drifting was done-no ore was found. Gross production to date is said to be about $600,000.00.

The Moore Mining & Milling Company's plant, erected in 1922 - 24 cost as follows:

Mill - 20- 1050 Stamps, 12-6' Fru Vanners, buildings, etc.	$50,072.00
Hoist Building and Hoist Engines	10,302.00
Headframe and equipment	7,902.00
Blacksmith Shop and Equipment	1,971.00
Timber Shed and equipment	2,481.00
Tramway from Hoist to Mill	5,972.00
Underground equipment	13,167.00
	$91,822.00

MILL AND TRAMWAY

I do not think it would be advisable to re-open the Moore Mine at this time, but future exploration should be carried on from the Jackson Shaft, as outlined elsewhere in this report. The equipment can be utilized at the Jackson as well as at the Buckskin Mine. In case ores in commercial quantities are developed in the Jackson workings, it would be advisable to construct an aerial tramway from the Jackson mine to the Moore Mill. As the distance is only 2200 feet, this can be done at a nominal cost.

EQUIPMENT

1	Mill Building, 60 by 125, Frame and Corrugated Iron, 1050 Stamps, complete concentration and amalgamation plant, capacity 85 tons, in first-class working order
1	500 Ton Ore Bin
1	Primary Crushing Unit, capacity 100 tons per day
1	Inclined Tramway, Frame construction, 330 ft. long
1	60 ft. Headframe
1	Double Drum Hoist, 150 H. P. - 4000 ft. 1" Steel Cable
1	Compressor, 500 cub. ft. capacity}
1	Compressor, 350 cub. ft. capacity} complete with Motors
1	Compressor, 200 cub. ft. capacity}
1	75 Gal. Triplex Pump
1	Sinking Pump, with 15 H. P. Motor, 75 Gal. capacity
1	Blower, with 25 H. P. Motor, 2000 cub. ft. capacity
3	Air Receivers
1	Crusher, size 10 by 14 - Colorado Iron Works
3	Steel Skips, 2 ton capacity
1	Bailer
1	Crusher, 12 by 14 - Knight & Company
1	Single Drum Hoist, 30 H. P.
1	Saw Mill, complete with saws and motors
1	Blacksmith Shop, complete with equipment and motors
1	Assay Office, complete with furnace and balances
1	Retort and Refining Room, fully equiped
1	Change Room, fully equipped
1	Office Building, with desks, adding machine, typewriter and steel safe
60	Ft. 12 by 12 Pine Logs
150	Ft. 10 by 10 Pine Logs
Also	Leyners, stopers, Steel Cars, Picks, Shovels, Saws, Axes, and other miscellaneous tools.

SHAFT AND HOIST HOUSE

According to Adolph Knopf, U. S. G. S. Proffessional Paper 157: "The Mother Lode is a strip a mile wide, extending for 120 miles along the lower western flank of Sierra, Nevada. It begins near Georgetown, Eldorado County, and extends to Mormon, two miles south of Mariposa county. The five counties that it traverses- Eldorado, Amador, Calaveras, Tuollumne and Mariposa are often

known as the Mother Lode Counties.

The main towns on the belt from north to south are Placerville, Plymouth, Sutter Creek, Jackson, San Andreas, Angels Camp, Jamestown and Mariposa. Jackson is the seat of Amador County. Its fortunes are closely linked to the great gold mines the Argonaut and the Kennedy."

These mines have a combined production in excess of $40,000,000.00-the Zeila Mining Company $5,000,000.00, the Moore Mining Company $600,000.00. The Mother Lode to date is accredited with a production of $250,000,000.00.

On Page 7, U. S. G. S. Proffessional Paper, Adolph Knopf makes the following statement regarding the Mother Lode:

"The possibilities of the lode are so great and its vitality is so strong, however, that we may confidentially look forward to a gold production that will continue at the present rate, or even at an increased rate formmany decades to come."

O. H. Hershey, in his report dated March 26, 1927, brings out the fact that the Kennedy-Argonaut ore bearing vein crosses the Moore property. A limited study made by the writer confirms his theory. The geology and vein system, shown on accompanying map, were taken from information complide by Hershey. As this district is so well know, no detailed description of ore occurrences and geology is attempted in this report.

The 15 feet of quartz exposed in the 48 foot shaft referred to by Schweitzer is, according to R. S. Rainsford, similar in appearance, character and metallic content to that found in the best pay shoots at the producing mines in the district. Therefore Schweitzer's prediction that the ore shoot encountered on the 345 foot level may extend to the surface is not without ffoundation. The fact remains that the Zeila Mining Company stoped out one shoot of ore which extended from the 1200 foot level to the surface. Although this shoot occurred in another vein, it still adds weight to the possibilities of finding pay ores on the 345 and 500 foot levels in the South Jackson Mine.

