

Notes on B.C. Silver Mines Ltd
Portland Canal Mining Division, B.C.

862028
BC Silver
Mines.

V. A. J.

This property was visited on October 22nd / 1926. It adjoins the Premier mine on the north and lies east of the Northern Light claims. The company is controlled by the Selkwe Company of London, which company also controls the Kafue Dredging company, operating on Antler Creek, Cariboo.

C. A. Banks is managing director, and Major C. B. North is resident manager of the B.C. Silver. Major North kindly gave permission to go underground and to examine the mine plans. The ore zones on the B.C. Silver are on the Oatville fraction near the Premier boundary and on the Humboldt fraction, 1600 ft from the Northern Light. ^(B.C. Silver) This property will receive some of the Premier ores at depth. The ore zone on the Humboldt fraction appears to have a length of about 350 ft. The average value over 15 ft. is about \$20⁰⁰ per ton in gold and silver, according to reports attached. There are wide low grade sections and also high-grade sections from which shipments have been made averaging \$88 per ton.

The quantity of ore so far indicated on the B.B. Silon is not in any way comparable to that found on the Premier. The Premier owns $37\frac{1}{2}\%$ of the B.B. Silon stock. Major North said the Selukwe can always get their investment back if they want to sell to the Premier, but that the present object was to develop enough ore to warrant a mill. It seems that they have about an even chance of doing this. New buildings for 50 men are nearly completed also an office and assay office. Mining by assay is the rule of the district. Power is provided by semi-Diesel engines using crude oil at 12^c per gallon, at the property. The present plan of development calls for sinking a 250-ft. shaft on the Humboldt fraction, to avoid driving a long tunnel. About 30 men are employed.

The Selukwe groups to the north is also controlled by the Selukwe company. A prospect tunnel is being driven in to cut ore bodies extending from the B.B. Silon on the south.

Vancouver, B.C.,
October 29, 1926.

H.P. De Pencier, Esq.,
General Manager,
Dome Mines, Limited,
South Porcupine, Ont.,

Dear Sir:

Following instructions in your letter of October 2nd, the writer visited the Northern Light property adjoining the Premier Mine, Portland Canal Mining Division, B.C.

The weeks October 17th - 24th was spent in the district. A visit was made to the Premier Mine, the B.C. Silver Mine, the Premier Extension claims, and the Riverside Mine.

W^m Bunting, of Hyder, owner of the Northern Light, and one of the locators of the Premier Mine, acted as guide.

Report herewith.

Respectfully yours,

V. A. James

Report on
NORTHERN LIGHT Group,
Portland Canal Mining Division, B.C.

General

The property consists of ten claims and fractions forming a compact group of 295 acres. Its south boundary adjoins in part the Premier property, and in part the B.C. Silver property. It lies in the valley of Cascade Creek and the East Fork and has an average elevation of roughly 1000 ft. above sea-level. Cascade Creek has a good flow and numerous falls and supplies about one-half of the 1500 horse-power used at the Premier Mine. The hillsides support a good growth of timber, principally hemlock of two feet or more in diameter. Access by Premier wagon road.

History

The claims were located in 1917, 1918 and 1919. A few years ago the group was optioned by the Premier Gold Mining Company, who held it for one year. This company put in a few surface cuts and two 500-ft. diamond drill holes,

And then dropped the option.

General Geology

The claims are underlain by the Ben River greenstones, tuffs and agglomerates, and lie approximately one mile from the irregular eastern edge of the Coast range granite batholith.

These rocks are of Jurassic age, according to McConnell (1) and Schofield (2).

The volcanics are folded and sheared in a general regional trend of north-northwest, parallel to the eastern edge of the batholith. Where best observed on the Northern Light, the trend of the shearing was approximately north-south. The heavy overburden and limited time available prevented any detailed study of the structure.

The volcanics are cut by a number of intrusive bodies, ranging from a few feet to several hundred feet in width, and described by Schofield as quartz porphyry sills. These bodies have a north-west trend, and a dip of 45° to 60° to the south-west.

(1) McConnell, R.G. Geol. Surv. of Can., Memoir 32, 1913.

(2) Schofield, S.J. " " " " " 132, 1922, Salmon River District Geology & Ore Deposits

The porphyry is fine-grained, light grey in colour, and siliceous, and carries considerable secondary sericite, calcite and chlorite. It often carries a considerable amount of pyrite, giving iron-stained outcrops.

Hornblende lamprophyre dykes also occur. They are post mineral.

