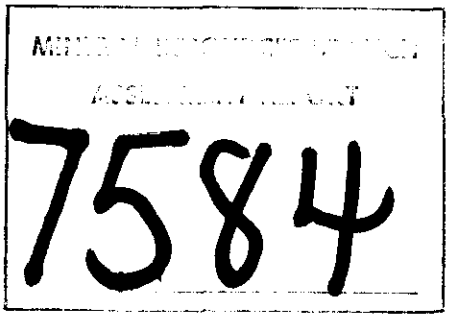
GEOLOGICAL AND GEOCHEMICAL REPORT

HG and MS CLAIMS

SIMILKAMEEN MINING DIVISION



By

J. Nebocat

November 16, 1979.

LOCATION:	40 kilometers north of Princeton, B. C. Latitude 49° 44', Longitude 120° 30' N.T.S. 92 H/9 W, 10 E
CLAIMS OWNED BY:	Edward Mullin, W. Stevens, Patricia Mullin
WORK DONE BY:	Newmont Exploration of Canada Limited
WORK DONE BETWEEN:	October 2, 1979 and October 17, 1979

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MAPS

LOCATION, ACCESS, TOPOGRAPHY

The HG and MS claims are located in the Thompson Plateau of south-central British Columbia. The claims are centred approximately 4 kilometers south of Missezula Lake and are bordered to the west by Summers Creek. The property spans N.T.S. sheets 92 H/9 W and 92 H/10 E (49° 44' latitude, 120° 30' longitude.

Access is by the Missezula Lake road which branches off Highway 5, 8 kilometers north of Princeton, B.C. The distance to Missezula Lake from Highway 5 is 30 kilometers over a good but winding gravel road. The HG 1 and HG 2 claims can be reached by a 3 kilometer 4-wheel-drive road that branches to the east from the main road about 1.5 kilometers south of Missezula Lake. The road ends approximately 400 meters north of the HG 1 claim. Access to the MS and the other HG claims is by foot from Summers Creek, the HG 1 claim, or from a logging road 4 kilometers east of the claims.

