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GOLDEN GRANITE MOUNTAIN MINES LTD. (N.P.L.)

REPORT

LEWIS LAKE PROPERTY  
VANCOUVER MINING DIVISION

801230

January 1975

W.H. Sharp, P.Eng.

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3280 CHESTERFIELD AVENUE  
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January 13, 1975

*Bank of B.C.*  
British Columbia Securities Commission  
Law Courts Building 756 Fort Street,  
Victoria, B. C.

Gentlemen:

Re: REPORT "LEWIS LAKE PROPERTY, POWELL RIVER AREA, B. C.  
VANCOUVER MINING DIVISION FOR GOLDEN GRANITE MINES LTD."

The undersigned hereby gives his consent to the use of this report by Golden Granite Mines Ltd. for the purpose of providing public information concerning the property, recommendations and cost estimates relating to its exploration.

The 'Summary & Conclusions' section, along with those re 'Recommendations' and 'Estimated Costs' comprise a fair summary of the report content and exploration objectives for presentation in a possible company prospectus.

Yours truly

W. M. Sharp, P. Eng.

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2 }  
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for this (file) copy. Tracings for these  
rolled up w prints of Falconbridge's  
map set.*

WILLIAM M. SHARP, M.A.Sc., P.Eng.  
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3280 CHESTERFIELD AVENUE  
NORTH VANCOUVER, B.C. V7N 3M9

January 11, 1975.

President & Directors,  
Golden Granite Mountain Mines Ltd. (N.P.L.),  
744 West Hastings Street,  
Vancouver, B.C.

Attention: Mr. T.P. Bowes, President

Gentlemen:

Pursuant to your instructions, the undersigned transmits his "REPORT ON THE LEWIS LAKE PROPERTY, Powell River Area, B.C., Vancouver Mining Division" - based on my personal examination during November, 1974, and on subsequent studies and interpretations of pre-existing detailed and general reports and maps.

Yours truly,

M.W. Sharp, P.Eng.

enclosure

R E P O R T

ON THE

LEWIS LAKE PROPERTY

POWELL RIVER AREA, B.C.

VANCOUVER MINING DIVISION

(N.T.S. Map Area 92F/16W)

for

GOLDEN GRANITE MOUNTAIN MINES LTD. (N.P.L)

VANCOUVER, B.C.

by

W.M. SHARP, M.A.Sc., P.Eng.

North Vancouver, B.C.

January 11, 1975

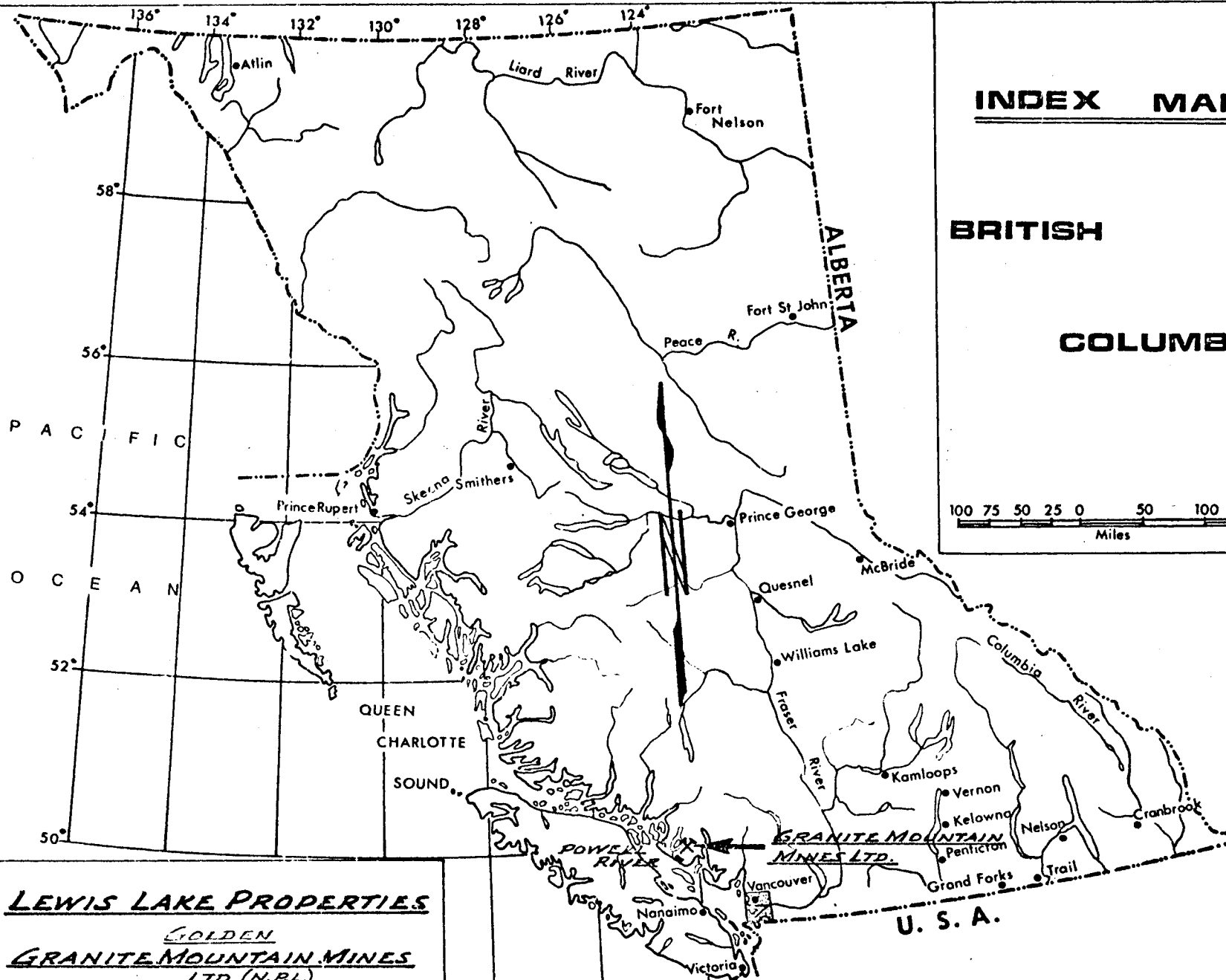
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**COLUMBIA**



