GEOCHEMICAL REPORT

ON THE

VI GROUP 104J/4E

LIARD AND ATLIN MINING DIVISIONS

VI 1-14, 33 Atlin

VI 17, 19, 21, 23-27, 35, 49 Liard

TWENTY-THREE MILES NORTHWEST OF TELEGRAPH CREEK, B.C.

Lat. 58° 05'N; Long. 131° 40'W

N.T.S.: 104-J-4-E½

FOR

SUMITOMO METAL MINING CANADA LTD.

FIELD WORK

August 13 - 17, 1971

July 6 - 14, 1972

By: G.R. Hilchey, P.E.

Date: November 1, 1972

3972

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BASE MAP

VI GROUP

INTRODUCTION

Immediately after the original staking of the property in August 1971 a geochemical soil sample survey of eight claims was made on a ribbon grid. Additional soil sampling was done during July 1972. The soil surveys, together with brief notes on the geology, are the subject of this report.

LOCATION AND ACCESS

The VI Group lies about 23 miles N 55°W of Telegraph Creek, B.C. It is centered near Lat. 58° 05'N and 131° 40'W.

The property may be reached by helicopter from Telegraph Creek. Tahltan lake about 10 miles to the south and Kennicott lake about 10 miles to the north are suitable for fixed-wing aircraft on floats. No facilities are available at either lake.

TOPOGRAPHY AND CLIMATE

The property lies in a plateau area on the east flank of the Coast Range Mountains of Northern British Columbia. Elevations in the immediate vicinity of the property range from about 3,300 feet (1,000 m) to 5,600 feet (1,700 m). Slopes are generally moderate.

The higher, southern part of the property is covered with scrubby trees up to the timberline which is near the southern boundary. The northern part has been burned over by an old forest fire and is now mostly covered by deciduous brush with some sub-alpine meadows on the eastern side.

The climate is continental with cold winters and moderate snowfall (probably not over four feet on the ground at any one time). Summers are warm with moderate rainfall. Owing to the elevation and the north-facing slope, snow does not disappear from the property until near the end of June. The first snow usually falls about the first of September but there is usually little snow on the ground until October.

CLAIMS

A group of 32 VI claims was staked on August 12th, 1971. These were called the VI 1 - 32 and were staked in a block 4 claims wide (east to west) by 8 claims long (north to south). They were recorded in Vancouver on September 8th, 1971. Subsequent soil sampling revealed anomalous copper values near the southeast end of the claims. It was therefore decided to stake additional claims on the south and east sides of the original group. These claims were staked on September 8th, 1971, and were named the VI 33 to VI 51 claims. They were recorded in Vancouver on September 10th, 1971.

Claims VI Nos. 1 - 16 and 29 - 34 are in the Atlin Mining Division. The balance are in the Liard Mining Division.

GEOLOGY

Geologic mapping of the property is incomplete. Some of the more important areas from the point of view of geochemistry have not been mapped. The following notes are, therefore, imcomplete and additional mapping will be required.

The east contact of the Sheslay Batholith crosses the property from north to south. The batholithic rocks on the property are a complex border phase with composition varying from about granodiorite to gabbro (field indentification).

The plutonic rocks intrude Upper Triassic (?) volcanic rocks. These rocks range from water lain-tuffs, crystal-tuffs (?), and agglomerate to andesitic flows including a trachytoid andesite. These rocks in general strike N.N.W. with moderate dips to tne southwest.

Intruding the volcanic rocks is a porphyritic quartz diorite (field indentification). The principal body is a small elongated stock or dike in the north-central part of the property. It is presumably genetically related to the batholith. There are also numerous smaller dikes of the same type of rock.

A broad pyritized zone covers much of the claims. It extends beyond the claims to the north but appears to fade out in the southern part of the property - a total distance of some 2,500 meters. The width of the zone is not accurately known but probably exceeds 1,000 meters at its widest point. Both the batholithic rocks and volcanics are pyritized. Some chalcopyrite was observed with pyrite in both plutonic and volcanic rocks.

The overburden, in general, appears to be shallow.

FIELD PROCEDURE

A 100-meter square grid was laid out on the central 8 claims of the original group in 1971 and extended in 1972. A total of 167 soil samples were taken in 1971 and 355 in 1972. Most of the samples were taken on the corners of the grid squares.

Soil samples were taken from the upper "B" horizon with a small mattock. The soil samples were collected in standard high wet-strength kraft soil sample bags.