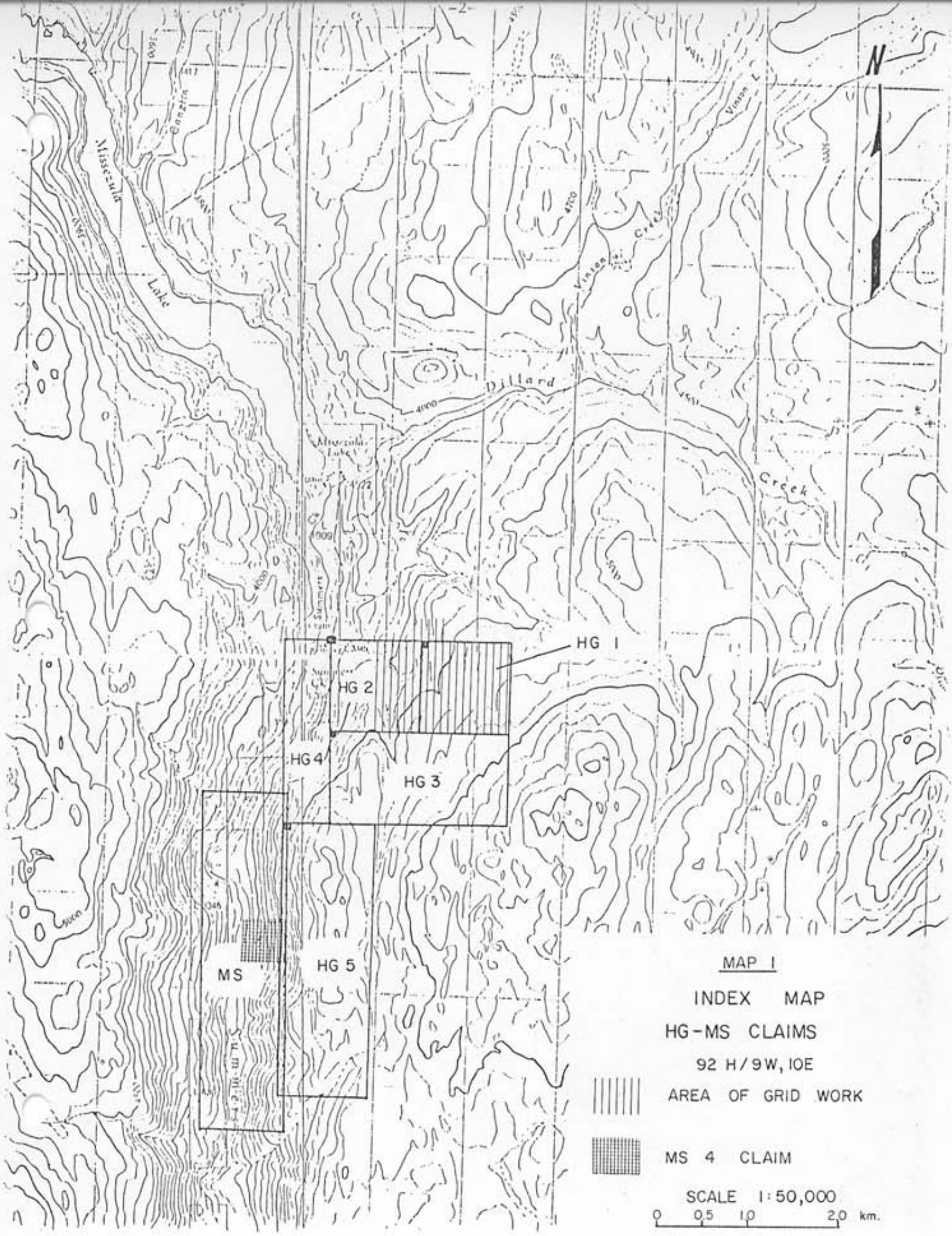
The terrain on the HG and MS claims varies from the steeply incised Summers Creek valley on the western border (slopes up to 45°) to gently rolling hills towards the east. Elevations vary from 975 meters (3200') ASL at the valley floor to 1550 meters (5100') ASL near the east-central part of the claims. The property is forested with jackpine and fir, with lesser spruce and deciduous types.

HISTORY

The HG 1-4 and HG 5-8 claims were staked by E. Mullin and W.C. Stevens on May 18, 1979 under the two-post system. They have subsequently been abandoned and restaked as the HG 1 and HG 2 claims under the modified grid system. The HG 3 to 5 claims were staked by Newmont Exploration of Canada Limited and connect the HG 1 and HG 2 claims with the MS claims.

No evidence of work previous to 1979 is known to the author, yet most of the ground had been staked at some time.

The claims are bordered to the north by the Prime claims (formerly "Primer") where chalcopyrite occurs in fractured and altered intermediate volcanics and quartz deficient intrusions commonly found in the Nicola Group. Similar mineralization was discovered by E. Mullin on the HG 1 claim in 1979.



MAP 1

INDEX MAP

HG-MS CLAIMS

92 H/9W, 10E

AREA OF GRID WORK

MS 4 CLAIM

SCALE 1:50,000

0 0.5 1.0 2.0 km.

Disseminated and fracture-filled chalcocite occurs in laharic breccias on the MS claims. Similar showings have been noted in the area by B.C. Ministry of Mines.

SUMMARY OF WORK

Between October 2 and October 17, 1979 the author and an assistant soil sampled and geologically mapped on the HG 1, HG 2 and MS 4 claims. 389 soil and 9 rock samples were taken within these claims. The results of 77 soil and 5 rock samples taken outside the claim boundaries are also presented but their costs are not included for assessment purposes.

Geological and geochemical maps were prepared at a 1:2500 scale. A grid totalling 15.56 line-kilometers was established on the HG 1 and HG 2 claims covering an area roughly 1.5 square kilometers. The grid was used for mapping and sampling.

A chain and compass survey was done on the MS 4 claim and plotted on a 1:1000 scale map. Steep bluffs prohibit the establishment of a proper grid on the western side of the showing.