As the accompanying map indicates, there is a strong probability of the South Jackson and Aetn veins froming an intersection a short distance to the northwest from the face of 345 level north. Points of junctions and intersection of veins are favorable to the occurrence of ore. The importance of this rule as a guide in exploration work has been pointed out by O. H. Hershey.

As soon as the mine is unwatered, a detailed study should be made of the underground workings, and if the findings indicate an intersection of these fissures, the level should be extended to the junction. If the 345 north ore shoot shows sufficient mineralization, it should be explored by raising.

The surface quartz croppings southwest of the main shaft (no doubt the Kennedy-Argonaut fissure) are strongly mineralized, and it is recommended that the 500 foot level be extended a distance of 750 feet in order to intercept the downward extension of this ore bearing fissure.

Ib order to car y out the suggested exploration work from the South Jackson shaft, the following expenditures are recommended:

Installing Machinery and repairs			$1,500.00
Unwatering and repairing shaft			3,000.00
Drifting- 345 ft. level- 650'	@	$15.00	9,750.00
Raising - 345 ft. level- 200'	@	18.00	3,600.00
Drifting- 500 ft. level- 750'	@	15.00	11,250.00
Raising - 500 ft. level- 200'	@	18.00	3,600.00
			$32,700.00

Say- $35,000.00, including overhead.

SUMMARY AND CONCLUSIONS

BUCKSKIN

The property consists of six claims, one fractional, patented, and seven claims, three fractional, unpatented, situated

16 miles southwest of Yerington and four miles of Ludwig, the terminus of the Nevada Copper Belt Railroad, Yerington Mining district, Douglas County, Nevada. The Yerington district west of Ely in Nevada's most productive copper district. The Mason Valley and Bluestone Mines were the largest producers, and operated successfully and profitably for sometime on 1½ per cent copper sulphide ores. Judging from assay results, the Buckskin ore should yield 2½-3 per cent copper and $1.00 to $2.00 in gold.

Due to the extensive mineralization on the 130 foot level in the Buckskin Mine, with 37,500 tons of $10..00 proven ore, 50,000 tons of probable, and the possibility of developing several hundred thousand tons within a depth of 700 feet, the possibilities of profitable operation are equally as good as at the other mines in the district. The character of the ore, its geological occurrence, the marked absence of displacement throughout the ore body and the adaptability of the ores to concentration are additional favorable factors, indicating a realizable profit up to $4.00 per ton of ore treated on a 100 ton basis, with the idea in view of increasing the plant in proportion to ore reserves developed.

It is my opinion that, in order to place the mine on a dividend paying basis, $100,000.00 must be expended for camp improvement, machinery, development and completion of the mill.

I do not recommend any development to the oxidized gold ores at the present time, except such work as is necessary for the development of the copper sulphide ore. All development work should be concentrated on the ore shoots on the 130-260 levels.

With progressive and efficient management, ample funds and by careful study of geological conditions during the development period, possibly changing plans from time to time to suit conditions, I feel confident that the possibilities of developing a reasonably large tonnage of additional commercial ores are excellent, thereby being assured of profitable operation for a number of years.

MOORE AND SOUTH JACKSON

The properties consist of some 570 acres of contiguous agricultural and mineral bearing land, situated near the southeast boundary of the town of Jackson, Amador County, California, and only 1½ miles south of the Famous Kennedy-Argonaut gold mines. These two mines have a combined production of $40,000,000.00, the Zeila $5,000,000.00 and the Moore $600,000.00. I wish to point out the fact that the Zeila adjoins the Jackson on the north and the Moore workings are only 2200 feet to the south. From my observations, I beleive the Kennedy-Argonaut fissure crosses the Moore-Jackson property. C.H. Hershey, on page one of his report, dated March 6, 1927, makes the following statement: "Incidentally I have traced on the probable line of the Kennedy-Argonaut vein, to remove any question that it crosses the Moore property."

The Mother Lode today is accredited with a production of $250,000,000.00.

On page 7, U. S. G. S. Profession Paper Adolph Knopf has the following to say: "The possibilities of the lode are so great, and its vitality so strong, however, that we may confidentially look forward to a gold production that will continue at the present rate, or even at an increased rate for many decades to come."

In view of the foregoing, and the low grade ores already exposed on the 345 foot level north, only 750 feet to drive, with the possibility of finding ore in the Kennedy-Argonaut fissure, it appears that the expenditure of $35,000.00, as recommended herein, is well justified. If ore is found, it can be treated cheaply at the company's mill, which is only 2200 feet distant.

In closing, I wish to imphasize that the company owns much valuable machinery, such as a modern 85 toon amalgamation plant at, Jackson, a partially completed milling plant at Buckskin, as well as double and single drum hoists, compressor, various size motors, saw mill, etc. This will effect considerable savings in expenditures giving additional value to the company's holdings.

No. 15

Respectfully submitted,

A. SYVERSON

Mining Engineer.

February 10th, 1930.