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Property File

082FSW040

Nugget

**REPORT  
OF EXAMINATION OF THE  
NUGGET & MOTHERLODE MINES  
SALMO, B.C.**

**TO:**

**Mr. F. R. Weekes, Manager,  
Porcupine Goldfields Development & Finance Co. Ltd.**

**BY:**

**Chas. C. Starr,  
July 3, 1925.**

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## SUMMARY

### NUGGET & MOTHERLODE MINES

**LOCATION:** On Sheep Creek, eleven miles east of Salmo, B. C.

**PROPERTY:** Fifteen claims, amounting to 506 acres, owned by the Selkirks Mining Co. Ltd.

**POWER:** Water power is used, but it is insufficient in amount about half the year.

**PRODUCTION & COSTS.** The total production is approximately 93,400 tons from which \$12.62 per ton has been recovered in gold. During the best days of the property (1913) 2727 tons of ore were milled per month, having a gross value of \$13.41 per ton, at a cost of \$7.11 per ton. In 1921 and 1922, due to lack of ore and power, 1667 tons were milled per month, having a gross value of \$7.14 at a cost of \$7.73 per ton.

**EQUIPMENT:** There is the usual mine equipment, tramway, and a very good 80 ton cyanide mill.

**DEVELOPMENT:** 4900 feet of crosscutting and 10,700 feet of drifting as well as much raising, stoping, and 170 feet of shaft.

**GEOLOGY:** The mine is in an area of northerly striking, steeply dipping, beds of massive quartzites and schists. The veins strike nearly east and west, are nearly vertical, and make ore in the quartzites only. The veins are quartz filled fissures averaging about two feet wide and carrying gold; the ore is oxidized. There is faulting which is not large but rather complicated. There is, geologically, reason to expect continuance or at least recurrence, of orebodies to a considerable depth.

**ORE:** There is very little ore exposed on one side in the mine, and none developed. A limited tonnage is indicated in the Nugget upper workings, and there is good expectation of the Nugget ore going below the present deepest level and showing a grade of \$10 to \$15. The lowest work on the Motherlode has not exposed much ore.

**FUTURE PROSPECTS:** Prospects of developing ore laterally to the east are good in the Nugget, and there is a reasonable hope of getting a tonnage of ore at greater depth that is comparable to that obtained in the past, but the cost and risk of such work is too great to be justified by the grade of ore that may reasonably be expected, on the basis of past operations.

**CONCLUSION:** The acquisition and development of the property can not be recommended.

## INTRODUCTION:

About a week was spent in the examination of the property, assisted by five men. Mr. O. D. Frith was in charge of the sampling.

Mr. Harold Lakes, the former superintendent, and Mr. Harry Gumble, the former foreman, represented the owners and acted as guides over the property.

## LOCATION:

The Metherlode Mill is situated on Sheep Creek, a tributary of the Salmon River, eleven miles southeast from Salmo, a small town on a branch of the Great Northern Railway. The property is 37 miles by highway from Nelson B.C.

From the mill, a pack-trail about a mile and a half long leads to the Metherlode Mine which is nearly 2000 feet higher. The old upper workings of the Bugget Mine may be reached by a steep trail, less than a mile in length, from the Metherlode Mine, or by an auto road from Salmo to within two miles of the workings, and thence by fair trail.

## PROPERTY:

The group consists of eleven nearly full sized claims, the Metherlode, Independence, Golden West, Virginia, Comstock, Eldorado, Bugget, Bonanza, Minoru, Lone Star, and Coyote, and four Fractions, the Metherlode Fr., Dominion Fr., Cook Cr., Searchlight Fr. These claims are all Grows Granted and cover an area of 506 acres.

The property is owned by the Selkirk Mining Co. Ltd., of which Mr. Alister Forbes, 901 Vancouver Block, Vancouver, B.C. is the President and principal stockholder.

#### TOPOGRAPHY:

Sheep Creek forms a narrow "V" shaped valley, at an elevation of approximately 2150 at the Salmon River, rising to 3400 feet at the Motherlode Mill. The No. 5 tunnel of the Motherlode Mine is on the steep slope on the north side of the creek little more than a half mile distant and at an elevation of 5330 feet. Thence, the mountain rises to an elevation of 6400 feet, and the Nugget Mine lies to the north of the summit, at an elevation of from 5950 to 6200 feet. The apex of the mountain lies between the Nugget and Motherlode outcrops, from which point it slopes downward in all directions; the slopes to the east, north and west, are comparatively smooth, but to the southward the slope is quite rough.