CLAIMS

The HG and MS group of claims are recorded in the Similkameen Mining Division. Work was carried out on the HG 1, HG 2 and MS 4 claims. The claims being grouped in the HG-MS group are:

CLAIM	NO. OF UNITS	STAKING DATE	RECORD DATE	RECORD NUMBER
HG 1	4	September 28/79	October 1/79	749
HG 2	4	September 28/79	October 1/79	750
HG 4	4	September 28/79	October 1/79	752
HG 5	12	September 29/79	October 1/79	753
MS 1 - 16	16	November 2/78	November 10/78	462-477

PREPARATORY WORK

An east-west baseline was established along the HG-Prime claim boundary with the HG 1 LCP as the origin point. The common HG 1-HG 2 claim line was used as a north-south control line. The grid spacing is 100 meters between lines, with 40 meter stations along them. A 25 meter by 20 meter spacing was used within areas of known showings.

The lines were surveyed in with the use of compass and hip chain; slope corrections were made accordingly. The distance between lines was chained along the southern claim boundary to check for angular deviations. Wooden laths were located on all 100 meter and 50 meter lines with 40 meter station intervals. Elevations were recorded with Thommen pocket altimeters at all 40 meter stations.

GEOLOGY

HG 1 and HG 2 Claims

General

The HG claims are underlain by an assemblage of andesitic to basaltic flows, breccias and tuffs, and quartz deficient intrusions of the Upper Triassic Nicola Group.

Dark green hornblende porphyry, hornblende-pyroxene porphyry, pyroxene-plagioclase andesite and auto-brecciated equivalents cover most of the eastern and south-central part of the grid. A syeno-monzonitic intrusion with minor hornblende diorite occupies the north-central and western portion of the grid and extends into the Prime claims.

An assemblage of steeply dipping, northeasterly striking tuffs, breccias, syenitic lahars and trachytes with intercalated augite prophyry flows and/or sills occurs in the southwest corner of the grid. This assemblage is identified as the "Eastern Belt" as defined by Preto, 1974.

The hornblende-pyroxene-plagioclase porphyries and related breccias seen on the eastern part of the property are similar to a sub-aqueous assemblage of flows seen by the author on the west side of Summers Creek. They are classified as "Central Belt" rocks and may possibly reoccur here.

Several north-south trending linears and creeks occur on the property and may represent fault zones. The creek on line 3 West may represent a major break between "Eastern" and "Central Belt" rocks but units of both types occur on both sides of the creek.

Mineralization

The syenitic and dioritic intrusive along the northern claim boundary hosts the only significant copper mineralization seen so far. Bulldozer trenches put in by the claim owner in September, 1979 on the original HG claims expose copper mineralization within an area occupying roughly 6400 square meters. An east-west fault separates unaltered syenite from a soft quartz-albite altered phase hosting most of the copper mineralization in the form of sporadic disseminations of malachite, chalcopyrite, neotocite (an amorphous mixture of black Fe, Mn and Cu oxides), and azurite. (See Map 3 for sample results). A fine-grained unaltered hornblende diorite is in fault contact with syenite in the westernmost trench but is not seen in the eastern trenches. Its age relation to the syenite is uncertain but minor copper mineralization was noted in it.

Traces of bornite, malachite, chalcopyrite, and chalcocite were seen in monzonite and agglomerates along the western part of the grid.

