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item 2

A DESCRIPTION OF THE LAKE SHORE MINING COMPANY PROPERTY.

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The Lake Shore Mining Company property is located in Clark County, in the southern part of the Gold Butte mining district, about five miles Northwest of a point on the Colorado River known as Gregg's Ferry.

Las Vegas is the nearest source of supply, and is reached by boat on Lake Mead. It is a fifty-three mile water haul. The property consists of six lode claims held by C. C. McDonald of Overton, Nevada, and is in possession of the Lake Shore Mining Company by reason of a certain contract to purchase.

GEOLOGY. The country rock in this region is deep seated granite, coarse grained, highly altered in places and evidently of early geologic age. A basic dike, or highly altered shear zone, having the general appearance of serpentine, cuts the granite in this area in a Southeast to Northwest direction. The thickness of this dike varies from six feet to forty. It crops more or less continuously for a distance of several thousand feet. The Lake Shore covers this cropping for 4,500 feet. The dip of the dike on the Lake Shore ground is very low, six to ten degrees. The hanging wall contact between the dike and the granite is a well defined slip, showing evidence of movement and is filled with about an inch of soft gouge. The dike material is entirely free from granite, and no point has there ever been any evidence of fusion or bonding of the two materials.

At several points along this contact there has been mineralization consisting of quartz, iron, gold and silver, by replacement of the dike for from a few inches up to five feet, measured normal to the contact, and isolated bunches of mineralized material within the body of the dike, removed and not connected to the contact. The size of these bunches or kidneys of ore varies from a few pounds on up., and the assay value from 0.08 oz. Au up to 10.00 oz. Au. The thickness of the quartz material along the contact varies from eight inches up to five feet, with an average width of eighteen inches and an average assay value of 1.20 oz. Au. per ton.

The minerals present are iron, mostly oxidized, traces of oxidized copper, gold and silver. There is no evidence of a separate silver mineral, the silver seems to occur alloyed with gold in the ratio of about six silver to ten gold.

DEVELOPMENT. The development work has been confined to two adjoining claims, known as the Utah and the Chicago Girl. On the Utah Claim, the contact has been exposed by means of open cuts and trenches for a distance of 300 feet on the strike, disclosing favorable indications of considerable tonnage of mill grade ore. Insufficient work has been done at this point to permit an intelligent estimate of either the volume or the grade of ore exposed. Some four hundred feet to the east of this work the overburden has been stripped from an area 50 by 100 feet in extent. This area has been further explored by means of trenches and pits in the dike. These trenches have exposed mill ore for a depth of four feet over this area. This work has not exposed the limits of the mineralization either in lateral extent or in depth. There is good reason to believe there exists here a considerable amount of mill ore of a gold value of from four to ten dollars per ton, that can be mined very cheaply due to the light overburden, three to eight feet.

The major part of the development of the Lake Shore ground has been confined to the Chicago Girl claim. Prior to the beginning of operations by the Lake Shore Company there was about six thousand square feet of overburden removed from the vein on the contact and a few hundred tons of ore recovered. The exact amount of ore recovered or the value is not known to me; however, since the Lake Shore Company has operated the property an area 120 feet by 300 feet on the strike has been uncovered and approximately twelve hundred tons of ore recovered with a settlement value of around thirty dollars per ton.

Stripping of the overburden was discontinued when the depth of the vein reached twenty feet from the surface, and underground development was begun. The development work on the Lake Shore ground includes the following: The overburden removed from an area of approximately 100,000 square feet, 1254 feet of drift, 100 feet of incline winze, 225 feet of shaft - 13 shafts 15 to 30 feet in depth, 300 feet of open cuts and trenches. This development work has definitely defined the limits of the ore shoot on the strike, but, the depth on the dip is still unknown.

There has been proven a block of ground 148,000 sq. ft. by 20 ft. thick, or 227,000 tons. The openings made in the course of development are so situated as to prove an area of 75,000 sq. ft. by 20 ft. in thickness or 110,000 tons having an assay value of 0.16 oz. Au, and a very probable value on the remaining 117,000 tons of approximately the same.

In addition to these stated tonnages, there is known to exist several thousands tons of ore along the outcrop to the east having an assay value of about \$5.00 per ton.

