

ARIS SUMMARY SHEET

District Geologist, Victoria

Off Confidential: 89.12.21

ASSESSMENT REPORT 18609

MINING DIVISION: Vancouver

PROPERTY: Cu 4
LOCATION: LAT 49 42 22 LONG 123 27 19
UTM 10 5505836 467172
NTS 092G11W
CLAIM(S): Cu 4
OPERATOR(S): Bragg, D.K.
AUTHOR(S): Bragg, D.K.
REPORT YEAR: 1989, 16 Pages
COMMODITIES
SEARCHED FOR: Copper, Silver, Molybdenum/Molybdenite
KEYWORDS: Coast Plutonic Complex, Granite, Quartz Veins, Bornite
WORK
DONE: Prospecting
PROS 100.0 ha
Map(s) - 1; Scale(s) - 1:5000
MINFILE: 092GNW005

LOG NO: 0404	RD.
ACTION:	
FILE NO:	

FILMED

PROSPECTING REPORT
on the
Cu 4 Reduced Claim
Vancouver Mining Division
92 G / 11
49° 42' 22" N 123° 27' 19" W
Owner: D. K. Bragg
Operator: D. K. Bragg
Author; D. K. Bragg
Date: Feb. 15, 1989

GEOLOGICAL BRANCH
ASSESSMENT REPORT

18,609

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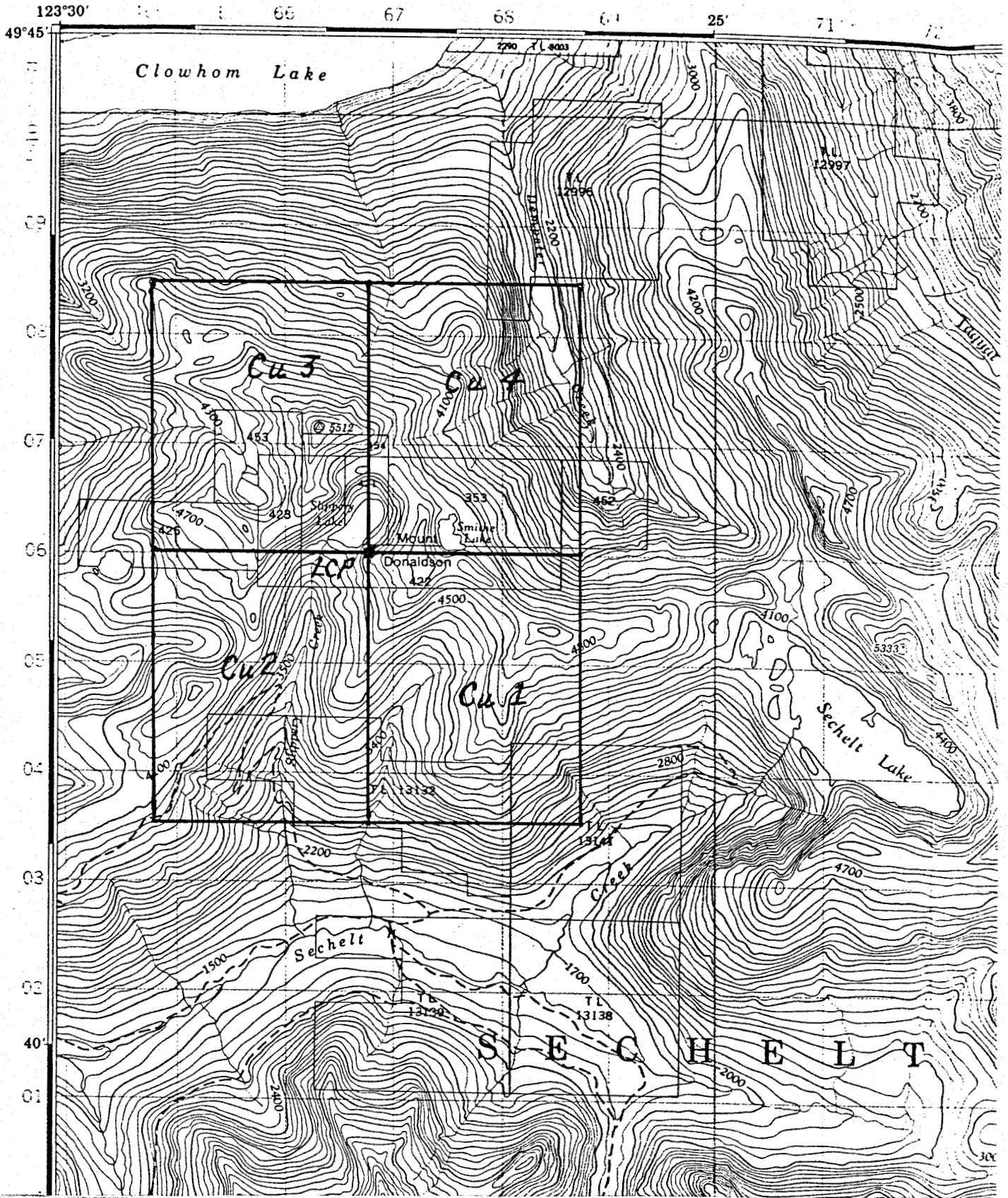
INTRODUCTION