SAMPLE PREPARATION

The samples were delivered from the field to the base camp where they were dried and sieved through a stainless steel screen to -80 mesh. The -80 mesh material was placed in numbered coin envelopes and shipped to CHEMEX LABS Ltd., 212 Brooksbank Ave., North Vancouver, B.C., for analysis. In 1972 the samples were shipped as taken.

ANALYTICAL PROCEDURES

The samples were analysed for both "total copper" and "cold extractable copper" by the following procedures :

GEOCHEMICAL LABORATORY PROCEDURE FOR THE HANDLING AND ANALYSIS OF SOIL AND SILT MATERIALS CONTAINING TRACES OF Cu, Mo, Zn, Ni AND Co.

Step 1. Samples are dried @ 110°F and then sieved to -80 mesh consistency through a nylon and stainless steel sieve. Presieved materials are processed starting at Step #2.

Step 2. 0.50 grams of the dry pulp is weighed into a calibrated test tube.

Step 3. 3 mls. of perchloric acid and 1 ml. of nitric acid is added to sample.

Step 4. Samples are digested at low heat initially and then the temperature is raised to 203°C. Digestion time 2 to 3 hours.

Step 5. Digested samples are cooled, made up to 25 ml. volume with distilled water and solutions are thoroughly mixed.

Step 6. Analysis for Cu, Mo, Zn, Ni and Co by Atomic Absorption procedures. Detection limits as per our brochure.

Bruce W. Brown,
Manager Laboratory Division.

COLD EXTRACTABLE COPPER DETERMINATION

Step 1. A 0.50 gram portion of -80 mesh material is weighed into a calibrated test tube.

Step 2. 10 mls. of 1X holman Buffer is added to sample. Sample and buffer is thoroughly mixed and solution is settled for 1 hour.

Step 3. Sample volume is made up to 25 mls. with distilled water. The samples are thoroughly shaken and allowed to settle until clear

Step 4. The analysis of cold extractable copper is completed by atomic absorption method.

Detection limit - 1 p.p.m. copper.

Notes : Holman Buffer (5X)

For 2 liters (makes 10 liters of 1X working solution)

500 gms Ammonium citrate

200 gms Hydroxylamine hydrochloride

350 ml. concentrated hydrochloric acid

Enough copper-free water to make 2 liters

- Dilute one part 5X solution with 4 parts water and test with 1 ml. of 0.001% dithizone. If blue or red, solution must be scrubbed with dithizone or cleaner water obtained.

- pH of 5X solution is approximately 1.5 pH, of 1X working solution is approximately 2.0 (usually about 3.0 when mixed with soil).

This buffered solvent will dissolve oxides and carbonates but no sulphides or silicates. Neither will this solvent attack metal organic compounds in any organic material present in the sample.

RESULTS

The statistical distributions of the results were obtained and the distributions plotted as histograms. (Figs: 2 and 3)

The results have been plotted on a scale of 1:5,000 or approximately 1 inch = 417 feet. The maps presented show total copper, total copper minus cold extractable copper (sulfo-silicate copper), and molybdenum.

INTERPRETATION

HISTOGRAMS

The statistical distributions of the results were all found to be approximately log-normal and multi-modal. Since the standard

statistical parameters have little meaning in the case of multi-modal distributions these were not calculated.

The histograms were used to determine the approximate limits of the background and anomalous populations. This was done in the following manner using figure 3 to illustrate the procedure. The principal sub-populations (A, B, C, etc.) were identified by inspection and their distribution visually estimated (solid lines). The points where two sub-populations crossed were marked (e.g. a, b, c, etc.). The values at a could belong with equal probability in either sub-population A or B. Similarly b could belong with equal probability to sub-population B or C and so on. These values were then used as contour values on the plan maps of the results. Therefore all points lying between contours a and b - can be considered to have a greater than .50 probability of belonging to sub-population B.

A description of the sub-populations must depend on other data - primarily geology and known mineralization. These descriptions in general are rather subjective as are of course the limits of the sub-populations. The following tentative interpretations are made :

Sub-population A - This is a background sub-population which occurs at various places throughout the area sampled. Its origin is not known but it may be derived from a rock type with low copper content or by partial natural leaching of the soil.

Sub-population B - Like A it is a background sub-population. It is probably related to widely distributed rock-types carrying a modest amount of copper.

Sub-population C - This is considered to be weakly anomalous.

Sub-populations D and E - These are considered to be strongly anomalous and highly anomalous respectively.

TOTAL COPPER MAP

This is the standard map used in presenting geochemical data. It gives a general picture of the distribution of anomalous copper in the area surveyed. It is of value as a preliminary assessment of the merit of the area. Since, however, the copper occurs in different forms (as sulphides, absorbed on clays, as oxides and carbonates, and possibly as silicates or metal-organic compounds), this presentation can be misleading in some cases if it is used alone in an anomalous areas. To facilitate interpretation another map - the sulfo-silicate map - has also been prepared.

