

5875

GEOCHEMICAL REPORT COVERING

THE SNOWFLAKE CLAIM

ASPEN GROVE AREA

NICOLA MINING DIVISION

BRITISH COLUMBIA

Number of Units - 6

Located - 2 Miles (3.22 km) North of Aspen Grove

N. T. S. - 92H/15E Lat. 49°58' Long. 120°37'

Work Performed - June 16, 1975 to June 10, 1976

- Prepared for Owner -

MR. FRED GINGELL

4306 DAWSON STREET

BURNABY, B. C.

- Prepared By -

ROBERT W. YORKE-HARDY, M. T., C. E. T.

15 EMERALD DRIVE

LOGAN LAKE, B. C.



- Date -

MERRITT, B. C.

JUN 11 1976

MINING RECORDER

Department of	JUNE 10, 1976
Mines and Petroleum Resources	
ASSESSMENT REPORT	
NO. <u>5875</u> MAP.....	

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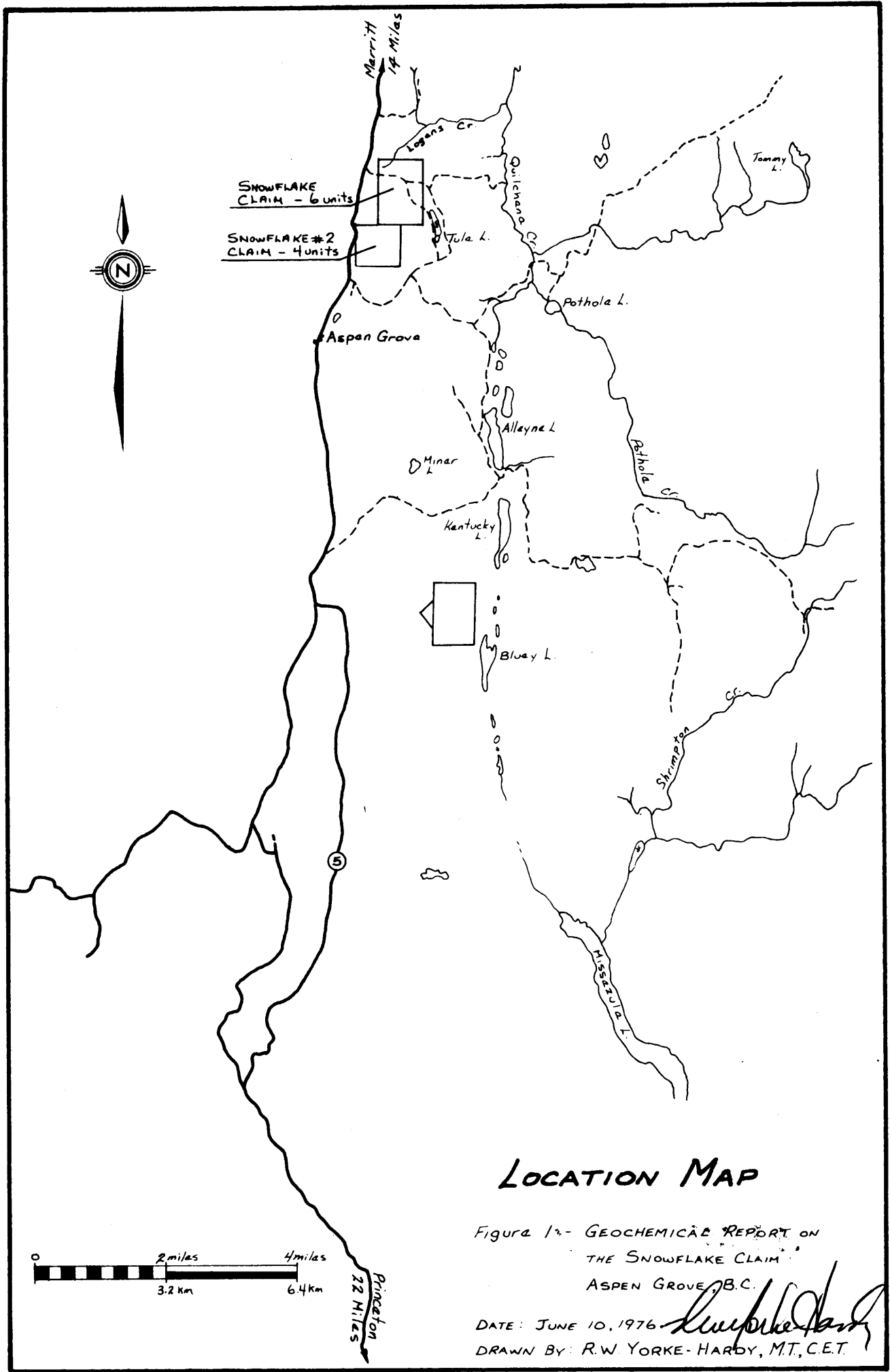
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LOCATION MAP

Figure 1- GEOCHEMICAL REPORT ON
THE SNOWFLAKE CLAIM
ASPEN GROVE, B.C.

DATE: JUNE 10, 1976 *Lumpkin*
DRAWN BY: R.W. YORKE-HARDY, M.T., C.E.T.

INTRODUCTION

A geochemical survey was conducted on the Snowflake mineral claim during the spring of 1976. The Snowflake claim is located in the Aspen Grove area of British Columbia and is owned by Mr. Fred Gingell, 4306 Dawson Street, Burnaby, British Columbia.

This program was undertaken at the request of the owner; at the recommendation and under the direction of Mr. J. M. Dawson, P. Eng., Kerr-Dawson and Associates Ltd., 1 - 219 Victoria Street, Kamloops, British Columbia. The program was performed under the immediate supervision of the writer, R. W. Yorke-Hardy, 15 Emerald Drive, Logan Lake, British Columbia.

Maps and illustrations showing the property location, claims and the results of the program are included in the report.

The work was performed to satisfy the assessment requirements on the claims Snowflake and Snowflake #2 and this report is to support the submission of the geochemical survey for assessment purposes.

PROPERTY

The Snowflake Group consists of two (2) mineral claims in the Nicola Mining Division of British Columbia, as follows:

<u>Claim Name</u>	<u>Record No.</u>	<u>Tag No.</u>	<u>No. of Units</u>	<u>Record Date</u>
Snowflake	8	02059	6	May 13, 1975
Snowflake #2	93	19656	4	April 14, 1976