In mid November 1987 this writer was contracted to stake 80 units over the known mineralized showings in the vicinity of Smithe and Slippery Lakes on Mt. Donaldson on N T S Sheet 92 G / 11 just to the south of Clowhom Lake. Part of the contract was also to traverse the area of the head waters of Slippery Creek and the southern nose of Mt. Donaldson to see if road access could be had from the end of any of the existing logging roads into the vicinity of the showings. Representative samples of mineralization from the showings were to be collected for rock geochemical analysis.

The writer and a helper were in the field on Nov. 20 and returned to Vancouver late on the evening of Nov. 25, 1987. During this time the Cu 1 to 4 claims, comprising a total of 80 units, were located and subsequently recorded on Dec. 23, 1987.

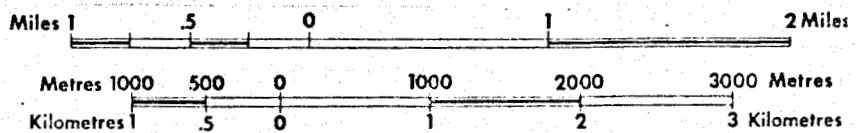
When by the 21 st of Dec. 1988 the contractor still had not paid for the work that had been done the writer decided to reduce the number of units to four units and to use a portion of the prospecting work that had been done to record one years assessment work. This report summarizes the work that was done.

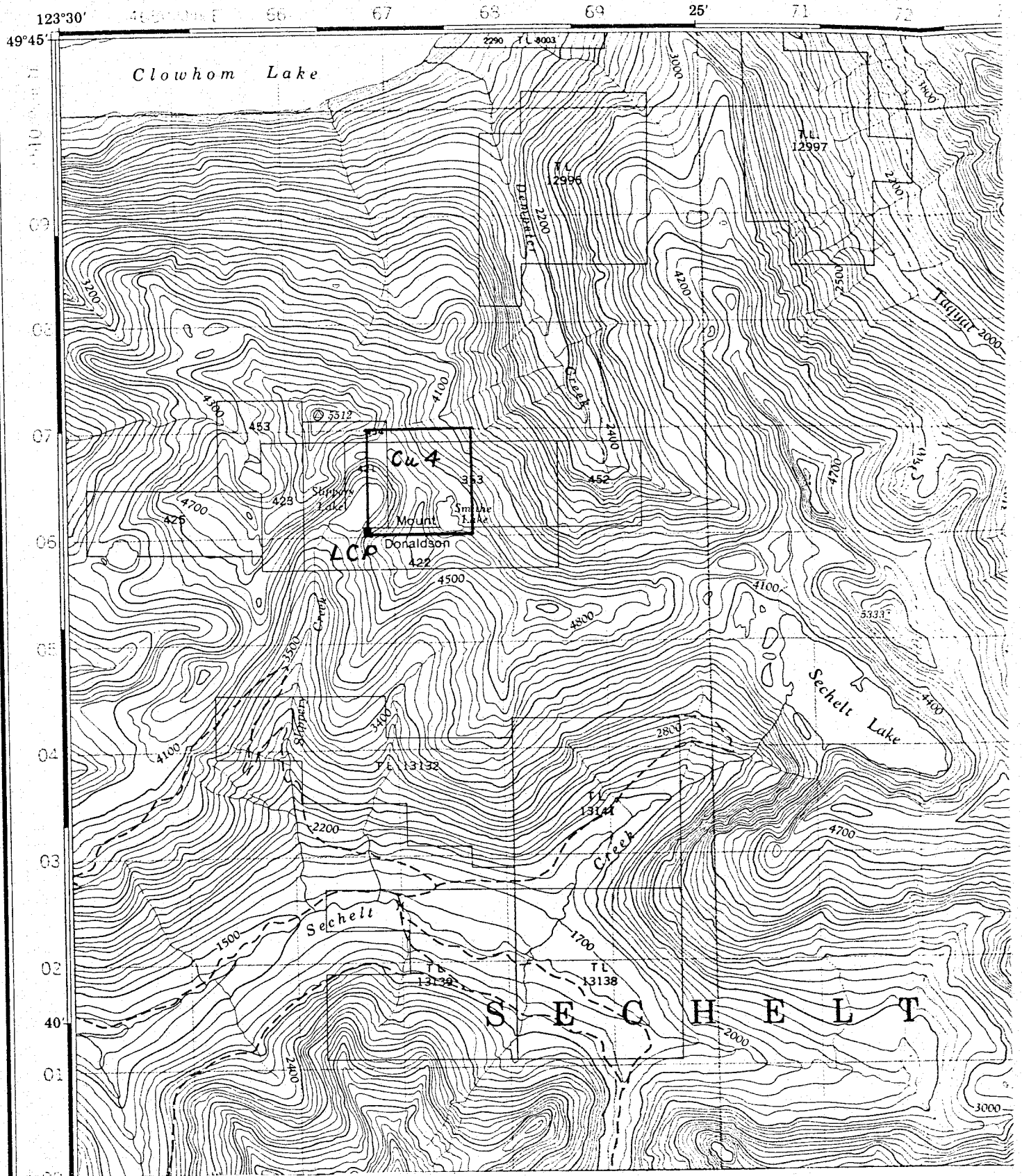
The history of the showing on Mt. Donaldson date from 1874 when Howe Sound Mining Company reported finding copper mineralization on the mountain. Since then an adit has been driven for 90 feet on the best showing to date at Smithe Lake and numerous other showings have been trenched. The area has been staked numerous times since, with some recorded work having been done, such as an airborne magnetic and electromagnetic survey, limited ground surveys of both magnetic and electromagnetics, geological mapping and some drilling. However this work has been sporadic and has not yet resulted in a conclusive evaluation of the potential of the area.