The geological sequence, as applied to the Northern Light, is as follows:

Era	Period	Geological Events
Quaternary	Glacial	Erosion - deposition of glacial drift
Tertiary		Uplift and Erosion
MESOZOIC	Cretaceous	Erosion - probable peneplanation Hornblende Lamprophyre dykes - post mineral Intrusive Contact Period of Mineralization
	Jurassic	Coast Range Batholith - Granodiorite Intrusive Contact Mountain building - Folding and Uplift Quartz Porphyry Sills Intrusive Contact Vulcanism - Bear River greenstones, tufts and agglomerates

The rocks of the district have been glaciated up to elevations of 5000 feet or more. Valley glaciers are still at work, as shown by Salmon and Texas glaciers on accompanying panoramic view. Glaciation in such valleys will be more profound than on the steeper hillsides.

Signs of such profound erosion are found in the Cascade valley occupied by the Northern Light.

The general geology is similar to that of the Premier, but the claims being several hundred feet lower down in the valley than the Premier producing more, are less favorably situated for secondarily enriched ores, particularly those of the bonanza type.

Veins and Outcrops

Four veins outcrop on the Northern Light, as marked approximately on accompanying plan. A brief description follows.

(a) Vein on East creek, Northern Light
Fraction (#4057)

Width: 6 feet
Strike N. 110° E.
Dip 45° S.

Elevation: 850 feet
Pay streak: 2 ft wide

Mineralization: Galena, zinc blende and pyrite
 One lense 40 feet long. Continuity uncertain.
 Probable extension of this vein
 found on N.L. No. 3, 1500 feet to west,
 showing irregular width from few inches to
 four feet.

(b) Vein on northern part of Northern
 Light No. 4, on banks of creek near forks.
 Width: $7\frac{1}{2}$ feet Elevation: approx 1000 ft.
 Strike: 70° Pay streak: 26 inches
 Dip 80° S.

Vein matrix light grey silicified rock with
 quartz and calcite. Mineralization pyrite with
 fine PbS and ZnS. Tunnel opening few
 feet long on vein. A parallel zone
 about 30 feet away shows a width of
 about 10 feet with stringers of ore. On
 the creek bank a few hundred feet to
 the south-west an iron stained outcrop
 20 or more feet wide is the apparent
 continuation.

(c) Vein on Northern Light No. 5, on creek
 bank, near south-east corner.
 Width: 8 ft. Elevation: approx. 700 ft.
 Strike: $\frac{1}{2}$ W.
 Dip: Steep to S.

Vein matter light green silicified rock, probably altered porphyry, with qtz. and calcite. Good min. pyrite with little fine ZnS and PbS. A 40-ft. tunnel and short cross-cut were driven on this, but the ore petered out in the first 20 ft. or so.

It was noticed that a fault striking north-and-south and dipping 60° W. intersected the vein at the portal of the tunnel, which may account for the localization of values. It is also possible that ore might be found along this fault if explored. The fault shows eight inches of gouge on the hanging wall.

It was learned at the Premier that they had drilled ^{on} the Northern Light. The owner of the latter did not point out the holes to me but on inquiry he informed me that two 500-foot drill holes were put down on this showing and that the values secured were \$3⁵⁰. The average of two samples taken by the writer across 4 feet was \$3⁰⁰ in gold and silver, the lead-zinc mineralization being very slight.

(d) Vein on Northern Light No. 7, near west bank of East Fork and 100 ft. above creek.
 Width: 12 ft. Elevation: approx. 900'
 Strike: N. 15° E. Pay streak: 2 ft.
 Dip: 40° W.

Silicified vein matter with little pyrite and zinc blende. Wide low grade zone traceable for several hundred feet.

Sampling and Assays

Samples 7534 to 7546, inclusive, were taken from the Northern Light. Samples 7547-7550, and 8201-8203, were taken from showings on the Premier and Premier Extension comparatively close to the Northern Light boundary.

Some samples were run for lead and zinc, but the present showings indicate that the commercial values in the Northern Light must be reckoned in gold and silver, as in the Premier.

It is notable that where character samples of galena were run, the proportion of silver was only from one-quarter to one-third of an ounce to the unit of lead.

Samples taken over widths show values in gold and silver combined of less than \$5⁰⁰, with one exception of \$12⁵⁰.

NEIGHBOURING PROPERTIES

Notes concerning these are given on separate sheets. The main points affecting the Northern Light are as follows:

PREMIER

The Premier producing zone is on Cascade Falls No. 4 and the Simpson claim, as marked on plan, a minimum of 1250 ft. horizontally from the Northern Light. Dipping 55° N.W. this ore is effectually cut off from the Northern Light by the Oakville Fracture and the Cascade Falls No. 5, owned by the B.C. Silver. Further, at these depths of 1000 feet or more the ore is primary and medium to low grade. The elevations of the working tunnels range from 1,300 to 2,000 feet ^{above} _{sea level} and the mine is located on a steep hillside.