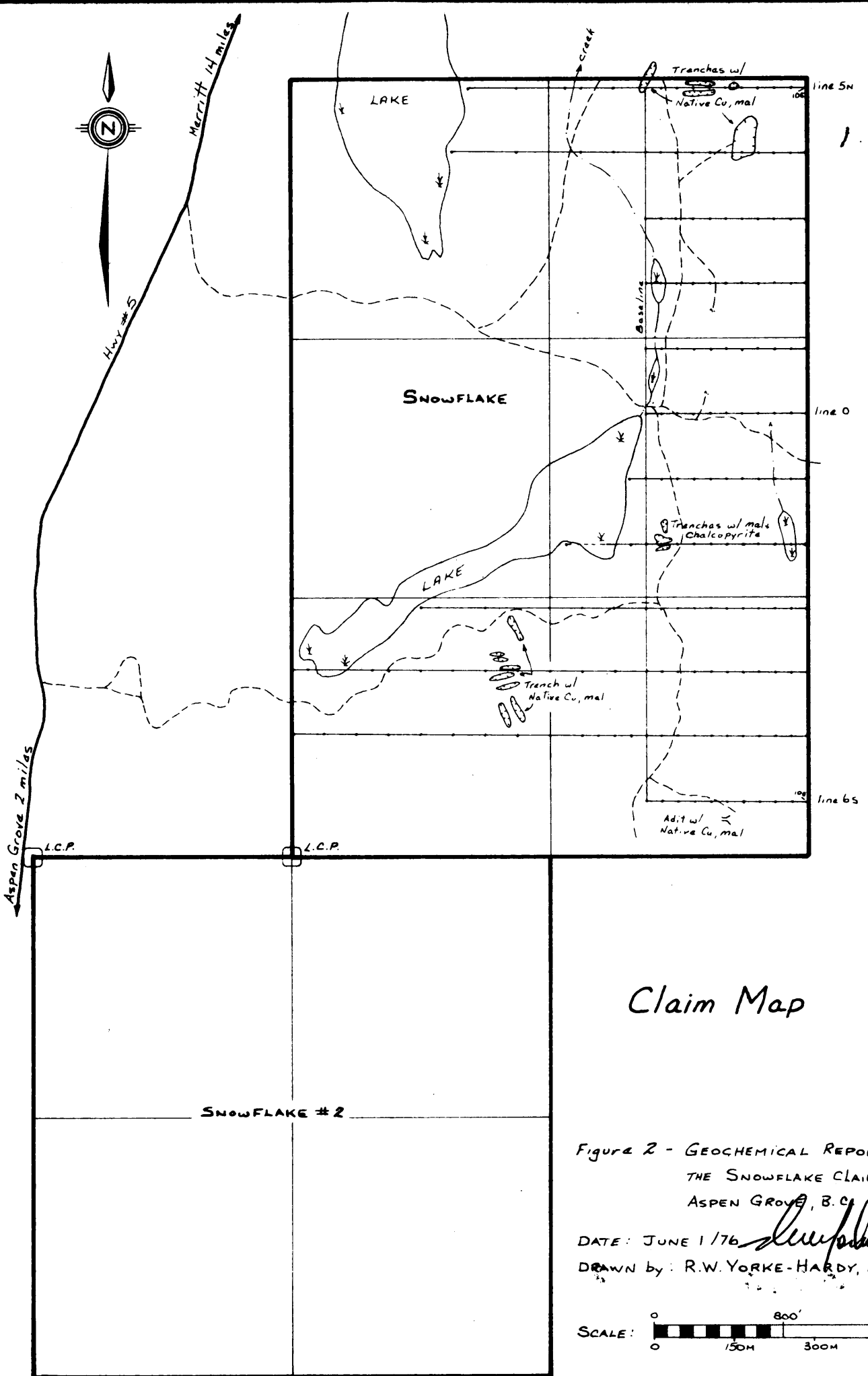
LOCATION AND ACCESS

The Snowflake group of claims is located in southern British Columbia approximately two miles north of Aspen Grove. The claims are located near the Merritt-Princeton Highway (Highway #5).

The claim group is readily accessible by road. Trails provide easy access throughout the claims.

GEOLOGY

The regional geology of the Aspen Grove area and the geology of the Snowflake property in specific are described by Mr. J. M. Dawson, P. Eng. whose entire report is included in this report as Appendix "A".



GEOCHEMICAL SAMPLING

3.

During the period from April 21, 1976 to May 2, 1976 a geochemical survey was conducted on the Snowflake claim. A total of 176 samples were taken during this program. The samples were taken at 100 foot intervals over the most favourable geological areas (as per Appendix "A"). In addition several lines were run taking samples at spacings from 200 feet to 400 feet in an attempt to expand the area of immediate interest. The samples were taken along grid lines spaced 400 feet apart. Where possible, previously located lines were used so that data from previous programs could be readily located. All lines required re-^{chaining}claiming, re-staking and flagging for this survey.

A steel auger was used to obtain most of the soil samples. Where soil conditions were too rocky for the auger to be used a folding "army-type" shovel was used to reach the soil horizon to be sampled. These samples were then collected with a stainless steel spoon.

The samples were taken from an average depth of from 10 to 12 inches. In the majority of cases soils from the "B" horizon were sampled. Where this horizon was lacking the samples were obtained from the "C" horizon. Each sample was placed in a duly identified Kraft sample bag. The samples were taken to the Kamloops Research and Assay Laboratory, Trans Canada Highway West, Kamloops, British Columbia for analysis.

ANALYSIS

The Kamloops Research and Assay Laboratory dried and screened each sample to minus 80 mesh. Hot aqua regia was used for extraction of the elements to be tested for and atomic absorption was used to determine the quantities of copper and silver in each sample. The results were reported in parts per million - ppm.

The values reported were entered on plans of the property and the values were then contoured (Figs. 3 and 4).

STATISTICAL DATA

The copper and silver values have been plotted as histograms (Fig. 5) and both appear to have log normal distribution. The copper distribution appears to be somewhat complex and may contain more than one population.

The geometric mean of the copper and silver values was calculated using the following formula:

$$\text{Geometric Mean} = \sqrt[N]{X_1 \cdot X_2 \cdot X_3 \cdot \dots \cdot X_N}$$

where X_1 to X_N are the values obtained

the values calculated were - Cu = 107 ppm

- Ag = .59 ppm

The standard deviation of the copper and silver values was calculated using the following formula:

$$\text{Standard Deviation} = \sqrt{\frac{\sum(X-\bar{X})^2}{N}}$$

where \bar{X} is the geometric mean and

X are the values obtained

the values calculated were - Cu 111 ppm

- Ag .26 ppm

Anomalous values have been defined as the geometric mean plus one standard deviation which results in the following values:

	<u>Cu</u>	<u>Ag</u>
1st order anomaly -	218 ppm	.85 ppm
2nd order anomaly -	329 ppm	1.1 ppm
3rd order anomaly -	440 ppm	1.4 ppm