#### TRANSPORTATION:

The Mill is connected with the railway at Salmon by a fair auto road 11 miles long. To and from the mill ore and supplies are taken to the Motherlode mine by aerial tram; from the Motherlode to the Nugget material is taken through the mine.

#### WATER:

Sheep Creek furnished an ample supply of water at the mill. At the Motherlode Mine there is no surface water but a crosscut in the mine has been dammed up and furnishes a limited, but generally sufficient, supply of water for camp use. There is a good spring at the Nugget Mine.

#### POWER:

Power is obtained from the water of two forks of Sheep Creek, the dams being about two miles from the mill, and the head at the mill about 700 feet. This water supplies about 500 H.P. during the period of high water, which usually lasts about four months of the year. During the period of extreme low water there is little more than 75 H.P. available, and for eight months of the year operations must be more or less curtailed.

To operate the property efficiently about 350 H.P. must be provided from other sources.

#### HISTORY:

Most of the claims of the property were located previous to 1900. The first record of production from the Motherlode is in 1906, and the Nugget in 1907. The Motherlode mill began production about the middle of 1912 and closed down in October 1915. About 1919 it was bonded to E. McMartin and incorporated as the Motherlode Sheep Creek Mining Co.

The Motherlode and Nugget properties were consolidated under the name of the Nugget Gold Mines Ltd. in 1918 and in March 1919 development was begun, which principally consisted in the driving of a 1200 foot crosscut from the lower Motherlode workings to the Nugget vein; this was completed about the end of the year. The first record of production of the Nugget was in 1907; later a four stamp mill was erected and ran for three years, closing in 1911, and the mine lay idle until 1919. During 1920 the mill was operated for four or five months on part time, due to lack of ore. During 1921 and 1922 the mill was run for ten months, usually at less than full capacity. Since 1923 the property has been idle.

**PRODUCTION AND COSTS:**

The total production of the two properties, compiled from Government and Mine records, is as follows:

	Tons	Recovery per ton	Gross Recovery
Motherlode, ship't up to 1911	808	\$81.27	\$65,420
Motherlode, up to 1914 -milled	60504	11.67	706,180
Nugget, up to 1916, -	15471	18.97	292,549
Motherlode & Nugget, since 1916	16675	6.92	115,454
	<u>93488</u>	<u>12.62</u>	<u>1,179,603</u>

Throughout the operation of the property the mill was periodically shut down, or its operation curtailed on account of lack of water, and from the fact that the mine was unable to produce ore fast enough. On this account costs have been high and variable. The period during which there appears to have been the least interference to continuous operation was from June to November, inclusive, 1913 during which time the following record was made:

Average tons per month	Average gross value per ton	Average Cost & mill loss per ton	Profit per ton
2727	\$15.41	\$7.11	\$6.29

The "Average Cost" includes development expense, but it is probable that insufficient development was done to develop the amount of ore mined. The mill loss was approximately 54 cents per ton.

From the summer of 1912, when the mill started, to December 31st 1913, a profit was made every month aggregating \$190,500 at the end of the period; from then to September 1915, when operations were suspended, the surplus dropped to \$116,750.

Since the mill and mine equipment cost around \$500,000, exclusive of the mining property, the operation was a

considerable loss.

During 1921 and 1922 the mine and mill were operated about ten months with the following results

Average tons per month	Average gross value per ton	Average cost & mill loss per ton	Loss per ton
1667	\$7.14	\$7.75 †	\$0.59 †

† Figures are approximate.

The above costs apparently covered current development done during the months the mill was operated, only.

During the early operation of the mine, development costs are given as approximately \$9.00 per foot, but it is not specified just what is included in these figures.

Cost figures given by Mr. Harold Lakes, the last superintendent, in his report to the Nugget Company are as follows: based on continuous and full capacity operation:-

tunnel work in schist	\$10 to \$12 per foot
" " quartzite	\$15 " "
Drifting on vein	\$12 " "

The above are direct costs, only.