**LEWIS LAKE PROPERTIES**

*GOLDEN*  
**GRANITE MOUNTAIN MINES**  
LTD. (N.P.L.)

**VANCOUVER MINING DIVISION**

***FIG. 1.***

*W. M. G. King, P. Eng.*

## SUMMARY & CONCLUSIONS

The Lewis Lake property of Golden Granite Mountain Mines Ltd. (N.P.L.) comprises 62 contiguous full-sized claims, covering an area of approximately 5 square miles. Situated 10 miles northeast of Powell River, B.C., they are accessible from Highway 101 via 16 miles of good main-haul logging road, and from 1 to 6 miles of local road, departing from the main road near Nanton Lake.

Much of the property has been competently prospected, with encouraging results, but only a minor part of it has been subjected to detailed examination and thorough exploration. The first significant exploration was undertaken in 1967, during which year Falconbridge Nickel Mines Ltd. optioned former claims which now comprise part of the present property, and explored them in more or less detail.

The 1967 program comprised general geological mapping, soil sampling and E.M. 16 surveying, followed by a self-potential follow-up survey of a soil copper/molybdenum anomaly related to the Mary V surface exposures of Cu and Mo sulphide mineralization. This was followed up by a small amount of bulldozer stripping and rock trenching. The latter work exposed the main Mary V showing. Here, a very limited amount of trenching has exposed good concentrations of disseminated chalcopyrite, pyrite and scattered molybdenite in a highly silicified section of the enclosing foliated granodiorites. Following the completion of 1655 ft. of diamond drilling, via 5 holes all directed to explore this one showing, the option was dropped. No induced polarization checks of the mineralization were carried out prior to drilling, in spite of the obvious local applicability of the method.

Soil sample surveys carried out in 1967 cover less than one-half of the area of the present claim group. However, these resulted in the delineation of six major soil copper anomalies over a north-south distance of 12,000 feet. To date, only a part area of one of these has been explored in detail. In addition, the largest anomaly, reflecting both Cu and Mo bedrock mineralization, has yet to be fully delineated.

The general region, including the Lewis Lake property, is totally underlain by metasomatically evolved facies of the Coast crystalline plutonic complex. The principal rock types include diorite, granodiorite quartz monzonite, granite, and porphyritic phases of these. The regional copper-molybdenum mineralization occurs in all members of the series, but appears to favour the intermediate-to-acidic plutonics - particularly those that have undergone marked silicification or "quartz-flooding". The sulfide minerals principally occur as disseminations - occurring most frequently as discrete grains and blebs replacing the mafic minerals in the rocks. Foliated, slightly chloritized granodiorite has been identified as a favourable host rock. However, significant amounts of Cu/Fe sulphides occur in much more massive but siliceous granodiorites and quartz monzonites. This is evidenced by presence of mineralization, grading 0.10 - 0.15% Cu and higher, in several pits and outcrops scattered over a 1000 by 1500 ft. area locating at about one-half mile southeast of Spring Lake.