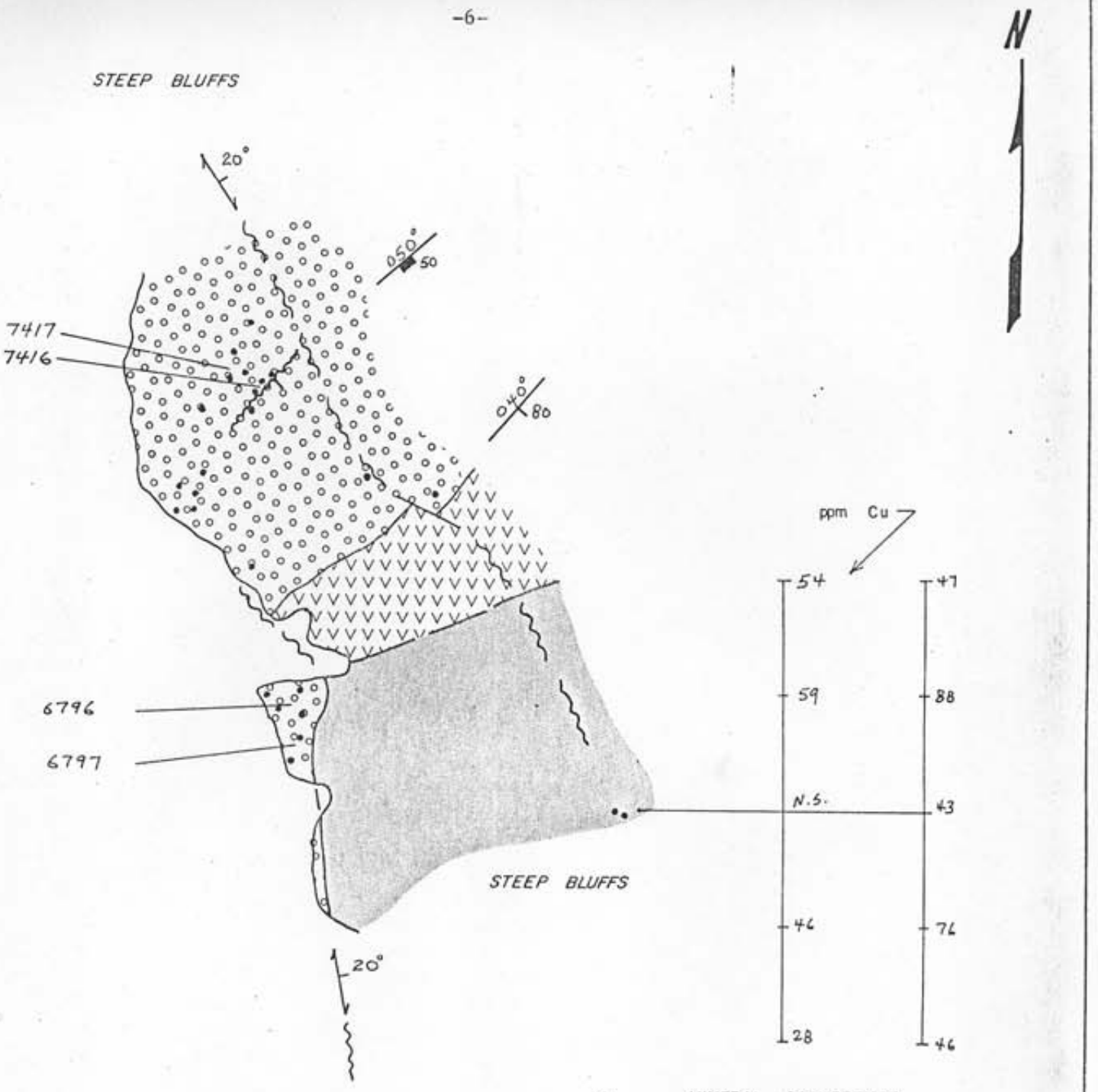
MS 4 CLAIM

A thick sequence of lahar with abundant syenitic clasts is the predominant rock type on the property. On the main showing (see Map 2) clasts and stringers of chalcocite occur throughout the laharic matrix. In float below the bluffs some finely disseminated bornite-chalcopyrite and chalcopyrite-pyrite was observed in several clasts in the lahar.

A pinkish-grey to flesh coloured trachyte porphyry flow is in contact with the lahars and indicates that the trend of the rocks here is northeasterly. A grey to maroon trachye-andesite or trachye-basalt overlies the trachyte porphyry.

Several strong cleavages are evident, and one set dipping 20° to the northeast has a measurable displacement along it in two places. Another major set roughly parallels the contacts between the different units and might be indicative of a crude bedding feature in the lahars.