Index Map of Original Claim Block Fig 1
Cu 1 to 4 claims

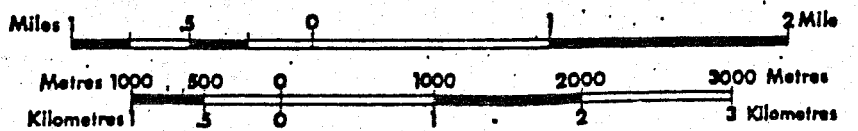
scale 1 - 50,000





Index Map of Cu 4 Reduced Claim Fig 2

Scale 1 - 50,000



M92G/11W

Clowhorn I.

Area below 200 ft.
reserved from staking
under Mineral &
Placer Acts
% 253/4 - 13. Feb. 50

Dempster

Cu 4
Reduced
Claim

Slippery I.

DONALDSON
LCP

Smith

Sechelt Lake

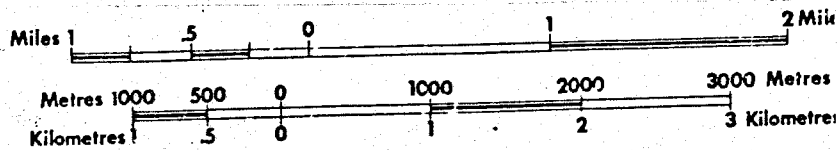
Slippery Cr.

Creek

Sechelt

CHEEKYE - CAPE COCKBURN T/L R/W
MINERAL
OXC 921
SUBJECT

Location Map of Cu 4 Reduced Claim Fig. 3
Scale 1 - 50,000



PROPERTY LOCATION AND ACCESSIBILITY

The Cu 1 - 4 claims were located on Mt. Donaldson within the Coast Range approximately 35 miles north north west of Vancouver. The L C P is at $49^{\circ} 42' 22''$ N and $123^{\circ} 27' 19''$ W. (See Fig. 1). Elevations on the Cu 1 - 4 range from 730 metres to 1680 metres. The elevations on the remaining 4 units of Cu 4 after reduction range from 1150 metres to 1550 metres (see Fig. 2 & 3). The topography of the area is very steep and precipitous to the point where some areas are impassible by foot or at the least trecherous. Much of the lower elevations on the southern two claims, Cu 1 & 2, have been logged and numerous roads do exist in the area, however some of these roads are now impassible due to wash outs and renewed growth on the roads. The remainder of the claim area up to about the 1350 metre elevation is covered by typical dense coast range forest. Above the 1350 metre elevation this forest cover decreases to sub alpine and above 1500 metres the area is mainly rock, talus and snow. In some areas this snow may remain all year around.

Previous assessment reports on the area had suggested that vehicular access could be via the power line from Port Mellon along the north shore of Thornbough Channel to M^CNab Creek and thence via the logging roads into Slippery Creek. However at the time of Nov. 1987 the power line was no longer passible and we had the truck transported by a small barge from Horseshoe Bay to M^CNab Creek and then traversed the logging roads up M^CNab Creek, over the pass into Sechelt Creek and up to the 760 metre elevation on Slippery Creek. From there we were able to travel by foot up Slippery Creek into the area of the showings.