A study of the regional air photography has provided evidence that probably three major fault zones occur, and intersect, within and close to the claim block. In more local detail, the air photos reveal several times as many smaller lineaments which are interpreted as minor fault zones or dykes. In this structural framework, the possibilities for the



occurrence of intensely fractured rock masses, comprising possible ore focii, are excellent.

The chalcopyrite mineralization at the main Mary V (#1) showing is traceable, in the present exposures, over a net area of about 200 square feet. Of two samples taken by the writer the first, a 5-foot chip sample, ran 0.38% Cu. The second, a random grab samples of excavated pit material, ran 0.89% Cu. Assays of core from the four diamond drill holes located well to west of the showings mostly graded under 0.1% Cu. However, as they were spotted without the guidance of an I.P. survey the results are not considered to be significant, except by reason of the fact that they disclosed a broad area of minor copper mineralization.

The "Spring" showings, situating at about  $1\frac{1}{2}$  miles northwest of the 1967 exploration area, locate in a little explored part of the property. Within the southerly showing, currently opened over about 500 square feet, appreciable amounts of disseminated chalcopyrite, with occasional clots of molybdenite, occur in quartz-flooded granodiorite or granite. A random chip sample by the writer over a distance of 50 feet assayed 0.30% Cu. The smaller showing, at 150 feet to the north, is also mineralized but was not sampled. The "Spring" mineralization is especially attractive, occurring in a potentially extensive zone of quartz-flooded intrusives.

The presence of several large geochemical anomalies and numerous, scattered mineralized showings in a favourable geological setting are common features of porphyry-type copper deposits; hence the property has sufficient potential to warrant thorough exploration as hereby recommended.

RECOMMENDATIONSPHASE I

1. Extend geochemical soil-sampling surveys into south, north-central, and northerly parts of the property, - based on a cross-line spacing of 400' and stationing at 100' intervals.
2. Carry out induced-polarization surveys over geologically and geochemically indicated target areas. These to be based on the existing grids, with preliminary I.P. surveying done on cross-lines spaced 800 feet apart.

PHASE II - open, possible trenching and diamond drilling, contingent on the Phase I results.

ESTIMATED COSTSPHASE I

1. (a)	Grid preparation, 30 miles @ \$150/mi. . . . .	\$ 4,500
	(b) Soil-sample collection & analyses, 1500 @ \$4 each . .	6,000
2. (a)	I.P. survey, estim. 20 mi. @ \$600/mi. . . . .	12,000
	(b) Field Engineering and supervision . . . . .	3,500
	(c) Administration & travel expense . . . . .	2,000
	(d) Provision for extras & contingencies @ 15% . . . . .	<u>4,200</u>
	TOTAL, PHASE I . . . . .	<u>\$ 32,200</u>

PHASE II - open

Respectfully submitted,

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W.M. Sharp, P.Eng.