Mining and Milling costs, on an 80 ton per day basis, are:

Mining, labor	\$2.58	
" supplies	1.04	
" proportion of general		
	<u>.23</u>	\$3.85
Milling labor	.75	
" supplies	.94	
" proportion of general	<u>.23</u>	<u>1.90</u>
Total operating cost per ton		5.75

#### EQUIPMENT:

**MINE:** The mine equipment consists of the usual track, cars, etc, stoping drills and steel, and a limited number of hammer drills for drifting. In the blacksmith shop at the

No 5 Motherlode tunnel there is a rough drill sharpener and other usual mine equipment. The mine and blacksmith equipment is, in general, in fair condition.

**TRAMWAY:** The tramway from the No. 5 Motherlode tunnel to the mill, was built by the Al Leschen & Son Rope Co. It is 3600 feet long, and the terminals are 1770 feet apart vertically; its capacity is ten tons per hour.

**MILL:** The mill is a ten-stamp cyanide plant of rated at 80 tons per day capacity, designed by the Merrill Metallurgical Co. It is a well designed and well built plant containing standard machines for crushing, classifying, agitating, filtering, and precipitation.

It is driven by nine Pelton water wheels, including one for the 1400 feet Sullivan compressor which furnishes air for the mine. The machinery and equipment at the mill is generally in good condition.

**BUILDINGS:** At the Bugget mine openings there is one small bunk- and cook- house, and several other buildings in poor condition. Between the No. 3 and No. 5 tunnels on the Motherlode there are three good sized buildings for the accomodation of men, the tramway terminal, and several small buildings of various sorts.

Near the mill there are ample buildings for the accomodation of the mill crew and the staff, besides other necessary offices etc. These are generally in very good condition.

**DEVELOPMENT:**

The footage of "level" development on the property is approximately as follows:



Mine & Level	Main Crosscut	Miscellaneous Crosscuts	Main drift mostly on vein	Other drifts	Elevations
Nugget #1	0	0	75	0	6240
" #2	70	45	435	170	6190
" #3	130	70	945	235	6110
" #4	350	185	1500	250	5960
" 200 Sub.	0	15	360	0	5550
" #5	1375	0	240	0	5360
Total	1925	315	2575	655 - 6470	
<u>Motherlode</u>					
#1	70	65	600	70	5735
#2	400	160	1025	375	5655
#3	635	300	1710	130	5555
#4	0	50	360	0	5450
#5	780	175	1400	85	5320
#6	0	20	660	0	5225
#7	0	0	115	0	5145
	1885	790	5870	550 - 9205	
Both mines	3810	1105	9445	1315 - 15675 feet	
	4915		10760		

In addition to the above there is 175 feet of winze to the #6 and #7 levels, on the Motherlode, and 615 feet of raise from the #5 to #4 levels of the Nugget; there is probably a total of about 2000 feet of raising.

Practically all this work is now open and accessible, and the workings are in excellent condition.

The stopes were worked on the shrinkage system and on account of lack of timber are generally inaccessible although open.

#### GEOLOGY:

**GENERAL:** The general geology of the district has been briefly summarized by LeRoy (see Sketch Map of Sheep Creek Mining Camp, Dept. of Mines, Canada), and the local geology has been worked out in considerable detail by Arthur Lakes.

Both of these sources of information have been largely drawn on in the following.

In the area covered by the Nugget & Motherlode claims the rocks are massive quartzites, with interbedded schists, belonging to the Beehive and Ripple formations of Cambrian age. The strike is generally slightly east of north and the dip steeply eastward.

A porphyry dike crosses the west end of the property following the stratification of a band of the Beehive schist; several small basic micaceous dikes occur in the mine.

The maps accompanying this report, are those made to accompany the report on the geology of the property by Arthur Lakes, and give a good illustration of the geology of the property in detail. The essential details have been checked over and appear generally to be correct; any essential differences noted will be mentioned later.

**VEINS:** The veins, which vary from a mere crack to seven or eight feet wide, occur in fault fissures in the quartzites and schists. They vary only slightly from N 80° E in strike, and from vertical to 75° south in dip.

The vein filling is vein quartz and quartzite, with small amounts of pyrite which have oxidised and stained the vein a brownish color. The hanging wall is usually, though not always, well defined but the footwall is more indefinite and irregular and leaves a rather jagged footwall in the stopes. With one unimportant exception the ore occurs exclusively in the quartzite, and the vein is narrow and nearly barren in the schist.

