



WILLIAM M. SHARP, M.A.SC., P.ENG. CONSULTING GEOLOGICAL ENGINEER 171 W. ESPLANADE, NORTH VANCOUVER, B.C.

(1- COPY TO DON. SEC. FOR GEN. APPRAISAL)

April 12, 1972

President & Directors, Mount Sicker Mines Ltd. (N.P.L.), P.O. Box 576, Victoria, B.C.

Attention: Mr. Charles B. Field, President

Gentlemen:

With this the undersigned transmits his "Report on Geology & Exploration of the Cruickshank River Copper Prospect, Nanaimo Mining Division, B.C." - prepared on the basis of the general directives, supplementary information, and authorization recently received.

This report consolidates observations and conclusions contained in a series of preliminary, interim, progress, and summary geological-geochemical exploration reports and corollary estimates submitted by the writer between May, 1970 and April, 1971. The current report, however, includes a more detailed interpretation of the geochemical survey data and minor but necessary revisions of previous exploration recommendations and cost estimates.

Respectfully submitted,

Mm. Sharp

W. M. Sharp, P. Eng.

REPORT

on

GEOLOGY & EXPLORATION

of the

mest

CRUICKSHANK RIVER COPPER PROSPECT

in the

COMOX LAND DISTRICT

and the

NANAIMO MINING DIVISION, B.C.

for

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

by

W. M. Sharp, M.A.Sc., P. Eng. April, 1972

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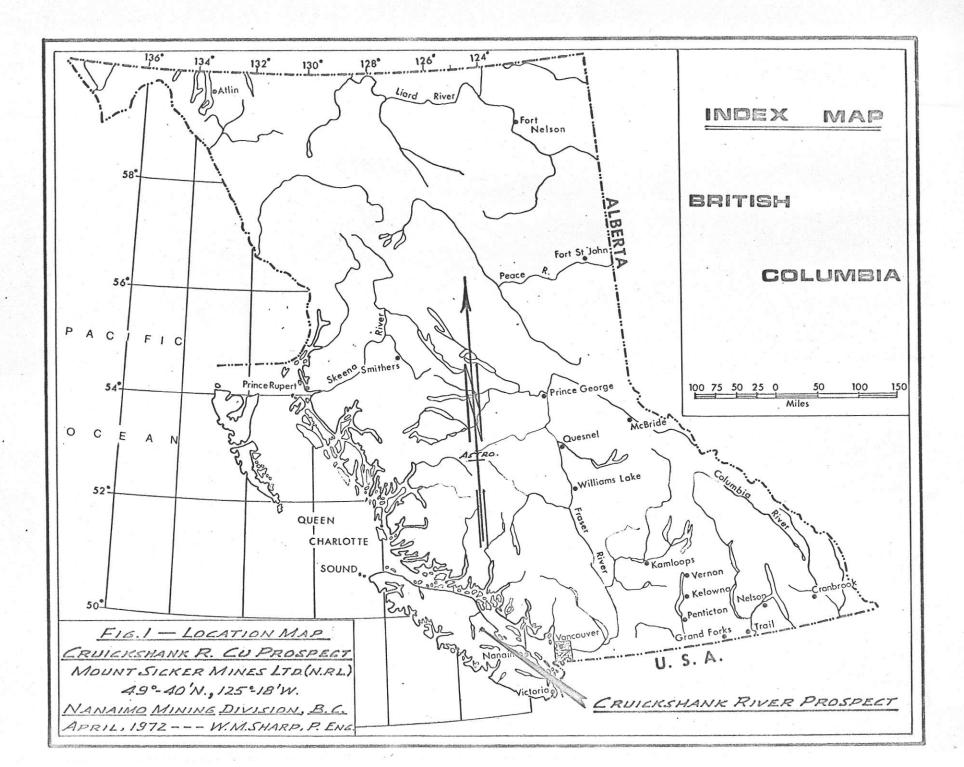
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CERTIFICATE

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Dwg.	No.		Cruickshank River Copper Prospect - Geology & Mineralization, 1" = 400'	in	pocket
Dwg.	No.	2,	Cruickshank River Copper Prospect - Geochemical Soil Survey, 1" = 400'	in	pocket



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SUMMARY & CONCLUSIONS

The Cruickshank River property of Mount Sicker Mines Ltd. (N.P.L.) situates about 12 line-miles due west of Courtenay, B.C. and locally, centers on a point closely northwest of the junction of Cruickshank River and Eric Creek. It consists of one 7,200 by 10,000 foot block of 33 located claims; these lie within leased Blocks 748 & 1016 of total area 6920 acres. The property is readily accessible via 27 miles of public and private road from Courtenay. Property elevations range between 1,400-3,500 feet. The surface of the property is generally steep with local inaccessible cliff sections; however, frequent branch logging roads provide excellent general access.