Department of
 Mines and Petroleum Resources
 ASSESSMENT REPORT
 NO. 5875 MAP 5

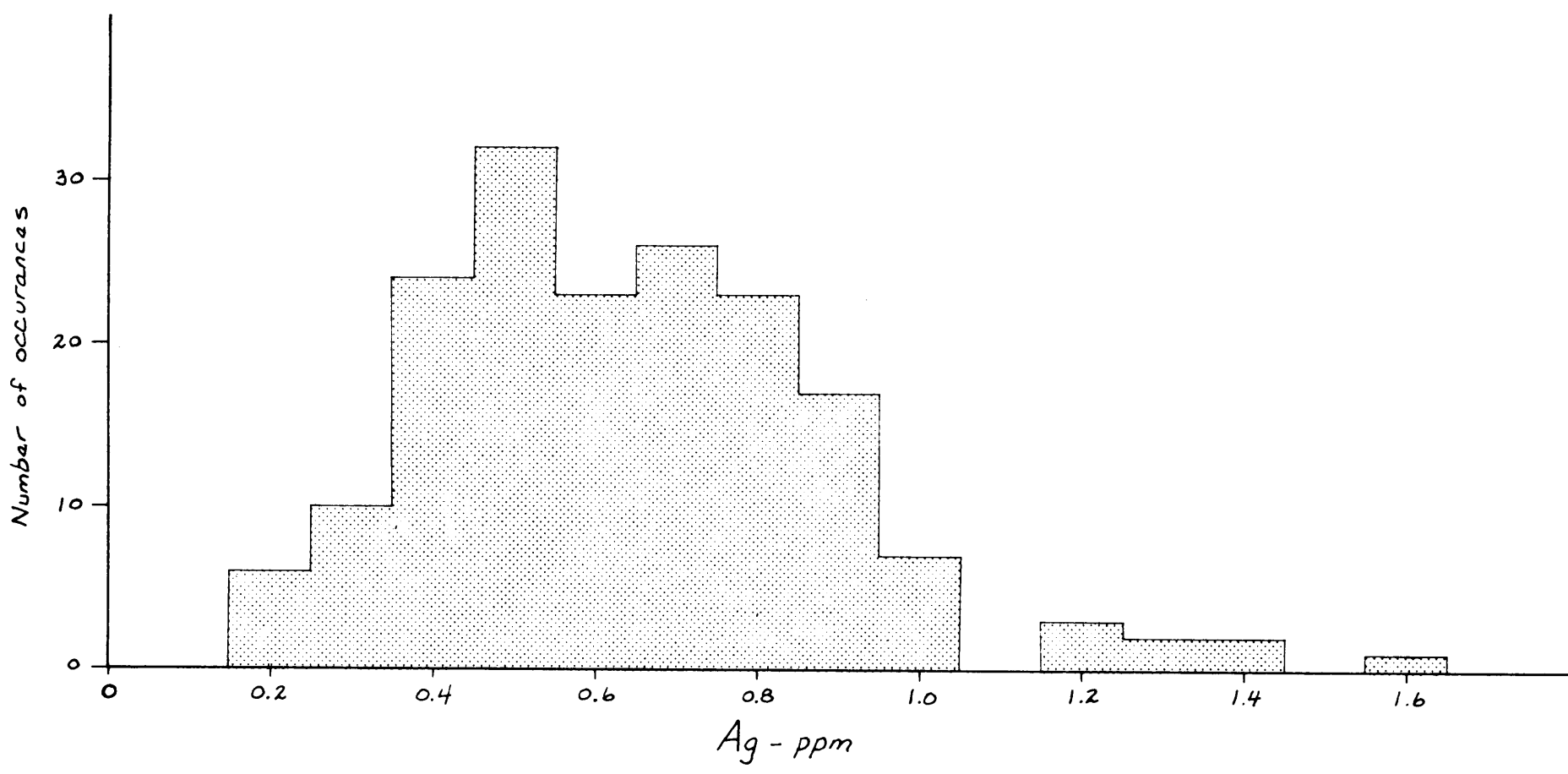
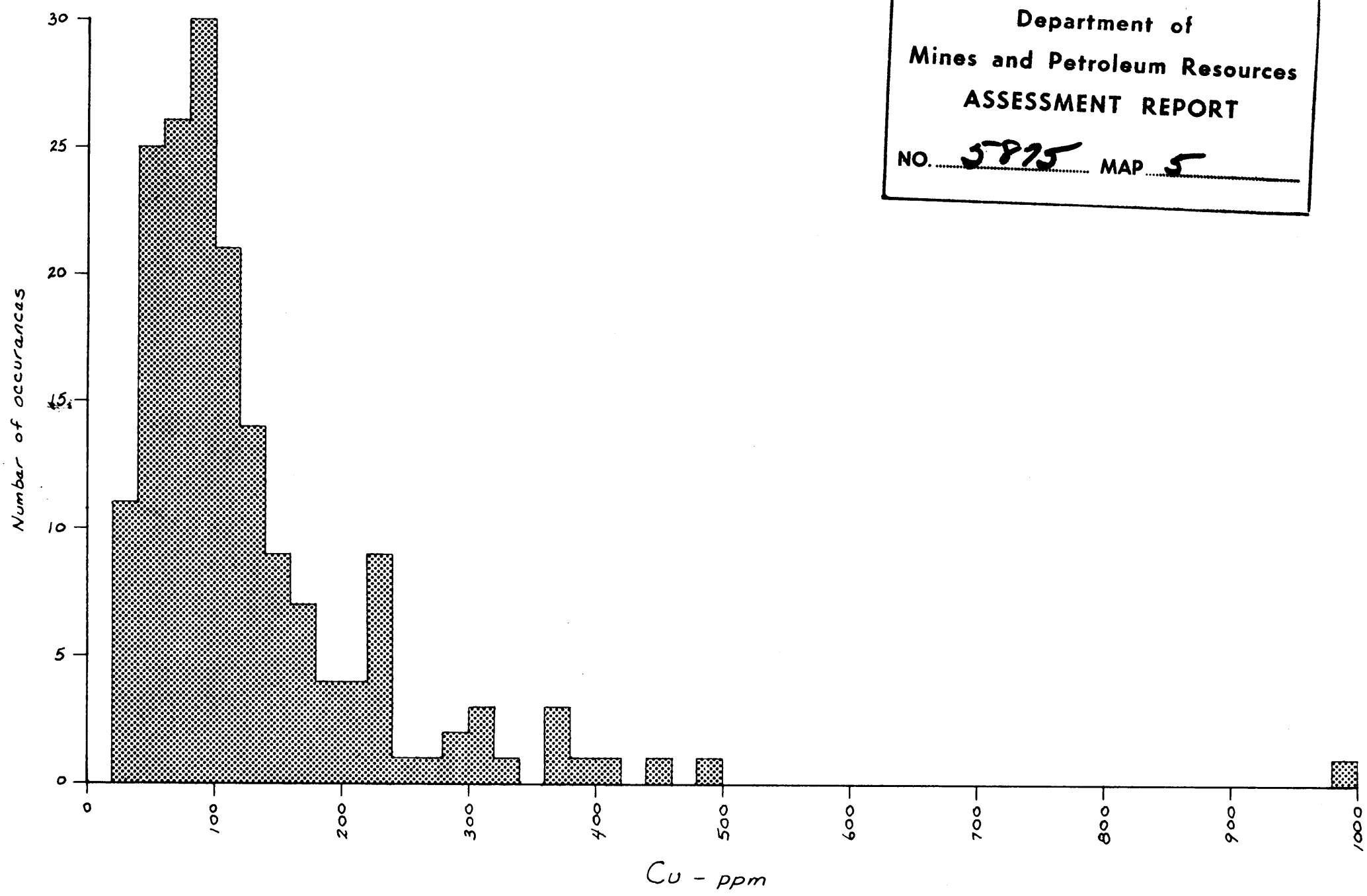


Fig. 5 Histogram of Copper and Silver Values *[Signature]*

DISCUSSION OF ANOMALOUS AREAS ENCOUNTERED

Copper:

As indicated in Figure 1, there are two prominent copper anomalies. In addition there are two somewhat isolated copper anomalies. Significant second order anomalies occur within the two larger anomalies as well as one of the more isolated anomalous areas. The third order anomalous values may be somewhat erratic values.

The largest anomaly, which has a continuous strike length of more than 2800 feet and a width from 100 feet to more than 600 feet, begins on line 5N near the northern limit of the Snowflake claim and trends north-south. The widest portion of this anomaly occurs at the north end and would appear to extend northward beyond the limit of the claim. Considerable stripping and trenching exposing native copper mineralization has been undertaken at the north end of this anomalous zone. There has also been some drilling done but it would appear that the full extent of this anomaly has not yet been tested. The third order anomaly located at 4E on line 4N does not appear to have been tested. Although the value of 990 ppm is an erratic high this area appears quite significant.

The other continuous anomaly occurs approximately 600 feet east of the main anomaly and is roughly parallel to it. This anomaly is 1200 to 1400 feet in length and up to 100 feet in width. No previous exploratory work was noted in this area. The 500 ppm value obtained at 8E on line 1S should be considered an erratic high due to a collection effect along a minor drainage system. This drainage appears to follow one of the faults trending north-south.