SULFO-SILICATE MAP

This map shows total copper minus cold-extractable copper. This will be referred to as sulfo-silicate copper since only sulphide copper and silicate copper will remain after removing the cold-extractable copper. (It should be noted that any copper-organic compounds present in organic material would be included in the sulfo-silicate copper. There is believed to be very little organic material in samples from the VI group.)

This plot should give a more reliable guide to the location of the source areas of the copper mineralization than the total copper map. In the case of the VI group there is relatively little cold-extractable copper and consequently the sulfo-silicate map is hardly necessary.

MOLYBDENUM MAP

The soil samples taken in 1971 were also analysed for total molybdenum and the results plotted on a separate map. Values varied from 0 to 11 p.p.m. Since there were only three values which could possibly be anomalous (two of 7 p.p.m. and one of 11 p.p.m.) and these are very doubtful, the values were not contoured. The samples taken in 1972 were not analysed for molybdenum.

CONCLUSIONS

Parts of the large pyritic zone on the VI group have been found to contain anomalous copper but no anomalous molybdenum values. Some of the anomalies found to date are rather small but several are large enough to justify further investigation by surface prospecting geologic mapping and, possibly, trenching or geophysical methods.

RECOMMENDATIONS

It is recommended that a detailed geochemical survey and geologic mapping be done on a 50 meter grid in the area west of line 10E.

If results of these surveys warrant, an IP survey would then be recommended.

G.R. Hilchey, P. Eng.,
Technical Advisor

DECLARATION OF EXPENSES

1971

Ronald Britten	Aug. 16		1 day	@ $23.26	$ 23.26
Darryl Gjerness	"	13 - 14	2 days	@ $21.15	42.30
Douglas Rogers	"	15 - 17	3 "	@ $21.15	63.45
Douglas LePatourel	"	13 - 17	5 "	@ $21.15	105.75
Bernard Stannus	"	16	1 day	@ $23.26	23.26
Board Loss	12 man-days		@ $7.00		84.00
Chemical Analysis	167		@ $1.00		167.00
	167 x 2		@ $ .80		267.20
					$ 776.22

1972

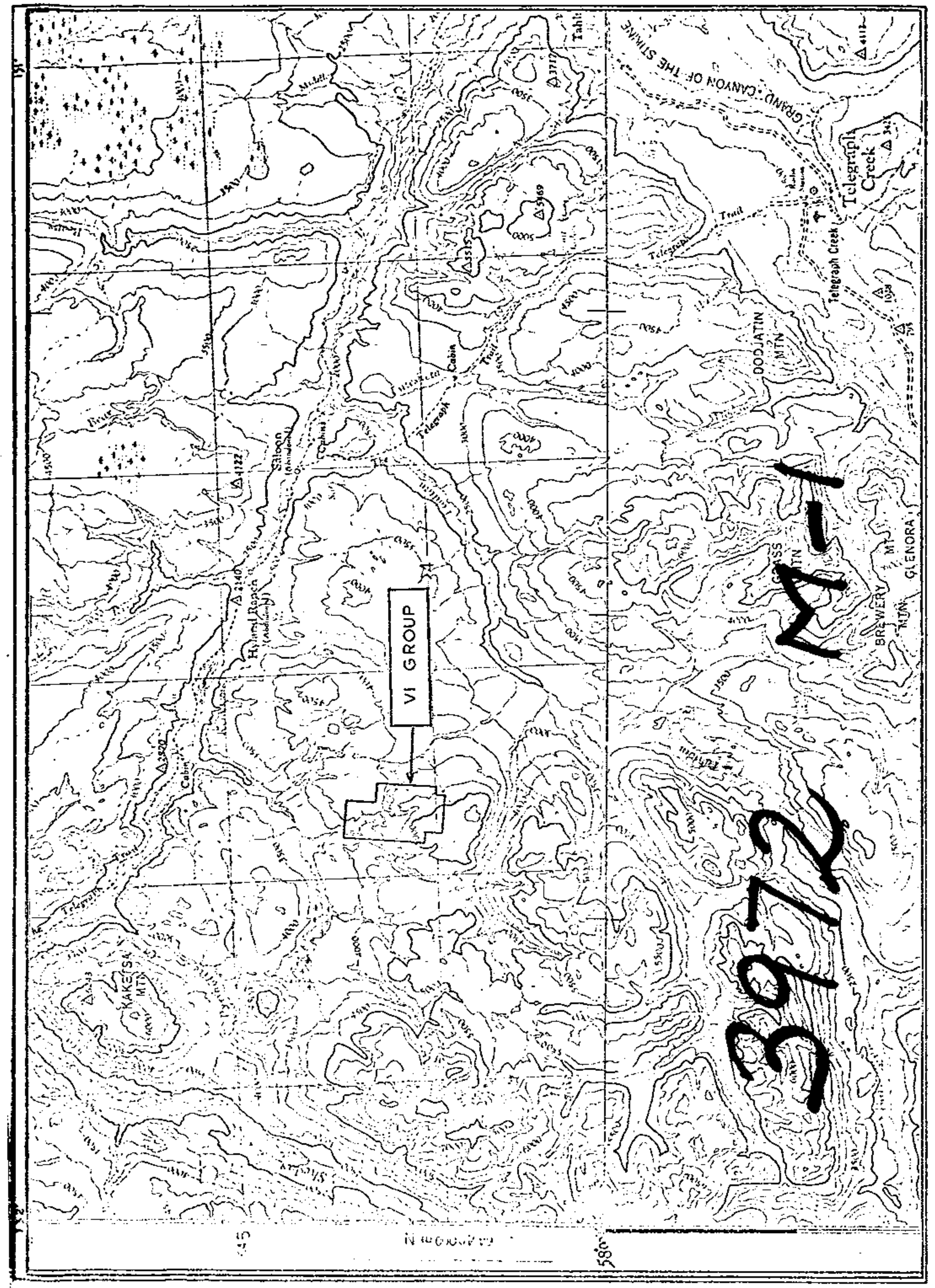
Manex Mining Invoice for services of samplers and geologist, rentals and supplies less mobilization and demobilization costs	3,498.18	
Chemical Analysis	480.42	
Drafting	215.87	
Reproduction	46.57	
Total		$5,017.26