At the time of our visit into the area there was about a half a metre of snow at the L C P and for the last three days we were subjected to strong cold gale force winds with driven snow above the 1400 metres that made work above that elevation most enervating and difficult. In some areas this fresh snow had drifted into snow packs of over two metres on top of old snow that had not melted during the summer. From this it was estimated that at the most the area of the workings might be open for exploration for less than four month of the year.

GENERAL GEOLOGY OF THE AREA

The general geology of the area is covered by Map 42 - 1963, Squamish B.C. by H.H. Bostock, with more specific geology presented in Assessment Reports 752, 4003 8822 and 11619.

The area of the Cu 1 - 4 claims is within the Coast Plutonic Complex consisting here mainly of medium grained quartz, biotite granite and hornblend, biotite granite. In the area of the showings west of Smithe Lake within the quartz, biotite granite is what is probably a late stage intrusive body of muscovite granite.

The mineralization appears to be closely associated with this muscovite granite and occurs as disseminations and small blobs within the muscovite granite and in many of the numerous quartz veins and quartz masses within the muscovite granite and the surrounding quartz biotite granite.

Small aplitic dikes cross the property parallel to the joint systems. Also within the area are linear outcrops of bedded lapilli tuff or tuffaceous rocks. The relationship of these tuffs to the granite is unclear.

FIELD WORK

The location of the Cu 1 - 4 claims was started on Nov. 20, 1987 and all location lines that could be run were marked with 50 metre stations in the south east quadrant grid system with the L C P designated as 100+00 E 100+00 S. All roads and large scale topographical features were noted for the drafting of a preliminary topographical map of the area. In doing this particular attention was taken to try to delineate a possible access route into the showings and much of this information was obtained while locating the claims.

We attempted on two of the days to carry the central location line to the north of the L C P around Slippery Lake and continuing on to the north and the line to the east of the L C P towards Smithe Lake over the north sholder of Mt. Donaldson, but were stopped both days by cold gale force winds and driven snow at these upper elevations. We had to return to lower elevations where the existing roads were mapped and access routes were looked for. Some preliminary prospectig was also done.

The L C P was closed at 11 am on Nov. 25 and an attempt was made to visit the

showings and collect some representative samples of the mineralization, but after four hours work we again had to give up due to extreme weather conditions.

RESULTS

Due to the precipitous terrain and the adverse weather and snow conditions only 5400 metres of the perimeter boundaries of the claims could be run in and gridded.

In prospecting the area between Slippery Creek and the 100+00 E line on the Cu 2 it was found that most of the area rocks were hornblend biotite granite. There were some areas where there seemed to be an increase of silica and a decrease in the hornblend content. No attempt was made to differentiate and map these rocks. For the most part these rocks were little weathered and were quite blocky.

However there was one area where the intrusives were quite weathered and were a muscovite rich leucocratic granite weathering to a buff colour. No minerals could be seen in the rocks.

Only one shear or small fault was noted in this area. It was about $\frac{1}{2}$ a metre wide with a north southerly strike. The shear was quite rusty but no sulphides could be seen in the weathered rock. This rusty weathering persisted in both walls of the enclosing rocks for about $\frac{1}{2}$ a metre but tapered off rapidly. No increase of silicification was noted in the shear.

For the most part there was little of interest in the lower elevations of Cu 1 & 2. No quartz veining was seen in place although some quartz was seen in the gravels within the Slippery Creek stream channel.

Between the 1100 metre and the 1150 metre contours along the west flank of the south west by south nose from Mt Donaldson and Slippery Creek there is a ring of cliffs. There are two possible breaks in this ring of cliffs. One break is just above Slippery Creek off the end of the road on the east side through a field of large boulders and between the two creeks that straddle identification post 15 to the north and the south. The end of the road is at 1040 metres and elevation might be gained by a series of switch backs between the two creeks missing most of the cliffs up to an elevation of 1340 metres. This route has a number of disadvantages as the switch backs would have to be tight and the area looks like it may be

a snow slide area that would constantly bring debris down onto the road bed necessitating a yearly spring clean out. It is also thought that the spring melt in this area would be quite late. The grade of this route would have to be quite steep.

The best route seems to be from the end of a short spur about 150 metres to the west of identification post 3 S. The end of this spur is at an elevation of about 1170 metres and elevation might be gained by fewer and wider switch backs between the cliffs to the 1280 metre elevation and then by means of a more gradual slope northerly along the west flank of the nose from Mt. Donaldson to the 1390 metre elevation just to the east of identification post 1S and thence northerly to a point between the L C P and the next cliffs to the east. This possible route is marked on Fig. 4.

