의 영화·시트

GEOLOGICAL REPORT-EXPLORATION
MINERAL HILL, MICROWAVE HILL, AND
HALL PROPERTIES, HOUSTON - TELKWA AREA,
OMINECA MINING DIVISION, B.C.

MOLY MINE EXPLORATIONS, LTD.

WILLIAM M. SHARP, P ENG.
CONSULTING GEOLOGICAL ENGINEER

STE. 808, 900 WEST HASTINGS ST.

March 29, 1967

President and Directors,
Maiymine Explorations Ltd. (N P ...),
e/a 201 - 535 Thurlow Street;
Vancouver 5, B C

Attention: Mr. D. W. Smell

Gentlemen:

GEOLOGICAL REPORT - EXPLORATION OF MINERAL HILL, MICROWAVE HILL, AND HALL PROPERTIES, HOUSTON - TELKWA AREA, OMINECA MINING DIVISION, B. C.

PRELIMINARY

With the exception of the Hall Cu-Fe propert, the writer has periodically inspected and reported an exploration progress at the Company's properties since the spring of 1965. The writer's most recent reports, pertaining to the Mineral Hill and Microwave Hill properties, respectively, were submitted on September 18 and 20, 1966. Subsequent interim visits to the same two properties, for the direction of concurrent field exploration, were made during November, 1966, and January, 1967.

The results of recent exploration of the Mineral Hill quartz-breezie zene have been provided via a series of maps propored by the staff of Anno Explorations Ltd., who have been retained to provide field expervision of the recent phase of exploration of the quartz-breezie zene. This has been further summarized (February 1967) in a report propored by Mr. J. Beley, Anno resident geologist.

Drill logs and general goological data deriving from Comince's exploration option, undertaken from March to July, 1966, provide details pertaining to the Mineral Hill south zone and regional goology. The south zone goology is additionally in a report following an interim goological examination by Amax Exploration

INDEX

	Page
PRELIMINARY	1
SUMMARY & RECOMMENDATIONS	3
I MINERAL HILL PROPERTY II MICROWAVE HILL PROPERTY III HALL COPPER-IRON PROSPECT	3 5 6'
ESTIMATED COSTS	7
PART I - MINERAL HILL PROPERTY	10
A GRANITE HORNFELS (SOUTH) ZONE B QUARTZ BRECCIA (NORTH) ZONE	11 13
PART II - MICROWAVE HILL PROPERTY	15
PART III - HALL Cu-Fe PROPERTY	17

Inc. during October 13-17, 1966.

The writer hereby acknowledges his reference to the above exploration data. In addition he expresses his sincere thanks to the afficers and staff of Molymine Explorations Ltd. and Anco Explorations Ltd. for their continued active assistance and kind cooperation during the writer's field examinations and periods of related office work.

Maps 1-A, 2,3,4,5 and section 5-A, showing details of surface geology, diamond drilling, geochemical-magnetometer surveys, and proposed exploration grids accompany this report.

Respectfully submitted,

W.M. Sharp, P.Eng.

SUMMARY & RECOMMENDATIONS

1 - MINERAL HILL PROPERTY:

Exploration to date has indicated important accurrences of Mo-Cu-Ag mineralization within two rather widely-separate zones contained in the Company's 134-claim group over the southerly and westerly areas of Mineral Hill. Until late 1966 exploratory work was almost exclusively focused an exploration of relatively shallow horizons of the westerly alaskite-harnfels complex and of contact regions of the quartz-feldspar (granite) perphyry stock - principally the former. This work was successful in locating minor sections of near-mineable grades of combined Mo-Cu-Ag mineralization within a 700 x 200-foot section of the potential structure.

Over this area assays of drill care, averaged over 100'-200' widths, ranged between 0.04% and 0.24% MoS2; 0.05%-0.10% Cu - the average of the better mineralization being about 0.12% MoS2 and 0.06% Cu.

Of the fourteen holes drilled within the general south prospect zone, eight appear to be "an-structure"; the remaining six, drilled during the recent option period, were on misceilaneous targets indicated by preliminary exploratory surveys - also based on personal inferences concerning the local geological controls of mineralization. The 1967 program will include the exploration of the one-half mile inferred geologically-favourable interval between the north and south zones; the exploration of the southerly zone at greater depth is also proposed.

