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# PROSPECTUS



**MOUNT  
SICKER  
MINES  
LTD.NPL**



MOUNT SICKER MINES LTD. (N.P.L.)  
P R O S P E C T U S

A purchase of the securities offered by this prospectus must be considered a speculation.

There is presently no existing market for the securities of the Company.

No securities commission or similar authority in Canada has in any way passed upon the merits of the securities offered hereunder and any representation to the contrary is an offence.

NOTICE - no survey of any property or property interest held by the Company has been made and therefore in accordance with the mining laws of the appropriate jurisdiction in which such property is situated the existence of and the areas of such properties could be in doubt.

This prospectus is not, and under no circumstances is it to be construed as, a public offering of the shares for sale in the United States of America, or in any of the territories or possessions thereof.

September 15, 1967.

P R O S P E C T U S  
MOUNT SICKER MINES LTD. (N.P.L.)

A. The full name of the Company is Mount Sicker Mines Ltd. (N.P.L.). Its registered office is at 750 Courtney Street, Victoria, British Columbia. The head office is at 602 West Hastings Street, Vancouver, British Columbia.

B. The Company was incorporated on September 23rd, 1966 under the laws of the Province of British Columbia by Memorandum of Association as a private company. The Company by Special Resolution dated 28th June, 1967 resolved to convert to a public company which Special Resolution was accepted for filing by the Registrar of Companies on the 29th day of September, 1967.

C. There have been no amendments to the Memorandum of Association.

D. The Officers and Directors are as follows:

Charles B. Field	Manufacturer, Director and President, 1342 Oliver Street Victoria, B.C.
Dr. Charles L. Emery	Professor, PHD, PHC, BSC, P. Eng Vice President and Director, 2235 West 32nd Ave., Vancouver, B.C.
Clair E. Bowman	Restaurant Owner, Director 220 Denison Road, Victoria, B.C.
Hugh G. Grant	Manager, Director, 1742 Midgard Street, Victoria, B.C.
Garry M. Hughes	Undergraduate Engineer, Director 8349 Elliott St., Vancouver 16, B.C.
Earl Hastings	Businessman, Director, 575 Pem- broke Street, Victoria, B.C.
H. Glen Sommers	Superintendent, Director, R.R.1, Lilelana Ridge, Campbell River, V.I., B.C.
A. William Whittingham	Manager, Director, 1291 Track- sell, Victoria, B.C.
John F. Wood	Barrister and Solicitor, Director, 300 Baynes, Victoria, B.C.

I.

Peter J. Burjoski Mining Executive, Director  
#3, 2567 West 4th Ave.,  
Vancouver, B.C.

The Promoter of the Company is:

Charles B. Field, of 1342 Oliver Street, Victoria, B.C.

E. The Auditors of the Company are:  
Roberts Denson Hill & Co.,  
Chartered Accountants,  
645 Fort Street,  
Victoria, B.C.

F. The Transfer Agent of the Company is:  
National Trust Company Limited  
510 Burrard Street,  
Vancouver, I. B.C.

G. The authorized capital of the Company is Three Million Dollars (\$3,000,000.00) divided into 3,000,000 shares with a nominal or par value of One Dollar (\$1.00) each. A total of 1,393,752 shares have been issued: 750,000 vendors shares at a discount of 87 1/2 cents; 500,000 shares held by Bio Metals Corporation Ltd. (N. P. L.) at \$1.00 per share; 2 subscribers shares at \$1.00 per share and the balance of 143,750 shares at a discount of 50¢. All shares are now fully paid for including the 10,000 shares not paid for June 30, 1967.

H. The Company has no bonds or debentures outstanding and does not propose to issue any.

I. 750,000 "vendors" shares were issued to Charles B. Field for the properties more particularly described in paragraph (M) hereof and 750,000 of such shares are held in escrow with the Transfer Agent of the Company pursuant to an Escrow Agreement under the direction and control of the Superintendent of Brokers of the Province of British Columbia.

In addition 500,000 shares are owned by Bio Metals Corporation Ltd. (N. P. L.) and held in Escrow with the Transfer Agent of the Company pursuant to an Escrow Agreement under the direction and control of the Superintendent of Brokers of the Province of British Columbia.

The Escrow provisions provide that the said shares may not be traded in, dealt with in any manner whatsoever, or released, nor may the Company, its Transfer Agent or Escrow Agent make any transfer or record any trading in the said shares without the consent of the Superintendent of Brokers.

The said 750,000 "vendors" shares are those issued for mining properties and mineral claims as described in more detail in clause (M) hereof, and thus in the event of the Company losing or not obtaining good and marketable title to or abandoning or discontinuing development of any of the property which was or formed part of the consideration for any part of the said shares or in the event of the property not being as represented, there shall be surrendered by way of gift to the Company for cancellation such number of the said shares as the Securities Commission aforesaid in their sole discretion deems fair and equitable.

The Vendors consideration may be required to be reduced by the Superintendent of Brokers in such amount as he may prescribe in the event that the Patriarche option herein referred to is exercised by the Company.

The 500,000 shares owned by Bio Metals Corporation Ltd. (N. P. L.) were issued to that company at \$1.00 and the proceeds used to acquire 500,000 shares of Bio Metals Corporation Ltd. (N. P. L.). 143,750 shares were sold for cash at \$ .50 and the proceeds used for preliminary work as set out in the Balance Sheet attached hereto. Two shares were sold to the subscribers to the Articles and Memorandum of Association for \$1.00 each.

Those persons or corporations which hold 5% or more of the common shares of Bio Metals Corporation Ltd., are:-

Name	Address	No. of shares.
Dr. Charles Emery	2235 W. 32nd Ave. Vancouver, B.C.	317,001
Emerex Mining Ltd.	60 Dalton Avenue Kingston, Ont.	500,000
Mount Sicker Mines Ltd. (N. P. L.)	750 Courtney Street, Victoria, B.C.	500,000
Walter Fabian	5886 Sherbrooke St., Vancouver, B.C.	450,001
Hamlin B. Hatch	14-1531 Davie St. Vancouver, B.C.	566,001
R. Franklin Stibbard	14-1531 Davie St., Vancouver, B.C.	691,000

The Company has sold a total of 143,750 shares at 50¢ per share, 111,950 prior to June 30, 1967 as disclosed in the balance sheet of the Company hereto attached and 31,800 shares after June 30, 1967. Of the said shares 132,752 are held in escrow by Clay, Macfarlane Ellis & Popham, 750 Courtney Street, Victoria, B.C., Solicitors for the company, subject to release pursuant to the directions of the Superintendent of Brokers.

Transfer of 100,000 shares of the said 750,000 "vendors" shares has since been made to William Smart-Howden, 435 West 48th Ave., Vancouver, B. C. Further transfer of the said "vendors" shares have been made by Charles B. Field, as follows:-

Transferee	Address	
Clair E. Bowman	220 Denison Road, Victoria, B. C.	25,000 shares
John F. Wood	3000 Baynes, Victoria, B. C.	25,000 shares
Hugh G. Grant	1742 Midgard Street Victoria, B. C.	25,000 shares
Earl Hastings	575 Pembroke Street Victoria, B. C.	25,000 shares
H. Glen Sommers	R. R. #1, Lilelana Ridge Campbell River, V. I., B. C.	25,000 shares
A. William Whittingham	1291 Tracksell, Victoria, B. C.	25,000 shares
Edwin A. Popham	1234 Transit, Victoria, B. C.	5,000 shares
Valance H. Patriarche	1377 Rockland, Victoria, B. C.	20,000 shares

- J. Shares sold for cash to date, are as follows:-
- 500,002 shares at \$1.00 each
  - 143,750 shares at \$ .50 of which 31,800 shares were issued after June 30, 1967.
  - The total cash received from the sale of shares \$622,852.00 and \$5,000.00 is due on shares sold. \$15,900.00 of the total sum was received after June 30, 1967.
  - No commission has been paid or allowed on the sale of the shares.
  - The only discount allowed to any person in consideration of his subscribing or agreeing to subscribe for any shares for cash in the company is a discount of 50% in respect of the 143,750 \$1.00 par value shares sold at 50 cents each.