No helicopter costs included.

Note: The field work in 1972 was contracted out resulting in higher unit costs than in 1971 when the work was done by our own staff and was part of a much larger project in the same area.

Certified Correct.

G. R. Pilkington



3972 M-2

SUMITOMO METAL MINING CANADA LTD. CAMP 4	VI GROUP LOCATION MAP
OCT. 14, 1971	Fig. 1

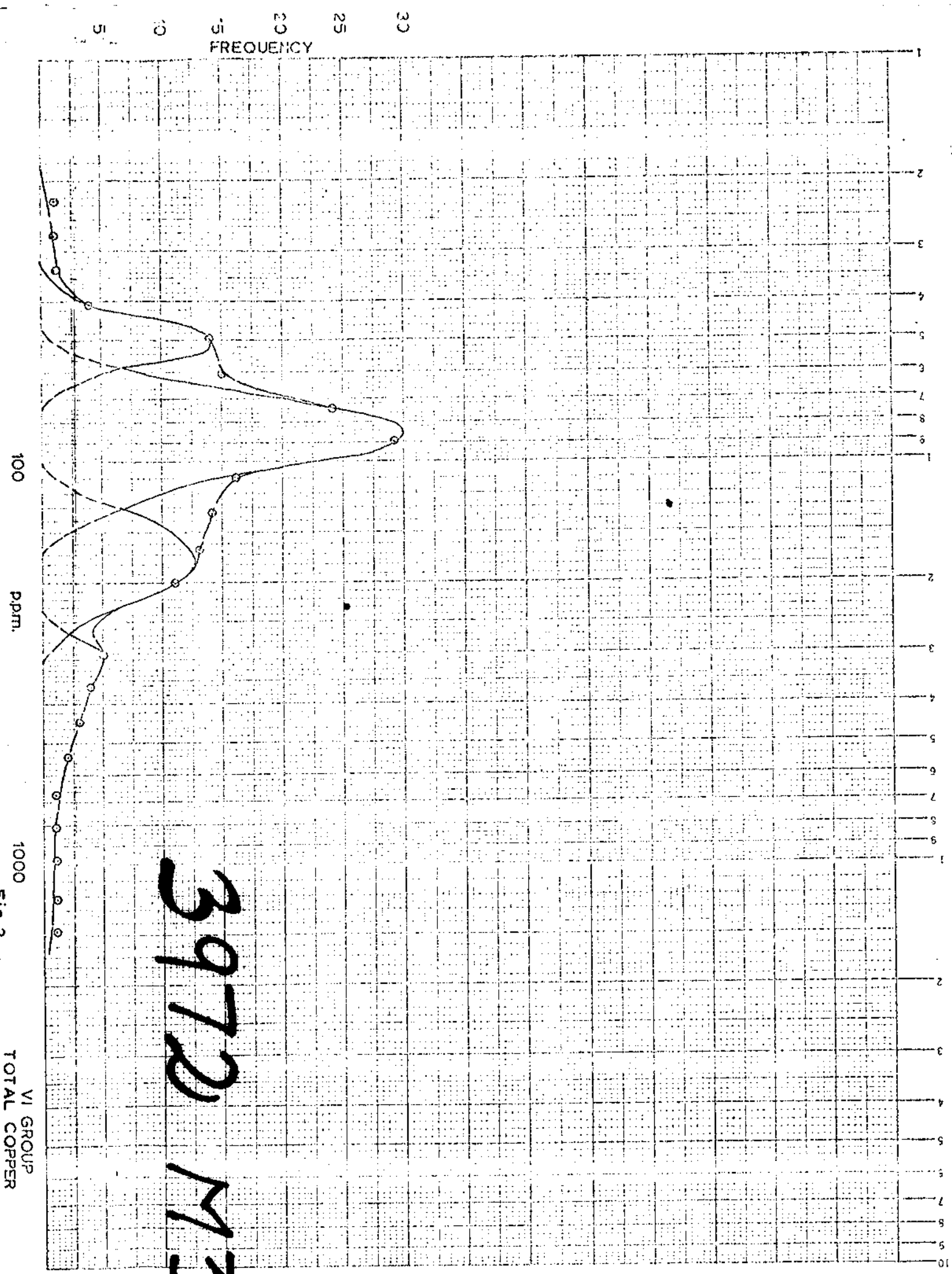


Fig. 2

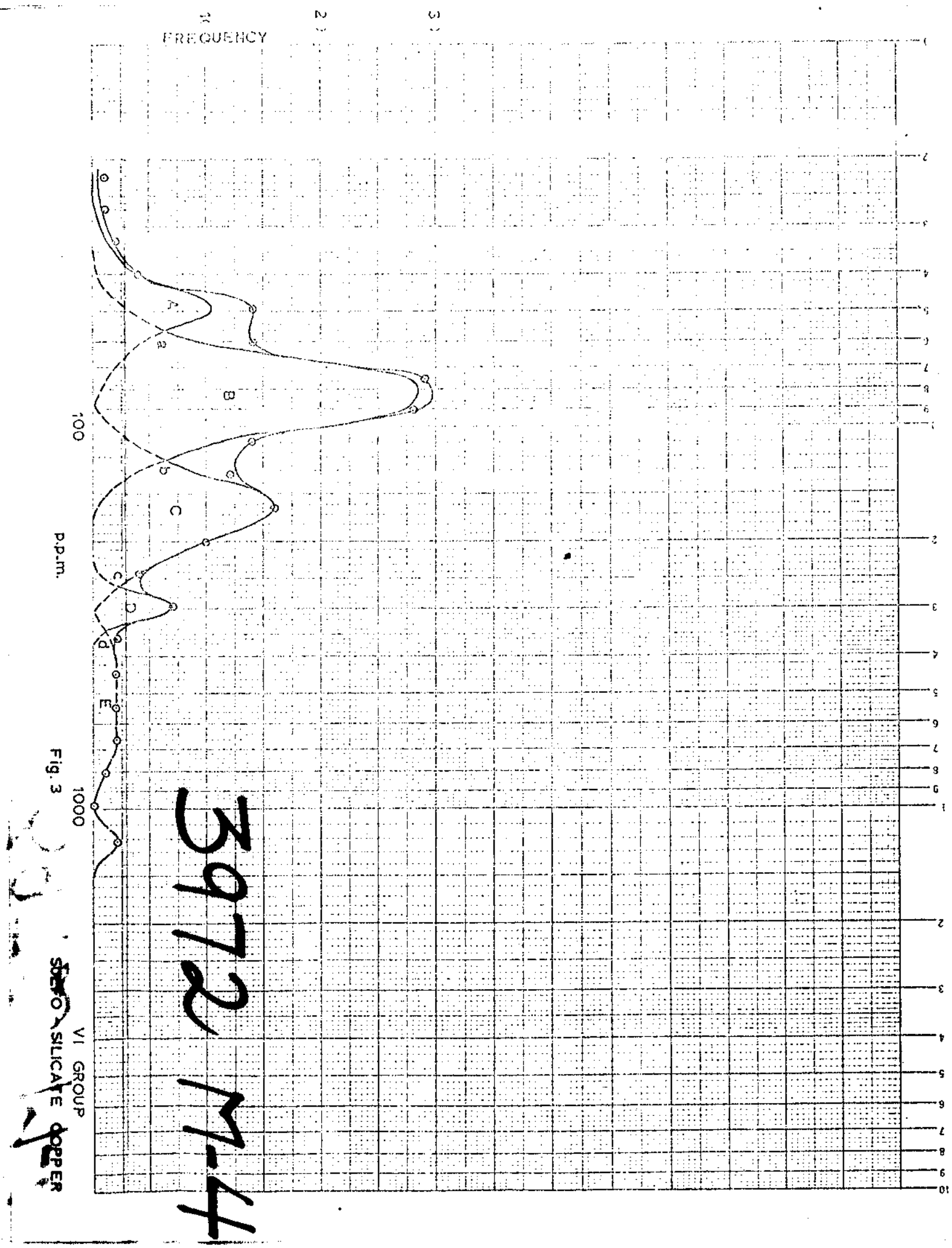
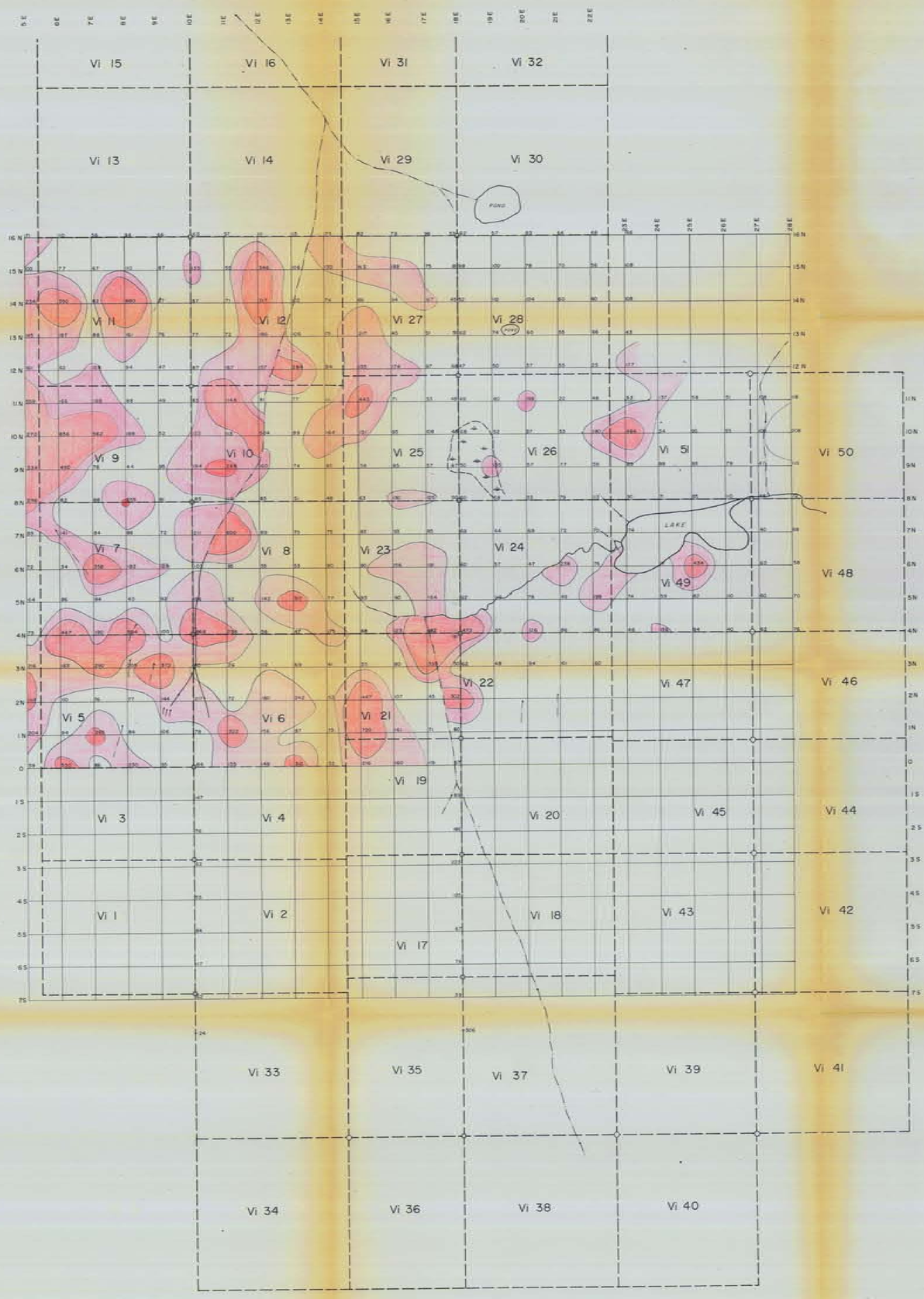