The initial exploration of the northerly, or quartz-breccia zone was by ripper-equipped buildazer. This was followed by geochemical and geophysical investigations and, most recently, by diamond drilling of a part of the currently-inferred extent of the Mo-Cu-Ag mineralization.

Diamond drilling, trenching and general exploration have, to date, provided only a very preliminary indication of the geology, economic potential, and total extent of the general quartz-breads zone. Exploration of the indicated northerly extension of Mo-Cu-Ag mineralization within the significantly wide composite stockwork-and-breads structure constitutes one of the principal objectives of the 1967 program.

During the recent preliminary exploration phase, 10 of a total of 15 trenches were excavated to bedirock, and 3 out of 7 holes successfully drilled through overburden and into significantly-mineralized, velned and/or brecciated host rock. Trench exposures and drill-hole intersections explored roughly one-quarter of the 750 x 1500 foot inferred local extent of the zone. However, the exploration accomplished was not sufficiently comprehensive or detailed to allow more than preliminary inferences concerning geologic controls or expectable Mo-Cu grades within optimum sections of the apparently complex general structure. Within the three widely-spaced drill holes that intersected mineralization, average assays of 50-foot core sections ranged between 0.02 and 0.08% MoS₂; and 0.02-0.41% Cu. Younger quartz-tetrahedrite veins and lodes within the general zone of dispersed Mo-Cu mineralization returned moderate to spectacular silver assays, as follows:

D.D.H. #14 10' core-length @ 2.10 oz/ton silver 10' " @ 1.30 " (above included in 50' @ 1.21 oz/ton silver)

D.D.H. \$16 10" care-length @ 1.70 oz/ton silver
2 1/2" @ 135.6 oz/ton silver; 7.23% Cu
(latter included in 50" @ 8.0 oz/ton silver)
2" care-length @ 27.8 oz/ton Ag; 2.18% Cu

As the writer believes that the recent exploration has defineated only a minor part of a favourable through-going structure with substantial are potential, comprehensive exploration is warranted.

RECOMMENDATIONS

- (a) Conduct reconnaissance and detailed magnetometer and geochemical surveys over a general grid extending northward from the south zone, and through and beyond the north prospect zone.
- (b) Carry out preliminary percussion-drill exploration sampling of currently, and subsequently-indicated target areas.

(c) As a distinct project, explore all indicated silver-bearing tetrahedrite veins and lodes.

Phase II

Carry out detailed persussion-drill exploration of currently, and subsequently indicated zones of Mo-Cu-Ag mineralization ensuing from Phase I exploration; supplement, where feesible, by stripping and trenching.

II - MICROWAVE HILL PROPERTY

Current surface exposures of one of a number of inferred, similarly-mineralized shear zones are restricted to a 200-foot cut on the principal access road. The results of the writer's preliminary sampling of this locally-exposed section of the inferred through-going shear follows:

(a) 11.0' true width @ Au, 0.015 oz/ton; Ag, 0.50 oz/ton, Pb, 1.0%, Zn, 3.35%

(b) Grab of better mineralization:

Ag, 0.35 ex/ton, Pb, 1.45%, Zn, 7.75%

In addition to the above a semi-quantitative analysis of predominantly Zn mineralization (b) returned 0.05% cadmium; thus confirming the preliminary identification of the rather prevalent greenish-yellow stain as greenockite. The indicated Cd:Zn quantity-ratio of 1:155 is slight but nevertheless is economically important, in view of the corresponding 265/14.5, or plus 18:1 price ratio. From the degree of local Cd staining the writer feels that the metal occurs more abundantly than is indicated above.

An apparently extensive zone of dispersed Cu-Zn mineralization in fine-grained granite occurs some few hundreds of feet to the west of the above-noted sheer-lade but, to date, has not been significantly prospected.