K. The Company has not sold any securities other than shares for cash.

L. 750,000 shares were allotted and issued to Charles B. Field in the consideration of the Company acquiring the mineral claims and the Crown Grant Claims as described in paragraph (M) hereof.

M. (i) The Company is the registered owner of certain Crown granted Mineral Claims respecting the Undersurface Rights to all gold and silver registered in the Land

Registry Office at the City of Victoria, Province of British Columbia under number 335031-G as follows:

- Lot 138, Chemainus District, known as Lot 35-G "Estelle" Mineral Claim.
- Those parts of Sections 1 in Ranges 1, 2 and 3, Chemainus District and those parts of Section 20, Ranges 1, 2 and 3 and Section 19, Ranges 1 and 2, Somenos District shown outlined in red on Plan 787 comprising Lot 54-G known as "Westholme" Mineral Claim, Lot 51-G known as "Blue Bell" Mineral Claim, part of Lot 50-G known as "moline Fraction" Mineral Claim, Lot 4-G known as "Acme" Mineral Claim, part of Lot 18-G known as "Donagan" Mineral Claim Lot 47-G known as "Nellena" Mineral Claim, Lot 59-G known as "Westholme Fraction" Mineral Claim, Lot 21-G known as "Dixie Fraction" Mineral Claim all of Lot 44-G known as "Golden Rod" Mineral Claim.
- Lot 24 Chemainus District known as Lot 18-G "Tony" Mineral Claim, Lot 23, Chemainus District known as Lot 19-G "XL" Lot 43, Chemainus District known as Lot 63-G "Donald" Lot 51, Chemainus District known as Lot 108-G "Muriel Fraction" Lot 59, Seymour District known as Lot 87-G "Doubtful Fraction" Lot 60, Seymour District known as Lot 85-G "Thelma Fraction" Lot 197, Seymour District Lot 61, Seymour & Somenos District Except that part in Somenos District known as Lot 86-G "Imperial Fraction" Lot 28, Chemainus District except that part included in Plan 736 known as Lot 20-G "Herbert" Lot 127 Seymour District known as Lot 110-G "Phil Fraction" Lot 94, Chemainus District known as Lot 43-G "N.T. Fraction" Mineral Claims.
- Lot 19, Chemainus District known as Lot 41-G "Magic Fraction" Mineral Claim.
- Lot 26 Chemainus District known as Lot-39G "Richard 3" Mineral Claim.
- That part of Lot 61 Seymour and Somenos Districts lying within said Somenos District known as Lot 86-G "Imperial Fraction" Mineral Claim. Also recorded under number 337145-G in favour of Mount Sicker Mines Ltd. (N. P. L.) in the Land Registry Office, City of Victoria, Province of British Columbia respecting Undersurface Rights as to all gold and silver is the following described Mineral Claim -
- Lot 20, Chemainus District known as Lot 37-G "Key City" Mineral Claim.
- Also registered in the name of Mount Sicker Mines Ltd. (N. P. L.) in the Land Registry Office

City of Victoria, Province of British Columbia under number 22588-F are Undersurface Rights as to all gold and silver under Lots 35-G and 36-G known respectively as "Lenora" and "Tyee" Mineral Claims Chemainus District.

- (i) Also registered in the name of Mount Sicker Mines Ltd. (N. P. L.) in the Land Registry Office, City of Victoria, Province of British Columbia under number 337143-G are undersurface rights as to all gold and silver under that part of Lot 60-G known as International Fraction Mineral Claim lying within Lot 3, Block H and Lots 2 to 6 inclusive Block J of Lot 42 Chemainus District Plan 694.

The above described Mineral Claims are registered in the name of Mount Sicker Mines Ltd. (N. P. L.) in the said Land Registry Office free and clear of liabilities and charges.

Mount Sicker Mines Ltd. is the recorded owner of 29 Mineral Claims filed under the Mineral Act of the Province of British Columbia. The Mineral Claims are all located on Mount Sicker, Vancouver Island, British Columbia adjacent to the area where the company holds Crown granted mineral claims and undersurface rights. Details of the Mineral Claims are as follows:

1. C. F. Group #1 Record No. 14150  
The claim lies North of C F Group Fraction. Bonded on the North-West by Belle M.C. Lot 55-G; and Queen Bee M. C. Lot 100.
2. C. F. Group #2 Record No. 14151  
The claim lies bounded on the S.W. by part of the Queen Bee M.C. Lot 100; on the South by the C. F. #1; on the East by the C. F. Group #3; on the North by C. F. Group #11.
3. C. F. Group #3 Record No. 14152  
The claim lies East of C. F. Group #2; Bounded on the North by C. F. Group #14 and on the South by C. F. Group #4.
4. C. F. Group #4 Record No. 14153  
The claim lies bounded South West by the Estelle M.C. Lot 53-A and on the North West by C. F. Group #3.
5. C. F. Group #5 Record No. 14154  
The claim lies bounded on the South West by C. F. Group #6 and on the North West by C. F. Group #16.
6. C. F. Group #6 Record No. 14155  
The Claim lies bounded on the South West by part of the Estelle M.C. Lot 53-G; and part of

- the Bluebell Lot 51-G and the Moline Fraction Lot 52-G and on the Northwest by C F. Group #5.
7. C. F. Group #7 Record No. 14156  
The claim lies bounded by on the South West by C. F. Group #8 and the North West by C. F. Group #18.
8. C. F. Group #8 Record No. 14157  
The claim lies bounded on the Southwest by part of the Moline Fraction Lot 52-G and part of the Gold Rod Lot 44-G and on the Northwest by C. F. Group #7.
9. C. F. Group #9 Record No 14158  
The claim lies bounded on the South West by C. F. Group #10 on the North West by C. F. Group #20.
10. C. F. Group #10 Record No. 14159  
The claim lies bounded on the South West by part of the Golden Rod Lot 44-G and by the ACME Lot 4-G and on the North West by C. F. Group #9.
11. C. F. Group #13 Record No. 14162  
The claim lies bounded on South East by C. F. Group #14.
12. C. F. Group #14 Record No. 14163  
The claim lies bounded on the South-East by C. F. Group #3; and on the North by C F Group #13.
13. C. F. Group #15 Record No. 14164  
The claim lies bounded on the South East by C F Group #16.
14. C. F. Group #16 Record No. 14165  
The Claim lies bounded on the South East by C. F. Group #5.
15. C. F. Group #17 Record No. 14166  
The claim lies bounded on the South-East by C. F. Group #18.
16. C. F. Group #18 Record No. 14167  
The Claim lies bounded on the South East by C. F. Group #7.
17. C. F. Group #19 Record No. 14168  
The Claim lies bounded on the South East by C. F. Group #20.
18. C. F. Group #20 Record No. 14169  
The claim lies bounded on the South East by C. F. Group #9.
19. C F. Group #25 Record No. 14185  
The claim lies bounded on the Northwest by Tony M.C. Lot 18-G. Bounded on the South by Group #26.
20. C. F. Group #26 Record No. 14186  
The claim lies bounded on the Northwest by C. F. Group #25.