Lower down, at an elevation of about 600 ft., Premier No. 6 tunnel on Claim 3610 was driven on a large low-grade outcrop 30 or more feet wide. The tunnel was

driven in 3,600 ft. The plan to place the mill there was abandoned and the tunnel is not in use at present.

The mill is located at No. 4 camp at about 1,300 ft. elevation.

Mine plans show the bonanza type of ore (roughly \$100 - \$500 in gold and silver) extending down 500 ft. from the surface. Secondarily enriched ores are found for 1,000 ft. downwards. These may run \$40 and up. Below 1,000 ft. the ore is largely primary, running \$10 - \$20. Mill-heads at time of visit were \$14.⁰⁰.

If we assume that erosion in the valleys has been 500 feet deeper, it will be seen that bonanza ores cannot be expected there.

B. C. Silver Mines

A long tunnel across the Oakeville No. 2 Fraction disclosed only a small ore-shoot remote from the Northern Light boundary. The ore-shoot in the present workings on the Humboldt Fraction is 1,600 ft. from the Northern Light boundary. The workings are at an elevation of 1,850 ft.

Sebakwe

This property was not visited, but the workings were seen on the B.C. Silver Mines plan. They run north-and-south and are two claims or so removed from the Northern Light. They also are at an elevation of about 2000 ft.

PREMIER Extension

This group has no connection with the Premier. It is under option to promoters. It adjoins the Northern Light on the west. It has several low-grade showings near the boundary, one or two of which might be received on the Northern Light.

Riverside

This property is in Alaska, at the 7 mile from Hyder, on the Premier waggon road, at an elevation of 300-500 ft. It is situated in the glaciated U-shaped valley of the Salmon River. It is mentioned as a type of low-grade, low elevation deposit. It is a 4-ft. quartz fissure vein in granite, carrying pyrite and galena but no zinc.

Mr. Mellon, the manager, stated that the heads to the 40-ton mill would run $\$2\frac{40}{100}$ in gold, and half an ounce of silver to the unit of lead. The lead content appeared to be from 5 to 10 per cent. Mr. Mellon said there was no sign of secondary enrichment there, nor would he expect any in that location.

Summary and Conclusions

1. There is no hope of the Northern Light receiving any of the Premier or B.C. Silver ores except at great depth. Even should the ores persist to such depth they would be primary and low grade.
2. While the geology is very similar, the Northern Light occupies an inferior position topographically to the above properties, lying in a glaciated valley and having a general elevation of 800 feet lower than the Premier bonanza zone. Signs of intense glaciation were observed on the west fork of Cascade Creek. Any enriched zone on the Northern Light

would therefore probably have been largely removed by erosion.

Such Premier ores as are found at this elevation are low grade and are not being worked.

3. The Northern Light group must therefore stand on the merits of its own showings. These are considered to be too meagre both in value and size to be of further interest to this Company.

It is therefore recommended that the group be released.

Respectfully Submitted,

V. A. James

Vancouver, B.C.,
October 29, 1926.

LIST OF SAMPLES
 "NORTHERN LIGHT" and adjoining properties
 PORTLAND CANAL DISTRICT, B.C.

Oct. 29, 1926
 V. R. James

Sample No.	Location	Description	Width	\$ per ton of ore	
				Total Au Ag (Silver at \$0.50)	Total all metals
7534	NORTHERN LIGHT Fraction	Qtz. & silic ^d greenstone 2 ft H.W. section good PbS, ZnS, FeS ₂ , rest poor.	48"	3.35	
7535	"	Character sample gneissic PbS. Little fine ZnS, FeS ₂ & qtz.	Charac.	8.80	
7536	"	Pay streak, H.W. section Heavy min PbS. Some fine ZnS in qtz.	20"	4.40	
7537	40' W. on strike	Pay streak. Fair min. PbS, ZnS & little pyrite.	22"	4.40	
7538	NOR. LIGHT #4	Silic ^d & seric ^d porphyry 3% sulphides, FeS ₂ ZnS & PbS. consid Calcite. Pay Streak. F.W. section.	26"	12.50	
7539	"	H.W. section. Silic ^d Vein matter with fair Bronzy FeS ₂ & little fine ZnS	64"	1.05	
7540	"	Character sample - dump at opening. Qtz. & calcite Good min bronzy FeS ₂ with ZnS & little PbS	Charac.	23.85	
7541	"	From 1-ft. streak in 8-ft. parallel zone 30' away. Qtz & calcite with 5% PbS, ZnS, FeS ₂	Charac.	9.55	
7542	" #5 Portal of 40' tunnel	Qtz. & calcite vein matter. Good min. Greenish FeS ₂ . Little fine ZnS and PbS.	48"	2.10	
7543	Ditto 40' above portal	Silic ^d vein matter Good min. FeS ₂ Some PbS Zone about 6-8' wide	48"	4.90	
7544	N.L. #3	Charac. sample best few inches in 4 ft. Heavy coarse PbS with qtz. & little FeS ₂	Charac.	8.70	