Although this latter route in to a point east of the L C P is longer and may entail more rock work getting through the ring of cliffs it is believed that the overall costs would not be that much more and this would be off set by lower maintenance costs and the fact that this route would probably open up sooner in the spring. The grade would not be as steep and it has the advantage that it would open up a larger area of commercial timber and some cost sharing may be obtained from the logging company working in the area.

From a point just to the east of the L C P the route into the showings becomes more difficult as the road would have to work up along the eastern side of the basin about Slippery Lake and up onto the ridge between Slippery Lake and Smithe Lake. This may be difficult and costly as the sides of the basin are quite steep and the construction of the road would entail considerable rock work. However once on the top of the ridge the trenches on the highgrade showings to the north would be accessed and if it was desirable to continue the road to the adit on Smithe Lake this could be done by swinging back southeasterly along the ridge losing elevation into Smithe Lake.

The length of the road from the end of the spur west of 3S to just east of the L C P would be about 1700 metres. From a point east of the LCP into the north trenches and back into Smithe Lake would add at least another 1200 to 1300 metres

of road.

After closing the location of the Cu 1 - 4 claims at 11:00 am on Nov. 25 a traverse was made over the northern nose of Mt. Donaldson into Smithe Lake to obtain some representative samples of the mineralization from the adit and the muscovite granite. When we arrived at what we thought was the adit and the dump we found the portal blocked and the dump covered with snow. Some samples of high - grade boronite and chalcopyrite were found in the water at the lake edge just to the south of where we thought the portal and dump to be. About two lbs. of this material was collected and as it was quite spectacular it was thought to have probably come from the adit. A sample of the muscovite granite was collected higher up on the ridge on the way back, but as this only contained malachite staining and the rest of the surrounding area was snow covered there was no way of determining that this was a representative sample.

We worked northerly along the ridge towards where we thought that the high grade silver was trenched. We did not find the trenches but did find three small quartz veins in a wind swept portion of the ridge. We sampled what little mineralization we could find but it was not thought to be a representative sample. Since we were not paid for the job these samples were not analysed but are kept on file.

As there was better than $\frac{1}{2}$ half a metre of snow in the area and outcrop could only be found on steep cliffs and wind blown ridges, and as the weather was closing in we had to give up. However it was during the trip into the showings and back that we were able to determine a possible route for a road into the showings. This route is marked on Fig. 5. At this time no attempt was made to try to estimate the cost of any road construction as the thrust of this trip was to determine if any route at all was possible.

The total cost of the contract to stake the claims, survey in a possible road access and to collect some samples, including mobilization and demobilization was \$ 5312.07. Of this amount a total of \$ 926.00 was pro rated to the time solely on prospecting and surveying in a possible road access route. This is shown on the ' Statement of costs For Prospecting.' However, since some of this work was done

on the area of the Cu 1 & 2 claims which were not part of the area retained, and since much of the work was done prior to the closing of the location, all this was not used to apply for assessment work. However the results of this work has been included in the report since it has a bearing on the work that was done on the four units of Cu 4 that were retained.

Of this amount of \$ 926.00 prorated to prospecting a total of \$ 410.00 was prorated to the work done on the four units of Cu 4 that were retained and this work was done after closing the location. This is shown in the 'Statement Of Costs Applicable to Cu 4 Reduced Claim'.

CONCLUSIONS

The time that we were in the area from the 20th of Nov. to the 25th was much too late in the season to work effectively unless the advent of winter was later and less severe. It was estimated that the area of the workings would perhaps be open less than four months of the year.

Access by foot from the end of the existing logging roads that are accessible to four wheel drive to the areas of interest is very time consuming. A good foot trail should be delineated and marked into the area selecting the best route, at least for the initial stages of an exploration program.

If helicopter supported camp is to be used it would have to be much earlier in the season.

What little results that were seen from the limited prospecting has indicated some spectacular mineralization in the vicinity of the adit at Smithe Lake and to a limited extent the quartz veins on the ridge between the two lakes further substantiate that this may be an area of some potential.

Any initial exploration program should entail a regional stream geochemical program about the area now known, this to be followed up with a more detailed program of soil sampling if any areas of interest are delineated.

It would appear from previous work in the area that any future work should be concentrated to the north and east of Mt. Donaldson.

Additional work should be done and favourable results obtained before contem-

plating the construction of a road into even at least as far as Slippery Lake. Should results be obtained that would indicate any drilling or extensive trenching then the construction of a road into the area of the main showings would be warranted and perhaps then only if the costs could be shared with the logging company.