21. C.F. Group #27 Record No. 14187  
The claim lies bounded on the Northwest by the Donald Lot 63-G and the Muriel Fraction Lot 108-G.
22. C.F. Group #28 Record No. 14188  
The claim lies bounded on the Northwest by the C.F. Group #27.
23. C.F. Group #29 Record No. 14197  
The claim is bounded on the north by Doubtful M.C. 87-G on the south west by C.F. Group #30.
24. C.F. Group #20 Record No. 13198  
The claim is bounded on the north east by C.F. Group #29.
25. C.F. Group #31 Record No. 13199  
The claim is bounded on the North East by the Thelma M.C. Lot 85.
26. C.F. Group #32 Record No. 14200  
The claim is bounded on the North East by C.F. Group #31.
27. C.F. Group #33 Record No. 14201  
The claim is bounded on the North East by the Imperial Fraction Lot No. 86-G and the Yankee M.C. Lot 89-G.
28. C.F. Group #34 Record No. 14202  
The claim is bounded on the North East by C.F. Group #33.
29. C.F. Group Fraction Record No. 14174  
The claim is bounded on the South West by the Tyee M.C. Lot 36-G; on the North-west by the Melle M.C. Lot 550G; on the South East by the Estelle M.C. Lot 53-G; on the N.E. by C.F. Group #1+4. Bounded on the North by C.F. Group #1; Bounded on the east by Lot 53-G; Bounded on the South by Tyee M.C. 36-G; bounded on the West by Lot 55-G.

Also registered in the Land Registry Office, City of Victoria, Province of British Columbia in the name of Mount Sicker Mines Ltd. (N. P. L.) are the following described Undersurface Rights particulars of which are as follows:

- (a) Registration number 335032-G respecting Undersurface Rights to:  
First Lot 17, Chemainus District, ("Lenora" Mineral Claim) Except that part of said Lot lying within the boundaries of Plan 694.  
Secondly: Lot 25, Chemainus District, EXCEPT that part thereof lying within the boundaries of Plan 736.

The said Undersurface Rights are subject to the exceptions and reservations in favour of Esquimalt and Nanaimo Railway Company registered under number 85715-G and to a Mineral Claim as to gold and silver registered under number 22588-F

- (b) Registration number 352032-G Undersurface Rights as to Lot 26, Chemainus District. The said undersurface rights are subject to the Exceptions and Reservations in favour of Esquimalt and Nanaimo Railway Company registered under number 67219-G and to the Undersurface Rights as to gold and silver hereinbefore described registered under number 335031-G.
- (c) Registration number 335032-G Undersurface Rights as to Lot 19, Chemainus District. These Undersurface Rights are subject to the Exceptions and Reservations in favour of Esquimalt & Nanaimo Railway Company registered under number 604313-G and to the Undersurface Rights as to gold and silver hereinbefore referred to registered under number 335031-G.
- (d) Registration number 335032-G Undersurface Rights as to Lot 20, Chemainus District subject to the Undersurface Rights as to all gold and silver hereinbefore described registered under number 337145-G.
- (e) Registration number 335032-G Undersurface Rights as to:  
First Lot 138, Chemainus District (Estelle Mineral Claim), Lot 163 Chemainus District, (T.A.W. Fraction Mineral Claim) and Lot 17, Chemainus District, (Alpha Fraction Mineral Claim)  
Secondly: Those parts of Sections 1 in Ranges 1, 2 and 3 Chemainus District, and those parts of Sections 20, Ranges 1, 2 and 3 and Sections 19, Ranges 1 and 2, Somenos District, shown outlined in red on Plan 787 and included in the following Mineral Claims:  
(1) Lot 54-G, Westholme Mineral Claim  
(2) Lot 51-G, Blue Bell Mineral Claim  
(3) Lot 50-G, Moline Fraction Mineral Claim  
(4) Lot 44-G, Golden Rod Mineral Claim  
(5) Lot 4-G, Acme Mineral Claim  
(6) Lot 18-G, Donagan Mineral Claim  
(7) Lot 47-G, Nellena Mineral Claim  
(8) Lot 59-G, Westholme Fraction Mineral Claim  
(9) Lot 21-G, Dixie Fraction Mineral Claim.

Thirdly: Those parts of Section 20, Range 2, Somenos District and of Section 1, Range 2, Chemainus District, outlined in red on said Plan 787, included in that wedge-shaped portion thereof bounded on the West by the East boundary of said Golden Rod Mineral Claim, on the East by the West boundary of said Acme Mineral Claim and on the South by the North boundary of said Donagan Mineral Claim.

Subject to the Exceptions and Reservations in favour of Esquimalt and Nanaimo Railway Company registered under number 94523-G and 137131-G and to the Undersurface Rights as to all gold and silver hereinbefore referred to registered under number 335031-G.

- (g) Registration number 335032-G Undersurface Rights to

First: Lot 28, Except that part thereof included in Lots 23, 24, 43, 51 and 94, All in Chemainus District.

Secondly: Lots 59, 60, 127 and 197, All in Seymour District.

Thirdly: Lot 61, Seymour and Somenos Districts, Except that part thereof within Somenos District, said excepted part being within the boundaries of the Municipality of North Cowichan.

Subject to Exceptions and Reservations in favour of Esquimalt and Nanaimo Railway Company registered under number 137131-G and 137210G and Undersurface Rights as to all gold and silver hereinbefore referred to registered under number 335031-G

The said Undersurface Rights registered in the name of Mount Sicker Mines Ltd. (N. P. L.) free and clear of charges and encumbrances save and except as herein referred to.

By agreement dated May 1st, 1967 Valance H. Patriarche granted to Mount Sicker Mines Ltd. (N. P. L.) an Option exercisable any time up to August 1st, 1968 to acquire all the right, title and interest of the said Patriarche in and to Mineral Agreement number 8 dated October 1st, 1963 and made between the said Patriarche and Canadian Pacific Oil and Gas Limited. Under the said Option Agreement in favour of Mount Sicker Mines Ltd. (N. P. L.) dated May 1st, 1967 the company agreed to pay to the said Patriarche \$2,500.00 in cash, an additional \$1500.00 on September 1st, 1967 and \$1,000.00 on August 1st, 1968 and upon exercise of the Option \$16,000.00 in equal

monthly instalments of \$500.00 each commencing September 1st, 1968 and agreed to allot to the said Patriarche 10,000 fully paid common shares of the company at such time.

Mineral Agreement Number 8 is an Option to Lease in favour of the holder all minerals which according to the records of the Land Registry Office, Victoria, B.C. were on the 31st day of May, 1962 owned by the Esquimalt and Nanaimo Railway Company except fireclay, coal, petroleum and natural gas and related hydro carbons respecting all those parcels of land situate in the Chemainus Land District described as commencing at a point nine thousand (9000) feet due east of the northwest corner of Block 278, thence due north in a straight line a distance of six thousand (6000) feet, thence east at a right angle in a straight line to the western boundary of the east one-half of section seven (7), range one (1), thence northerly along said western boundary of the east one-half of section seven (7), range one (1) to the northern boundary of section seven (7), thence easterly along said northern boundary of section seven (7) to the eastern boundary of range two (2), thence southerly along said eastern boundary of range two (2) to the point of intersection with the southern boundary of the Chemainus Land District, thence westerly along the said southern boundary of the Chemainus Land District to a point on said southern boundary being the intersection of the southerly extension of the first described line, thence northerly along said extension to point of commencement, the area herein described comprising twenty-five hundred and forty (2540) acres, more or less.

In said Mineral Agreement Number 8 Canadian Pacific Oil and Gas Limited has covenanted that it has acquired, or has the right to acquire, the right or title of the Esquimalt and Nanaimo Railway Company to the minerals, as such right or title existed on the 31st day of May, 1962.

The area covered by Mineral Agreement Number 8 involves generally considerable base metal rights not otherwise owned by Mount Sicker Mines Ltd. (N. P. L.) in the area of Mount Sicker adjacent to the Company's base metal or gold and silver holdings.