The general region is mainly underlain by Karmutsen basic volcanic rocks. Locally, these are intruded by a granodiorite stock, which underlies much of the southwest half of the general claim block, but which terminates at the (inferred N.W.-trending) Gruickshank River fault. Outcrops of younger(?), more acidic intrusive rock are found over a 2000-foot interval of the above-noted fault zone.

Bedrock over most of the property - excepting the northeasterly cliff section - is obscured by drfit, talus, or mixed rubble. Prior to 1970 prospecting was largely restricted to a search for surface exposures of bedrock mineralization. This resulted in the discovery of the North and South vein occurrences within the above-noted cliff-section of the property. The first claims were located over these showings in 1966. Between 1966 and 1970 exploration was restricted to hand-trenching of the North and South vein occurrences and direct prospecting for similar occurrences; Mount Sicker Mines Ltd. acquired the initial 9-claim block during this period.

During 1970 survey control was established, 24 additional claims located, and preliminary geological mapping and geochemical surveying accomplished over most of the expanded claim block. In addition, the North and South vein showings were sampled by the writer. Currently, both veins are exposed only within the cliffs, and by rock trenches closely below them. Westward they are concealed by a heavy cover of drift talus. Trench samples returned the following assays: North Vein

3-foot part width @ Cu, 4.6%; Au, 0.005 oz/T; Ag, 0.45 oz/T 5-foot total width @ Cu, 3.05%; Au, 0.005 oz/T; Ag, 0.28 oz/T

South Vein (2 consecutive samples across the structure) 2.0' @ Cu, 4.60%; Au, 0.045 oz/T; Ag, 0.84 oz/T

2.0' @ Cu, 0.93%; Au, 0.04 oz/T; Ag, 0.14 oz/T Total 4.0' @ Cu, 2.76%; Au, 0.042 oz/T; Ag, 0.49 oz/T

The respective gross values at current prices, of the North and South vein mineralization, over the 5 and 4 foot widths are \$32.50 and \$31.60 per ton - indicating significant possibilities for the occurrence of mineable grades along the covered westerly extensions of the veins.

As a result of the 1970 preliminary geochemical soil surveys a major, composite copper anomaly is delineated. This abuts the base of the northeasterly cliffs, and trends N.E .- S.W. below them. The strongest part of the anomaly has a median-length of 2,800 feet, with the upper part of its having a down-slope width of 900-1400 feet; within it, soil-copper concentrations average in excess of 400 p.p.m. Below it, soil-coppers, range between 100 to 600 p.p.m. - with local 'high' areas undoubtedly reflecting drainage-concentrations. Preliminary surveys indicate a 4200-foot N.E. extension of the anomaly in which copper values range between 100-250 p.p.m. The anomaly obviously reflects the presence of other bedrock copper mineralization other than that obviously originating from the North and South veins - these situating only 300 feet apart and trending almost directly down-slope. Widely spaced reconnaissance soil surveys over a broad ridge within a southwesterly part of the property disclose two areas of 3rd order (101-250 p.p.m.) response which warrant a more detailed coverage.

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RECOMMENDATIONS & ESTIMATED COSTS

RECOMMENDATIONS

STAGE 1

- (a) Mobilize camp & crew, re-establish 1970 survey control, and complete general geologial mapping.
- (b) Complete geochemical surveys reconn. & detail.
- (c) Prospect and map areas indicated by (b) above.
- (d) Carry out geophysical surveys over geological contact zones. 2 N-5 VN. TRENDS.
- (e) Carry out preliminary drill exploration of indicated targets.

STAGE 2

General provision for follow-up drill exploration & sampling.