**FAULTING:** There are a number of faults in the mine which have a strike and dip nearly parallel to the vein, viz., N 60 to 70 E and Vertical to 70° south. Since these faults cut the vein, which itself occupies a fault plane, and since the filling of the veins and the faults are almost indistinguishable considerable complication results.

There are also several other faults of small throw in the mine which cut the vein more or less at right angles and dip to the westward.

**NUGGET MINE, DETAILS:** The theory of faulting, as worked out in considerable detail by Mr. Lakes, and shown on the level maps of the Nugget, fits the observable data well as far as the Nugget vein and the Calhoun fault are concerned. In the case of the Calhoun and No. 2 veins, and the Middle and South faults the data is not always in accord with the theory, although it can hardly be said to definitely disprove it. As an example of this note the insert on the Nugget No. 4 level map, showing the observed vein and fault fractures at the east end of the level.

On the whole, however, in the absence of any other theory, Mr. Lakes' delineation of the structure forms a good working hypothesis.

**MOTHERLODE MINE, DETAILS:** On the Motherlode vein the evidence of similar faulting is not as conclusive as it is in the Nugget, and there seems to be a reasonable doubt as to the correctness of Lakes' hypothesis, although the evidence against it is mostly negative, in that it fails to prove it. The distinction between the vein and the nearly parallel fault, if there is such a fault, is very hard to make and must be based on the presence

of slips, differences in the amount that the strata are faulted by the veins and faults, on the presence or absence of ore, and on the strike at any given point.

On Level #1 nothing was observed that has any direct bearing on the problem.

On Level #2 the east end of the west workings was not entered on account of rotten timber, but the extension of the fault, as shown by Mr. Lakes, is not in evidence in the tunnel between the portal and the vein.

On Level #3 at "305" there is a seam leaving the drift toward the southwest which may connect with the slip shown in the Main Crosscut, and which may be the evidence of a fault which cuts the vein and extends eastward to the Blacksmith Fault. A similar fault appears to occur at "329".

On #5 level a fault slip leaves the drift to the southwest between "510" and "511" but does not appear, or at least does not fault the strata, in the tunnel between the portal and the vein. This fault or vein continues westward to the Blacksmith fault.

As for the amount of faulting of the strata, so far as I could determine the faulting along the vein, along the fault, or along the combination of the two ( as shown by Lakes ) is essentially the same, indicating that there is no fault but a vein only. Between, and somewhat beyond, "306" and "307" Lakes shows a segment of the vein cut by a fault on both ends, where he attempts to show that the vein faults the strata a short distance, only, as compared with the dislocation of the strata by the fault. I am unable to see that the vein has

been cut, or that there is any difference in the amount of the faulting. It does not appear that ore is always present in the vein, and it is not entirely certain that the faults are always entirely barren.

While admitting that Lakes undoubtedly spent much more time on the geology than I, and that he worked it out in much greater detail, I am not able to see much indication of the system of faulting nearly parallel to the vein on which he lays much stress.

There are a few faults, of small throw, more or less at right angles to the vein which are shown on the maps so clearly that they need no comment.

The two orebodies parallel to each other at the east end of the No. 5 level appear to be on two separate parallel veins, and not, as Lakes believes, parts of the same vein thrown into their present position by faulting. The insert on the map shows my interpretation of the structure there.

#### INFERENCES FROM GEOLOGY:

There is no geological reason why the vein and ore should not extend to much greater depths than present development has shown them. The same formations should continue thousands of feet below the present workings, and there is no evidence of the weakening of the vein fractures in the present lowest workings. Ore has been found at an elevation of from 6500 feet on the Reno claim, to 2400 feet in the Queen Mine. On the Nugget vein ore has been worked over a vertical range of more than a thousand feet.

It is evident that there has been a certain amount

of enrichment in the veins adjacent to the surface, and, in the Motherlode vein there was apparently a diminution of values in the No. 6 and No. 7 levels which may or may not indicate the approaching end of the oreshoot. Even if the oreshoot has been bottomed, there is every reason to expect that another shoot will be opened at still greater depth. On the Nugget vein there is no evidence of the values decreasing since the zone of surface enrichment was passed. Oxidation continues nearly as strong at a thousand foot depth in the Nugget as at any point, and it is probable that the primary sulphide ores will carry essentially the same values as the oxidized ores.

It seems to be well established that the white massive quartzites are the favorite locations of the orebodies, and there are excellent chances that the Nugget vein will prove productive in the Eastern Quartzite.