In the event that Mount Sicker Mines Ltd. (N. P. L.) shall by the exercise of its rights or options lease the whole or any portion of the lands under Mineral Agreement number 8 then such lease shall be for a period of 10 years at a rental of \$1.00 per year per acre leased plus

- (a) Copper- a royalty based on the net smelter returns and the yearly average grade of mill feed determined by mill head

samples which the Lessee shall take and assay as follows:

Average Grade of Mill Feed	Royalty Payable
2% copper or less	- 3% of Net Smelter Returns
Over 2% copper but not exceeding 3% copper	- 4% of Net Smelter Returns
Over 3% copper	- 5% of Net Smelter Returns

For purposes of determining the royalty payable for a given month the weighted average grade of mill feed in that portion or the whole of the calendar year ending with such month shall be used, but the total amount of royalty so paid in respect of any calendar year shall be adjusted at the end of that year, based on the actual weighted average grade of mill feed during that year.

- (b) Iron - Concentrated Ore - 3% of the shipping value thereof. The minimum royalty shall be twenty cents (20¢) per ton of concentrated ore.  
Direct - shipping Ore - 5% of the shipping value thereof. The minimum royalty shall be thirty-five cents (35¢) per ton of direct-shipping ore.
- (c) Other Metals - 3% of net smelter returns or if concentrates containing such metals are sold as such, 3% of the selling price thereof.

The Annual Royalty must not be less than \$2500 and the lessor has the right after the return to the lessee of its capital investment and development costs to elect to have a Royalty based on 10 per cent of the annual net profit accruing from the mines and minerals sold.

- M. (ii) Charles B. Field, 1342 Oliver Street, Victoria, B.C. sold to the Company the Mineral Claims, Crown Granted Mineral Claims and Undersurface Rights hereinbefore referred to in consideration of 750,000 shares of the Company issued at a discount of 87.5 per cent.
- M. (iii) Of the 750,000 Vendors Shares issued to Charles B Field for properties transferred 100,000 of said shares have been transferred to William Smart Howden, 435 West 48th Avenue, Vancouver, B.C.
- M. (iv) Access to the properties of Mount Sicker Mines Ltd. (N.P.L.) is by Public highway as more particularly set forth in the report of E. Percy Sheppard dated June 17, 1967.

- M. (v) The character extent and condition of the underground exploration development plant and equipment is set forth in the report of E. Percy Sheppard dated June 17, 1967.
- M. (vi) The character, extent and condition of the surface exploration development plant and equipment is set forth in the report of E. Percy Sheppard dated June 17, 1967.
- M. (vii) The history of the properties held by the company is set forth in the report of E. Percy Sheppard dated June 17, 1967.
- M. (viii) A description of the work done and improvements made by the company under its present management is made in the report of E. Percy Sheppard dated June 17, 1967 and in paragraph O hereof.

N. The Company has entered into no contracts respecting options on shares nor any underwriting agreements respecting the sale of shares or other securities. The Company, however, does propose to sell 200,000 shares at the price of Seventy-Five Cents (\$.75) per share. After commission of Twenty-Five Percent (25%) this is calculated to raise the net sum of \$112,500.00.

O. The Company proposes to produce 95.5% or better copper powder from the low grade copper ore existing in the Lenora and Tyee dumps and from the old mill tailings on the property. The process will employ bacteria to place the copper in solution which will then be precipitated by using iron shavings. Initially this will be a pilot plant, capable of economic production.

Approximately 20,000 tons of this ore has been placed in a heap on a leaching pad now constructed by the company and the bacteria culture will be placed in the heap. The ore placed on the heap has been taken primarily from the Lenora dump.

As the bacteria increase in the heap the company proposes to build the required precipitating and drying facilities. When constructed the company proposes to commence the precipitation process from the pregnant solutions resulting from bacterial action.

The movement of ore from the Lenora dump has exposed the Lenora face which will be explored as a source of inexpensive ore for additional leaching. In addition the Tyee dump ore can be moved for bacterial leaching.



The increased bacteria colony created by the initial tonnage will be used for additional tonnages and may be employed in leaching any suitable additional ore in the ground in or about the existing old mine workings. These will be investigated after the completion of the surface mapping and its correlation with the underground data. The repair of surface facilities, underground rehabilitation and exploration and further surface exploration will be limited in accordance with funds made available from copper powder sales from the original heap and any additions thereto.

In addition to the sum of \$113,000.00 estimated to be required to build and complete the pilot plant and to commence the production of copper powder therefrom as detailed in the report of E. Percy Sheppard dated June 17, 1967 the company will require

\$17,000.00 to satisfy current liabilities shown on the balance sheet dated June 30, 1967.  
 \$10,000.00 legal, auditing and administrative expenses  
 \$5,000.00 Directors remuneration

all of which total \$145,000.00

The company has been able to satisfy the following items included in the total cost

Water reservoir completion	\$ 500.00
Access Roads	500.00
Heap base plywood and polythelene	5,000.00
Utility Vehicle	4,000.00
Engineering	5,200.00
Ore movement to heap	6,000.00
	<u>\$21,200.00</u>

Summary

Total funds required		\$14,500.00
Work or services completed	\$ 21,200.00	
Cash on hand	11,800.00	
Proceeds from sale of 200,000 shares at .75 net	112,500.00	
Contingency		500.00
	<u>\$ 145,500.00</u>	<u>\$ 145,500.00</u>

The report of E. Percy Sheppard dated June 17, 1967 includes a map showing the location on Mount Sicker of the pilot plant, leaching heap base and another map showing the North and South are zones and adjacent ore outcroppings. These maps are not reproduced in this prospectus in order to minimize costs but are available for inspection at the registered office of the company, 750 Courtney Street, Victoria, B.C.

P. The Company has been incorporated for more than one year and no expense remains outstanding for the formation

or incorporation of the Company.

Q. There is no substantial indebtedness to be created or assumed that is not shown on the balance sheet of the Company filed herein June 30th, 1967 or which is not described elsewhere herein.

R. The principal business in which each Director of the Company has been engaged during the immediately preceding three years is as follows:

CHARLES EARL HASTINGS  
 President and General Manager  
 United Engineering Works Ltd.

JOHN FINLAYSON WOOD  
 Barrister and Solicitor,  
 Campbell, Donegani and Wood.

A. WILLIAM WHITTINGHAM,  
 Manager  
 National Wholesale Co.

HARRY GLEN SOMMERS,  
 Shift Superintendent Power Plant  
 Elk Falls Company Ltd.

CHARLES B. FIELD,  
 President and Managing Director  
 Pure Food Brokerage Limited

CLAIR E. BOWMAN,  
 Manager,  
 Cherry Bank Hotel.  
 President,  
 Gay Nineties Spare Rib House Ltd.  
 and Guv'nor's Grill Ltd.

PETER J. BURJOSKI,  
 Staff Sgt. Canadian Army  
 Securities Salesman of Holberg Mines Ltd.  
 Securities Salesman of Texas Creek Mines Ltd.  
 Mining Executive and President of Burdos  
 Mines Ltd. (N. P. L.)

HUGH GRAHAM GRANT  
 General Manager  
 Victoria Community Grocers Ltd.

DR. CHARLES L. EMERY  
 Professor and Head of Department of Mineral  
 Engineering, University of British Columbia.

GARRY HUGHES  
 Student,  
 C.I.M. Consultants Ltd.  
 Consulting Engineer,  
 Bio Metals Corporation Ltd. (N.P.L.)

S. None of the Directors or Officers of the Company had or have any interest direct or indirect in any property at any time acquired or proposed to be acquired by the Company except Charles B. Field, Director who sold to the Company assets described in paragraph (I) hereof. The said Charles B Field has no further interest in said assets.

T. The aggregate remuneration paid to Officers and Directors of the Company are:

1. to Directors during the fiscal year last ended - \$5,000.00
2. to Officers during the fiscal year last ended - NIL.

U. It is estimated that there will be remuneration paid to the Directors during the current fiscal year, \$5,000.00 and no remuneration to be paid to any Officer, as such.