ESTIMATED COSTS

STAGE 1

(a)	Engineering & assistance sals. & exp \$1,000.	
	Field-crew, 10 days @ \$50/day 500.	. 10
	Mobilization & supply expense	\$ 2,000.
(b)	12 man days @ \$50 \$ 600.	
	Analyses, 250 Cu-Mo @ \$2.40 each \$ 600.	\$ 1,200.
(c)	Field crew, 8 days @ \$50 \$ 400.	
(-)	Field engineering and assistance \$ 500.	
	Bulldozer trenching, 8 days @ \$250 \$2,000.	
	Analyses and assays \$ 200.	\$ 3,100.
(a)	Magnetometer grid prep., 8 mi. @ \$62.50 \$ 500.	, , , , , , ,
(0)	Magnetom. survey \$ 600.	
		\$ 3,800.
	I.P. survey, 4 mi. @ \$550 <u>\$2,200</u> .	\$ 2,000.
(e)	Drilling, B.Q.W.L., 2000' @ \$13/ft 26,000.	101 800
	Sampling & assaying § 500.	\$26,500.
(f)	General provision, engineering & supervision \$2,400.	
	Accom., meals, vehicle rental \$2,000.	
	Miscell. equip. & supplies \$ 600.	\$ 5,000.
(g)	Provision, h.c., omiss. & conting	\$ 4,000.
	TOTAT STATE 1	\$45,600.

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STAGE 2 - contingent on Stage 1 results:

Respectfully submitted,

W. M. Sharp, P. Eng.

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INTRODUCTION

This report summarizes and interprets field work accomplished since the writer's May 9, 1970 preliminary geological examination of the property. Between this date and November 15, 1970 the writer established main survey control points, carried out additional geological mapping, and planned and generally directed the geochemical surveys performed by the Company's fieldman and hired-crew. Assays reported in the following text derive from sampling done by the writer.

The current report includes and consolidates data presented in previous reports and accompanying maps, and provides revised schedules of exploration recommendations - estimated costs, these being based on re-appraisals of the various exploration possibilities indicated by the 1970 field work and subsequent office compilations.

Preliminary field guidance, assistance, and background information were furnished by Mr. H. G. Grant. Property schedules, 1970 exploration costs, and geochemical assay reports were provided by Messrs. J. F. Wood and C. B. Field and other Company staff. All of the above is hereby thankfully acknowledged.

Principal references for the current report are:

- 1. W. M. Sharp, P. Eng.
 - (a) Report, Preliminary Examination, Cruickshank Creek Copper Prospect, May 29, 1970.
 - (b) Geological and Geochemical Report, Cruickshank River North Claim Group, November 30, 1970.
 - (c) Progress Report 71-1, Cruickshank River Copper Prospect, January 27, 1971.
- J. E. Muller and D. J. T. Carson G.S.C. Paper 68-50, "Geology and Mineral Deposits of Alberni Map Area".

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PROPERTY & OWNERSHIP

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The Company's Cruickshank River property (Dwg. No. 1) comprises one block of 33 contiguous, full-sized mineral claims - located within a generally rectangular, 7,200 by 10,000 foot area. This occupies parts of Blocks 748 and 1016 - held via Mining Agreement No. 65, of date January 15, 1971, between Canadian Pacific Oil and Gas Ltd. and Mount Sicker Mines Ltd. (N.P.L.). Specific details of the constituent claims and leases, from the Company's schedule are given below:

(A) Leased Blocks 748 & 1016, totalling 6920 acres, include:

(B)	Claim Block	Claim Name	Record No.(s)	Date of Record/Issue
	'North'	John	19108	November 16, 1966
	'North'	Cathy	19109	November 16, 1966
	'North'	Decie	19110	November 16, 1966
	'North'	Rosalie	19111	November 16, 1966
	'North'	Heather	19112	November 16, 1966
	'North'	Allison	19113	November 16, 1966
	'North'	David	19114	November 16, 1966
	'North'	Angie	19115	November 16, 1966
	'North'	Lisa	19116	November 16, 1966
	'South'	Brent 1-22, incl.	32665-32686, incl.	June 24, 1970
	'South'	Brent 23	32804	June 24, 1970
	'South'	Brent 24	32805	June 24, 1970

All of the above claims are in the Comox Land District of the Nanaimo Mining Division, and are owned by Mount Sicker Mines Ltd. (N.P.L.) and reported to be in good standing.