**SAMPLING:** There was said to be very little ore exposed in the Nugget and Motherlode workings, and practically no ore that was in any sense blocked out. The lack of workable ore was apparently the cause of the property being shut down. Therefore no great number of samples were taken, and those that were taken were with the idea of, generally, checking former sampling. In most cases samples taken in the past seem to have been taken over a stoping width, with its attendant possibility of error due to taking too large a proportion of the softer high grade material. The samples taken on this examination covered the good portion of the vein only, leaving the value of the stoping width to be calculated on the assumption that the wall rock is barren. This is not entirely true, but it is certain that in most cases the vein

walls contain very little value, and no serious error should result. Wherever bottom samples were taken the coarse pieces only, were saved in order to obviate salting by fine ore from the chutes.

Nugget Workings: On the No. 3 Level twelve samples were taken across the bottom of the drift under the east stope; they represent a length of 120 feet, width of 3.9 feet and show a value of \$4.85.

- Just west of the first stope on the No. 4 Level five samples represent a length of 50 feet, width of 2.4 feet and show a value of \$18.25.

Four samples from the east stope on the No. 4 level, two in the top and two in the bottom, show an average width of 2.5 feet and average value of \$21.30.

Underneath this stope five samples represent a length of 50 feet, width of 2.7 feet, and average \$5.43.

On the No. 4 level, on the Calhoun vein, ten samples represent a length of 100 feet, over an average width of 2.0 feet, and average \$10.81.

In the main Nugget Raise, ten samples roughly represent 150 feet along the vein, and show an average width of 2.0 feet and average value of \$4.40

The top of the stope above the 200 sub-level is represented by seven samples which average 1.7 feet in width and \$5.35 in value. This stope also shows low values in the back by Lakes' sampling.

The back of the drift on No. 5 level under this stope for a length of 150 feet is represented by seven samples which average 2.6 feet in width and \$15.53 in value. If a stoping width of 4.0 feet be assumed with the wall rock containing 1.00, this

value will be reduced to \$10.48.

The value obtained by the face samples during the driving was \$19.52 over a width of 3.1 feet; this represents a length of 120 feet. Car samples from the drift, over a length of 105 feet, average \$16.60. Since our samples were spaced at irregular intervals on account of the chutes, it is possible that they give a too low average.

The Nugget workings on and above the No. 4 level have been thoroughly sampled for the American Smelting & Refining Co., and show more or less comparable results, if the large difference in the widths sampled is taken into account.

Motherlode workings: Seven samples in the west raise on the No. 1 level, representing 70 feet in length, average 1.15 feet and \$41.35 or \$12.60 over a 4 foot stepping width. All other samples taken on the Motherlode average less than \$4.00 and do not show any ore.

Samples taken for the company before or during the first period of operation show the following values and widths on the No. 5 and No. 6 levels:

105 feet, under slope on No. 5 - width 2.6 ft. Value \$26.37

70 feet, " " " " 6 - " 1.8 " " 15.27

If these values are brought up to a 4 foot stepping width they are reduced to \$17.49 and \$7.42 respectively. It is to be assumed that the remainder of the No. 6 level is too low grade to be classed as ore. There is no data whatever to be found in regard to the values on the No. 7 level.

#### ORE DEVELOPED:

On the Motherlode vein there is no ore exposed even on one side, except 60 feet above the No. 1 level which averages



1.15 feet wide and \$41.04.

On the Nugget vein a little ore is exposed on one side at two places on the No. 4 level, and on the No. 5 level there is 140 feet of ore averaging 2.6 feet wide and \$15.53 in value (according to Lakes, 3.1 feet and \$19.52 for 120 feet in length) which may be presumed to extend some distance downward.

#### FUTURE PROSPECTS:

Possibilities of further ore are (1) at greater depth, (2) laterally, (3) ore faulted to one side of the drifts, (4) new veins to be developed.

(1) From a geological point of view the prospect of developing ore at any reasonable depth is very good, but there is an apparent falling off in the value of the ore opened in the levels below the No 5, which may possibly indicate the bottom of the present west Motherlode crosscut is about reached. If that is the case the discovery of a new sheet might be expensive, and this factor must be considered before planning deeper development.