V. Charles B. Field and Bio Metals Corporation Ltd. (N.P.L.) by virtue of the beneficial ownership of a majority of the shares deposited in Escrow as described in Clause (I) hereof could, if acting in combination, elect or cause to be elected a majority of the Directors of the Company.

W. There have been no dividends paid within the five years preceding the date of this Prospectus.

X. There is no material fact not disclosed under any other provision of the Securities Act, 1962.

Y. The Foregoing constitutes full, true and plain disclosure of all material facts in respect of the offering of the securities referred to above, as required by the "Securities Act" of the Province of British Columbia, and there is no further material information applicable other than in the financial statements or reports where required.

"CHARLES B. FIELD"  
 Director & Promoter

"DR. CHARLES L. EMERY"  
 Director

"CLARE E. BOWMAN"  
 Director

"HUGH G. GRANT"  
 Director

"GARRY M. HUGHES"  
 Director

"EARL HASTINGS"  
 Director

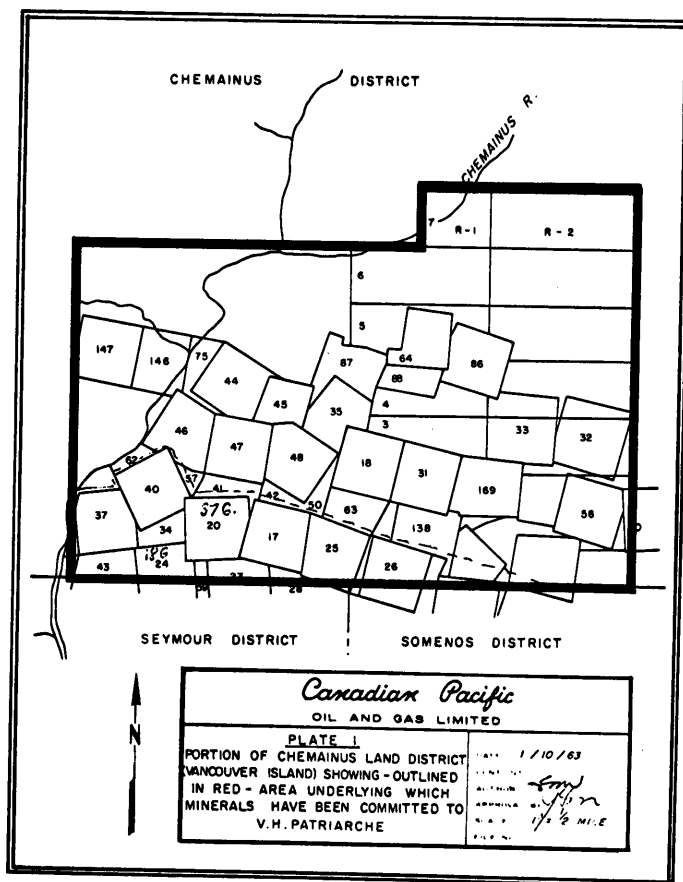
"H. GLEN SOMMERS"  
 Director

"J. FINLAYSON WOOD"  
 Director

"A.W. WHITTINGHAM"  
 Director

"PETER J. BURJOSKI"  
 Director.

This Prospectus is dated September 15th, 1967.



MOUNT SICKER MINES LTD. (N.P.L.)

FINANCIAL STATEMENTS

AS AT JUNE 30, 1967

ROBERTS, DENSON, HILL & CO.  
Chartered Accountants  
Victoria, B.C. Duncan, B.C.  
Dennis C. Roberts, C.A.  
R.W. Denson, B.Comm., C.A.  
A. Kenneth Hill, C.A.

545 Yarrow Building  
645 Fort Street  
Victoria, B.C.  
385-8791

P.O. Box 1340  
Duncan, B.C.  
746-7136

August 21, 1967.

The Shareholders,  
Mount Sicker Mines Ltd. (N.P.L.),  
Victoria, B.C.

We have examined the Balance Sheet of Mount Sicker Mines Ltd. (N.P.L.) as at June 30, 1967 and have obtained all the information and explanations we have required. Our examination included a general review of the accounting procedures and such tests of accounting records and other supporting evidence as we considered necessary in the circumstances.

In our opinion, the accompanying Balance Sheet, supplemented by the notes thereto, is properly drawn up in accordance with generally accepted accounting principles so as to present fairly the financial position of the company as at June 30, 1967, according to the best of our information and the explanations given to us and as shown by the books of the company.

"Roberts, Denson, Hill & Co."

Chartered Accountants.

MOUNT SICKER MINES LTD. (N.P.L.)

BALANCE SHEET

AS AT JUNE 30, 1967

A S S E T S

<u>Current Assets</u>		
Cash	\$11,816.22	
Accounts receivable	<u>127.92</u>	\$ 11,944.14
<u>Investment in Shares of Bio Metals Ltd. (N.P.L.) - At Cost</u>		500,000.00
	(Note 1)	
<u>Pre-Production Expense Per Schedule 1</u>		43,932.42
<u>Administrative Expense Per Schedule 11</u>		7,258.55
<u>Mineral Claims, Crown Granted Mineral Claims And Undersurface Mineral Rights</u>		93,750.00
<u>Option on Mining Lease Agreement</u>		5,000.00
<u>Buildings and Equipment, at cost</u>		11,064.08
<u>Incorporation Costs</u>		1,222.85

\$674,172.04

Approved on Behalf of the Board:

"C.E. Bowman" Director

"C.B. Field" Director

L I A B I L I T I E S

<u>Current Liabilities</u>	
Accounts payable	\$ 12,992.59
Amounts due within one year on agreements payable	<u>4,000.00</u>
Agreements Payable	
Bio Metals Corporation Ltd. (N.P.L.)	\$ 13,952.45
Option agreement	<u>2,500.00</u>
	\$ 16,452.45
<u>Less: Amounts due within one year</u>	
<u>Shareholders' Equity</u>	12,452.45
<u>Capital Stock</u>	
Authorized:	
3,000,000 shares with a nominal or par value of \$1.00 each	
Issued and Fully Paid:	
for mineral claims, 750,000 shares	
for cash, 611,952 shares	
<u>less: 10,000 shares unpaid</u>	<u>\$611,952.00</u>
<u>Less: Discounts on shares issued</u>	<u>5,000.00</u>
	606,952.00
	<u>\$1,356,952.00</u>
	712,225.00
	<u>644,727.00</u>
	<u>\$674,172.04</u>

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The accompanying notes form an integral part of this statement.

MOUNT SICKER MINES LTD. (N.P.L.)

NOTES TO FINANCIAL STATEMENTS AS AT JUNE 30, 1967

NOTE (1) 500,000 shares of Bio Metals Corporation Ltd. (N.P.L.) were acquired by the company in June, 1967 for a price of \$1.00 per share. As Bio Metals Corporation Ltd. (N.P.L.) is a private company, we have no knowledge of the market value of these shares and cannot express an opinion thereon. Bio Metals Corporation Ltd. (N.P.L.) also acquired 500,000 shares of Mount Sicker Mines Ltd. (N.P.L.) at \$1.00 per share.

MOUNT SICKER MINES LTD. (N.P.L.)

SCHEDULE OF PRE - PRODUCTION EXPENSE

TO JULY 31, 1967

Schedule 1

Engineering and designing	\$ 14,703.83
Road construction	8,392.88
Reservoir and pad construction	7,182.98
Salaries and employee benefits	7,349.71
General expense	221.11
Insurance	329.20
Licences	257.00
Light, heat and power	732.73
Equipment maintenance	127.54
Recording fees and permits	194.50
Geological reports	2,440.94
Feasibility study	<u>2,000.00</u>
	<u>\$ 43,932.42</u>

SCHEDULE OF ADMINISTRATIVE EXPENSE

TO JULY 31, 1967

Schedule 2

Legal and accounting	\$ 3,878.75
Interest and bank charges	277.58
Office supplies and stationery	630.30
Telephone	241.63
Travel and promotion	<u>2,230.29</u>
	<u>\$ 7,258.55</u>

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SUMMARY REPORT ON MOUNT SICKER MINES LTD.  
Victoria Mining Division, British Columbia

by

E. P. SHEPPARD, P. ENG., CONSULTING GEOLOGIST  
Vancouver, B.C., June 17, 1967.

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(Bio Metals Corp. Ltd.)

