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TONOPAH, NEVADA

Los Angeles, California

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Descriptive Statement and Report of the Assets and Resources of The Longstreet Mill and Mine which are the Principal Assets of the Golden Lion Mining and Milling Corporation

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LOCATION & PROPERTY

The property is situated in the Longstreet Mining District in the North Central part of Nye County, about sixty miles from Tonopah, the County Seat and Railroad point for the property. Forty miles of the road between the mine and Tonopah is a gravel surfaced State Highway. The other twenty miles is a good desert road and is kept in repair by the County and the Company. The mine is about 7000 feet above sea level and is on the Northeast slope of theMonitor Range of mountains. A plentiful supply of pinion (native pine) surrounds the camp. This pinion assures a supply of wood for camp purposes, also mine timber. Water from a natural warm spring (about 80 deg.F) is piped by gravity from a distance of about two miles to the property. This warm water is a wonderful thing for this property for it prevents freeze-ups in the winter and also keeps the solutions hot in the mill and greatly aids the extraction in the metallurgical process to which the ore is subjected. There is sufficient water piped to the mine from the spring to run a 500 ton plant and also supply all water for camp use.

The property consists of the following Lode Claims: Mountain Lion's 1 to 7, also three placer claims known as the Golden Seals 1 to 3. This placer ground has considerable merit and should be developed into a valuable holding by the Company.

TITLES TO CLAIMS

The title to the seven Mountain Lion Lode Claims is held by the Company on a quit-claim Deed paid in full to Jack Longstreet and O. K. Reed. This gives the company complete right to the ground. The water rights and placer Claims are included in this Deed. This makes seven mining claims or 60 acres of Placer ground that are held by the company by Deed from the original locators.

GEOLOGY AND VEINS

The general country rock is Rhyolite consisting of two distinct flows. The upper or capping flow is of later, or new Rhyolite; it is dark reddish brown in color with a course grain structure.

The second or ore bearing Rhyolite is an older flow of Rhyolite; it is fine grained having a grayish white color, comparable in structure to the Oddie Rhyolite of Tonopah. It has been ruptured by numerous dikes on the footwall side. A Prophritic intrusion in this Rhyolite forms the hanging wall of the main vein. The Prophritic intrusion has in itself been ruptured by several large veins which are approaching the main vein from an angle of about 45 degrees or from a northwest direction. The first of these porphyry veins should intersect the

main Rhyolite vein in the 1000 foot level at about 350 feet west of the Lower cut X, and a greatly enlarged and enriched ore body should be encountered at this point. The vein is a true fissure vein having an east and west trend, with a dip of fifty degrees to the north. Both walls are well supplied with a talc gouge ranging from one inch to several feet in thickness. The ore is a crushed material composed of quartz interlaced with talc. The ore was apparently formed by upward percolation of ore bearing solutions and should extend to a great depth. The upper portion of the mine is in a highly oxidized state. The mineral is free gold, and hornsilver or cerargyrite, and argentite or silver sulphide.

The gold is the predominating mineral in the upper or oxidized zone while the transition zone the silver becomes the more predominate. The ore becomes a silver ore in the Sulphide zone with gold as the accessory mineral. This condition shows that the upper zone has been leached of part of its silver value. This silver has been reprecipitated as a secondary sulphide in the sulphide zone and with more depth the sulphide zone should be considerable richer than the sulphides that are now exposed. I make this statement because the sulphides that are now exposed are still in the transition zone as evidenced by exidized and semi-oxidized places in the lower level. This oxidization will ease with depth and the true sulphides will come in with probable secondary enrichment of the primary sulphides that should extend to a considerable depth. The Porphritic veins on the hanging side have values scattered here and there, and with depth should become valuable producers.

ECONOMIC MINING

The upper portions of the ore body are well developed. The vein is opened for a distance of 600 feet on the 700 level, all mill ore. A crosscut having its portal at the mills cuts the vein at an additional depth of 300 feet. A raise on the ore connects this level with the upper level. Drifts in both east and west directions are out about 100 feet on the lower level. These drifts are in ore all the way. A raise connecting with a shaft 400 feet above the upper level gives a good air supply as well as making 400 feet more of ore available for sampling. The out-croppings are still 300 feet above this point and from ore exposed in open cuts on the out-croppings I would say the actual ore opened up is of a depth of 1000 feet from the lower level to the out-croppings.

An enriched mineralized zone starts from the out-cropping and dips to the west. This zone was cut on the 700 level and some stopping was done there. It is also cut about 200 feet above the 1000 feet level in the connecting raise and the west drift on the lower level should enter this zone in another 100 feet of work. This enriched zone or ore chute makes an excellent reserve to draw on to keep the mill heads up to a maximum value. The vein is four feet wide at the Eastern portal of the 700 level and is 14 feet wide at the Western heading of this 700 level, this western heading is 700 feet from the portal at the present writing.