STATEMENT OF COSTS FOR PROSPECTING

D. K. Bragg	12 hours at \$20.00 per hr	\$ 240.00
Rob Neudorf	10 hours at \$15.00 per hr	\$ 150.00
Truck rental and gas	1 day at \$ 50.00 per day	\$ 50.00
Camp rental and costs	1 day at \$ 30.00 per day	\$ 30.00
Board 2 man days at	\$ 10.00 per man day	\$ 20.00
Prorated mobilization and demobilization		\$ 170.00
Report preparation		<u>\$ 266.00</u>
	Total	\$ 926.00

STATEMENT OF COSTS APPLICABLE TO Cu 4 REDUCED CLAIM

D. K. Bragg	5 hours at \$ 20.00 per hr	\$ 100.00
Rob Neudorf	5 hours at \$ 15.00 per hr.	\$ 75.00
Truck rental and gas	$\frac{1}{2}$ day at \$ 50.00 per day	\$ 25.00
Camp rental and costs	$\frac{1}{2}$ day at \$ 30.00 per day	\$ 15.00
Board 1 man day at	\$ 10.00 per man day	\$ 10.00
Prorated mobilization and demobilization		\$ 70.00
Prorated report costs		<u>\$ 115.00</u>
	Total	\$ 410.00

D.K. Bragg

STATEMENT OF QUALIFICATIONS

D. K. Bragg supervised and did most of the work involved in this investigation, including the line cutting, prospecting, mapping the geology, soil sampling magnetometer survey and report preparation. His qualifications are as follows:

Graduated Armstrong High School, Armstrong, B.C., 1951

Attended U.B.C. from 1958 to 1962 in the faculty of Arts and Science, in Honors Geology.

Has worked in the mineral exploration industry since 1956.

Worked for Kennco Explorations during the summers of 1956, 1957, and 1959 in the Yukon and northern B.C. as an assistant prospector and geochem sampler under the direction of Dr. R. Campbell and R. Woodcock.

Worked as head prospector for the Nahanni 60 Syndicate in the Northwest Territories in 1960 under the direction of Doug Wilmont.

Worked as head prospector in the Yukon for Dualco in 1961 under the supervision of E. Wozniak.

Worked as head prospector for Mining Corp. of Canada in southwest B.C. in 1962 under J. S. Scott and Dr. K. Northcote.

Worked as head prospector during the summer of 1963 for the Francis River syndicate in the central Yukon, under the direction of Dr. A. Aho.

Worked as field geologist in the Greenwood area of B.C. for Scurry Rainbow Oil in 1965 under the direction of Bill Quinn.

Worked as field supervisor for Alrae Explorations Ltd. from sept 1965 to April 1967 under the direction of Rae Jury.

Since 1956 has also worked as a self employed contractor, working for various mining companies in the following fields: prospecting, property examination, staking, line cutting, topographical mapping, geological mapping and reconnaissance mineral sampler, draughting, air photo interpretation, geochemistry, geophysics, and supervising property exploration programs.

Since 1956 has also been a self employed prospector working in various areas in B.C. on numerous properties.

Has assisted in teaching the geochemical section of the Ministry of Energy, Mines and Petroleum Resources Mineral Exploration Course For Prospectors under the direction of Dr. S. Hoffman in 1984, 1985, 1986, 1987, 1988

Has recieved the B.C. Provincial Grubstake for the years 1964, 1968, 1969, 1970, 1980, 1981, 1982, 1983, and 1985, 1986, 1987, 1988

Has worked in the Rossland camp since 1971 as a miner on the Snowdrop and BlueBird claims. Has spent considerable time in the camp as a prospector and mining exploration contractor.