LOCATION, ACCESS, & GENERAL FEATURES

The property, comprising claims and leases, locates at about 12 line-miles due west of Courtenay, B.C. and lies along the southwesterly border of the Forbidden Plateau. More locally, it straddles the valleys of Eric Creek, upper Cruickshank River and intervening ridge.

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From Courtenay, the showings are readily accessible via the public road to Comox Lake, thence via private (Crown Zellerbach) logging roads along the north shore of Comox Lake and up Cruickshank River - for a total distance of approximately 27 miles. Access is controlled by the logging company and its operations. During the average field season - usually from May through November - the property and showings may be reached by standard 2-W.D. motor vehicles.

The showings and much of the general property situate on steep to locally-precipitous slopes which have been partly logged off. With this, the resulting underbrush and/or litter from logging operations locally impedes surface-travel; however, this is largely compensated for by the good vehicular access provided by the system of branch logging roads.

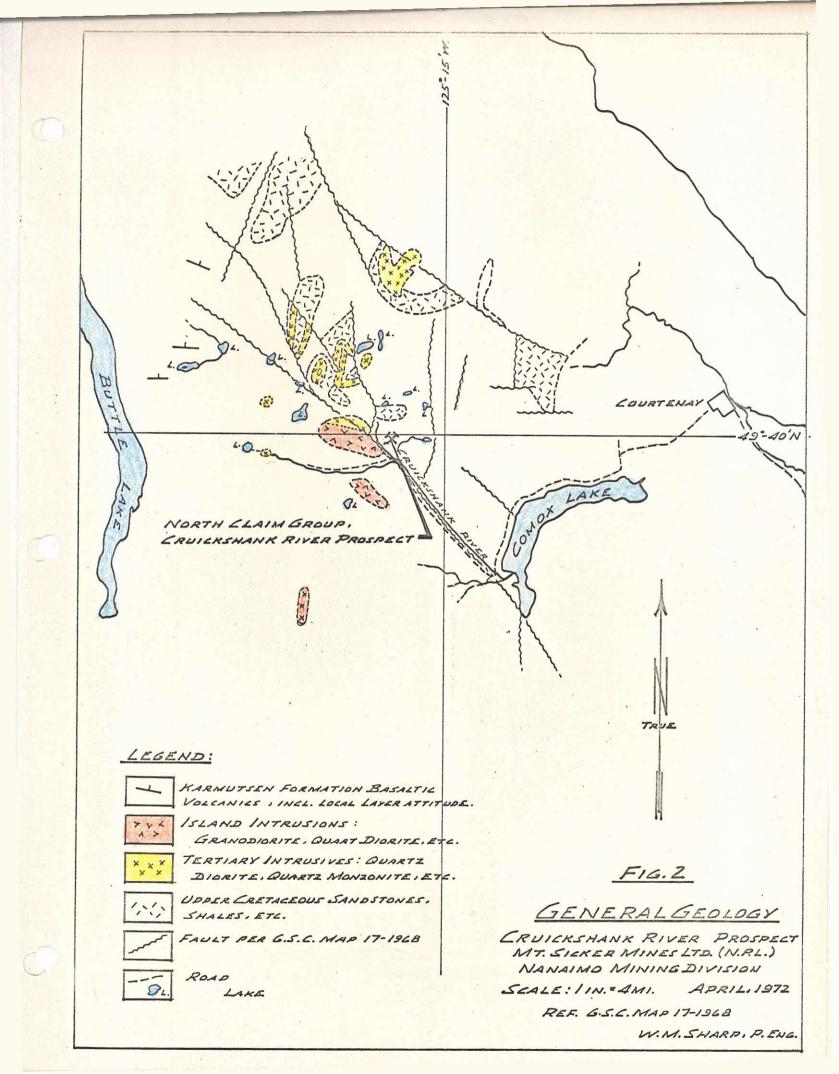
HISTORY

Float from the South vein showings was discovered by Mr. H. G. Grant some 25 years ago. Subsequent prospecting resulted in his discovery of the above showings, and also of the North vein, and other vein-occurrences of copper mineralization outcropping in the steep bluffs above the S.W.-facing slopes of Cruickshank River Valley. The showings lay dormant until 1966, during which year Mr. Grant staked the 9-claim North block. Between 1966-70 he and associates explored the bluff showings via local bedrock trenching. Within this period Mount Sicker Mines Ltd. (N.P.L.) acquired the above-noted claim group.