Sample No	Location	Description	Width	\$ per ton	
				Au Ag	All metals
1545	NORTHERN LIGHT No.7	Pay streak in 10-ft vein. Silic ^d with qtz. Some ZnS & little FeS ₂ & PbS.	24"	# 0.85	
1546	"	Silic ^d vein matter with about 7% sulphides - ZnS, FeS ₂ & PbS	Charac.	10.85	
1547	"Premier Extension" Vancouver No.2	Vuggy qtz. Fair min. small cube yellowish FeS ₂ . Grab from 18 inch qtz. & schist said to run up to \$40 Au	Grab 18"	5.10	
1548	Ditto Vancouver No.3 Fr.	Light grey silic ^d prob. alt ^d porph. with 2% yellow FeS ₂ also 1-inch calcite with fair ZnS Charac. sample from 8' zone	Charac.	14.10	
1549	"Premier Extension" Woodbine Frac.?	Charac. sample from best 6-ft zone in 40 ft low grade lead similar to Premier No.6 Qtz. & calcite with about 60% sulphides - ZnS, grey Cu, little FeS ₂ & PbS	Charac.	1.85	
1550	Ditto	Dark green rock with good min yellowish FeS ₂ & calcite with grey Cu & ZnS. From large low-grade zone.	Charac.	11.80	
8201	"	Largely calcite with good min. Cu FeS ₂ , some grey Cu & fine ZnS.	Charac.	1.70	
8202	100' W. & 500' higher	Charac. sample from 6-ft. vein in short cut. Good min. yellow FeS ₂ & Cu FeS ₂ . Some fine PbS, ZnS, also grey Cu.	Charac.	2.45	
8203	Premier No.6	Charac. sample from large low-grade outcrop above No.6 tunnel (Not being worked) vein matter with calcite stringers & 40% sulphides - ZnS, PbS & FeS ₂ Width of zone 30+ ft.	Charac.	3.90	

Notes on Premier Mine
Portland Canal Mining Division, B.C. V.A.J.

This mine was visited on October 20th and 21st, 1926. Mr. Dale Pitt, the general manager, was very courteous and recalled the fact that he had been well received at the Dome a few years ago. Every facility was given to examine the mine plans and two trips were made underground. The main working levels are at an elevation of from 1325 to 2000 feet and are connected by a vertical shaft. The mine workings are fairly compact and the producing zone is on Cascade Falls No. 4 and the northern part of the Simpson claim, as shown on plan herewith. No. 4 tunnel at 1325 ft. elevation follows along the north boundary of the Simpson claim. The slopes are from 10 to 30 ft. wide, with some as much as 60 feet. The ore-shoot is more or less continuous for 1500 ft. The dip of the main ore-shoot striking north-east is from 45° to 60° north-west. The ore is in the footwall of a quartz porphyry sill, near its

contact with the tuffs. The plans show one of three types; bonanza, secondary, and primary. The bonanza type extends down the dip of the vein for 500 ft., and the secondary for 1000 ft. The bonanza type of ore seems to be due to special structural conditions of fracturing in the vein allowing unusual enrichment by downward moving solutions at certain points. A point that does not seem clear yet is the cause of the unusually high gold values.