The vein on the 1000 foot level is 4 feet wide in the Eastern heading and over 20 feet wide in the western heading. A tremendous ore body should be encountered in another 250 feet of drifting west from this point for it would be where the porphryr vein makes a junction with the Thyolite vein. Samples from the vein indicate that it is getting richer as it penetrates to the west. The ore should be at its maximum value at this junction.

There are no breaks in this ore body and with raises already penetrating it, mining should be done for 75¢ per ton or cheaper. The ore is shot down and flows with gravity down the 50 degree raises to

the lower level and is thence trained directly into the mill. The hanging and foot walls both stand well and only a minimum amount of timbering is required. The ore is soft and the caving or shrinkage system can be used through the whole of the upper part of the vein. These natural conditions and developments already made by the company make for the cheapest kind of ore extraction.

The ore in the lower level is on a whole of a better average value than that of the upper level and should be explored and developed by the company. A shaft should be sunk at a point about 200 feet lower than the lower tunnel level and another crosscut run to intersect the vein. This shaft should be at least 200 feet deep as this would make an additional 400 feet of depth on the vein and this crosscut should kit the vein in the enriched zone of primary sulphides. The ore that is already exposed and ore that could be exposed by future development should make this property one of the largest gold and silver producers in Southern Nevada.

WORKING

The total amount of workings surveyed amounted to 2554.9 feet. Only such workings as were on the mineralized part of the vein were sampled.

SAMPLING & ASSAYING

The following comprises a table of the samples taken and their value. The numbers from 1 to 245 are indicated and correspond with the map submitted:

NUMBER	TOTAL VALUE OF A-G A-U
1	7.30
2	5.05
3	5.20
4	10.95
5	10.10
6	15.35
7	11.40
8	14.05
9	11.90
10	18.65
11	16.40
12	14.90
13	
14	14.90
15	9.70
16	8.80
17	9.00
18	8.05
19	25.50
20	32.70
21	12.96
22	29.25
23	26.15
24	23.90
25	31.10
26	15.60
27	57.95
28	9.85
29	13.70
30	19.90
31	8.30
32	7.05
33	7.45

NUMBER	TOTAL VALUE OF A-G A-U
34	.75
35	6.00
36	10.70
37	13.20
38	7.60
39	6.35
40	3.85
41	3.80
42	10.30
43	11.55
44	12.95
45	3.80
46	7.50
47	18.40
48	13.80
49	7.35
50	6.30
51	14.20
52	30.10
53	20.80
54	8.20
55	8.60
56	8.15
57	3.85
58	2.65
59	3.90
60	6.10
61	4.70
62	7.85
63	9.15
64	12.90
65	9.05
66	8.55
67	6.10
68	6.15
69	8.15
70	3.85
71	30.25
72	30.15
73	23.00
74	18.20
75	15.95
76	7.10
77	8.00
78	7.40
79	6.20
80	7.00
81	9.60
82	7.20
83	5.90
84	16.30
85	8.10
86	7.10
87	6.95
88	6.15
89	10.00
90	11.30
91	12.50
92	10.40
93	10.15
94	10.60
95	12.10
96	9.40
97	8.70
98	5.10
99	7.85
100	6.60

NUMBER	TOTAL VALUE OF A-G A-U
101	19.40
102	15.60
103	12.75
104	8.60
105	6.55
106	5.70
107	3.70
108	6.00
109	9.15
110	10.00
111	7.25
112	10.10
113	19.40
114	18.65
115	9.85
116	5.80
117	6.85
118	7.80
119	9.70
120	12.50
121	8.60
122	11.90
123	26.80
124	22.60
125	21.30
126	6.55
127	5.10
128	5.40
129	4.80
130	5.30
131	7.20
132	8.70
133	55.95
134	7.40
135	16.45
136	1.25
137	2.50
138	8.55
139	7.60
140	9.50
141	10.40
142	8.80
143	8.65
144	6.90
145	5.45
146	11.65
147	10.25
148	9.35
149	8.85
150	10.00
151	7.80
152	6.65
153	7.55
154	8.60
155	6.50
156	4.70
157	11.15
158	14.65
159	14.20
160	13.45
161	10.75
162	11.50
163	20.20
164	19.50