Genesis of the chalcocite mineralization is not yet understood. However, a concentration of chalcocite was observed along a "bedding plane" shear in the lahar.



SAMPLE NUMBER	TOTAL % Cu	OXIDE % Cu	OZ/T Ag	OZ/T Au	WIDTH metres
6796	0.653	0.376	0.66	Tr.	4.0
6797	0.720	0.417	0.72	Tr.	5.5
7416	0.192	—	—	—	2.5
7417	0.451	—	—	—	2.3

0 20 40 m.

- MINERAL OCCURRENCE
- GREENISH-GREY LAHAR WITH SYENITE AND ANDESITE CLASTS. HOSTS CHALCOCITE AND MALACHITE MINERALIZATION
- PINKISH-GREY TRACHYTE PORPHYRY
- GREY-MAROON TRACHYE-ANDESITE

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MS 4 CLAIM

SCALE	LOCATION	DATE
1:1000	92H/9w, 10e	
SURVEY BY: JN	DRAWN BY: JN	NO.: MAP 2

NCI 241 – N.E.C.

GEOCHEMISTRY

Field Procedure

Soil samples were taken at all 40 meter and 20 meter stations. The B horizon was sampled with a mattock and trowel at an average depth of 15 cm. The samples were collected in kraft paper envelopes.

The A horizon was very shallow in most instances (less than 5 cm) with exceptions being in creeks and gulleys where organic material had accumulated. The B horizon was for the most part a light greyish-brown soil derived from glacial till containing little or no organic material.

Rock assay samples were taken in the trenches exposing mineralization on the HG 1 claim and from the surface showings on the MS 4 claim. Sample weights varied from 1 kg to 3 kg.

Laboratory Procedure

The samples were prepared and analyzed by Min-En Labs Ltd. and Chemex Labs Ltd., both in North Vancouver, B.C. All but 3 soil samples were analyzed for Cu only at Min-En Labs.

After drying and sieving to -80 mesh, a 1/2 gram sample was placed in a tube and digested for 2 to 3 hours in a mixture of 3 ml perchloric acid and 2 ml of nitric acid. The mixture was then diluted to 25 ml with distilled water, mixed, and the sediment allowed to settle. The solute was analyzed by atomic absorption for Cu. Three samples were analyzed by Chemex Labs Ltd. (Nos. 2062-2064) for Cu, Mo, Ag, Zn.

Seven of the 9 rock assay samples on the claims were prepared and analyzed by Chemex Labs Ltd. The samples were crushed and pulverized to 100 mesh and then acid digested and chemically analyzed. The other 2 samples were analyzed by Min-En Labs Ltd.