Fig. 3



LEGEND
ppm COPPER
>250
120-250
<120

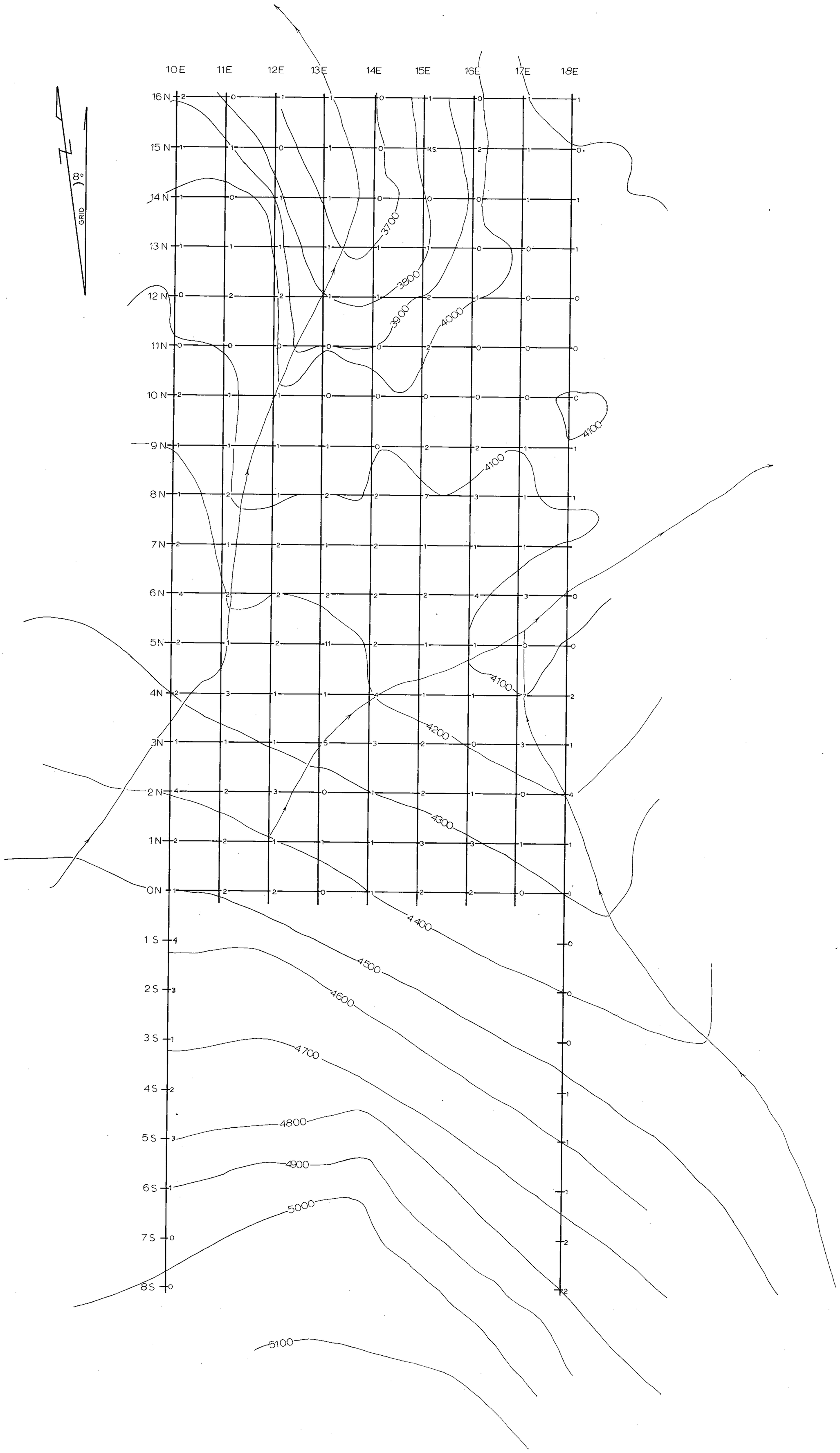
SUMITOMO METAL MINING CANADA LTD.