Soil sampling recently carried out over a 4000° x 2000° grid has disclosed two major and part of one (minor?) zinc anomalies. The principal geochemical anomalies, of which neither is alsoly related to the known zero of minoralization,

have lengths exceeding 1640 and 1800 feet respectively, and widths ranging from 100, to 200 feet; total zine contents range from a few 10's to over 2000 parts per million - most exceeding 1000 p.p.m.

The recommended exploration consists of a preliminary phase of exploratory trenching, to be followed up by diamond drilling of substantially mineralized intervals within the two, or more major shear-lade structures presently indicated.

III. HALL COPPER-IRON PROSPECT

Chalcopyrite, in association with magnetite, comprises the type-mineralization thus far observed over the relatively few exposures occurring within the heavily-overburdened claim group.

To date direct exploration has been restricted to difficulty-accessible convenwall exposures of the larger general mineralized zone. Geochemical (Cu) surveys over the thickly drift-covered area have provided only spetty, or localized evidence of mineralization - these ranging from less than 10 to, locally, more than 500 p.p.m. copper.

Preliminary, restricted detailed magnetometer surveys have disclosed two anomalous zones with peak values of 2680 and 14,000 gammas respectively.

The writer recommends that the preliminary investigation of the geology and mineralization patential be accomplished via a maderate program of diamond drilling on the principal magnetic anomalies.

A . - MINERAL HILL PROPERTY

Phase I:

2. Magnetor 3. Prelim. g (a) H	grid preparation, 20 miles @ \$75. meter survey; 10 days @ \$50 peochemical prospecting tig detection - bases on 400' x 400' grid:		\$ 1,500.00
	of samples = 13x10 + provis. checks = 150		
	ling labour (deep); 5 days/2men	\$ 250.00	
	le prep.; dry @ 100° , screen-80 mesh	125.00	
	ht and laboratory; 150 @ 2.50 each	375.00	
	lementary Mo, Cu, Ag, 150 @ 4.	00,000	
Allov	vance for re-sample & lab. checks	150.00	\$ 1,500.00
Estim	o-Cu-Ag Geochem. Prospecting: . 1/4 area; i.e. 1/2 width, 1/2 length or x 100° pattern; 14 lines @ 20/line = 280		
	HEREN HEREN HEREN HEREN HEREN HEREN HEREN HER HEREN HER HEREN HEREN HEREN HEREN HEREN HEREN HEREN HEREN HEREN H	250,00	
	ling labour (shellow); 5 days @ \$50.	125.00	
		910.00	\$ 1,285.00
rreig	ht & laboratory; 280 @ \$3.25	710.00	\$ 1,203,00
	for regional (Hg) geochem.		\$ 1,500.00
	ry O.D. Exploration-Sampling:		
	and de-mob , expense	\$1000.00	
	on 400' x 200' grid @ 75'/hole:		
Total	holes; 14 lines @ 10 holes/line = 140 ho	les	
Contr	ract; 140 x 75° x 3.00	31500.00	
	le prep. and freight 140x6x0.50	420.00	
	Cu-Ag assays 840 @ 10.13	8510.00	\$41,430.00
	drilling Ag-Tetrahedrite veining:	00.010	00,000,174
	i.f. @ 10.		\$15,000,00
	rovision, Engineering, supervision, transp		\$ 3,700.00
	Provision Omissions and contingencies		\$ 5,100.00
(4)	Tovision Chilasians and Contingencies		\$ 3,100.00
	Total Phase I:-		\$71,515.00
PHASE II, De	etalied O.D. Exploration-Sampling		
	2 area, on 200' x 100' pattern @ 100' ea. 0 holes - (7x10) = 190 holes)	hole)	
	rect costs per It . 6 = 19,000 .f. × \$4.40		\$83,600.00
	missions and contingencies =		\$ 8,360.00
	Total Phase II:-		\$91,960.00
			distribution of the second

8 .- MICROWAVE HILL PROPERTY

Phase I:

Anom. "C" prelim. 6 trenches - Estim. 3 days @ 250. 750	0.00 0.00 0.00 0.00 \$ 3,500.00
Provision, sampling. (© 2 per trench Ag-Pb-Zn-Cd) Total 20 trenches - 40 samples Shipping and assay charges 40 © 12.25, etc.	500.00
	\$ 1,000.00 \$ 1,000.00 \$ 1,000.00
Total Phase I:-	\$ 7,000.00
Phase II:	
Provision 5 holes © 200° = 1000 l.f. © 10. Provision Drill Supplies Provision Supervision and Eng. 1 month Provision Omissions and Contingencies	\$10,000.00 \$ 750.00 \$1,250.00 \$1,250.00
Total Phase II:	\$13,250.00
C HALL Cu-Fe PROPERTY	
Provision: Diamond Drilling: 1500 l.f. @ 10./l.f. Mob., de-mob., set ups Temporary tent camp Core boxes and miscell. drilling supplies Cu-assay charges; estim. 40 @ 3.75 Service vehicles Provision, supervision, engineering Provision, omissions and contingencies	\$15,000.00 500.00 500.00 250.00 150.00 400.00 1,200.00 2,000.00
Total:	\$ 20,000.00

SUMMARY: MOLYMINE EXPLORATIONS LTD. 1967

(A) - Phase 1 - Mineral Hill	\$ 71,515.00
Phase I - Microwave Hill	\$ 7,000.00
Total, Hall Group	\$ 20,000.00
Provision, general geophysical	\$ 10,000.00
Sub-total I -	\$108,515.00

Contingent on (A) results:

Phase II, Mineral Phase II, Microwa	II, Mineral Hill II, Microwave Hill	\$ 91,960.00
	Sub-total II ~	\$105,210.00

Respectfully submitted,

W M. Sharp, P. Eng.

principally structural with, possibly, an additional control exerted by the relatively more brittle-siliceous finer-grained granitic intrusives (alaskites).

A - GRANITE-HORNFELS (SOUTH) ZONE

Detailed Geology: This has been rather fully described in previous reports by the writer; however, some new features gave been indicated by subsequent exploration.

The apparent trend of the alaskite-hornfels zone, as currently deduced from the available geological data, is northerly. In addition, this projected trend is almost directly towards the quartz-breccla zone. From this, it is logical to assume that there is a presence of a controlled structural lineament traversing both zones, and of the possible occurrence of additional sites of mineralization between, and on extensions of the currently-delimited mineralized areas. The 1967 exploration program is, essentially, based on the writer's inferences concerning the generally favourable geological potential of the whole structural zone, and on the more directly-indicated mineral potential of its immediate northerly extensions beyond the quartz breccia site of mineralization.

The warped sheet-like pattern of the main alaskite body, and its situation within a zone of marked shear-deformation suggest that the intrusion was to some extent structurally controlled. Further, the apparent concentrations of post-intrusive shearing and fracturing, alteration, quartz-veining and mineralization indicate that later, repeated adjustments along the general zone provided the necessary solution channels and preparation of the host rocks for subsequent Mo-Cu-Pb-Zn-Ag mineralization. From this the writer infers that it is a principal structural lineament which has considerable unexplored depth potential, in addition to its near-surface lateral potential. As the drilling accomplished to date has not canalusively tested the apparent strike and dip extensions of the zone, further future drilling should be planned to explore these possibilities.

General Exploration:

Soll-sampling surveys performed to date have generally indicated the principal sites of bedrock mineralization. However data accruing from these obviously have been

affected by factors involving the considerable variation in the thickness and composition of overburden, and by variations in the analytical techniques employed. Former field and laboratory procedures are to be madified to at least partly compensate for the above interfering fectors. In this regard the Hg profiles obtained by Dr. Sutherland Brown over the southerly zone are of specific interest.

Exploration by I. P. methods has not been successful in indicating specific occurrences of Mo-Cu sulphides - principally by reason of false anomalies resulting from the frequent occurrence of barren iron sulphides within the general country rock.

Magnetameter surveys have fairly well outlined anomalously-low areas normally associated with alteration and non-magnetic sulphide mineralization. In addition, the magnetometer is highly effective in locating the pyrrhatite-rich harnfelsic rocks bordering mineralized zones and/or magnetically-weak bodies of granitic intrusive rocks.