The American Smelting and Refining Company took an option on this ground from the Lake Shore Company in March 1937. They continued with development work until March of this year. During the course of this development they expended approximately \$30,000.00. They released their option on March 21, 1938 with no reflection on the property other than that it was too small for their further consideration.

C ONCLUSIONS. The Lake Shore holdings contain a proven block of ore containing 110,000 tons with an assay value of 0.16 ounces of gold or \$5.60 at the present price. There is in addition to the above mentioned block, extensions of the ore containing 117,000 tons with a probable value of approximately 0.15 ounces gold.

This 227,000 tons lie in a solid block covering 148,000 sq. ft. by 20 ft. thick, with a uniform hanging and footwall, at a dip of 6 degrees. The overburden over the larger part of this 227,000 tons can be removed and the ore mined by some open cut method. The overburden has been removed in the course of mining the high grade streak on the hanging wall, over a considerable area. Seventy thousand tons of the 110,000 ton block is clear of overburden except for some broken debris remaining from the former stripping.

The mining cost on 70,000 tons of the 110,000 ton block will not exceed \$0.25 per ton. The remaining 40,000 tons will cost about \$1.00 per ton to mine.

The American Smelting and Refining Company did considerable test work on this ore to determine the most favorable process of recovery. An all slime cyanidation was recommended. Copies of the results of these tests are available. The indicated recovery is in excess of 90%. The total cost of mining and milling is estimated at \$1.77 per ton on the basis of 100 tons per day. On the basis of 100 tons per day, at an operating cost of \$1.77 per ton on 70,000 tons and \$2.77 on 40,000 tons, this 110,000 ton block of \$5.60 ore will return a net profit of \$307,000.00 over a period of three years, before depreciation or Federal Tax.

It will be necessary to pump water from Lake Mead to the mill site, a distance of 25,000 feet with a static head of 1480 feet.

It is estimated that it will require \$75,000.00 to install the cyanide plant, pumping equipment and camp. It is well known that the district surrounding the Lake Shore Company ground is well mineralized, it is reasonable to assume that in the event a reduction plant is constructed, considerable work will be done in the area. And the chances are good that additional producing ground will be developed.

PartTwo of this report gives in detail the information used in arriving at the conclusions stated in this description.

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MINING. The mining costs as tabulated below apply to about 70,000 tons of Block No. 1. This particular area will require an expenditure of less than \$500.00 to be ready for mining. There is some broken overburden left behind from the former stripping operations.

Mining operations will begin on the outcrop on the twenty foot face by 280 ft. long. The ground breaks and drills very easily. Twenty foot holes will be spotted 12 ft. back from the face and 12 ft. apart. A Breast hole will be drilled midway between these down holes, collared about 4 ft. above the toe, pointed down slightly, drilled approximately 18 ft. with the bottom about 2 ft. above the lower contact. These holes will be sprung with 5 sticks of 40% powder and loaded with about 60 sticks. These holes will break 16 ft. of ground on a 20 ft. face. Each group of three holes will break 7500 cu. ft., or roughly 500 tons. It is proposed to use a light drifter for drilling, with a 3 ft. feed, mounted on a tripod. Detachable bits will be used.

It is proposed to transport the broken material to the coarse ore bin by means of a Diesel operated International Harvester "caterpillar" loader. When the limit of this 70,000 ton block is reached the haul will not exceed 240 ft.

Estimated Costs.

Powder (14#), caps, fuse - -	0.034 ton	Loader labor	0.05
Drilling labor,	0.02	Fuel, diesel	0.025
Bits, steel, gas, oil	0.01	Repairs loader	0.025
Drill repair	0.01	10% of the above	0.017
total cost breaking and delivery bin - - -		18.7 cents per ton.	

MILLING. The American Smelting and Refining Company did considerable test work on the Lake Shore ore while the property was under option to them. From the results of these tests they came to the conclusion, although a good recovery could be made by flotation, that all-slime cyanidation was indicated. The ore requires very fine grinding in either case, through 100 mesh. Since the same grind was required for flotation as for cyanide the cost involved in metal recovery from concentrates more than offset the lesser capital requirements.

It is estimated that a recovery above 90% will be made on minus 100 mesh material, eighteen hours agitation period, cyanide strength two lbs. per ton of solution, cyanide consumption one-half lb. per ton, lime consumption three lbs. per ton. Settling tests indicated a requirement of four and eight tenths square feet per ton per 24 hours. In order to insure adequate settlement in cold weather, six square feet per ton per twenty four hours was recommended, Final densities of 65% were obtained.