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Composite Plans and Sections of Underground

Workings (In Pocket)

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CONCLUSIONS AND RECOMMENDATIONS

THE PROPERTIES OWNED OR HELD UNDER OPTION BY MT. SICKER MINES LTD. (N.P.L.) ON MOUNT SICKER HAVE NOT BEEN ASSESSED UNDER CURRENT ECONOMIC CONDITIONS, NOR IN VIEW OF ADVANCES IN TECHNOLOGY. IT APPEARS THAT THERE IS A POSSIBILITY OF LOCATING MORE OF THE HIGH GRADE ORE BODIES AS WELL AS LOW GRADE BUT ECONOMIC OCCURRENCES IN THE MAIN FRACTURE ZONE AND IN PARALLEL STRUCTURES.

BACTERIAL LEACHING OF MUCH OF THE MATERIALS ON THE DUMPS HAS BEEN FOUND TO BE FEASIBLE AND A PILOT LEACHING PLANT IS UNDER CONSTRUCTION.

IT IS RECOMMENDED THAT A TOTAL EXPENDITURE OF \$253,000.00 BE MADE TO REPAIR SERVICE FACILITIES; TO REHABILITATE PART OF THE UNDERGROUND WORKINGS TO PERMIT MAPPING, SAMPLING AND DIAMOND DRILLING; TO COMPLETE THE SURFACE MAPPING; TO DIAMOND DRILL FROM SURFACE THE ORIGINAL ORE ZONES AND GEOLOGICAL STRUCTURES AS WELL AS THE ANOMALIES ON THE LANDS HELD UNDER THE PATRIARCHE OPTION; AND TO COMPLETE AND OPERATE THE PILOT LEACH PLANT ON THE PROPERTY.

UPON THE COMPLETION OF THESE PROGRAMS THE RESULTS SHOULD BE STUDIED TO INDICATE WHAT FURTHER WORK SHOULD BE CARRIED OUT.

THE PRESIDENT AND DIRECTORS  
MT. SICKER MINES LTD., N.P.L.  
P.O. BOX 576  
VICTORIA, B.C.

DEAR SIRs:

ACTING UPON YOUR INSTRUCTIONS, WE HAVE MADE AN EXAMINATION OF YOUR PROPERTY NEAR DUNCAN, ON MOUNT SICKER, VANCOUVER ISLAND.

WE INSPECTED THE ACCESSIBLE UNDERGROUND WORKINGS, THE AVAILABLE PERTINENT MINE DATA, AND STUDIED NUMEROUS GEOLOGICAL, PROGRESS AND OPERATION REPORTS DATING FROM 1897 TO THE PRESENT, AS WELL AS THE APPENDED PROGRESS REPORT ON A FEASIBILITY STUDY FOR THE LEACHING OF MT. SICKER ORES.

PROPERTY

THE MT. SICKER MINES LTD. PROPERTY CONSISTS OF 3340 ACRES, MORE OR LESS, LYING ON THE FLANKS OF MOUNT SICKER IN THE VICTORIA MINING DIVISION, BRITISH COLUMBIA, (48° 123' N.W.).

THE HOLDINGS ARE MADE UP OF 29 MINERAL CLAIMS, 26 CROWN GRANTED MINERAL CLAIMS AND FRACTIONAL CLAIMS, TOTALLING APPROXIMATELY 800 ACRES, PLUS AN OPTION ON LANDS HELD BY V. H. PATRIARCHE UNDER A MINING AGREEMENT DATED OCTOBER 1, 1963, WITH CANADIAN PACIFIC OIL & GAS LIMITED, TOTALLING ABOUT 2540 ACRES.

29 MINERAL CLAIMS - CHEMAINUS DISTRICT

C. F. GROUP NUMBERS:

14150 TO 14159 INCLUSIVE	10 CLAIMS
14162 TO 14169 "	8 "
14174	1 "
14185 TO 14188 "	4 "
14197 TO 14202 "	6 "

26 Crown Granted Mineral Claims and Fractions

<u>Lot No.</u>	<u>Name</u>
35 G	Lenora*
36 G	Tyee*
37 G	Key City*
60 G	International Fraction*
18 G	Tony*
19 G	X L*
63 G	Donald*
108 G	Muriel Fraction*
87 G	Doubtful Fraction**
85 G	Thelma Fraction**
86 G	Imperial Fraction**/**
20 G	Herbert*
110 G	Phil Fraction**

43 G	N T Fraction*
39 G	Richard III*
41 G	Magic Fraction*
53 G	Estelle*
18 G	Donagan***
54 G	Westholme*
51 G	Blue Bell*
50 G	Moline Fraction*
59 G	Westholme Fraction***
21 G	Dixie Fraction***
44 G	Golden Rod*
47 G	Nallena*
4 G	Acme***

\* Chemainus District

\*\* Seymour District

\*\*\* Somenos District

Lands Optioned From V. H. Patriarche

"All those parcels of land situate in the Chemainus Land District on Vancouver Island in the Province of British Columbia lying within the boundaries of the area outlined in red shown on the attached sketch marked Plate I described as commencing at a point nine thousand (9000) feet due east of the northwest corner of Block 278, thence due north in a straight line a distance of six thousand (6000) feet, thence east at a right angle in a straight line to the western boundary of the east one-half of section seven (7), range one (1), thence northerly along said western boundary of the east one-half of section seven (7), range one (1) to the northern boundary of section seven (7), thence easterly along said northern boundary of section seven (7) to the eastern boundary of range two (2), thence southerly along said eastern boundary of range two (2) to the point of intersection with the southern boundary of the Chemainus Land District, thence westerly along the said southern boundary of the Chemainus Land District to a point on said southern boundary being the intersection of the southerly extension of the first described line, thence northerly along said extension to point of commencement, the area herein described comprising twenty-five hundred and forty (2540) acres, more or less".

OWNERSHIP

The properties described above are owned or held under option by Mt. Sicker Mines Ltd. N.P.L.

## LOCATION AND ACCESS

Situated about 14 miles by road from the city of Duncan, the property lies upon the slopes of Mount Sicker, which is a heavily-wooded mountain of medium to rugged relief rising to an elevation of nearly 2300 feet above sea level. The Chemainus River flows along the northerly base of the mountain.

The mine and mill sites are serviced by eight miles of all-weather road, partly paved, partly gravelled, which joins Trans-Canada I six miles north of Duncan.

Electric power and telephone services are four or five miles distant; however, for preliminary work, diesel-driven units could be rented. Labour and supplies for a surface and underground program should not be a problem. Water can be taken from hillside creeks or pumped from the Chemainus River. Timber required for underground renovation is in good local supply. The old office and Change House buildings can be repaired and put to good use. A 150-ton concentrator on the property is not in good condition and is being disposed of.

## HISTORY

The Mount Sicker area owes its development to the fact that in 1897 a forest fire and subsequent rains swept bare the hillside, disclosing a gossan outcrop which proved to be the surface exposure of the Lenora and Tyee south orebodies. During that year separate interests began surface and underground work on each claim.

A brief history of the three main claims (Lenora, Tyee and Richard III) is given in chronological order. Much of the following information was gleaned from the annual reports of the Minister of Mines of British Columbia.