NUMBER	TOTAL VALUE OF A-G A-U
165	6.90
166	6.60
167	7.50
168	5.75
169	9.60
170	4.10
171	4.40
172	3.90
173	7.00
174	4.60
175	5.10
176	6.35
177	3.80
178	4.00
179	4.20
180	4.35
181	5.50
182	4.20
183	4.35
184	3.20
185	2.20
186	6.30
187	4.40
188	3.85
189	2.60
190	5.90
191	4.40
192	6.00
193	4.60
194	3.80
195	5.10
196	4.90
197	4.70
198	5.20
199	4.80
200	4.20
201	4.60
202	4.40
203	10.25
204	4.20
205	1.80
206	1.50
207	2.20
208	2.00
209	3.10
210	3.10
211	4.05
212	10.00
213	7.35
214	16.60
215	10.10
216	8.10
217	15.30
218	4.25
219	5.45
220	26.80
221	3.20
222	7.35
223	4.45
224	4.95
225	4.00
226	4.65
227	3.10
228	12.90

NUMBER	TOTAL VALUE OF A-G A-U
229	21.70
230	31.00
231	8.85
232	2.75
233	8.30
234	.95
235	8.60
236	14.25
237	15.80
238	7.40
239	19.90
240	8.50
241	10.40

SURFACE CUTS

Cut	# 1	Sample	242
"	# 2	"	243
"	# 3	"	244
"	# 4	"	245

242	9.25
243	9.75
244	17.85
246	3.50

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250 samples were taken at intervals of six feet on the vein on the 700 level, 5 feet intervals on the 1000 level, and 5 feet intervals on the raises and each sample measured exactly 5 feet in length and was cut at right angles to the hanging and footwall. All samples were cut with a hammer and moil.

The average of the above samples as computed is in the amount of Ten Dollars and Ninety Cents ($10.90) per ton.

TONNAGE

To measure to an exact certainty the amount of positive milling tonnage in sight would be quite impossible without a great deal of time being spent for that particular purpose. Therefore, from such measurements as I have been able to take there is an excess of four hundred and ten thousand tons of milling ore in sight that can be mined for 75¢ per ton or cheaper. It has computed value of ten dollars and ninety cents per ton, or estimating 410,000 tons with a value of $10.00 per ton and allowing six percent metallurgical loss there is roughly $4,172,660.00 worth of positive ore exposed on three sides. This ore will run the present mill for ten years.

MILLING

Milling as practiced at present consists of crushing run of mine rock in a Blake Type jaw crusher. Primary grinding in a Hardinge Ball Mill, with a cyanide solution. Fine grading in Allis Chalmers Type tube mill in a closed circuit with a Dorr Classifier, Classifier oreflow goes to Dorr Thickener and thence through three Deveraux Agitators and two more Dorr Thickeners. Tailings from last Dorr Thickener are filtered on a 100 ton Oliver Filter to insure a further reduction of soluble losses. The continuous counter current Decantation System is used throughout the mill. Pregnant solutions are

precipitated in Zinc shavings. 100 tons per 24 hours is the present capacity of the mill. An extraction of 94.5% is being made on the ore at present, and the cost is about $3.00 per ton. This cost includes hauling of mill supplies and oil for the engines. The mill is arranged so that a line shaft and counter shaft drive all of the machinery. The prime mover or mill engine is a 100 HP Fairbanks Morse type semi-Diesel. The mine compressor of seven drill capacity is located in the mill building and is belt driven, by a 75 H.P. Verin Severin Engine of the same type as the mill engine. A further reduction of costs can be milled much cheaper in a flotation unit although t they are well adapted to cyanidation and would offer no objection to the cyanide process except an increased consumption of cyanide.

RECOMMENDATIONS

I would recommend you to build a 100 ton addition to the present 100 ton mill to increase capacity to 200 tons per day and to cut the present milling cost to a lower figure.

Build a 100 ton flotation unit with room for expansion to take care of the sulphides at present developed and that can be developed.

Sink a 200 foot shaft at a point 200 feet lower than the lower tunnel level and crosscut the vein in the sulphide zone, also a drift both ways on the vein on this level.

Extend the present crosscut on the 1000 foot level until the footwall dikes are cut. Float found on the Hillside about the present indicates a vein parallel to the present vein somewhere in the footwal

CONCLUSIONS

From the foregoing it can be seen that the raising of money to increase this capacity of the mill and for further development of the mine could not rightfully be termed a speculative venture and the writer unhesitatingly recommends the property of the GOLDEN LION MINING AND MILLING CORPORATION as one of merit.

Respectfully submitted,

(SIGNED) J. M. BUTLER, Consl. Engineer

Dated Feb. 16, 1929

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MEMO

Golden Lion Mining and Milling Company, comprises the Longstreet Mine. Located in Longstreet Canyon, 50 miles Northeast of Tonopah, Nye County,Nevada, elevation 7800 feet. Unsurveyed district.