RESULTS AND INTERPRETATION

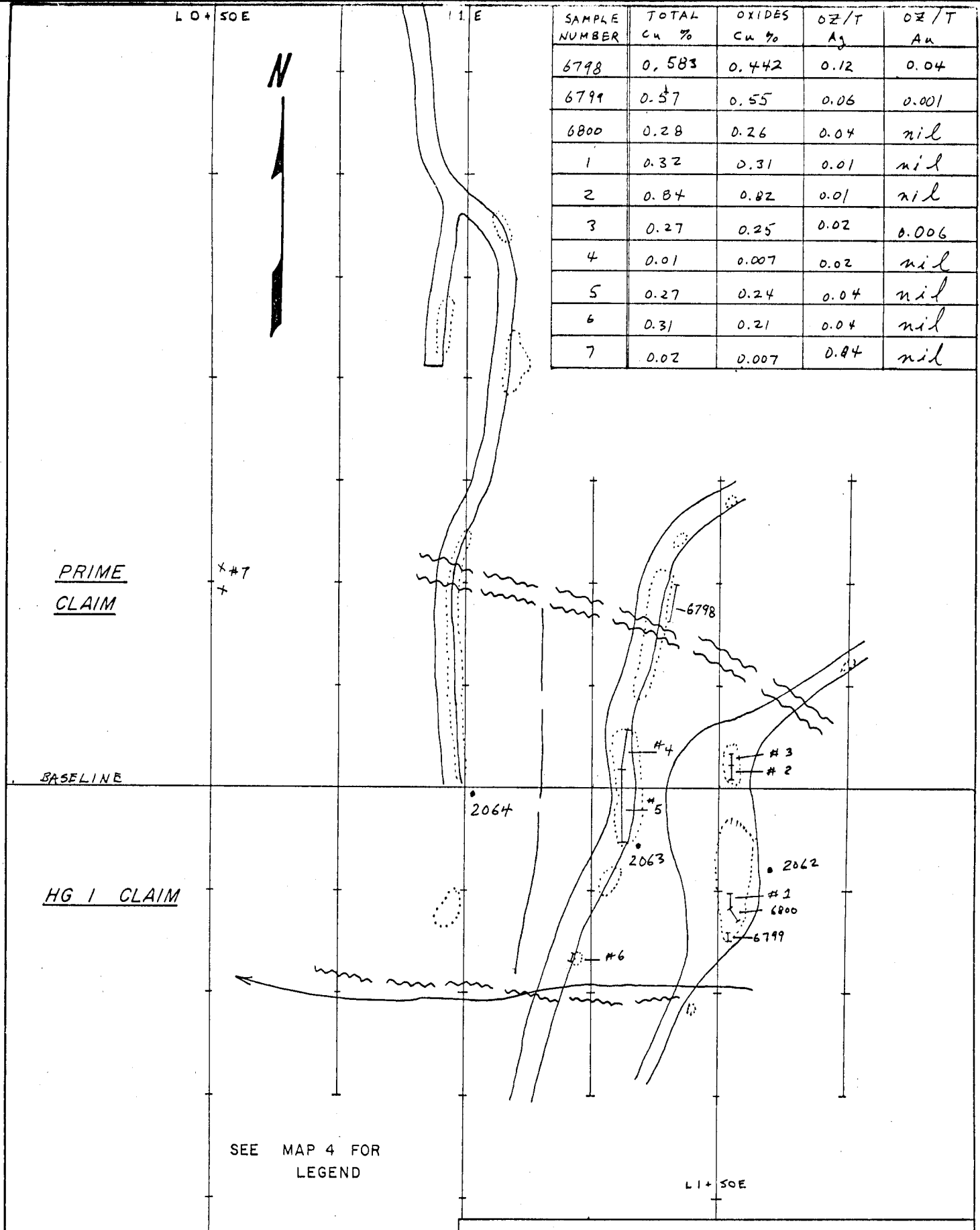
The Cu values for all soil samples taken on the HG 1 - HG 2 claim grid were plotted on a 1:2500 scale map (Map 5 in pocket). Rock assay samples are shown on Map 3. Geology, geochemical and assay samples on the MS 4 claim are shown on Map 2. A Table of assay samples, widths and locations is given in the Appendix.

A strong Cu anomaly occurs coincidentally with the exposed showing along the HG 1-Prime claim boundary. The 100 ppm contour has roughly a 150 meter diameter about the central part of the showing. The high value of 9500 ppm is probably attributable to malachite in the sample.

A 900 ppm value occurs on L1+50E, 200N. Some small outcrops of fractured and altered intrusive were seen in a creek bottom on L2E, 155N. Mineralization similar to the showing on the baseline may occur here but is covered with overburden. A larger and lower order anomaly (100-200 ppm) is found on L4E between 560S and 840S and over to L3E between 720S and 840S. Overburden hides any significant amount of outcrop but a few small ones of intermediate volcanic were found. The anomalous samples on L4E were taken in and beside a north-south linear which may represent a mineralized fault zone.

Several one- and two-station low order anomalies occur throughout the grid. Reddish-brown soil gossans found along northwesterly trending creeks may be representative of a NW-SE fault set. The anomalies at LO, 200S x L1W, 160S and L6E, 440S x L7E, 480S follow this trend. The remaining anomalies are unexplained. Soil samples 2062-2064 over the HG copper showing showed only low amounts of Mo, Zn and Ag (see Map 3 and Appendix).