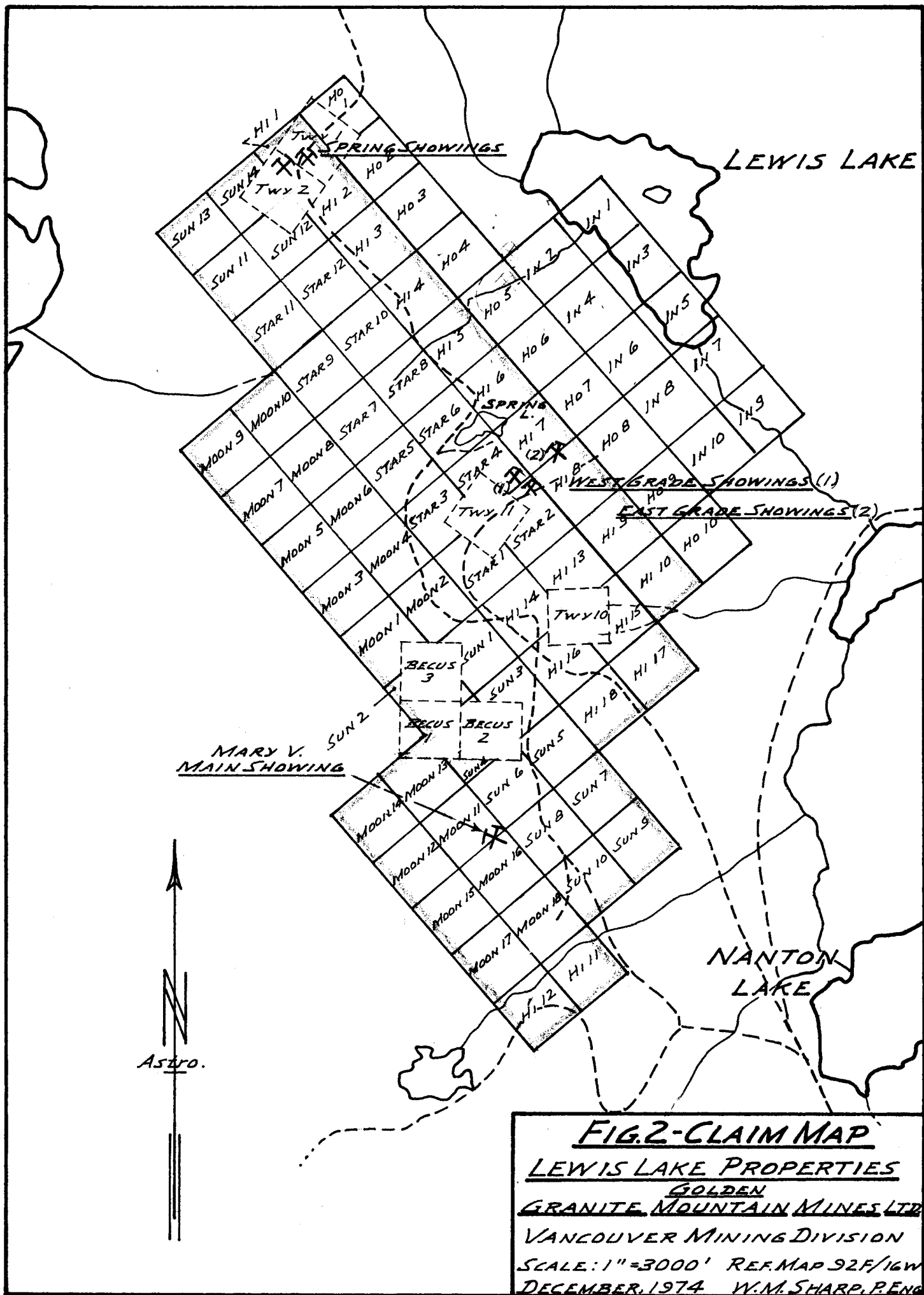
INTRODUCTION

During November 17 - 18, 1974, the writer studied all of the available data on the property and examined the main showings within the subsequently acquired and consolidated Lewis Lake claim block. Mr. T.P. Bowes, Company President, accompanied the writer on this visit. R.E. Mickle gave valuable assistance by providing field guidance and background information - the latter deriving from his personal familiarity with the showings and of the reports and maps. The aforementioned records have resulted from exploration of former claim groups now embodied in the Company's property. These maps and reports have become the property of Mary V. Boylan and R.E. Mickle - a result of previous option agreements. In turn, Mrs. Boylan has made this data available to the Company and, indirectly, to the writer for his use in the preparation of this report.

The writer's November 18, 1974, fieldwork comprised inspection, sketch mapping, and sampling of the "Mary V", "Spring", "East and West-Grade" showings, and incidental geological observations.

During April - May, 1971 the writer inspected and reported on Cu - Mo mineralization exposed south of Dodd Lake and east of Nanton Lake. During November 1971 the writer re-visited the area to inspect trenched exposures on claims southwest of Dodd Lake and prospected this area closely northeast of Nanton Lake. General geological information and interpretations resulting from these previous investigations comprise part of the background content of this report.

The present report drawings are, for the most part, based on the detail contained in the Boylan-Mickle set of maps. Also, much of



the essentially descriptive geological content of the following text derives from reports from the same source. However, the writer has endeavoured to provide an independent assessment and interpretation of the earlier data - largely on the basis of his own field observations and interpretations of the references consulted.

### PROPERTY

#### (a) Location & Access

The Lewis Lake property situates about 70 miles northwest of Vancouver and 10 miles northeast of Powell River, B.C. Physiographically, it lies close to the west boundary of the "Coast Range" physiographic unit.

The Mary V #1 (Main) showing situates near the Moon 11-16 claim boundary line; the Spring showings near the center of Hi 1; the West Grade showings straddle the Star 2-4 boundary line, and the East Grade showings lie across the Hi 7-8 boundary line.

From Highway 101 in the vicinity of Lang Bay, the showings within the property are reached by about 16 miles of well-maintained main-haul logging road, and approximately 1 to 6 miles of secondary logging and mining roads. During the spring-to-fall dry season, the property roads are passable via ordinary pickup trucks; during the fall-to-spring months, 4-wheel drive vehicles are required - particularly on the property access roads.