During 1970 the writer, on behalf of the Company, directed and participated in the exploration program described in this report. During this field season survey control was established, the 24-claim Brent group located, and preliminary geological and geochemical surveys carried out.

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In January, 1971 the Company acquired the leases on CanPac Blocks 748 and 1016 - thus substantially adding to the existing exploration possibilities within this geologically-favourable locality.

REGIONAL GEOLOGY

The general Gruickshank River (Fig. 2) area is mainly underlain by basaltic volcanic rocks of the Karmutsen Formation. These comprise basoltic lavas, agglomerates, breccias, and tuffs. Within the Eric Creek-Cruickshank River area these have been intruded by a medimum-sized stock of biotite granodiorite average composition. This 'older' intrusive body comprises an out-lier of the general system of Jura-Cretaceous "Island Intrusives". A N.E.-trending prong of this body, underlying much of the ridge between Eric Creek and upper Cruickshank River, appears to extend only as far as the latter - where it is tentatively assumed to be fault-terminated or offset.

The G.S.C. map of the area relates the course of Cruickshank River to a major N.W.-trending lineament (fault) of some 40 miles map extent. This probably constitutes a major structural control as regards the local intrusives and Fe-Cu sulphide mineralization. The spatial distribution of younger (Tertiary) intrusives, as shown on this map, would also suggest that their emplacement was controlled by this general fault zone. Significantly, the Mt. Washington (mine) Tertiary stock situates on a parallel (fault) lineament at some 6-7 miles to the northeast of the Cruickshank River lineament.

Vein-showings on the property relate to a local system of photo-indicated linears (drainage and/or fracture-trends); therefore, these minor linears may be more significant - from an economic point of view - than the Cruickshank River lineament.

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LOCAL GEOLOGY & SHOWINGS

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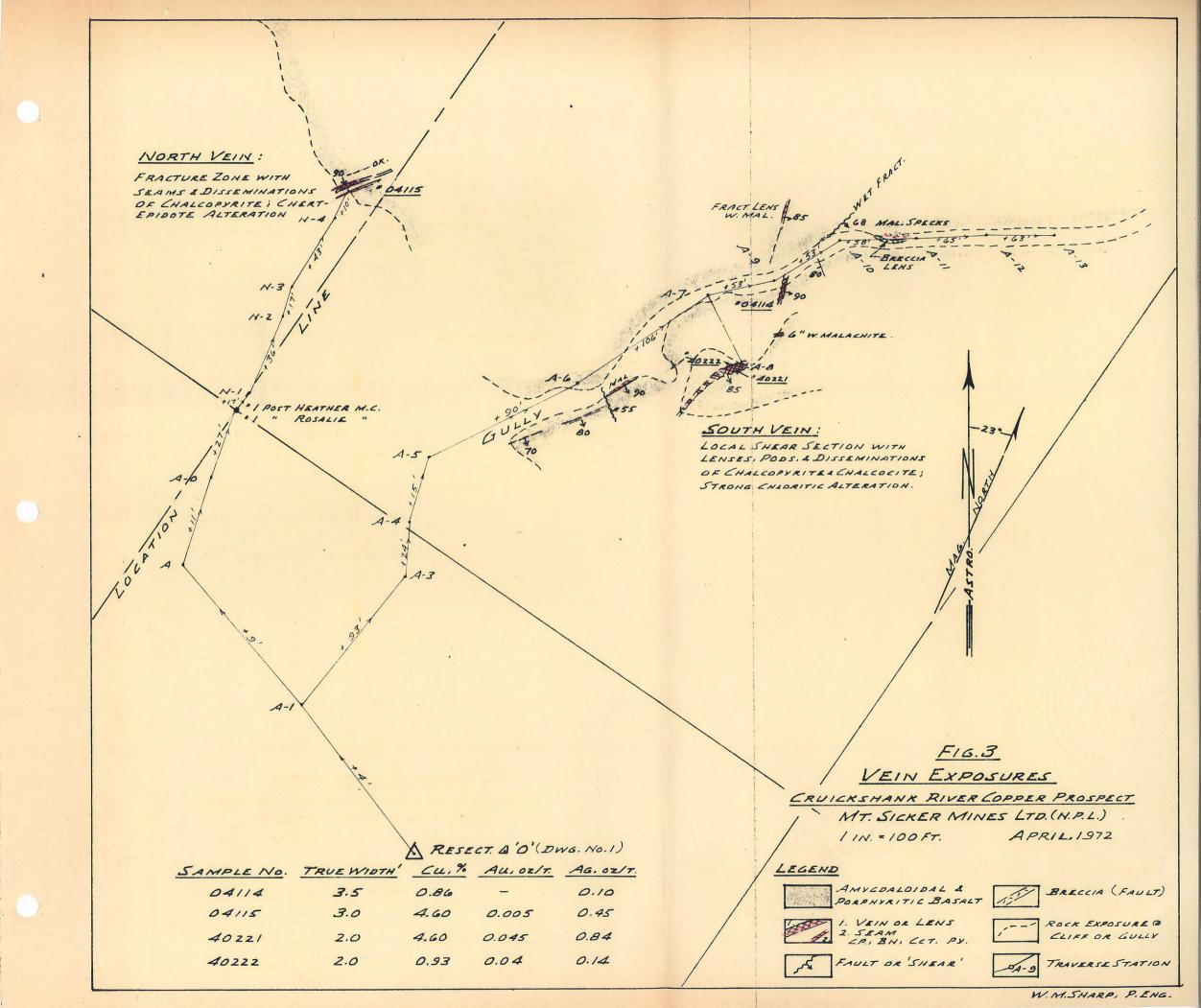
Drawing No. 1 and Fig. 3 supplement the following text:

Much of the Brent claim block, which straddles the ridge between Eric Creek and Cruickshank River, is underlain by relatively coarse-grained blotite granodiorite and related phases of it - occurring as a simple or composite stock. Claims to the northeast of Cruickshank River, including the North claim block, are underlain by massive basaltic flow and fragmental units; this assemblage appears to dip flatly E.N.E. Between these, outcrops of whiter, finer-grained intrusive rock occur - observed in the bed of Cruickshank River in the vicinity of the bridge, and around the small knoll at some 1200 feet W.N.W. of the bridge. This smaller body appears to have N.W. trend, with its emplacement controlled by the inferred Cruickshank River fault. The writer tentatively classifies it as leuco granite or quartz monzonite. Its relationship to the larger body is not known; it may be a local, acidic 'rim' or apophysis of the granodiorite stock. However, in view of its particular composition and its occurrence on a regional lineament (fault?), there is an equal probability that it is a small Tertiary stock - similar to those occurring at the Mt. Washington, Gem, and Faith Lake copper, and copper-molybdenum prospects of the region.

Few bedrock exposures occur within the talus or driftcovered areas of the property to the west of the bluffs containing the showings. However, bedrock is sufficiently exposed on road-cuts, bluffs and ridge-crests for a general delineation of the lithology of the property.

The few bedrock exposures also suggest that volcanics near the contacts of both intrusive types have been migmatized or otherwise altered. A section of volcanics bordering the small 'creek body' shows a significant degree of chlorite-epidote-biotite (hornfels) alteration, with patchy disseminated pyrite; this exposure situates

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closely down-slope of an extensive 3rd-order geochemical-Cu anomaly but, to date, has not been specifically covered by the survey. On the central ridge, in the area of the sharp switchback, a patch (roofscab?) of altered volcanics contains finely-disseminated pyrite, magnetite, and locally-discernible grains of chalcopyrite.

The main showings (principally Fig. 3) suggest that the potentially-economic copper-silver-minor gold mineralization will be found within easterly to northeasterly-trending, steeply-dipping shear and fracture zones - as single or multiple veins and lenses. Two of these, designated as the 'North' and 'South' veins, are well mineralized over significant widths. However, because of the local thick cover of talus and drift, hand-trenching was not feasible; hence, the present strike and dip-extent of exploration on them is limited to that permitted by two or three trenches - or about 40-50 feet of total strike-length.