(2) There is no particularly favorable ground to the westward of the present faces. To the eastward, there is a reasonable probability of developing ore in the Nugget vein in the eastern Quartzite, and a possibility of finding ore in both veins in the eastern band of Quartzite of the Ripple formation.

(3) Under Lakes' hypothesis of the faulting there is a very good probability of finding ore by short crosscuts at various points to faulted parts of the vein. Although arguments were advanced tending to disprove this theory it still carries weight enough to justify some prospecting.

(4) Other veins in the mine, besides the Nugget and Motherlode, do not, where they have been cut, show any indications of ore and may safely be neglected. If deeper development should be carried out by means of tunnels, other veins will probably be cut, notably the Golden Belle and Clyde, and these have fair possibilities of showing ore in the massive quartzites.

The history of the property, showing that only during low prices for labor and supplies and for a short period, while the richer ores near the surface were being worked, was the operation profitable, is a most discouraging feature, and one which must be given full consideration, since, under future conditions, costs may be expected to be higher and the ore grade lower than during the best days of the property, and to compare with those during the 1921 and 1922 operations.

Since it is impossible to estimate the grade of ore that can reasonably be expected by further development, the grade of ore that would be required to make the venture profitable is

figured, as follows:

Ore developed to date per foot of level work	5.96 tons.
Assuming the same ratio for the future, excepting long tunnels from the surface to cut the veins and \$12 per foot as a reasonable cost, the cost of development will be	\$2.00 per ton

If it be assumed that a new tunnel be driven 400 feet lower, and a crosscut driven to tap the Nugget vein, the footage will be approximately 1400 and 1300 feet respectively, which at \$12 per foot will cost

\$40,500.00

Assuming that the total length of stopes on the No. 5 level will extend to a level 400 feet below, and a stoping width of  $4\frac{1}{2}$  feet, the new ore developed by the new tunnel and crosscut will be

77,000 tons

Then, assuming Lakes' estimate of \$5.75 per ton the cost of mining, milling, and general, plus \$2.00 per ton for ordinary development, & \$0.54 (40500 - 77000) for extra development, a mill recovery is needed to pay expenses amounting to

9.29 per ton

The total cost of development required is estimated by Lakes at \$100,000, which seems a reasonable figure; in addition to this must be included say \$25,000 for additional power equipment at the mill making a total investment before any ore is milled of

\$125,000.00

The profit on an operation such as this should be at least 100% (really more than this under the conditions) to make it attractive or

\$4.25 per ton

which added to the calculated cost of production necessitates a recovery of

\$ 11.54 per ton

or an ore value (at 95% recovery) of

12.15 per ton

It is evident, therefore, that on the basis of the assumed development, and costs, the value of the ore must be about \$12. per ton to return the investment required for further development, plus a sufficient profit to make the risk justified. This is a higher value per ton than has been obtained from the mine, except during the first year of the mill operation, and higher than there is any reasonable hope of obtaining through deeper development.

#### RELATION TO OTHER PROPERTIES:

The Golden Fawn group adjoins the Nugget on the north, and has two small veins from which a little ore has been taken. Further north about a mile is the Reno group which has some ore. From both of these properties ore could be transported by tramway or road to the Nugget and through the mine to the Motherlode mill.

To the south of the Motherlode mine there are the Golden Belle and Clyde-Belt groups which both have fairly

strong veins and some small showing of ore; they are ideally located for the transport of ore to the Motherlode mill by tram.

Still further south across Sheep Creek the Kootenay Belle property has a small but good showing of high grade ore, the outcrop of which is 600 feet above the Motherlode mill, to which ore could easily be transported by tramway. Further east the Kureka group has a strong vein which is well situated for tramway connection to the mill.

None of the above mentioned properties are now equipped with any transportation facilities, and in none of them is there any tonnage of ore developed, with the exception of the Kootenay Belle which has a small tonnage partially developed. None of these properties are particularly attractive at the present time even in conjunction with the mill.

The Motherlode No. 5 tunnel is close to the south edge of the Motherlode ground, and a tunnel driven to cut the vein deeper, would have to be started on the Golden Belle claim which is owned by the Amalgamated Gold Mines.

#### CONCLUSION;

While the geological and general conditions at the property are favorable, the ore to be expected is too narrow and low grade to be worked at a sufficient profit to justify the further development of the property, and to make a sufficient return for the risk of the capital involved in such development. The property therefore cannot be recommended.

Respectfully submitted,