No anomalous copper values were observed in soil samples on the MS 4 claim.



SAMPLE NUMBER	TOTAL Cu %	OXIDES Cu %	OZ/T Ag	OZ/T Au
6798	0.583	0.442	0.12	0.04
6799	0.57	0.55	0.06	0.001
6800	0.28	0.26	0.04	nil
1	0.32	0.31	0.01	nil
2	0.84	0.82	0.01	nil
3	0.27	0.25	0.02	0.006
4	0.01	0.007	0.02	nil
5	0.27	0.24	0.04	nil
6	0.31	0.21	0.04	nil
7	0.02	0.007	0.04	nil

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HG 1 - ASSAY SAMPLE LOCATIONS

SCALE	LOCATION	DATE
1: 1000	92 H/9w, 10e	
SURVEY BY: JN	DRAWN BY: JN	NO.: MAP 3

NCI 241 – N.E.C.

CONCLUSIONS

1. A significant copper prospect has been uncovered on the north boundary of the HG 1 claim. Mineralization has been observed over an area 80 meters in diameter with grades of 0.2 to 0.8% Cu, mainly in the oxide form.

2. A strong geochemical anomaly exists in the soils above this prospect. Lesser geochemical anomalies elsewhere on the grid require further investigation.

RECOMMENDATIONS

1. Further trenching, mapping and sampling should be done on the principal prospect between LO and L2E.

2. More detailed soil sampling, mapping and pitting should be carried out around L4E between 560S and 840S.

3. Soil sampling, mapping and prospecting should be extended to cover the remainder of the claim group. A detailed examination of the bluffs on the MS 4 claim containing chalcocite should be included.

4. A magnetometer survey should be done over all grids.

John Nebocat

Vancouver, B. C.
November 16, 1979

STATEMENT OF QUALIFICATIONS

I, John Nebocat, do hereby certify that:

1. I am a geological technician presently employed by Newmont Exploration of Canada Limited.

2. I am a graduate of the British Columbia Institute of Technology (Diploma of Technology, 1974).

3. I have supervised and carried out the geochemical survey and the geological mapping described in this report.

John Nebocat

I, Terrence N. Macauley, do hereby certify that I supervised the work described in this report.

T. N. Macauley, P. Eng.
Exploration Manager
Western Division
NEWMONT EXPLORATION OF CANADA LIMITED

A P P E N D I X

TABLE OF ROCK SAMPLE ASSAYS

Claim Name	Sample Number	% Cu total	% Cu oxide	Ag oz/ton	Au oz/ton	Width (m)
HG 1	6799	0.57	0.55	0.06	0.001	1.5
	6800	0.28	0.26	0.04	nil	3.0
	6801	0.32	0.31	0.01	nil	3.0
	6805	0.27	0.24	0.04	nil	13.7
	6806	0.31	0.21	0.04	nil	grab
MS 4	6796	0.653	0.376	0.66	tr	4.0
	6797	0.720	0.417	0.72	tr	5.5
	7416	0.192	-	-	-	2.5
	7417	0.451	-	-	-	2.3
PRIME	6798	0.583	0.442	0.12	0.04	7.6
	2	0.84	0.82	0.01	nil	3.0
	3	0.27	0.25	0.02	0.006	2.1
	4	0.01	0.007	0.02	nil	8.5
	7	0.02	0.007	0.04	nil	grab

SOIL SAMPLES ON MAP 3 (in ppm)