The North vein, as currently exposed on the cliff face and in a trench in the talus immediately below it, ranges from 2 to 6 feet in width - the greater width occurring on its down-slope extension. Here, a 3-foot cut across the best mineralization assayed: Cu, 4.6%; Au, 0.005 oz/ton; Ag, 0.45 oz/ton. A 5-foot cut across the same section assayed: Cu, 3.05%; Au, 0.005 oz/ton; Ag, 0.28 oz/ton - for a gross value of approximately \$32.50 per ton.

The South vein showings, locally exposed in the south wall and floor of a sharp and deep gully within the basalt bluffs, comprise a series of short lenses and vein segments within a branched and crossfaulted zone of shearing and fracturing. Present evidence indicates that the general structure strands out and weakens eastward into the cliffs, but consolidates westward towards the river. At the main showing (samples 40221-22) gobs and stringers of more-or-less oxidized copper sulphides occur over a width of 4-5 feet of sheared and chloritized basalt. Two consecutive samples across this exposure assayed:

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2.0' @ Cu, 4.60%; Au, 0.045 oz/Ton; Ag, 0.84 oz/Ton 2.0' @ Cu, 0.93%; Au, 0.04 oz/Ton; Ag, 0.14 oz/Ton Total 4.0' @ Cu, 2.76%; Au, 0.042 oz/Ton; Ag, 0.49 oz/Ton

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- For a gross value of about \$31.60 per ton.

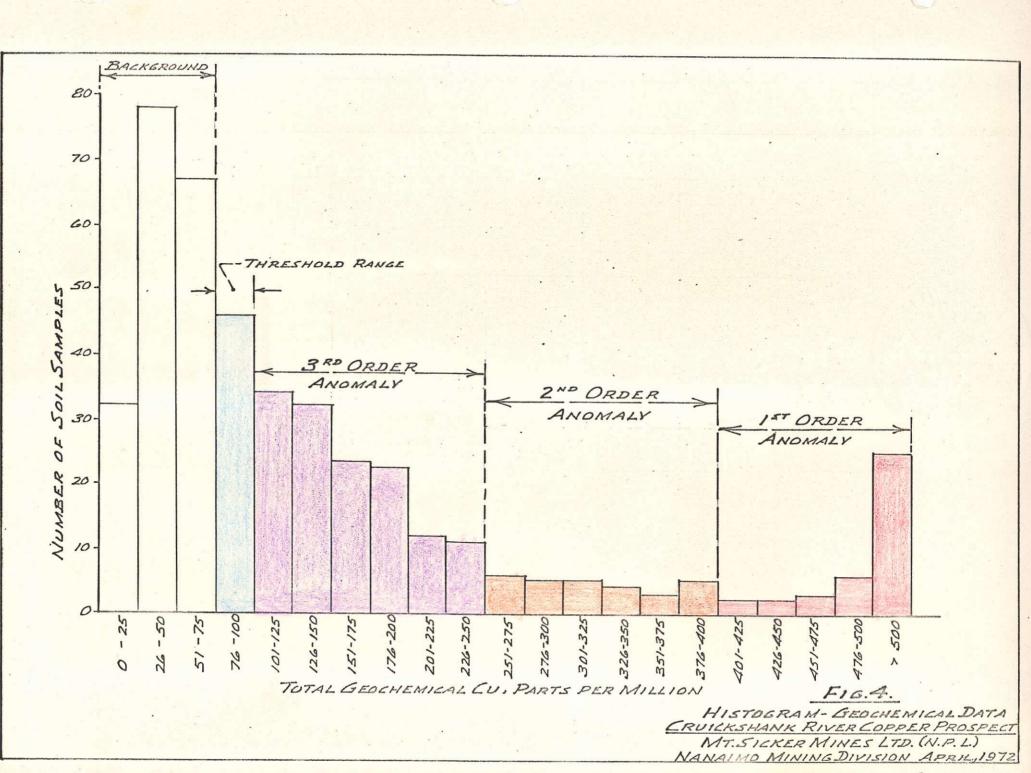
Both 'veins' may be expected to extend westward as far as the inferred Cruickshank River fault - a strike distance of about ½ mile. It is probable that both structures would maintain their strength through the volcanic assemblage, and perhaps 'open' appreciably at the fault or where there may be a section of harder, altered volcanic flanking the stock.