#### (b) Claims

The Lewis Lake properties of Golden Granite Mountain Mines Ltd.

comprise 62 contiguous, full-sized located claims contained within adjoining N.W.-trending rectangular blocks. The composite claim block occupies an area of approximately five square miles. Recorded data are as follows:

<u>Names</u>	<u>Record Numbers</u>	<u>Record Dates</u>
Sun 1 - 14 incl.	26375 - 26388 incl.	Nov. 25, 1974
Hi 1 - 3, "	26389 - 26391 "	Nov. 25, 1974
Star 1 - 12, "	26395 - 26406 "	Nov. 25, 1974
Moon 1 - 18, "	26407 - 26424 "	Nov. 25, 1974
Hi 4 - 10, "	26463 - 26469 "	Dec. 2, 1974
Hi 11 - 18, "	26455 - 26462 "	Dec. 2, 1974

Full details relating to the staking of the constituent claim groups and of the terms of the agreement pertaining to their acquisition by Golden Granite Mountain Mines Ltd. are available at the Company's Vancouver office.

(c) Physical Features

The topography within the property ranges from moderate to moderately rugged; maximum slope angles seldom exceed 40 degrees, and the drainage is only locally deeply incised. Elevations range from 600 ft. at the main access road, to about 2400 ft. to the west of, and up slope of the Mary V #1 showing. Much of the area is covered by heavy stands of merchantable timber. Locally, thick underbrush and windfall impede foot travel.

The wet season is generally between October and May, during which period temperatures seldom drop below 20°F. but much of the precipitation occurs as snow. The most favourable exploration weather normally prevails between early June and mid October. Water is available from several creeks and ponds within the property throughout most of the year.

Supply and transportation facilities, in respect of both labour and supplies, are good, due to the proximity of the property to Vancouver and to road and sea transport routes.

### HISTORY

There is no record of significant exploration activity within the general map area prior to 1967. In March, 1967 Falconbridge Nickel Mines Ltd. optioned the Bruce and Mary V claim groups from co-owners J.R. and M.V. Boylan and R.E. Mickle. The Mary V group comprised one N-S row of four adjoining claims located over ground which now comprises the south-center part of the Lewis Lake property. The main Mary V copper showing occurred near the south end of the former Mary V group. The Bruce group, situating closely south of Dodd Lake, lay about 3 miles E.N.E. of the Mary V claims, or on ground outside of the current Lewis Lake block.

During March to July, 1967, Falconbridge carried out geologic mapping, soil sampling and self potential and E.M.-16 surveys over the Mary V group and, subsequently, a soil sample survey over the former Tye group. This work was followed up by bulldozer excavation, rock trenching and 1655 ft. of diamond drilling via 5 holes in the vicinity of Mary V showing. The option was then dropped - entirely on the basis of the results from the localized trenching and drilling program. No induced polarization tests were carried out, in spite of the rather apparent applicability of the method. In accordance with the terms of the option agreement, the exploration data were subsequently given to the optionors.

Between December 1, 1969 and January 10, 1970 Caracas Mining Co. Ltd. staked the 15-claim Mike group immediately south of the Mary V

group. Sufficient trenching was carried out by this company in November 1970 to maintain the claims in good standing. However, no serious attempt was made to explore the indicated southward extension of a large soil Cu/Mo anomaly from the Mary V group into the "Mike" group - the latter now partly included in the south portion of the Company's Lewis Lake property.

Exploration activity since 1971 within the present area of interest has been limited to intermittent prospecting by R.E. Mickle and associates.

#### GEOCHEMICAL DATA

The 1967 soil sampling was done on two consecutive grids, covering the Mary V and Tye groups, respectively. On both grids, sample lines were established at approximate 200 ft. N-S intervals, and station- ed at 100 ft. E-W intervals. The "B" soil horizon, wherever present was sampled. The soils were analyzed for HCl-extractable copper and akali- extractable molybdenum. In general, soil-copper values ranged from less than 5 ppm to 250 ppm and higher. The results are currently scaled as follows:

<u>Scale</u>	<u>Cu.</u>	<u>Mo.</u>
Strongly anomalous	plus 200 ppm	plus 20 ppm
Moderately anomalous	100 - 199 ppm	12 - 19 ppm
Threshold	50 - 99 ppm	6 - 12 ppm
Background	0 - 50 ppm	0 - 6 ppm



The above scale of soil-metal values is such that the inhibiting effect of a generally occurring basal layer of compressed clay-drift on the upward migration of metal-bearing groundwaters is at least partly compensated for.

The south grid, centering at about 15,000 ft. south of Lewis Lake, covered an area of 7600 ft. by 5200 ft., N-S by E-W respectively. The more-or-less adjoining north grid extended the coverage 4000 ft. northward via cross lines ranging from 3000 to 5000 feet in length. The resulting series of anomalies lie on a path which trends northwesterly to northerly from the south end to the center of the property. From the latter point, the trend is northward. The long dimension of most of the separate Cu anomalies is either eastward or northeastward. This appears to relate more obviously to the local drainage direction rather than to any possible trend or distribution of the local bedrock mineralization.