The most significant of the isolated copper anomalies is centered at 1W on line 2S. There are test pits containing malachite and chalcopyrite located about 200 feet east and slightly up slope of this location.

The other two isolated anomalies are somewhat removed from the above described zones. One of these occurs in a creek draw located between 4W and 5W on line 5N. This creek appears to parallel to one of the major fault zones on property. The anomalous value is probably a result of an accumulation affect related to the creek. The second anomaly, located at 8W on line 4S is in an area previously trenched. There was native copper and malachite noted in these trenches.

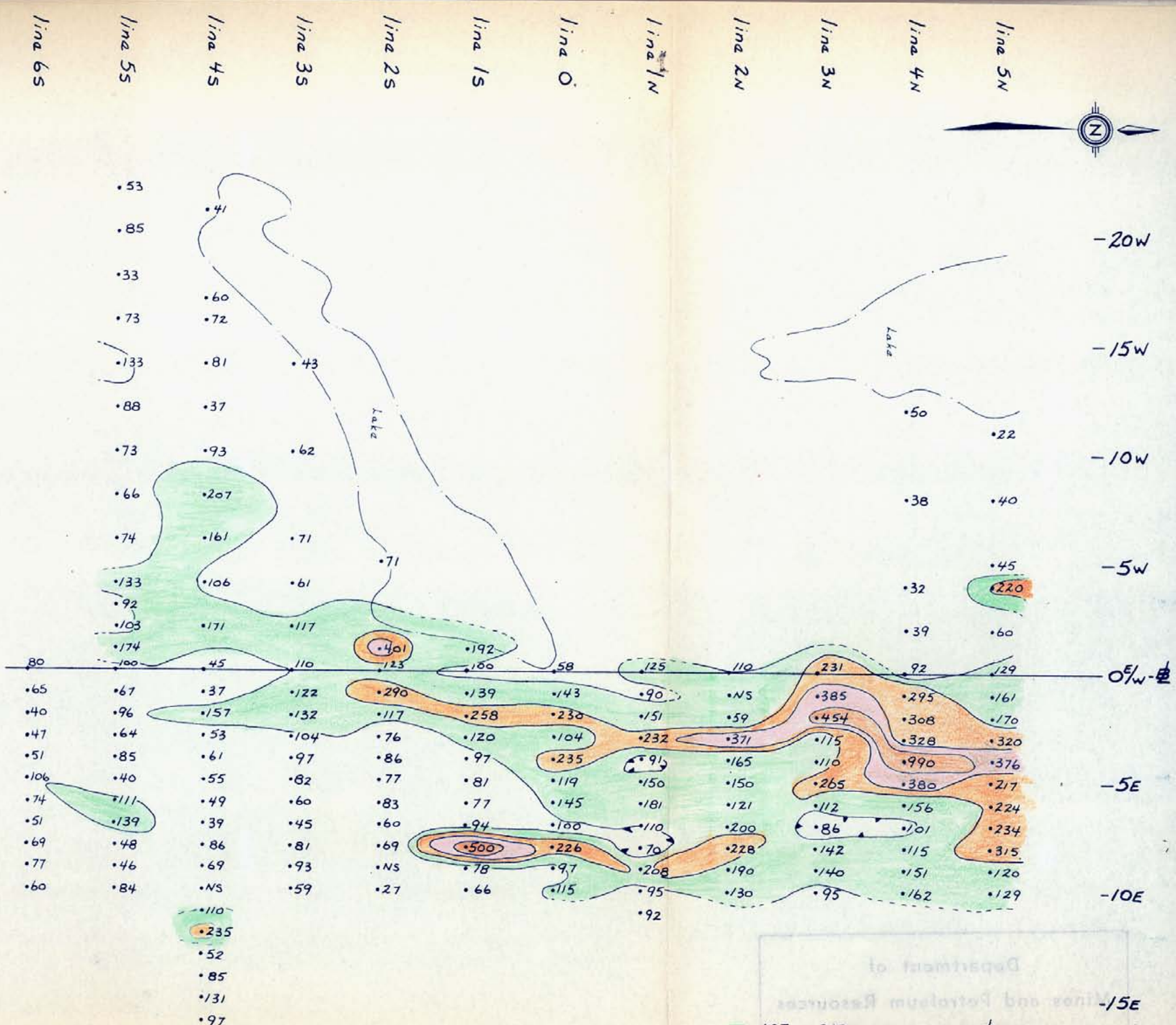


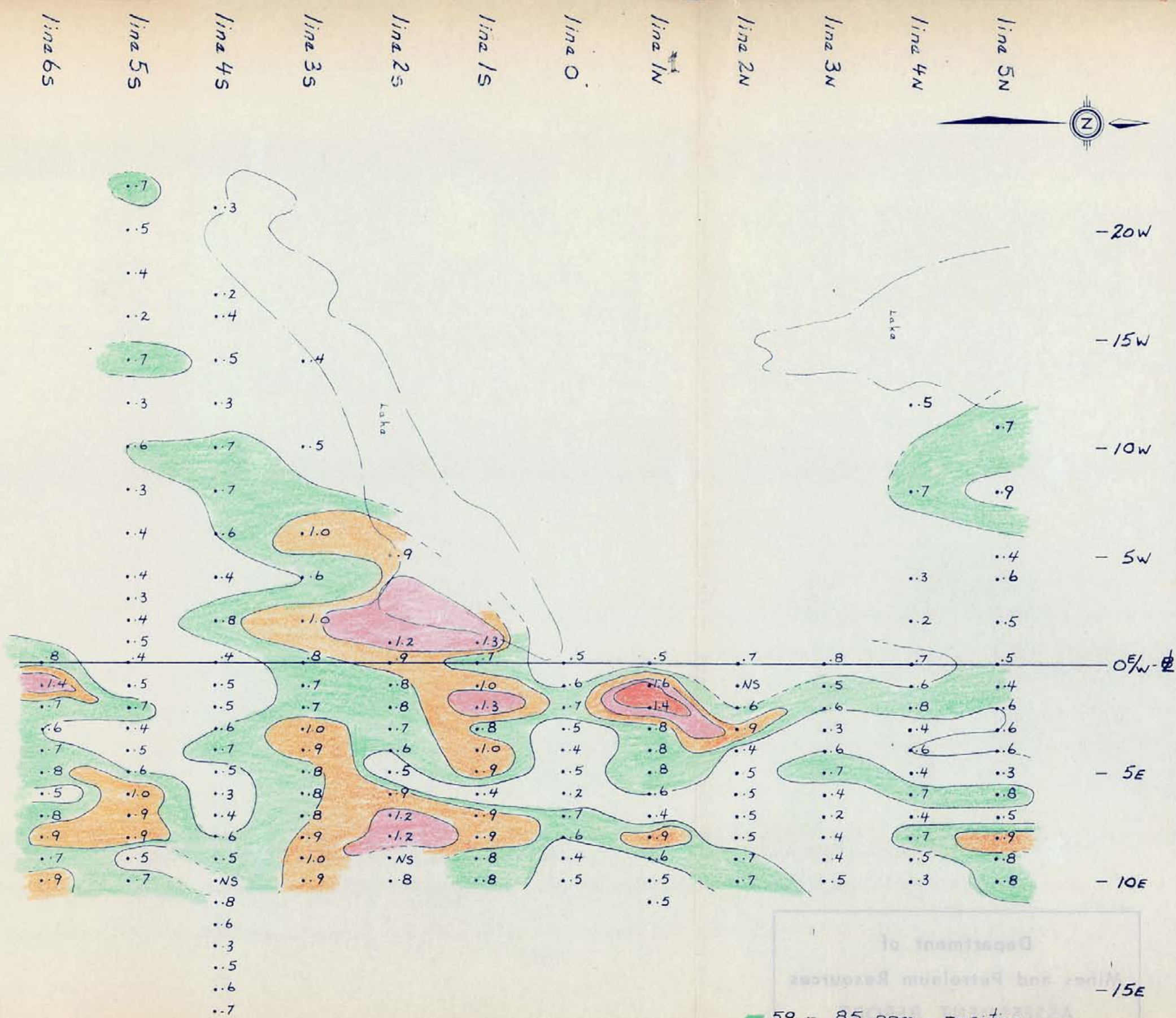
Figure 3 - GEOCHEMICAL REPORT ON THE SNOWFLAKE CLAIM
ASPEN GROVE, B.C.