GEOCHEMICAL EXPLORATION

Sample locations, results, and interpretations are shown on Dwg. No. 2.

Soil-sample traverses cover most of the located claims - excepting the bluff and plateau areas of the North group. In addition, they were extended beyond the claim blocks via traverses along the local system of roads - thus permitting rapid reconnaissance coverage of the 'ridge' stock and adjacent areas of (potentially mineralized) volcanic rocks. All traverses were run along pre-determined road sections and 'contour lines' in order to obtain rapid and effective coverage of what the writer inferred to be the more geologically-important areas.

Across the property the overburden varies considerably in depth and composition, being, as would be expected, deepest (to 40') along valley bottoms. The average profile consists of a basal section of variably consolidated clayey or silty till, overlain by sandy or silty rubble and soil. The yellow-brown limonitic soil horizon (general B-zone) ranges from a few inches to over 2 feet deep; sample depths ranged, generally, between 2"-8" below the base of the organic soil layer.



Soil samples were taken 100, 200, or 400-foot traverse intervals - depending upon the degree of detail required. The lower half of the North claim block received the most detailed coverage, by reason of the fact that the more immediate exploration possibilities exist within this area.

The laboratory results, accruing from 423 soil-samples are plotted on Fig. 4. From this histogram the writer classifies soilcopper concentrations into the following ranges:

1st order anomalous @ 401-plus p.p.m. (parts per million)
2nd order anomalous @ 251-400 p.p.m.
3rd order anomalous @ 101-250 p.p.m.
Threshold - - - - - - @ 76-100 p.p.m.
Background - - - - - - @ 0-75 p.p.m.

The plotted and correlated laboratory data disclose a major, composite soil-copper anomaly which abuts the base of the cliffs above and northeast of Cruickshank River. 1st and 2nd-order sections of it, with a median contour length of 2,800 ft., occupy roughly one-half of the overburdened area of the North claim block, with the 3rd-order component of the general anomaly occupying the remaining area. The current survey coverage, indicates it to be 'open' for an unknown distance to the southeast. Double, and single-line survey coverage to the northwest of the North claim block show a continuation of 3rd-order response for some 4,200 feet. The principal (1st and 2nd-order) part of the North-block anomaly obviously reflects the North and South vein mineralization. However, as these veins are only 300 feet apart (normal-separation), and with their westerly projections trending almost directly down-slope, it is also obvious that other occurrences of bedrock mineralization are contributing to the anomaly. Moreover, it seems unlikely that the necessary geochemical support would derive entirely from the few other minor occurrences discovered via the uppermost traverses.

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Reconnaissance surveys over the nose and ridge to the southwest of Gruickshank River have indicated two areas of 3rd-order response. Both areas are within heavily-overburdened parts of the ridge; consequently, a more detailed coverage is required to determine whether or not the current indications are significant. For similar reasons, additional traverses should be made along both sides of Cruickshank River - particularly in the vicinity of the granite or quartz monzonite creek and bluff exposures. However, the currently-accumulated evidence suggests that the principal target for follow-up geochemical detailing is the northwesterly extension of the major South block anomaly and, to a lesser extent, its southeasterly extension out of the North claim block.

W. M. Sharp. P. Eng.

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CERTIFICATE

I, William M. Sharp, with business and residential addresses in North Vancouver, British Columbia, DO HEREBY CERTIFY THAT:

- 1. I am a graduate of the University of British Columbia with an M.A.Sc. (1950) degree in Geological Engineering.
- 2. I am a registered Professional Engineer in the Province of British Columbia.
- 3. I have practiced my profession since 1950, and in a consulting capacity since 1964.
- 4. I have personally examined the Cruickshank River copper prospect, and have made use of the available references before preparing this report.
- 5. I do not have any direct or indirect interest in the properties or securities of Mount Sicker Mines Ltd. (N.P.L.), nor do I expect to acquire any such interest.
- 6. I have personally examined the staking of the "key" claims and found it to be in compliance with the Mineral Act.

W. M. Sharp, P. Eng.

North Vancouver, Canada April 14, 1972

m.m.D.