Estimated Milling Costs - - - 100 tons per day

3 operators at \$5.00	- - \$15.00	Power - - - - -	\$0.20 per ton
3 " 4.50	- - \$13.50	Reagents - - - -	0.15 " "
1 Foreman " 6.00	- - 6.00	Steel - - - - -	0.03
2 crushermen 4.00	- - 8.00	Repairs - - - - -	0.05
1 truckdriver 5.00	- - 5.00		0.43 " "
	47.50		
11% tax	5.23		
	52.73		

Labor \$52.73 per day  
" 0.527 per ton

Total direct mill charge of \$0.957 per ton.

Superintendent	_____	\$300.00	
Assayer	_____	175.00	
Bookkeeper	_____	125.00	
		600.00	
11% tax		66.00	
		666.00	per month - \$0.222 per ton
Assay office supplies		100.00	
Transportation "water"		500.00	
Miscellaneous		600.00	
		1200.00	per month - \$0.400 per ton

CAPITAL REQUIREMENTS.

Mill: It is estimated that it will require \$30,000.00 to equip and construct the 100 ton cyanide plant, less power, This is, of course taking advantage of the present used equipment market. Construction costs on the proposed site will be low. The weather in this locality is so mild necessitating but a minimum of covering for the plant, and the anticipated life of the project is so short that it would be wise to use as light and cheap construction as possible.

Power. It is proposed to install one eighty horse power and two forty horse power International Harvester Diesel Electric Units. By making use of this type of power equipment rather than the heavy type diesel, considerable saving is made in cost of foundations, starting equipment, switchboard installation, maintenance cost and operating expense. The cost of this equipment is approximately \$10,000.00.

Water. It will be necessary to pump water from Lake Mead. The pipe line distance will be 25,100 ft. The lift from the present lake level is 1480 ft. It is proposed to lift in a single stage through two inch pipe at the rate of twenty gallons per minute. This will require approximately twenty horse power. The power cost for pumping the water is included in the 20¢ a ton power charge made in the mill costs. The cost of the pipe, pump, power and installation is estimated at \$10,000.00

Miscellaneous Equipment. The present road from the lake to the mine is in fair condition, \$500.00 expended on it will put it in very good condition. The International Harvester Loader proposed for transporting the ore from the face to the bin will cost approximately \$4000.00. It will be necessary to purchase approximately \$1000.00 of drilling equipment. A Gardner Denver 240 cu. ft. portable compressor in good condition is on the ground. The operation will require one truck and two light cars. \$3000.00 is estimated as the cost. An expenditure of \$2000.000 on the present camp will suffice until such time as the Company can afford better quarters. In addition to the amounts mentioned above, there should be provided sufficient capital to take care of operating expenses for 60 days after the plant is in operation. This will require \$10,500.

Capital Requirements. - - - -		Mill - - -	\$30,000.00
		Power - -	10,000.00
		Pipe Line -	10,000.00
		Loader	4,000.00
		Drilling Equipment -	1,000.00
		Road Repair -	500.00
		Camp -	2,000.00
		Cars and Trucks -	3,000.00
		Operating Capital -	10,000.00
		Miscellaneous	4,000.00
			<hr/>
			75,000.00
Estimated Costs - -		Mining - - - - -	00.187
		Milling - - - - -	00.957
		General - - - - -	00.622
			<hr/>
			1.766 per ton

The costs as outlined above are applicable to 7000 tons of Block #1, all of Block #2, 30,000 tons and approximately one half of Block #3, 40,000 tons. The mining costs on the remaining 40,000 tons of proven ore and 40,000 tons of probable ore will be approximately one dollar more or a total cost of \$2.766 per ton.

Block #1 - - - - -	70,000 tons	
Assay value - - -	0.171 oz Au per ton	
90% Recovery	0.154 " " " " - -	\$5.39
Gross recovery	\$5.390	
Costs	<u>1.766</u>	
Net recovery	3.624	
Total net recovery	\$253,680.00	

The information contained in this report indicates that the Lake Shore property, with a properly designed mill, and under proper management should show a net profit before income tax, depreciation and depletion, of \$250,000.00 at the end of two years operation.

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