### LENORA

- 1898 Drifting, crosscutting and sinking. Two parallel ore zones identified.
- 1899 Development and stoped ore stored in dumps. Some hand-picked ore sent to a smelter.
- 1900 Lenora-Mount Sicker Mining Company formed. Development and stoping continued. Shipped ore by wagon, narrow-gauge railway, E & N
- to mid-RAILWAY, to Ladysmith thence by steamer to
- 1902 Van Anda, Everett and Tacoma smelters.

- Late Railroad completed to the mine. Smelter completed at Crofton. Shortly after shipments commenced to Crofton the mine was closed because of litigation.
- 1902
- 1903 Minor work done and small shipments of ore to from the dump made to Crofton.
- 1907
- 1924 Re-opened under lease and bond by R. C. Mellin, primarily to re-examine the north ore zone, which was reported to assay 2% copper, 7% zinc, with \$1.50 in gold and silver. This ore had become attractive because of advances made in separating copper and zinc by flotation.
- 1925 No work.
- 1926 Ladysmith Tidewater Smelters Ltd. took over assets of Tyee mine and smelter and leased the Lenora. Under the direction of R. C. Mellin an adit was started on the Lenora to connect both mines to provide efficient working conditions.
- 1929 The lease on Lenora was dropped and work ceased.

### TYEE

- 1897 Explored and developed the property with drifts. to crosscuts and shafts. Made a small shipment of sorted ore in 1901 which ran 8% copper, \$5 in gold and \$5 in silver per ton. The bulk of production stored in surface dumps.
- 1901
- 1902 Completed construction of aerial tramway to Somenos where ore was transhipped by E & N
- to Railway to the newly-built Tyee smelter at
- 1907 Ladysmith. A 1250-foot shaft sunk to develop lower grade ore zone found on 1000, 1150 and 1250 levels. Much development, exploration and production during these years. Concentration tests were being made on low grade ore when mine closed due to low price of copper. Work done on Tony, XL, Key City and Westholme claims disclosed some copper mineralization.
- 1928 Tyee holdings taken over by Pacific Tidewater Mines, Ltd., which then obtained from Mellin the Lenora lease. The adit being driven on the Lenora towards the Tyee was continued and ore was encountered.
- 1929 Pacific Tidewater Mines, Ltd., taken over by Ladysmith Tidewater Smelters, Ltd. No work done on Tyee or Lenora, and Lenora lease dropped.





## GEOLOGY

The area is underlain by a series of cherty tuffs, graphitic schists, sodic-andesites, porphyry, sodic-rhyolite porphyry and sodic-diorite. The cherty tuffs are light grey rocks, usually consisting of 1/8" to 1/2" laminae of cherts separated by thin layers of sericite schist. Where undeformed, the rocks are slaty, but where they are deformed they possess laminae and are bent into small canoe-shaped folds. Where intensely deformed, either by close shearing or folding, the tuffs are very schistose and it is difficult to identify the former chert layers which serve to distinguish these rocks from the more schistose phases of the rhyolite porphyry. The cherty tuffs are always associated with black graphitic schists.

Much of the black schist has been folded into a succession of small drag-folds, and where dragfolding has been so extreme that it passes into shearing, the thin laminae of the schist have been nearly destroyed and are difficult to identify in the resultant sheared rock. This series is classified tentatively as belonging to the Mount Sicker Group of rocks.

The series strikes N 70° W and dips 50° to the southwest. The andesite porphyry is intrusive into the sediments, andesite porphyry and early phases of the diorite, but it is cut by the later phases of the diorite. Diorites are generally older than both the sediments and the andesite porphyry but some phases are younger than the rhyolite porphyry and other phases are older than the rhyolite.

## ORE DEPOSITS

The ore deposits occur as a replacement of folded, cherty tuffs and related graphitic schists. There are two separate, easterly-trending bodies about 150 feet apart known as the North orebody and the South orebody. The ore is of two closely allied types; one type, called "Barite ore", consists mainly of barite and sulfides with small amounts of quartz; the second type, called "Quartz ore", consists mainly of quartz and chalcocopyrite. The two orebodies are parallel and lie along two main drag-folds in the band of sediments. Study of the ore deposits from underground openings is impossible because of caved workings.

The North orebody measures about 1700 feet along the strike, 120 feet down dip, and from one to 10 feet in width.

The South orebody lies about 150 feet south of the North orebody and has a length of 2100 feet, a depth of about 150 feet, and a thickness of 20 feet or more. The upper limit of this orebody is about 150 feet higher than the North orebody.

Post Ore Faults: Two main faults striking east and west and dipping vertically displaced the orebodies. The north fault is between the two orebodies. This fault strikes into the South orebody at a small angle. Near the Richard III shaft it is 26 feet north of the ore, further west near the Tye shaft it is closer, and near the portal of No. 1 adit it makes the north wall of the ore. The fault displaces the South orebody 200 feet upward and an unknown distance eastward with respect to the North orebody. Long sections of barite drag-ore may be seen in the north fault below the South orebody.

The south fault lies 80 to 100 feet south of the Tye shaft and south of the South orebody. Very little is known about this fault. Diagonal faults, which moved segments of the ore southward and downward relatively small distances, give a resultant plunge to the orebody that is steeper than the horizontal crestlines of the drag-fold. However, because of reversal of the vertical displacement in some of the diagonal faults, the orebody does not exhibit any appreciable plunge.

Ores: The Barite ores are a fine-grained mixture of pyrite, chalcocopyrite, sphalerite and a little galena in a gangue of barite, quartz and calcite. The order of mineralization from oldest to youngest is as follows: barite, calcite, pyrite, sphalerite, chalcocopyrite and galena, quartz and late calcite. A characteristic of this ore is its banded appearance. Quartz ore is fairly uniformly mineralized with chalcocopyrite. Mineralogical composition of this ore is as follows: Pyrite 4.1%, chalcocopyrite 20.5%, sphalerite 0.3%, galena trace, barite 1.1%, quartz 68.1%, calcite 5.6%. In addition, some of the chalcocopyrite occurs as layers or streaks that follow unreplaced layers of schist in the quartz.

Barite: The presence of barite as a gangue mineral in the "barite ore" and as separate occurrences in the mine adds another economic consideration to the ores. It is reported that an appreciable tonnage of barite was indicated by early operators. Tentative markets for the barite have been investigated and samples have been sent to an interested company for analysis and study. The Mount Sicker areas have been mentioned in the 1947 report of the Minister of Mines of British Columbia as a source of by-product barite. This mineral occurrence warrants further consideration.

The ores are later than both the folding and metamorphism of the sediments. They appear to be closely related to the sodic-rhyolite porphyry and sodic-diorite. This association has been observed in important pyrite deposits of the Rio Tinto district in Spain and elsewhere.

The localization of the orebodies has been controlled structurally by a regional fracture zone and by drag-folds in the narrow band of tuffs and graphitic schists. The fracture zone is a regional feature, which can be traced for a total distance of eight miles and was encountered on the bottom level of the 1250-foot Tyee shaft. Little is known about the mineralization along the full length and depth of this zone because the early operators largely ignored it as uneconomic, but it constitutes a potential exploration target of great importance.

Lands Under Patriarche Option: Because of the scarcity of outcrops, these lands were explored by geochemical methods. The results were subsequently checked and reasonably confirmed the Self-Potential surveys. Several anomalous areas and zones up to 1000 feet in length were found to be lying approximately parallel to the major regional fracturing and to the Twin J orebodies. Soil samples indicate the presence of copper, lead and zinc mineralization.

These areas should be explored by shallow diamond drill holes.

#### LEACHING

Leaching of sulphide ores may be defined in general terms as the process which, when carried out under favourable conditions employing one or more species of bacteria, oxidizes mineral sulfides to mineral sulfates which are often soluble in water. The metals contained in the solution are treated to produce saleable metallic compounds which frequently command premium prices because of their relatively high purity.

Metals such as copper, and later on, iron and uranium have been profitably recovered by leaching in many parts of the world including Spain, the U.S.A. and Canada.