Plan of Copper Geochem Locations

Scale: 0 150m 300m 1000m

Date: June 1/76

Drawn by: R.W. YORKE-HARDY, M.T., C.E.T.



Scale: 0 500 1000
 0 150m 300m

Silver:

As shown in Figure 4, there are three prominent areas anomalous in silver values. There are also numerous smaller isolated silver anomalies. Significant second order anomalies occur within the three larger zones and one of the smaller isolated zones. There is a third order anomaly occurring at 1E on line 1N.

The three larger anomalies lie adjacent to or between the previously described copper anomalies. The largest of these anomalies is centered along the baseline between lines 1S and 3S and overlies the copper anomaly related to the sulphide mineralization located near 1E on line 2S. What appears to be an extension of this anomaly occurs at 1E on line 1N.

The second largest silver anomaly is centered along line 2S from 6E to 10E. No apparent work has been done in this area which overlies and extends south from the copper anomaly at 8E on line 1S. No work is apparent in this area. These three large silver anomalies tend to connect all the second and third order copper anomalies.

The more isolated silver anomalies also tend to connect or adjoin areas of known copper mineralization and isolated copper anomalies. A positive (>100 ppm) copper zone is enveloped by a

silver anomaly in the southeast corner of the Snowflake claim. There is known native copper mineralization in this area.

Additional Observations:

It was noted that by contouring the 110 ppm copper values a continuous "positive" copper zone of 4000 feet in length and from 100 to 1000 feet in width was outlined. Information available from a geochemical survey covering the "DOAT" claims located at Aspen Grove, British Columbia indicated values above 108 ppm as being anomalous (see Appendix "B").

The largest copper anomaly starts in an area of known native copper mineralization. This zone is virtually void of anomalous silver values. The largest silver anomaly, however, overlies known chalcopyrite-pyrite mineralization. The copper anomalies in this area are generally weaker than over the large native copper area to the north.

It was noted by the writer while researching the available data on this property that there is a prominent magnetic anomaly closely associated to the contact between the intrusive and volcanic phases. Closer examination indicates that the stronger copper anomalies tend to avoid the magnetic high areas and would

appear to favour the magnetic lows. This zoning feature was noted also by Sherwin Kelly, P. Eng. in a report on the "DOAT" claims referred to previously. This zoning effect is not evident when comparing the silver anomalies to the magnetic features; instead these anomalies tend to overlap the magnetics.

Topography:

In general, topographic features are not prominent throughout the northern two-thirds of the claim area. The features that do exist are mostly parallel to and apparently related to fault zones. These features are marked by creeks and swampy areas and the areas have heavy overburden cover. The area of greatest relief occurs over the entire southern one-third of the claim area. In this area the steep slopes, facing northerly, are marked by considerable rock exposure and relatively poor soil development. This steep topography is terminated abruptly at the east-west elongated lake in the southern portion of the claim. In this steeply sloping area there are few prominent anomalies although there is evidence of copper mineralization. This could be a result of rapid drainage of surface water from the entire area.

Soil Type:

In general the texture of the soil sampled was medium-course. The composition was mainly sand with minor silt and clay content and would be considered a sandy loam soil. The color varied from light grey-brown in areas of rapid drainage to yellow-rusty brown on flatter ground. The areas of depression had thick "A" horizons which made sampling difficult. Soils sampled in these areas were generally grey in color.

SUMMARY AND CONCLUSIONS

A geochemical survey was conducted in a systematic manner over portions of the Snowflake mineral claim. A detailed survey was completed over the entire eastern one-third of the claim which corresponds to the area of most favourable geology as expressed in the preliminary report by J. M. Dawson, P. Eng. - Appendix "A". Additional, less detailed coverage was used in other areas in an effort to tie areas of apparently less favourable geology and extensive overburden coverage to the eastern portion. In all, 176 soil samples were taken and analyzed for copper and silver.

The program has served to tie all the known mineralized areas together, with positive copper and/or silver values being obtained over almost the entire area east of the baseline and west into the known area of mineralization south of the east-west elongated lake in the southern portion of the claim. It would appear that the higher, more consistent copper anomalies are associated to areas of native copper whereas the chalcopyrite-pyrite mineralization appears to be related to the weaker copper - higher silver anomalies.

To conclude, it would appear that further work is warranted in an effort to delineate the extent of copper mineralization. When working in areas of sulphide mineralization there should be checks made for silver and gold which may make the difference between an economic or non-economic deposit.

Although considerable previous work is evident, there has not been a consistent nor thorough examination of all anomalous areas. Presently the anomalous copper and silver values show possibilities of trending over into the western portion of the claim. This area is virtually unexplored and blanketed with overburden. The possibility exists for extending the known areas in this direction. A further geochemical program on the western portion of the claim may result in additional targets being discovered. To date, geochemical exploration has produced excellent, continuous indications of copper mineralization. Further development of mineralized area should be attempted by detailed prospecting and follow-up cat work.

RECOMMENDATIONS

Continue as per recommendations by J. M. Dawson.

- 1) Prospect known mineralized areas and attempt to extend the mineralization throughout the anomalous areas.
- 2) Cat trenches should be cut into the more favourable areas to expose fresh rock for sampling purposes. Rock samples should be run for copper in areas where native copper is indicated, while assays for copper, silver and gold should be considered in areas of sulphide mineralization.
- 3) Drill promising targets.

APPENDIX "A"

R E P O R T

- on the -

SNOWFLAKE, BLUEY AND PRIZE PROPERTIES

ASPEN GROVE AREA

NICOLA MINING DIVISION

British Columbia

- for -

F. Gingell,
4306 Dawson Street,
BURNABY, B. C.

Prepared By:

KERR, DAWSON & ASSOCIATES LTD.,
#1-219 Victoria Street,
KAMLOOPS, B.C.