The largest Cu anomaly centers about 2000 feet southeast of the Mary V #1 showing. It shows a marked, slightly arcuate west-east elongation which, in this instance, is at about 30 degrees to the local (E.N.E.) drainage line. It has a N-S width of about 1000 ft. and an E-W length of about 3000 feet. For the most part it reflects soil Cu concentrations in the "moderately anomalous" range. To date it has not been explored to an appreciable extent. A southeasterly extension of this anomaly is probable and, as it may be important, it should be investigated by additional soil sampling.

A smaller, but generally stronger, anomaly situates northwest of the Mary V #1 showing, and has been partly tested by trenches and drill holes in the vicinity of the showing. The N.W., or long axis of the

anomaly measures about 1300 ft. or, with "outliers", about 2000 feet. Over about 40% of its area soil-Cu concentrations are in the "strongly-anomalous" range.

Several broad soil-copper anomalies occur within the east-central section of the property. The available outcrops within them seem to have been examined; however, none of the anomalies - or others within the property - have been investigated by the I.P. method which, on the basis of the dispersed nature of typical Cu/Fe sulphide mineralization, would appear to be more appropriate than the general E.M.16 and local S.P. surveys carried out in 1967. Soil samples from the most northerly grid were analyzed for copper only.

The analyses show that Mo co-occurs with Cu at least throughout the south section of the property, where samples were analyzed for both metals. Mo anomalies are generally coincident with the Cu anomalies and have about the same, or greater, areal extent - probably as a result of a relatively higher mobility for Mo in this geochemical environment. The shape and extent of the most southerly Mo and Cu anomalies are fairly similar, and both show some elongation in the E-W direction. However, Mo anomalies to the north of this show a marked N-S elongation in spite of the prevailing eastward ground-slope. From this it is logical to assume that the Mo component of the mineralization definitely trends N-S, and the Cu probably trends similarly.

Due to the presence of increased amounts of metal ion-absorptive clayey glacial deposits and detrital material on "flat" areas and at the foot of some slopes, it is probable that Cu and Mo values are somewhat enhanced in such localities. This possibility should be considered during

the assessment of individual anomalies; it could be a significant factor in the development of the large soil-Cu anomaly which straddles the easterly flowing part of the most southerly of the creeks running into Ireland Lake.

The total geochemical survey coverage to date does not include large westerly and northerly sections of the property. Of the latter, the area including the Spring showings most definitely warrants a detailed soil-sample survey and, very possibly, appropriate corollary or follow-up surveys.

#### GEOPHYSICAL DATA

##### E.M. 16 Survey

This survey reportedly detected a number of narrow, weak conductors within the fraction of the south half of the property that was traversed. The location, trend, or other features of the several anomalies, deduced to be faults, are not specified.

##### Self-Potential Survey

This survey was of restricted extent; most of it carried out in the vicinity of the Mary V main showing - principally to trace out possible extensions of the local Cu - Mo - Fe sulphide mineralization. The coverage was such that only the southerly half of the local strong soil-Cu/Mo anomaly was tested. As subsequent diamond drilling in the locality generally failed to intersect significant Cu/Mo sulphide mineralization, it was assumed that bedrock mineralization was mostly restricted to the area of the main showings.

It is the writer's opinion that the S.P. method did not provide an adequate geophysical test, and that the drilling itself was insufficient for a thorough test of all bedrock - mineral possibilities that are geochemically indicated. In this connection, the writer's doubts about the actual capabilities of the S.P. method relate to its inability to detect minor amounts of oxidizing sulphides or significant concentrations of fresh sulphides below the local water table - which is probably only a few feet, or few tens of feet below the ground surface in this area. On the other hand, the survey produced some results which may be of structural, and perhaps of economic significance. The several anomalies delineated in the area of the showings, or at least elements of them, are mostly elongated in the E.N.E. direction. If these are represented as trend-lines (axes), the resulting plot is suggestive of a zone of E.N.E.-trending conductors. Those are probably fractures - both barren and mineralized. Their structural (and economic) significance is based on the possibility that they may relate to presently undetected bodies of commercial mineralization.

#### GENERAL GEOLOGY

##### (a) Petrology

All bedrock exposures in the general region comprise various types or facies of the Coast Plutonic (or Crystalline) complex. Roddick (G.S.C. Memoir 335, 1965) postulates, from his study of the plutonic rocks of the Pitt Lake, Coquitlam, and North Vancouver map areas, that Coast metamorphic - plutonic complex is the result of progressive metasomatism and recrystallization of pre-existing metamorphosed volcanic and sedimentary rocks. This theory regarding their

origin had been previously advanced by Armstrong (G.S.C. Paper 53-28, page 5) in connection with his work in the North Vancouver map area. Armstrong observed that --- "the general trend of the various facies divisions is roughly parallel with that of the pre-plutonic rocks, and --- all facies are gradational into adjoining masses; they do not appear to represent separate intrusions and, indeed, may not be of igneous or magmatic origin."