Sample Number	Cu	Mo	Zn	Ag
2062	275	1	68	0.1
2063	630	2	64	0.1
2064	430	2	108	0.1

STATEMENT OF COSTS

Personnel	Dates (1979)	Office Days	Field Days	Total Days	Daily Wage	Cost
Geological Technician	Oct. 2-5; Oct. 9-13; Oct. 15-17; Oct. 30, 31; Nov. 1, 2, 5	5	12	17	$72	$1,224.00
Assistant	Oct. 2-5; Oct. 9-13; Oct. 15-17; Oct. 30; Nov. 1	3	12	15	58	870.00
Senior Geologist	Oct. 2		1		150	150.00
Accommodations	14 days between October 2, 1979 and October 19, 1979 @ $22.50/day					315.00
Food						250.00
Fuel						92.00
4 x 4 Vehicle Rental	14 days @ $29.79/day					417.06
Analyses	Min-En Labs: 386 soils for Cu @ $2.00	$772.00				
	2 assays for Cu @ $5.00	10.00				
	Chemex Labs: 3 soils for Cu, Mo, Zn, Ag @ $3.75	11.25				
	7 assays for total Cu, oxide Cu, Ag, Au @ $23.00	161.00				954.25
Report Typing, Printing, etc.						100.00
						$4,372.31

T T Macauley

L5W L4W L3W L2W L1W L0 L0·50E L1E L1·50E L2E L2·50E L3E L4E L5E L6E L7E L8E

PRIME CLAIM

240 N

BL

240 S

480 S

720 S

960 S

HG 2 1E

HG 2, HG 1 2E LCP

HG 1 1E

HG 1 2E

HG 2 1E 2S

HG 2 2E 2S

HG 1 2S

HG 1 1E 2S

HG 1 2E 2S

N

LEGEND

- Hornblende diorite, fine to medium grained, magnetic, hosts minor copper mineralization.
- Altered rock of probable syenitic or monzonitic composition. Argillitized and kaolinized, hosts chalcopyrite, malachite, neotocite, azurite and pyrite.
- Monzonite porphyry, syeno-monzonite, syenite porphyry. Locally well fractured, hosts chalcopyrite, malachite, neodocite.
- a: Lahoric breccia, agglomerate and crystal tuff-breccia with trachye-andesite, andesite porphyry and syenite clasts. b: Fine-grained tuff and volcanic wacke. c: Massive pink trachyte flows.
- Massive dark green augite-anatcine? porphyry. Locally amygdaloidal with calcite.
- Hornblende porphyry, hornblende-plagioclase porphyry, hornblende-augite-plagioclase andesite and fine-grained andesite. Extensively auto-brecciated and epidotized.
- FAULT : defined, inferred
- CONTACT : defined, inferred
- BEDDING : inclined, vertical
- SYNCLINE, SHOWING PLUNGE
- CLAIM POST

CONTOUR INTERVAL : 15 meters

ELEVATIONS : in metres above mean sea level

cpy – chalcopyrite
py – pyrite
cc – chalcocite
mal – malachite
az – azurite
neo – neotocite

MAP 4

50 25 0 50 100 150 200 Metres

NEWMONT EXPLORATION OF CANADA LTD

HG 1, HG 2 CLAIMS

GEOLOGICAL PLAN

SIMILKAMEEN MINING DISTRICT, B.C.

NTS: 92 H/9 W	DATE: NOV. 16, 1979	DRAWN BY: LC, JN

L5W L4W L3W L2W L1W L0 L0+50E L1E L1+50E L2E L2+50E L3E L4E L5E L6E L7E L8E

PRIME

CLAIM

240 N

BL

240 S

480 S

720 S

960 S

HG 2 1E

HG 2, HG 1 2E LCP

HG 1 1E

HG 1 2E

HG 2 1E 2S

HG 2 2E 2S

HG 1 2S

HG 1 1E 2S

HG 1 2E 2S

N

100 - 199 ppm

200 - 299 ppm

300 - 499 ppm

500 - 999 ppm

> 1000 ppm

NOTES ON SOIL SAMPLES

sampling method: mattock & trowel

sample depth: 10 to 30 cm.

horizon sampled: 'B'

portion analyzed: -80 mesh

analytical method: $HClO_4 - HNO_3$ digestion, atomic absorption

ASSESSMENT REPORT

7584

MAP 5

50 25 0 50 100 150 200 Metres

NEWMONT EXPLORATION OF CANADA LTD

HG 1, HG 2 CLAIMS

GEOCHEMICAL PLAN - Cu

SIMILKAMEEN MINING DISTRICT, B.C.

NTS: 92 H/9 W	DATE: NOV. 16, 1979	DRAWN BY: LC