REFERENCES

Map 42 - 1963, Squamish, B.C. by H.H. Bostock

BCDM MMAR 1917 - 281
 1922 - 251
 1924 - 244
 1928 - 389
 1965 - 222
 1966 - 245
 1967 - 62

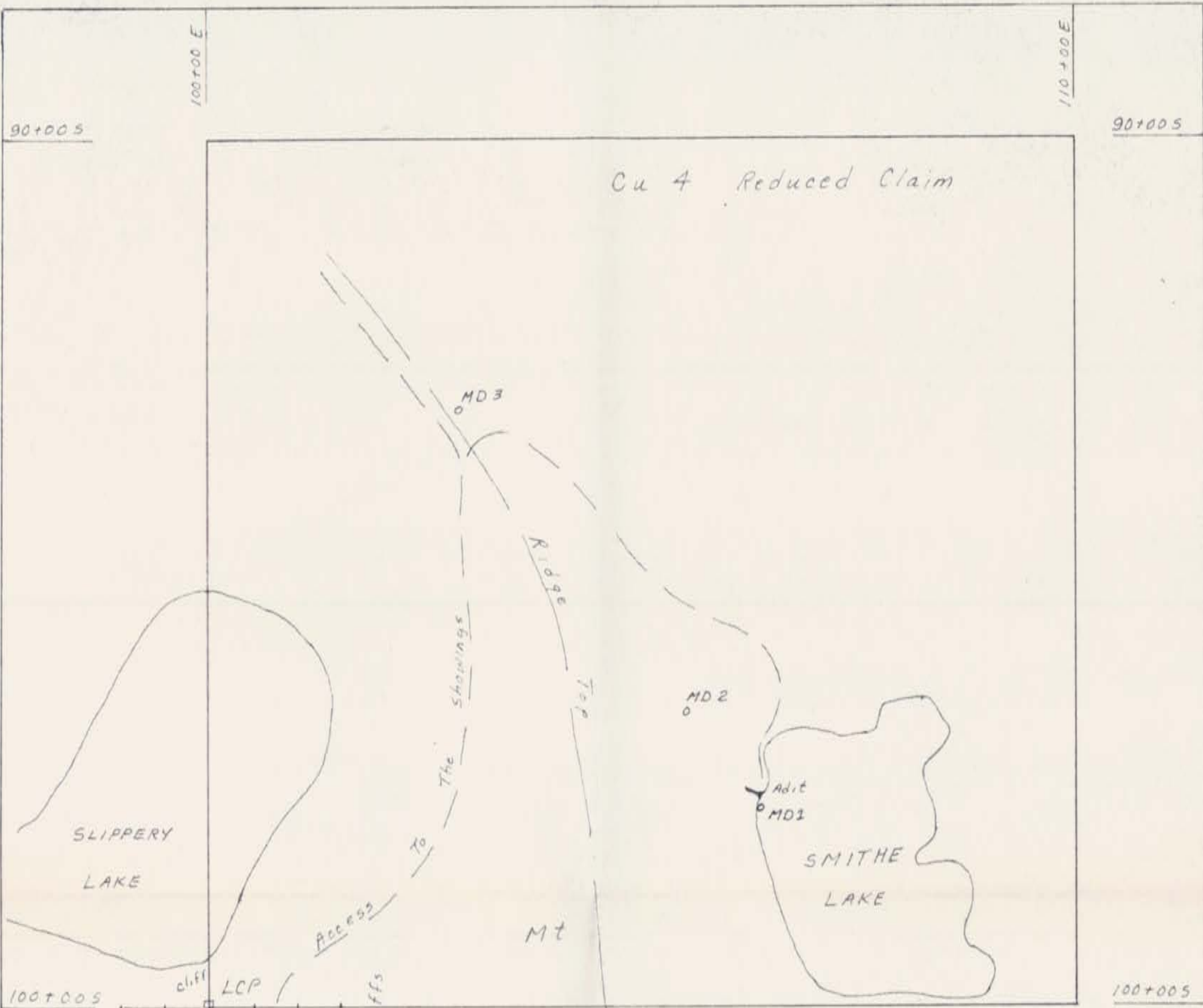
BCDM GEM 1972 - 277
 1975 - E106

BCDM Open File

EMR MRD Corpfile (Pacific copper Mines Ltd., Grasset Lake Mines Ltd.)

CIM Special Vol 15 - Res

BCDM Ass Rpt 752
 4003
 8822
 11619

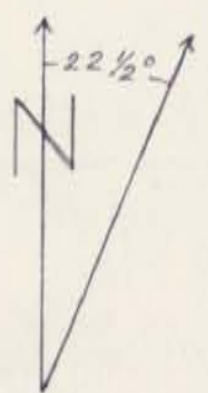
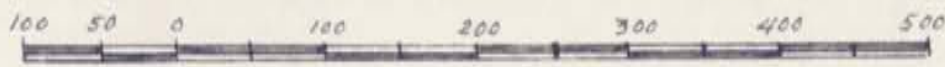


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TOPOGRAPHY Cu 4 REDUCED CLAIM