DIAMOND DRILLING:

All holes drilled to date within the south zone are shown on Drawing 1-A.

Significant intersections of mineralization obtained in the course of the exploratory drilling of the southerly zone are tabulated below; core and sludge results are combined where indicated - C/S:

Hole No.	Interval, ft.	Intersection, ft.	% Me5 2	% Cu
1.	150-220	70 C/S	0.12	0.06
	220-290	70 C/S	.11	.06
	290-350	60 C/S	.08	.07
2.	0-560	•	minus .05	minus .05
3.	100-200	100	0.05	0.05
	200-280	80	.11	.05
	280-290	10 (vein)	1.47	.08
	290-300	10	.10	.04
*	360-380	20	.09	.06
	530-540	10	.13	.05

Hole No.	Interval, ft.	intersection, A.	%MoS ₂	%Cu
3A.	30-50	10	0.10	0.04
	80-90	10	0.18	0.07
	150-220	70	.145	.07
	230-280	50	.12	.07
A.	240-310	70	0.06	0.07
	470-480	10	.14	.07
5.	150-170	20	0.10	0.05
	280-300	20 C/S	.13	.04
8.	190-220	30	0.20	•

Diamond drill holes *9 to *13, located away from the assumed controlling structure returned occasional fair MoS2 assays over relatively minor widths. The above core semples contain trace to locally appreciable amounts of Ag and Zn.

No diamond drill or trench exploration of the easterly margin of the main granitic stock has been attempted. In view of the fair probability that a significant fault accupies the northerly-trending contact depression in this area, the locality should be investigated - possibly by preliminary, restricted geochemical-magnetometer surveys followed, if indicated, by trenching and/or drilling for core or cuttings samples.

B - QUARTZ BRECCIA (NORTH) ZONE

The ensuing descriptions of this zone are largely based on the accompanying Drawings 2 to 5-A inclusive.

Drill, trench and magnetometer exploration has established that the composite fracture-breakle zone has a minimum 750° x 1500° surface extent. Also it positively is "open" to the north and possibly also the the south and west. The nature of its depth extensions are only inferred at present.

The zone consists of a variably-fractured and altered lithic volcanics and sediments.

The included rocks range from very slightly bleached, relatively unfractured varities to highly brecaisted, strongly chloritized and/or bleached-silicified types. The principal Mo-Cu sulphide mineralization occurs principally with quartz, and mainly where this gangue mineral occurs as fracture, or brecals fillings. Some siderite is frequently associated.

Diagnostic alteration minerals include chlorite, epidote, kaolin, sericite, and pink potesh feldspar.

A second, younger period of mineralization, composed primarily of silverrich tetrahedrite, with minor associated galena, sphalerite, and copper sulphides transacts the older Mo-Cu mineralization. This occurs within distinct veins and (random) veinlets within the fracture-bracela complex.

To date the average drill-indicated grade of the generally dispersed mineralization is only in the range of 0.04% MeS₂ and 0.05-0.15% Cu. Also, although present in any minor amounts, the average silver to Cu-MoS₂ ratio is well above average for this type of deposit; this is probably due to the frequency of minor tetrahedrite veining.

At the current very preliminary stage of explanation, the probable structure of the zone is only vaguely indicated. However, the writer currently infers that it is essentially comprised of crudely defined zones or sheets of fractured and brecciated, variably silicified and mineralized volcanics and sediments. The few primary bedding attitudes observed exhibit northerly trends and flat easterly dips.

The breccia structure could have originated by reason of folding and fracturing or, as others have reasoned, through subjacent intrusive activity. The writer feels that there is more basic evidence in support of the farmer theory than for the latter, but suggests that a multiple hypothesis with respect to possible origins should be retained pending the accumulation of more substantive evidence.

General Exploration:

A plat of the geochemical survey results shows that additional Mo and Cu mineralization accurs up-slope, or to the east of the inferred boundaries of the zone, and also to the south and west of it. The preliminary survey was not extended a sufficient distance to the north to provide basic indications of the continuity of mineralization in this direction.