J. M. Dawson, P. Eng.,
July 9th., 1975.

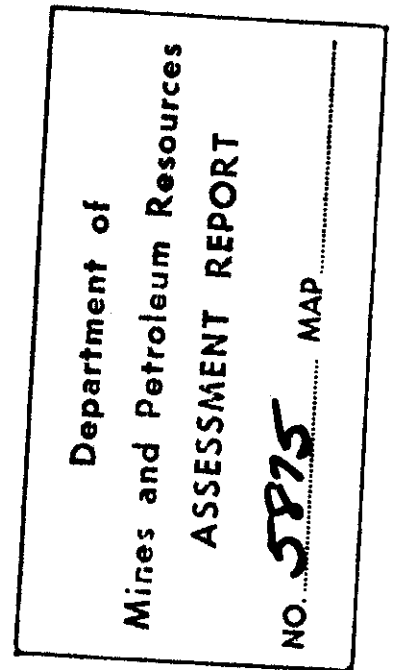


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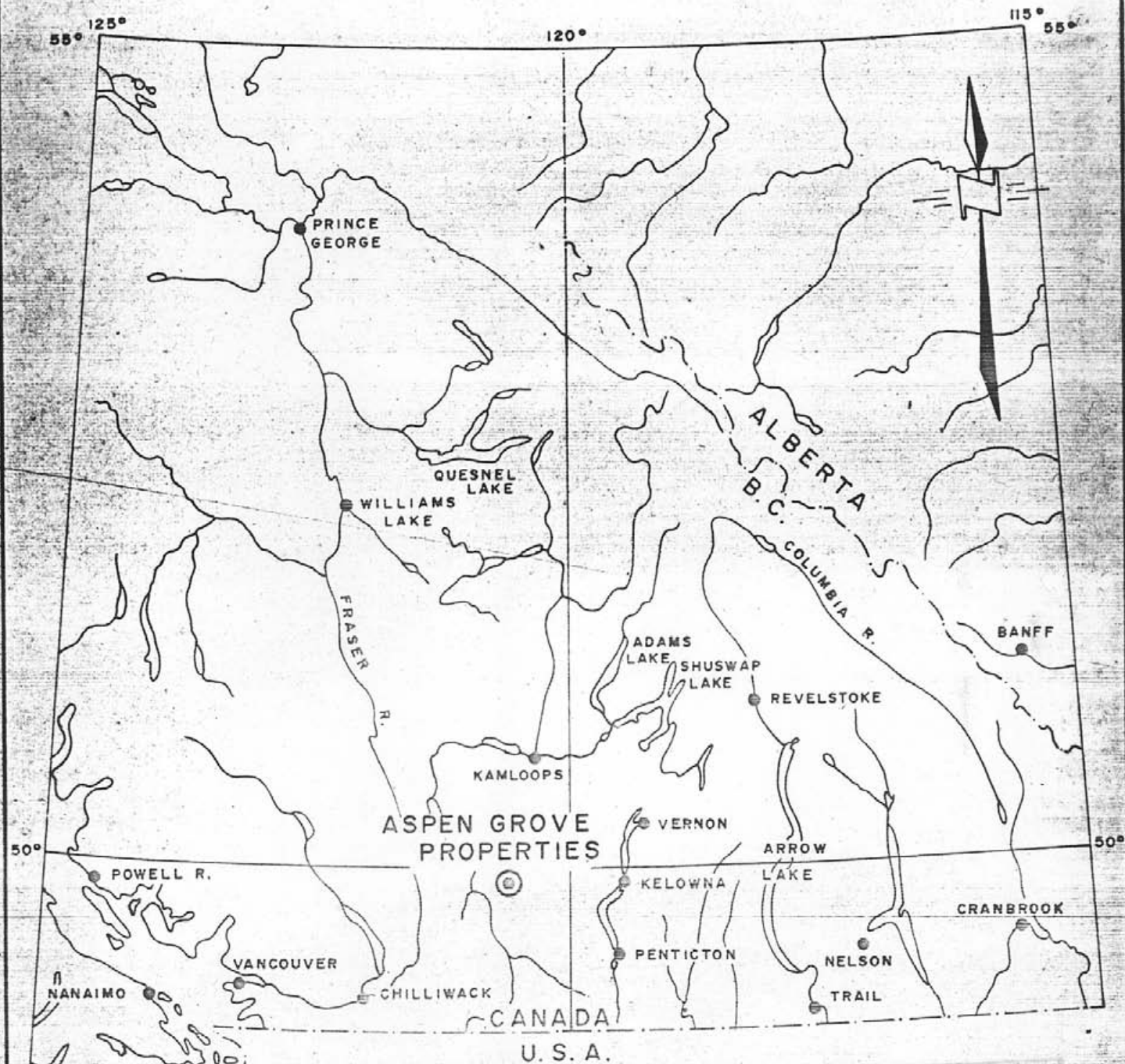
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To Accompany A Report By J.M. DAWSON, P. Eng.

LOCATION MAP
 SNOWFLAKE, BLUEY &
 PRIZE PROPERTIES
 ASPEN GROVE AREA
 NICOLA MINING DIVISION
 BRITISH COLUMBIA

Date: JULY 4, 1975

Scale: 1" = 64 Miles

Tech. Work By:
KERR - DAWSON & ASSOCS.

Dwg no. III-1

INTRODUCTION

This report has been prepared at the request of Mr. F. Gingell. It describes the results of a three day examination of the Snowflake, Bluey and Surprise mineral properties near Aspen Grove, British Columbia.

Maps showing property location, claims, geology, and location of mineral occurrences were prepared and are included in the text of this report.

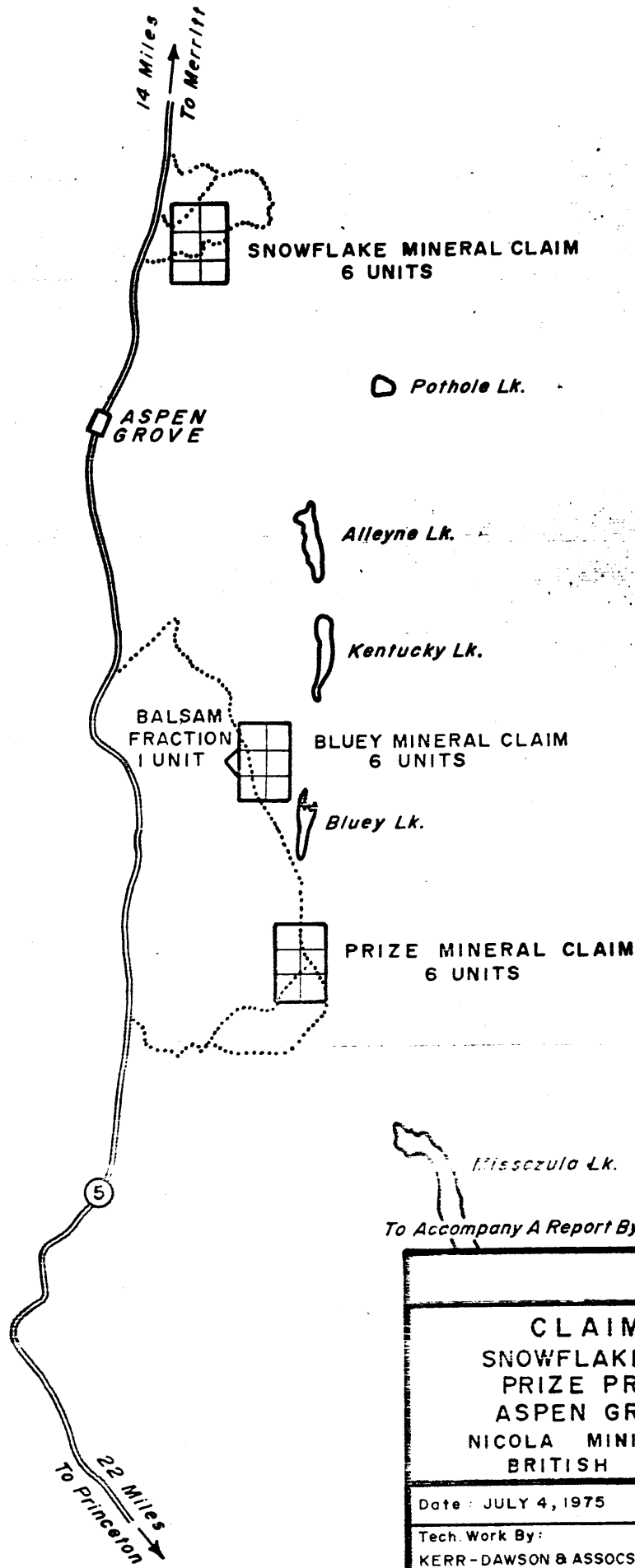
PROPERTY

The property consists of three separated claim blocks in the Nicola Mining Division, British Columbia, as follows:

<u>Claim Name</u>	<u>Record No.</u>	<u>Tag No.</u>	<u>No. of Units</u>	<u>Record Date</u>
Snowflake	8	02059	6	May 13th., 1975
Bluey	17	02060	6	June 16th., 1975.
Balsam Fraction	16	02061	1	June 16th., 1975.
Prize	5	02058	6	April 28th., 1975.