Within the Lewis Lake area, the suite of assemblage of plutonic rocks appears, in part, to have resulted from the above noted "granitization" processes. Rock types present, in apparent order of decreasing abundance, are granodiorite-quartz diorite-diorite, (quartz) monzonite, feldspar porphyry, and porphyritic granodiorite - the latter two usually occurring as dyke-like bodies. There is some field and photogeological evidence which indicates that intrusions of the younger (acid) plutonics might be localized by strong faults or breccia zones. Also, the writer has personally noted that different facies of the general suite show intrusive - contact relationships in both the Pitt Lake and Dodd Lake regions.

(b) Type - Mineralization

The typical economic minerals occurring in the area comprise chalcopyrite (plus silver), pyrite, and molybdenite. Some bornite (secondary?) was noted in the Mary V mineralization. Chalcopyrite and pyrite occur in both the fracture - filling and disseminated mode; however, molybdenite tends to occur mainly in fracture-filling forms or as discrete masses - usually with, or in, quartz.

(c) Photogeological Interpretations

These are based on a study of stereo-pairs of air photographs of the Dodd Lake region. The lineaments observed were plotted on a planimetric map of the area and, at the same time, fitted to such coincident linear features as might exist on the map. From this a few major and several minor, or less apparent, lineaments were deduced, respectively depicting major faults and minor faults, dykes or other thus-far undefined features.

The resulting plot of the above detail indicates a major fault ("Haslam Lake fault") traversing the region in a northeasterly direction from the south end of Haslam Lake. Two other strong "faults" are indicated: one trending northwesterly through Horseshoe and Lewis Lakes, and a second which strikes east-west through a point at about one-quarter of a mile north of Horseshoe Lake. Over a dozen other less apparent "breaks" have been plotted. Of these, one fairly well defined group strikes E.N.E. to N.E. across the property, showing a slight degree of convergence with the "Haslam Lake" fault-lineament. Significantly, perhaps, the trend of this group matches that of several small faults, and also that of the most conspicuous set of joints occurring within the south part of the property. Of most significance, however, is the general indication of major zones of faulting and fault-intersection within, and close to the claim block. Within this indicated structural framework there are excellent possibilities for the occurrence of intensely fractured, and perhaps well mineralized, panels or blocks of ground - and the necessary "plumbing".

CURRENT SHOWINGS

In spite of the evident widespread occurrence of Cu - Mo mineralization within the original claim groups, and the fact that this was geochemically well substantiated, very little physical exploration was carried out. Most of that which was done was concentrated on only one of the several geochemical anomalies that had been delineated - this being the one containing the Mary V - #1 showing.

The following text relates to Dwg. No. G-2.

Mary V - #1 Showing

This showing situates near the south end of the present claim block and, perhaps significantly, only about 1000 ft. north of the inferred "Haslam Lake" fault zone. The showings are exposed along a section of old railroad grade via a series of shallow trenches and slashes in the local bedrock.

Wall rocks in the vicinity of the showing comprise silicified foliated biotite/hornblende granodiorite. These are traversed by a few stringers of quartz-feldspar porphyry, and intruded by a small plug and several veins of glassy white quartz.

The mineralization consists of disseminated chalcopyrite, minor bornite, and pyrite - the former frequently occurring as blebs and grains abutting or replacing biotite in the fractured host rock. Disseminations of chalcopyrite also occur within the highly siliceous matrix of the host rock, quartz masses, and at granodiorite/porphyry contacts. Pyrite occurs sparsely within the main showing, and a little molybdenite is found locally - mainly in fractured quartz. This is

usually accompanied by some chlorite - sericite alteration of the granodiorite.

Few natural outcrops occur in the general area of the showing. However, some disseminated pyrite and chalcopyrite occur within one outcrop situating about 150 ft. N.W. of the main showing.

The mineralization can be traced for approximately 50 feet along the general line of the old roadbed. The "apparent" width of the currently exposed zone of copper mineralization is estimated to be at least 10 feet; however, there is no evidence that the gross width of this band of mineralization was fully delineated by the trenching and drilling done in 1967.