The magnetometer survey, and particularly recent extensions of it, suggest periodic reaccurrences of the general structure both to the north and south.

The I.P. survey covering this zone provided fewer tangible indications of general mineral trends than did a similar survey over the southerly zone.

PART II - MICROWAVE HILL PROPERTY

PRELIMINARY

The writer's initial examination was made during September, 1966. A subsequent visit was made on Navember 4, 1966, for the purpose of inspecting the geochemical grid coverage, and to tie this into the previously-mapped road showings.

PROPERTY

This consists of a single group of 36 full-sized claims covering probable extensions of the two distinct mineral zones occurring on the property.

LOCATION AND GENERAL FEATURES

The property is situated over the middle-eautherly slopes of the small mountain on which the B.C. Telephone Campany's relay station is located. The principal showings are reached by this company's access road which departs northerly from Highway 16 at about a mile east of Houston, B.C.

The moderately-sloping, ii ghtly-timbered terrain provides ready access to all parts of the group and allows rapid exploretion progress.

GENERAL GEOLOGY

The claims are underlain by Hazelton group andesitic to baseltic flows and tuffs, with minor intercalated sediments. At the mineral showings these strike northerly and appear to dip flatly eastward. A stock of fine-grained leuco granite occupies part of the lower slopes of the hill and property.

DETAILED GEOLOGY & MINERALIZATION

The (single?) mineralized exposure lies within a rock cut for the access road at about the 3000 feat elevation.

Zinc-lead and minor Cd sulphide minoralization occurs within an irregularly silicified section of a major shear zone striking N20E, and dipping 80-90° easterly at this point. Sphalerite is evidently the most abundant are sulphide. This occurs in dispersed fractures and localized masses, with minor disseminations in chert zones adjacent to classly-fractured sections of the shear lade. Iron sulphides do not occur sanspiauously. The presence of admium sulphide was suggested by films of bright greenish-yellow material.

The copper-zinc prospect zone within a rather closely adjacent body of granite (and volcanics?) has not yet been investigated by the writer.

EXPLORATION

A 2000' by 4000' area has been soil sampled, this being done on cross lines at 400' N=5 spacing, with sample stations at 100' intervals. This survey has indicated 2 major, and part of one minor zinc anomalies. None of these, for same reason, are correlative with the known zinc occurrence or its postulated extensions.

PART III - HALL Cu - Fe PROPERTY

PRELIMINARY

The writer's knowledge of this property has been gained through plans and reports detailing reconnaissance and localized exploration performed by Mr. W.D. Yorke-Hardy and associates.

By reason of the very few actual exposures of mineralization outcropping within the heavily drift - covered area of the property, and the necessarily indirect evidences of mineralization, the property is classified as a "potential" copper prospect.

PROPERTY & ACCESS

The 32-claim group is situated to the south of Sunrise Creek, at a few miles southwest of Barrett - the latter a flag-stop on the C.N. Railway line situated some 7 miles west of Houston.

The claims straddle a low, broad (granite) ridge between Sunrise, and the next creek to the south.

Access is gained via a few miles of secondary logging road following Sunrise Creek carryon.

GEOLOGY & MINERALIZATION

The claim group is generally underlain by granite containing minor bands or septal of andesitic flows and fragmentals. The latter, where associated with magnetite-chalcopyrite - (local assenapyrite) mineralization are bleached and silicified to varying degrees. The apparent structural trend of the granitic-volcanic complex is northerly.

Mineralization consists of chalcopyrite - as veinlets, clots and dispersions in magnetite, or in tuff with variable amounts of replacement magnetite. The few samples examined by the writer are well mineralized but, to date, systematic sampling is precluded by the general paucity of exposures; also, the mineralization exposed within the rock carryon is not necessarily representative of mineralization possibly associated with the principal magnetic anomaly farther south.

EXPLORATION

This, to date, consists of a combined magnetic-geochemical survey. This has indicated two fair-sized magnetic anomalies. The supplementary geochemical investigation indicates copper mineralization within this locality - most probably occurring within, or marginal to the indicated magnetite zones.

Respectfully submitted,

W.M. Sharp, P.Eng.