LOCATION AND ACCESS

The properties are located in southern British Columbia near the Merritt - Princeton Highway. The Snowflake property is located approximately 2 miles northeast of Aspen Grove. The Bluey claim and Balsam Fraction are located about



To Accompany A Report By J.M. DAWSON, P. Eng.

CLAIM MAP SNOWFLAKE, BLUEY & PRIZE PROPERTIES ASPEN GROVE AREA NICOLA MINING DIVISION BRITISH COLUMBIA	
Date : JULY 4, 1975	Scale : 1" = 1/4 MILE
Tech. Work By: KERR-DAWSON & ASSOCS.	Dwg. No. III - 2

5 miles southeast of Aspen Grove and adjacent to the north end of Bluey Lake. The Prize property is located about 7 miles south-southeast of Aspen Grove and approximately 3 miles east of Highway No. 5.

All three properties are road accessible. A network of logging roads provides facile access to each claim group and various old trails and drill roads allow one to walk to any part of the individual claim blocks relatively quickly.

PHYSIOGRAPHY AND VEGETATION

The three subject claim blocks lie on the Thompson Plateau, an area of rolling uplands with occasional narrow steep valleys which are fault controlled. The Snowflake property occupies an area of very gentle topography with elevations varying from less than 3,500 feet A.S.L. in the northwest corner to just over 3,900 feet A.S.L. at the southern end of the claim block. The northwestern half of the block is occupied by two lakes and an area of rolling grassland which is devoid of outcrop. The rest of the property is covered with scattered coniferous trees alternating with burned out areas now covered with low deciduous underbrush.

The Bluey property covers steeper topography-elevations varying from more than 4,100 feet A.S.L. at the western and northwestern edges down to about 3,500 feet A.S.L. at the eastern margin of the claim block. This area is covered with a fairly mature growth of fir, spruce, and pine with virtually no open areas.

The Prize property lies on an easterly-sloping hillside varying from about 3,900 feet A.S.L. at the western margin down to about 3,300 feet A.S.L. in the prominent north-south valley which contains the Alleyne-Kentucky fault zone. This property is fairly heavily tree covered except for portions of the lower slopes.

HISTORY

The Aspen Grove Copper Camp has a history of exploration and minor production extending back to the turn of the century. Numerous old diggings occur in this 8 mile long area which extends from the north end of Missezula Lake to the northern boundary of the Princeton Map-Sheet.

On the Snowflake property, a number of old surface pits and shallow underground workings date back at least 30 to 40 years. A second generation of trenching and some diamond drilling probably dating from the 1950's and 1960's is located in the south central and northeastern portions of the property. Claim posts dating from this period indicate that one of the previous owners was Valnicola Copper Mines. During 1972 and 1973, Craigmont Exploration carried out a programme of percussion and diamond drilling which covered portions of the northern portion of the existing property. It is reported also that two induced polarizations surveys covered a part of the present claim area (personal communication - N. B. Volle, Craigmont Exploration Ltd.)

The Bluey property contains a number of old prospect pits and short adits which probably predate 1940. A later series of bulldozer trenches and several diamond drill holes probably date from the early 1960's when the property was controlled by the Pyramid interests.

The Prize property, similarly, has several old, shallow adits and prospect pits which are at least 40 years old. A series of more recent bulldozer trenches are located in the northwestern portion of the property and at least two diamond drill holes - estimated to be not more than 10 years old, are present.

Much of this work should be documented in Assessment Reports and Annual Reports of the B. C. Minister of Mines and Petroleum Resources.

GEOLOGY

The Aspen Grove area is within a terrain commonly referred to as the Nicola Belt, a eugeosynclinal Upper Triassic island-arc rock assemblage. Massive andesitic flows and coarse pyroclastic rocks predominate in the central part of the area and a sequence of layered and massive volcanogenic rocks along the eastern margin. The southwestern section of the area is underlain by intercalated volcanoclastic rocks, flows, and calcareous sedimentary rocks that are partly covered by coarse volcanic breccia.

A sequence of massive red to purple and green augite porphyry flows, coarse volcanic breccia and dioritized volcanics is present in the central part of the region. This sequence may indicate the existence of a central zone of partly subaerial volcanic centres.

Intrusive rocks within the area are mainly dioritic and appear to be in part comagmatic with the Nicola volcanic rocks because of similar composition and gradational relationships. Several small areas of monzonite and/or syenite are found within the belt.

The structure of the Aspen Grove area is dominated by two regional, northerly-trending faults about 2.5 miles apart. They are linked by many splays and a terrain shattered by brittle fracture. In contrast, folding is obscure and may be slight except for drag near faults.

The Snowflake property is underlain by a sequence of flows, volcanic fragmentals and related volcanoclastic sediments intruded by a mass of diorite in the eastern half of the claim block. A small body of monzonite is present near the northeast corner of the property.

The Bluey property is underlain by red and green intermediate to basic flows, volcanic fragmentals with varying amounts of intercalated clastic sediments and calcareous rocks. This sequence is intruded by a body of "diorite" which occupies the northeast half of the property.

Portions of this "diorite" may in fact be altered and dioritized flows. A number of outliers of volcanic fragmentals are found in this diorite. A prominent northwesterly - trending fault transects the property and forms the boundary between the "diorite" and younger, intruded rocks.

The Prize property is underlain almost entirely by a sequence of massive red and green, andesite and basalt flows of the Nicola Group. Minor horizons of volcanic fragmentals occur in the area and a small body of monzonite outcrops near the northwest corner of the claim block. Two small remnants of Pleisocene valley basalts are found in the eastern half of the claims.

MINERALIZATION



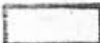

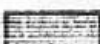





Copper mineralization is widespread in the Aspen Grove belt and various copper sulphides, oxides, and carbonates along with pyrite, hematite and magnetite are usually present in the various showings.

According to Christopher (1973) four main types of copper occurrences are found:

- (1). Chalcopyrite, bornite and native copper and chalcopyrite and pyrite mineralization in fine grained and brecciated zones along the western margins of the diorite bodies. (areas No. 5 & 6 on the Snowflake property).



- LEGEND -

-  MONZONITE & SYENITE ;
MEDIUM GRAINED & PORPHYRITIC.
-  DIORITE, QUARTZ DIORITE & GABBRO.
- NICOLA GROUP
-  VOLCANIC SILTSTONE & SANDSTONE.
-  VOLCANIC BRECCIA ; VOLCANIC
CONGLOMERATE & LAHAR DEPOSITS.
-  AUGITE PORPHYRY FLOWS ;
AUTOBRECCIATED IN PART.
-  GEOLOGICAL CONTACT.
-  FAULT
-  TRENCH
-  OLD WORKINGS : SHAFT, ADIT.
-  MINERAL OCCURRENCE DESCRIBED
IN ACCOMPANYING REPORT.