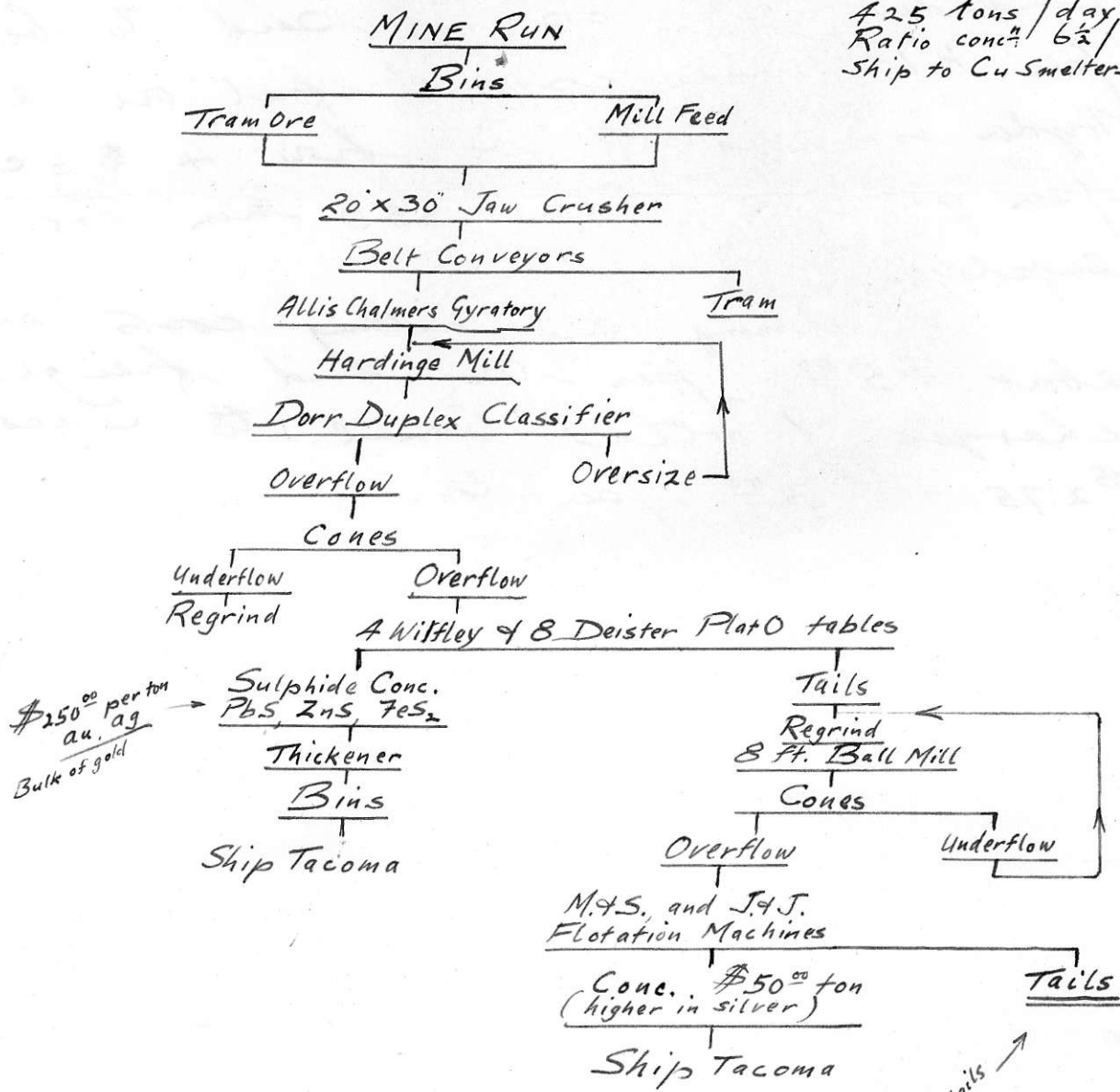
Regarding the proportion of gold, an assayer told me that when the ore was running 150 ounces of silver the value in gold and silver would be about \$150, and yet no free gold has ever been found in the Remin.

The bonanza type has been largely mined out. About 750 tons of ore are being mined per day, of which 425 tons is put through the mill. The mill-heads average \$14.⁰⁰ in gold and silver, but are very variable. The concentrates and a higher grade ore are shipped to the Tacoma smelter, and a siliceous ore to Anox.

An aerial tram connects the mine with the dock at Stewart.

Flow Sheet of Premier Mill

Mill heads \$14.⁰⁰
 425 tons/day
 Ratio concⁿ 6 1/2/1
 Ship to Cu Smelters



\$250.⁰⁰ per ton
 au. ag
 Bulk of gold

Granite for flotation tails
 recently discarded as
 uneconomical

About 1500 H.P. are used. Water power on Cascade Creek provides about half of this, and semi-Diesel engines the remainder. The cost is said to be \$80⁰⁰ per H.P. The cost of fuel oil at Hyder is said to be from 4 to 6 cents per gallon. About 350 men are employed.

Mining and milling costs are about \$5⁵⁰ per ton, and freight charges Portland Canal to Tacoma \$2.75 - \$3⁰⁰ per ton.