MT DONALDSON
Vancouver M.D
49° 42' 22" N 123° 27' 19" W
Cu 4 Reduced Claim



Rock Sample Site MD1

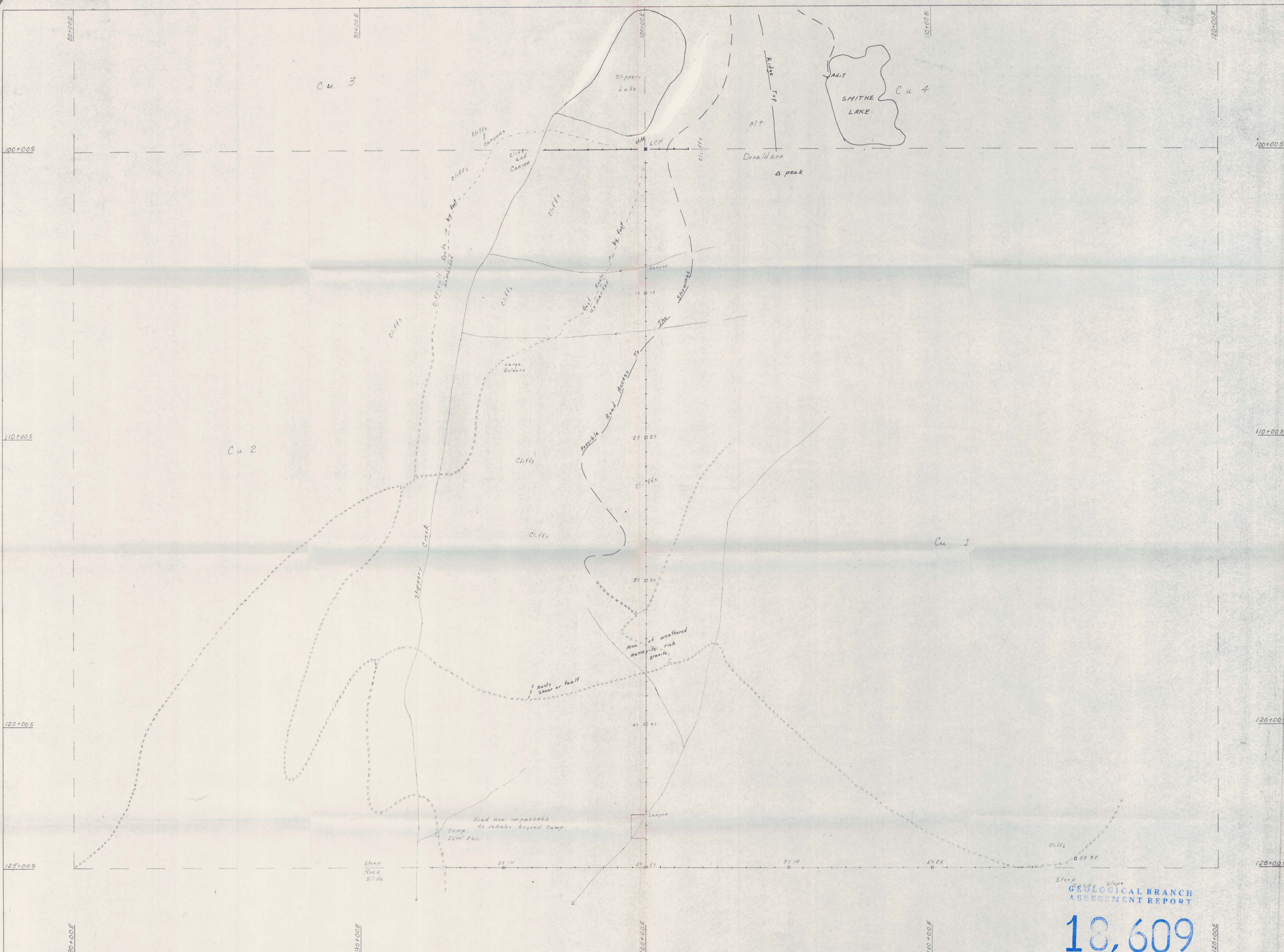
To accompany 'PROSPECTING REPORT' on the Cu 4 Reduced Claim
Smithe Lake Vancouver M.D by D.K. Bragg Dated Feb. 15, 1989

SCALE: 1 - 5000

DATED: Feb 15, 1989

DRAWN by: D.K. Bragg

FIG: 5

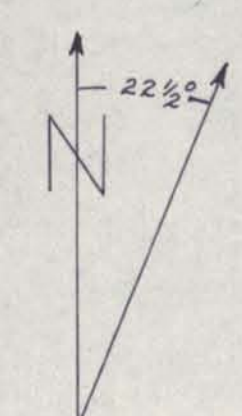


LEGEND

Intermittent stream or gully ———→

Logging road =====

Rock sample site MD1 •

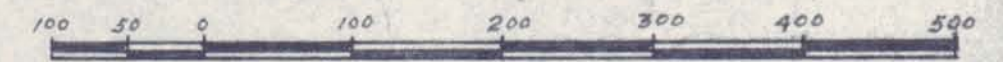


GEOLOGICAL BRANCH
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TOPOGRAPHY Cu 1 & 2

MT. DONALDSON
Vancouver M.D.
49° 42' 22" N 123° 27' 19" W
Cu 1 + 4 Claims



To accompany 'PROSPECTING REPORT' on the Cu & Reduced Claim
Smithe Lake, Vancouver M.D. by D.K. Bragg Dated Feb 15, 1989
SCALE: 1 - 5000 DATE: Feb. 15, 1989
DRAWN BY: D.K. Bragg FIG. 4