MINE

The property consists of 7 unpatented quartz claims,there is about 2,500 feet of work done on the property of which approximately 1,500 feet of drifting and raises is in the ore. The developed vein is opened by crosscut on the surface, all in ore. A drift on the 600 ft. level, all in ore.

There is in excess of 300,000 tons of exodized ore blocked out on 3 sides about the 900 ft. level. Average value of oxidized ore $7.02 per ton in gold and 8 oz. silver.

Mining equipment consists of the following:

1 -507 cubic ft. Chicago Pnematic Compressor
10 - Ore Cars
5 - Stoppers
1 - Blacksmith Shop

All mine trackage, ore shoots and air lines are intact and all ready to operate without additional expense.

MILL

1 - Coarse ore bin 80 tons capacity
1 - Fine ore bin 170 tons "
1 - Number 3½ Universal Crusher
1 - Automatic ore feeder
1 - 12' by 12' Oliver Filter
1 - Doake Vacuum Pump
4 - Solution Pumps
1 - Solution Clairifyer
1 - " " Pump
4 - Zinc boxes
4 - Solution Tanks
2 - Fresh Water tanks
2 - Fuel Oil storage tanks
Lubricating oil and grease
New belting, bearings, etc. throughout
1 - 60 H. P. Ban-Severen Engine
1 - Fairbanks Morse type "Y" 100 H.P. Diesel engine
1 - 4' x 12' Ball Mill
1 - 4½' x 14' 8" Dorr Duplex Classifyer
3 - Dorr Thickeners
3 - Deveraux Agitators
1 - 12' x 12' Oliver Filter

All milling equipment installed, fully tested and ready to operate. Mill housed in building of wood frame, covered with corrugated iron.

Water is piped to the plant and camp from a warm spring; flow averages 70 gal. per minute. There are four other cold water springs, to which are developed and can be cut into present pipe line at a cost of approximately $500. However water now piped into plant sufficient for all needs with present mill capacity.

The ore is composed of porphyry with some quartz gang so that present mill has a capacity of 100 tons per 24 hours, crushing from nine size to 90% through 100 mesh. This degree of grinding gave a recovery of ;94% of the gold and 69% of the silver. Agitation time 48 hours, cyanide. Consumption of 1/2 lb. per ton. Lime consumption 1 lb. per ton. Ratio solution to solids 1½ to 1.

ESTIMATED MINING COSTS
BASED ON THE TREATMENT OF 100 TONS DAILY

Gen. Foreman	1 @ $7.00	$7.00
Blacksmith	1 " 6.00	6.00
Miners	5 " 5.50	27.50
Timberman	1 " 5.50	5.50
Trammers & Muckers	5 " 5.00	25.00
		$ 71.00

Cost per ton labor .71

Supplies exclusive of power	$27.00	
Cost per ton supplies		.27
Miscellaneous	12.00	
Cost per ton		.12
Total and cost per ton	110.00	$1.10

ESTIMATED MILLING COSTS
BASED ON THE TREATMENT OF 100 TONS DAILY

LABOR

Gen. Foreman	1	at $7.00	$7.00
Engineers	3	at 6.00	18.00
Mechanics	1	at 6.00	6.00
Crusher Men	3	at 5.00	15.00
Solution Men	3	at 5.50	16.50
Roustabout	1	at 5.50	5.50
Total...	12		$ 68.00

Cost per ton labor .68

SUPPLIES

Cyanide	at .20 per lb.	.10
Lime	.02 " "	.02
Grinding Balls and Liners		.15
Replacement parts		.30
Miscellaneous		.25
Total cost per ton		$1.50

POWER

Cost exclusive of operation labor that is included above:

Fuel oil	at .0975 per gal.	.51
Supervision Direct Plant	.20	
Taxes, Miscellaneous	.10	
Total Direct Plant Cost per day		$ 341.00
Total cost per ton		3.41

VALUE HEADS at 100 TONS PER DAY

Ag. at .25 per oz.	Recovery at 69%	$138.00
Au. at	Recovery at 94%	660.00
	Total recovered values	$798.00

Total Direct Plant Costs per day	$341.00
Net Recovered Value per day	$457.00

The above figures are conservative being based on actual tuning up run in plant covering a period of 18 days. Improved recovery can no doubt be effected with a continuous operation and finer grinding.

Costs are based on writer's experience at the mine during the course of reconditioning the mill and putting the mine in shape foe operations.

Compiled by J. T. Shimmin,
Metallurgical Engineer,
Feb. 9, 1931.