The writer took two samples at the showing, as follows:-

- (a) Continuous-chip across 5.0' section of fractured siliceous biotite/hornblende granodiorite containing disseminated chalcopyrite, pyrite, and a little bornite.  
Assay - - - Ag. 0.05 oz./ton; Cu. 0.38%
- (b) Random-chip of similar mineralization in wall - slash.  
Assay - - - Ag. 0.08 oz./ton; Cu. 0.89%

Close spaced fractures in the west wall have a strike of N.10° W, and dip steeply westward. This would also appear to be the trend of the local mineralization. However, the 1967 mapping, based on fresher and more extensive exposures, depicts a zone of jointing, minor intrusion and quartz (-pyrite) veining with an E.N.E. trend and vertical dip. On the basis of the total geological evidence, however, the mineralization tends to follow the foliation, and fractures parallel to it, in the granodiorite.



The final exploration done in 1967 comprised five diamond drill holes for a test of possible lateral and depth extensions of the mineralization. As these were confined to one (N.30E) "section-line" of questionable orientation, the writer feels that the average results are neither representative nor conclusive. However, the main objection to this test was that it was based on an S.P., rather than on I.P. survey. In general, assays of most core samples were under 0.1% Cu. One hole (No. 10), drilled vertically at about 250 ft. S.W. of the showings, intersected 10 ft. carrying 0.30% copper. Possibly, the most significant feature of the gross drilling results is their indication of widespread, although sparse, copper mineralization.

#### West Grade Showings

These center on an old railroad grade, locally situating about 3000 ft. S.E. of Spring Lake. The general locality is underlain by rather massive speckled white siliceous biotite/hornblende granodiorite. The mineralization comprises rather sporadically occurring disseminated chalcopyrite and associated pyrite. It is exposed by a few small prospect pits and trenches within an approximate 1200' x 1500' area, presumably excavated during the 1967 exploration program. Some of the more southerly exposures are coincident with a relatively minor soil - copper anomaly. Two old chip, or grab, samples taken here assayed 0.30% and 0.16% Cu. Five old samples from other exposures in the locality averaged about 0.12% Cu; a sixth assayed 0.55% Cu. A random chip sample by the writer, from a 6-foot pit exposure of typical granodiorite containing disseminated chalcopyrite assayed 0.11% Cu.

### East Grade Showings

These situate approximately 1500 - 2000 ft. N.E. of the West Grade showings. The principal mineralized exposures occur within an excavated wall-section of the old railroad grade. Here, sparsely disseminated chalcopyrite occurs in rather massive, fine-grained siliceous biotite granodiorite. A random chip sample by the writer over a 10-foot length of this rock assayed 0.07% Cu. Very few pits have been excavated over this particular group of showings; however, two old chip or grab samples, taken from a few small exposures lying about 500 ft. north of the old grade, assayed 0.11 and 0.61% Cu. respectively.

### Spring Showings

These, located within the N.E. corner of the claim block, situate at over  $1\frac{1}{2}$  miles N.W. of the most northerly 1967 exploration grid. To the extent of the writer's knowledge, no systematic exploration has been carried out in the locality of the showings nor, for that matter, in the general area to the northwest of Spring Lake.

Mineralization in this locality is exposed along a line of natural outcrops and small pits through the overburden into bedrock. A second set of showings, at about 150 ft. to the northeast, is exposed over the bed of the local access road. The mineralization, comprising disseminated chalcopyrite and local clots of molybdenite, occurs in quartz-flooded white granodiorite or granite. This facies of the general intrusive contains 15 - 20% mafics (3/4 biotite), and differs from typical granodiorite in appearance, due to the presence of abundant lustrous blebs of smoky gray quartz. The sulphide minerals are almost

totally unweathered and occur, typically, as grains and blebs replacing biotite, and as larger masses in biotite-rich dark clots or stringers within otherwise normal appearing intrusive.

The writer took one large sample at the southerly showing. This, comprising a random chip sample of intermittently exposed mineralization over a gross length of 50 feet, assayed Ag. 0.02 oz./ton; Cu. 0.30%.

To the writer, the Spring mineralization appears particularly attractive by reason of the association of good disseminated Cu/Mo mineralization with an obviously quartz-flooded, probably-younger phase of the regional plutonic suite.

Respectfully submitted,

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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, Reg. No. 2164.
3. I have practiced my profession for 25 years, including 10 years as a geological consultant.
4. I personally examined showings on the Lewis Lake properties of Golden Granite Mountain Mines Ltd. during November 17-18, 1974.
5. This report on the above properties is based on a personal examination of them, and on pertinent government reports and Company maps.
6. I have no direct or indirect interest in the property of Golden Granite Mountain Mines Ltd., N.P.L. or of any of its affiliates, nor do I own or expect to own any securities of the Company or its affiliates.

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W.M.Sharp, P.Eng.

North Vancouver, B.C.

January 11, 1975.