Although bacterial action has been used in heap leaching, mostly in copper mines, since the earliest recorded time, it was not until the 1940's that it was realized that the leaching action in sulfide ores was due to bacterial action and that the presence of bacteria speeded up the oxidation process by one thousand or more times the natural rate. This discovery has spurred research into the

possibility of recovering by leaching metals such as molybdenum, mercury, lead, zinc and others.

Late in 1966, Bio Metals Corporation Ltd., agreed to undertake a feasibility study to determine whether or not the dumps and mineral-bearing zones at Mt. Sicker could be leached.

Work done includes trips to the property for examination, sampling and design layout; continuous leaching tests on prepared samples done in the Bio Metals laboratory; chemical tests and assays to determine ore characteristics and values; engineering estimates and reports on work begun in November 1966 and currently in progress; design of a pilot plant, partial construction of two liquid retaining ponds and preparation of a site for the leach heap in the Lower Lenora dump area which is below the lowest drainage point of the mine.

The Tyee, Upper Lenora, and Lower Lenora dumps were surveyed and sampled. Respectively the dumps are estimated to contain 50,000 to 150,000 tons assaying 0.48% Cu; 20,000 to 50,000 tons assaying 0.22% Cu; and an unknown scattered tonnage assaying 0.17% Cu. Laboratory results indicate that a probable cut-off grade of 0.2% Cu. would be profitable.

The pilot plant will consist of a leach base or pad, two reservoirs for the storage of fresh water and leach solutions, and a processing plant, all situated just below the lowest (Lenora No. 3) adit.

Initially it is proposed to use the Upper Lenora dump for heap material on the leach base. Removal of this dump will expose a good cross-section of the ore zone which could permit some open pit mining if required. Later on the Tyee dump will be leached in place as it is ideally situated and some of the leach solutions may be directed through parts of the old underground workings and would flow by gravity to the pilot plant reservoirs.

It is indicated from past records that the unmined ore zones in the Richard III, the Tyee, and the Lenora mines contain enough copper to warrant further investigation of in situ leaching.

Experiments by Bio Metals on the Mt. Sicker ores suggest that the areas might be further fractured by blasting or by hydraulic fracture. The rock mechanics analysis indicates several sets of planes of preferred shear. More work in the laboratory and in the field should be done before planning a rock fracturing program.

## SUMMARY

The Mt. Sicker Mines Ltd., property in the Victoria Mining Division, British Columbia, was discovered in 1897 and has produced important amounts of gold, silver, copper and zinc, as well as lesser amounts of lead and cadmium.

The property is located 14 road miles from Duncan, B.C., and consists of 800 acres of mineral claims and Crown Granted mineral claims, plus 2540 acres of land optioned from V. H. Patriarche. It is favourably located with regard to transportation, water supply, electric power, labour and supplies. There are no severe weather conditions which might cause work stoppages.

In general, the surface of the property has not been adequately prospected and mapped. Some detailed mapping was done in 1943 and 1944, but this was not correlated to the underground work.

Underground development, exploration and mining have been extensive. Most of it was done in areas of high grade ore during the early part of the century when metal prices were low or when metallurgical processes were relatively crude. Modern methods would permit efficient recovery of more of the economic minerals.

Metal prices are much higher now than during the period 1901 to 1908. For example, the U.S. copper price is 2.4 times higher, while silver and gold prices are up 2.2 and 1.7 times respectively.

The high grade orebodies located to date occur within a major fracture zone which has been traced on surface for eight miles and which has been encountered, still strongly going down, at a depth of 1250 feet near the Tye shaft bottom. From these observations it appears to be persistent on both strike and dip. Sulfide mineralization in the fracture zone has been reported by the former operators, but was not considered to be ore at that time.

The possibility of marketing crude barite is being investigated by an interested company.

A progress report prepared by Bio Metals Corporation Ltd., on the feasibility of leaching at Mt. Sicker indicates that:

- (1) A pilot leach plant is justified and should return a profit during the fifth month of operation.

- (2) Material for the leach heap is available from the Upper Lenora dump.
- (3) Exposure of the ore zone covered by the Lenora dump may lead to limited mining from surface to provide ore to replenish the original heap.
- (4) The Tye dump can be leached in place. It seems probable that in this case some of the ore zone underlying the dump would be leached in situ and the solutions would flow by gravity through the underground mine to the pilot plant for treatment.

## ESTIMATED COST OF EXPLORATION PROGRAM

An exploration program is envisaged which would require some rehabilitation of underground workings, repair of the old change house buildings, a limited program of underground mapping, sampling and diamond drilling, completion of surface mapping and correlation with underground data, and a surface drilling program on the main ore zones and the Patriarche option. The estimated cost is as follows:

Repair surface facilities	\$ 7,000.00
Underground rehabilitation	60,000.00
Underground exploration	25,000.00
Surface exploration	<u>48,000.00</u>
	\$140,000.00

## REFERENCES

- Various Annual Reports of the Minister of Mines for British Columbia from 1897 on.
- Robert Musgrave: Copper Deposits of Mt. Sicker, Vancouver; The Engineering and Mining Journal, pages 673 and 674, October 27, 1904.
- Walter H. Weed: Notes on the Tye Copper Mine; The Engineering and Mining Journal, pages 199 to 201, January 25, 1908.
- John S. Stevenson: Geology of the Twin J Mine; The Canadian Institute of Mining and Metallurgy Transactions, Volume XLVIII, 1945, pages 294 to 308.
- J. E. Reeves: Barite 1965, Mineral Processing Division, Mines Branch, Department of Mines and Technical Surveys, Ottawa, Ontario.

ESTIMATED COST OF LEACH PILOT PLANT

Bio Metals estimates that the following capital or preproduction expenses are required to put a pilot leach plant into operation on a profitable basis:

Water Reservoir Completion	\$	500.00
Access Roads		500.00
Heap Base Construction		5,000.00
Move 20,000 tons of Upper Lenora		
Dump to base		6,000.00
Processing Plant		6,000.00
Acid Storage		3,500.00
Pumps		3,000.00
Piping		4,000.00
Precipitation (Iron Powder)		2,000.00
Solution Storage Tanks		3,000.00
Culture Tanks, etc.		2,000.00
Laboratory Equipment		2,500.00
Filters, Dryers, Handling Equipment		21,000.00
Utility Vehicle		4,000.00
Contingencies		5,000.00
Labour to Production		10,000.00
Engineering to Production		10,000.00
Operating Costs Prior to Receipt of Sufficient Proceeds from Sales		25,000.00
		<hr/>
		\$ 113,000.00
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Respectfully submitted

"E. Percy Sheppard"

"Seal"

E. Percy Sheppard, P.Eng.  
Consulting Geologist

Vancouver, B.C.  
June 17, 1967

C E R T I F I C A T E

I, E. PERCY SHEPPARD, do hereby certify that I am independent Consulting Geologist with offices at 402 West Pender Street, Suite 314, Vancouver 3, British Columbia.

I am a member of the Association of Professional Engineers of British Columbia, the Geological Association of Canada, the Society of Exploration Geophysicists, and the A. I. M. E.

I have been active in mining geology and geophysics for the past thirty years.

I am a graduate of Dalhousie University, Halifax, Nova Scotia, with a B. Sc. in Geology.

The information for the accompanying report was obtained from an examination of the property and a study of records, publications, assay plans, and pertinent reports, during the periods October 31, 1966 and May 25, 1967.

I further certify that I have no direct or indirect interest in the property described herein, nor in the share capital or securities of Mt. Sicker Mines Ltd., and do not anticipate any interest as a result of writing this report.

"E. Percy Sheppard"

E. Percy Sheppard, P. Eng.  
Consulting Geologist

Vancouver, B.C.  
June 17, 1967



**MOUNT SICKER MINES LTD NPL**

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