Vi GROUP

SOIL SAMPLE SURVEY
SULFO-SILICATE COPPER

Meters 0 100 200 300

Date October 1972 | Scale 1:5,000 | NTS 104-J-4-E | Map No. 10-V-2-72



△ CAIRN
5436'

FOR LOCATION OF GRID SEE CLAIM MAP

Department of
Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 3972 MAP #7

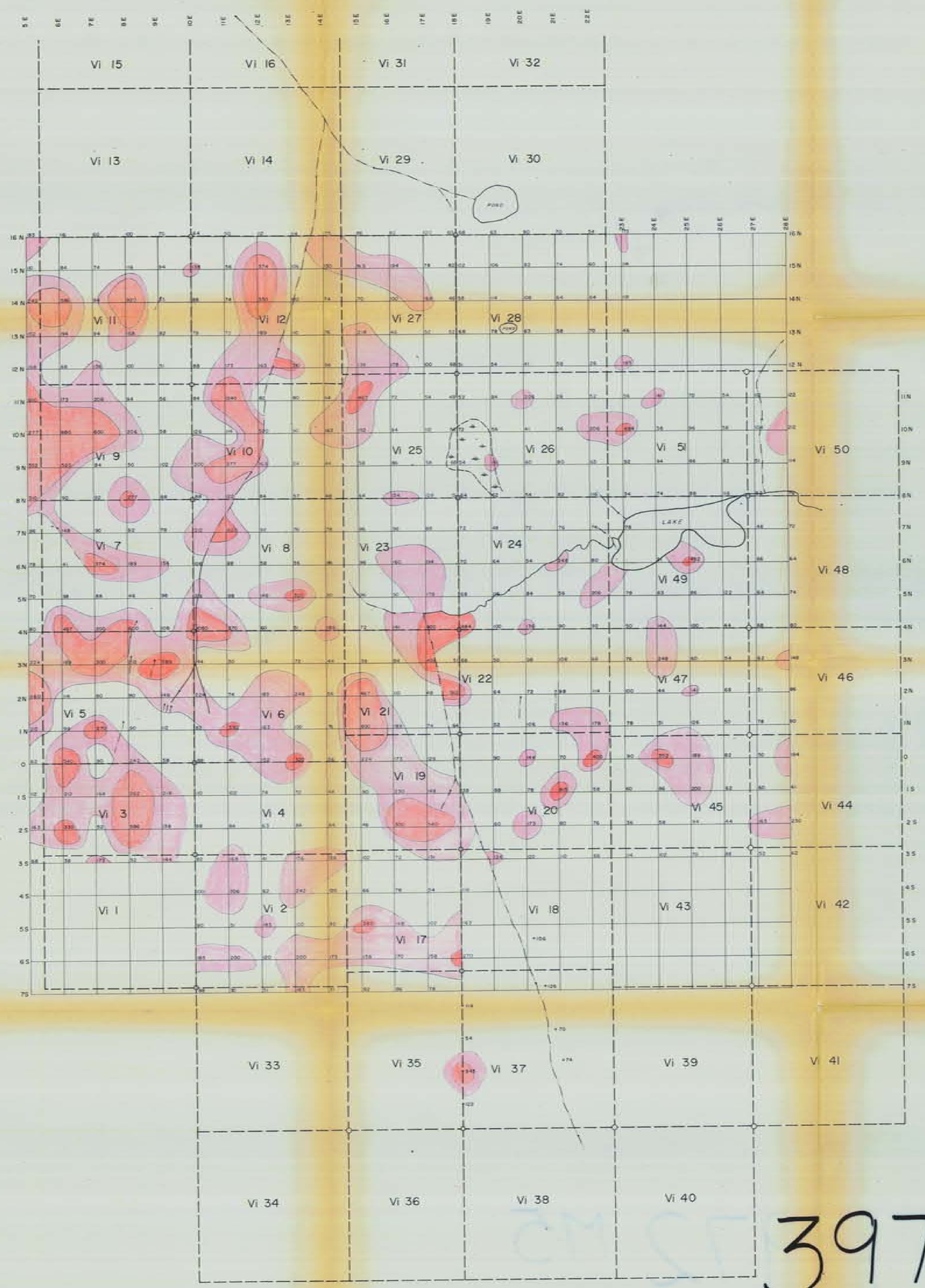
SUMITOMO METAL MINING CANADA LTD.

CAMP 4

SCALE: 1:4,000 100 0 100 200m. DATE: 31/8/1971

VI GROUP
SOIL SAMPLE SURVEY
MOLYBDENUM

MAP No. 10-V-3-71



SUMITOMO METAL MINING CANADA LTD.

Vi GROUP

SOIL SAMPLE SURVEY

TOTAL COPPER

3972 M-5