To Accompany A Report By J.M. DAWSON, P. Eng.

GEOLOGY & MINERAL OCCURRENCES
SNOWFLAKE MINERAL CLAIM
ASPEN GROVE AREA
NICOLA MINING DIVISION
BRITISH COLUMBIA

Date: JULY 4, 1975 Scale: 1" = 1/4 MILE

Tech. Work By:
KERR-DAWSON & ASSOCS. Dwg. No. III - 3

- (2). Chalcopyrite, bornite, pyrite and magnetite in breccia zones in andesite, dioritized volcanics and diorite (area No. 2 on the Bluey property, area No. 3 on the Prize property).
- (3). Chalcocite, native copper and hematite in fracture zones in the massive volcanic sequence and in breccia sequences. (area No. 1 on the Snowflake property, areas No.1 & 2 on the Prize property).
- (4). Chalcocite, bornite, chalcopyrite, malachite, and pyrite in limestone and argillite (area No. 1 on the Bluey property).

Six areas of copper mineral occurrences were noted on the Snowflake property and will be described in order, (see figure III-3). At area No. 1, a 30 foot long quarry and a 15 foot long adit have been driven southwesterly into a sequence of coarse to fine volcanic fragmentals and graywackes. Malachite, chalcocite and minor bornite are found as thin coatings on three sets of fractures and also with thin calcite veinlets which occur along some fractures.

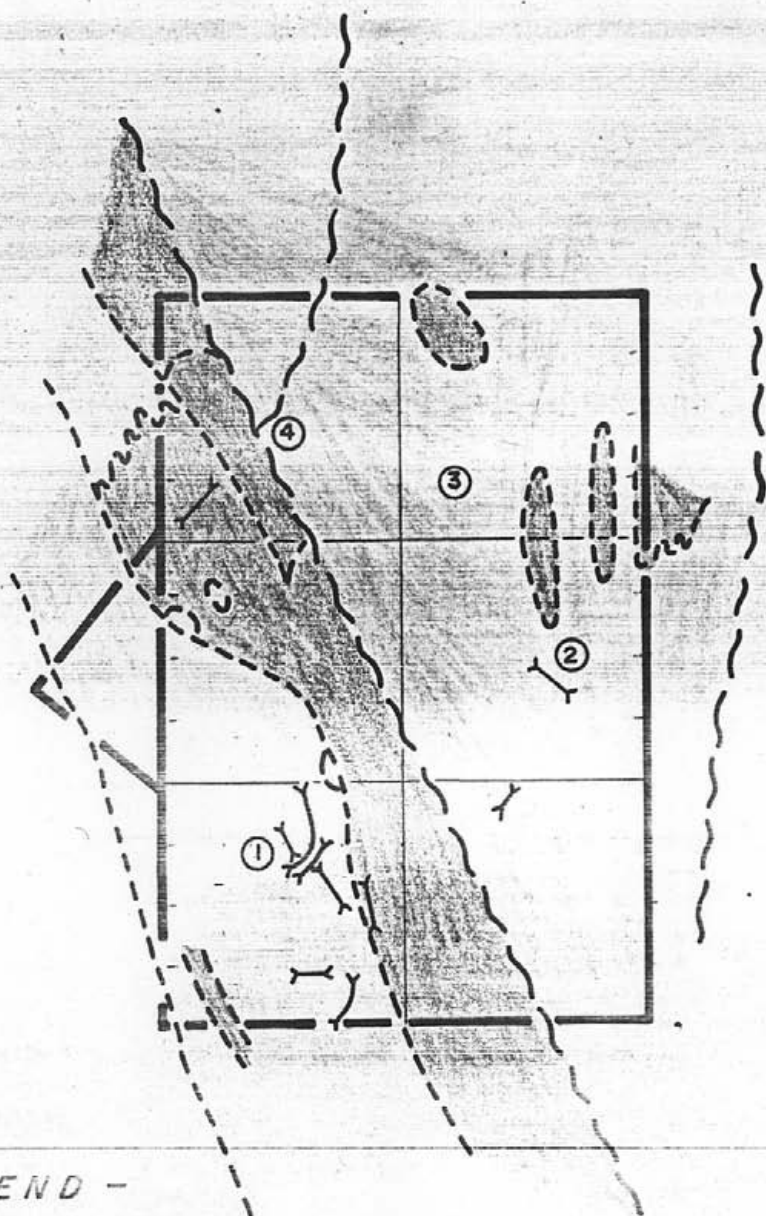
At No. 2 a partly caved 8 foot shaft has been sunk on a northerly-trending shear zone in greenish, basic volcanics. Minor scattered malachite was noted on fractures over a width of several feet within the shear zone.

Area No. 3 is located near the southern edge of the claim. This showing consists of a 15 foot tunnel driven northeasterly along a dike (?) or two parallel faults in fairly massive flows. Minor malachite was noted on several fractures. The zone cannot be traced on surface.

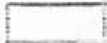

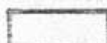






Area No. 4 consists of about 6 bulldozer trenches which have been cut around a series of shallow, older prospect pits. At least one short X-ray drill hole was drilled to cut this northerly-trending zone. This area is underlain by a series of red and green volcanic fragmentals and sediments cut by one or more north-trending diabase or diorite dikes? Scattered malachite and chalcocite were noted on fractures in volcanic and intrusive material in three trenches. The width of this zone is not known, but seems to be roughly 10 to 20 feet. It cannot be traced outside the trenched area because of overburden cover.

Area No. 5 consists of about 7 bulldozer trenches and irregular cleared areas. The eastern-most trenches are cut in coarse diorite which contains scattered pyrite and limonite but no visible copper mineralization. Nearer the lake (see figure III-3) several irregular cuts expose a zone (north-trending but of unknown width) of fine grained diabasic rocks, sparsely to moderately mineralized with disseminated, fine grained chalcopyrite. Some narrow stringers and blebs of chalcopyrite occur along incipient fractures. Frequent coatings of malachite occur on fractures where material has been exposed for some time.

Area No. 6 is a north-trending zone which may be as much as 100 feet wide and can be traced along strike for at least 750 feet. It may be the northern extension of mineralization exposed at area No. 5 (see figure III-3). A series of trenches and irregular cleared areas crosscut the mineralized zone. Very old prospect pits are noted in two areas. A number of diamond drill holes and percussion



- LEGEND -

-  DIORITE, QUARTZ DIORITE & GABBRO.
NICOLA GROUP.
-  SILTSTONE, SANDSTONE & ARGILLITE.
-  REEFOLD LIMESTONE & RELATED
SEDIMENTARY ROCKS.
-  GREEN & RED VOLCANIC
BRECCIA & LAHAR DEPOSITS.
-  RED & GREEN ANDESITE & BALSALT FLOWS
WITH SOME INTERCALATED SEDIMENTS.
-  GEOLOGICAL CONTACT
-  FAULT
-  TRENCH
-  MINERAL OCCURRENCE DESCRIBED
IN ACCOMPANYING REPORT.

To Accompany A Report By J.M. DAWSON, P. Eng.

GEOLOGY & MINERAL OCCURRENCES
BLUEY & BALSAM
MINERAL CLAIMS
ASPEN GROVE AREA
NICOLA MINING DIVISION
BRITISH COLUMBIA

Date: JULY 4, 1975

Scale: 1" = 1/4 MILE

Tech. Work By:

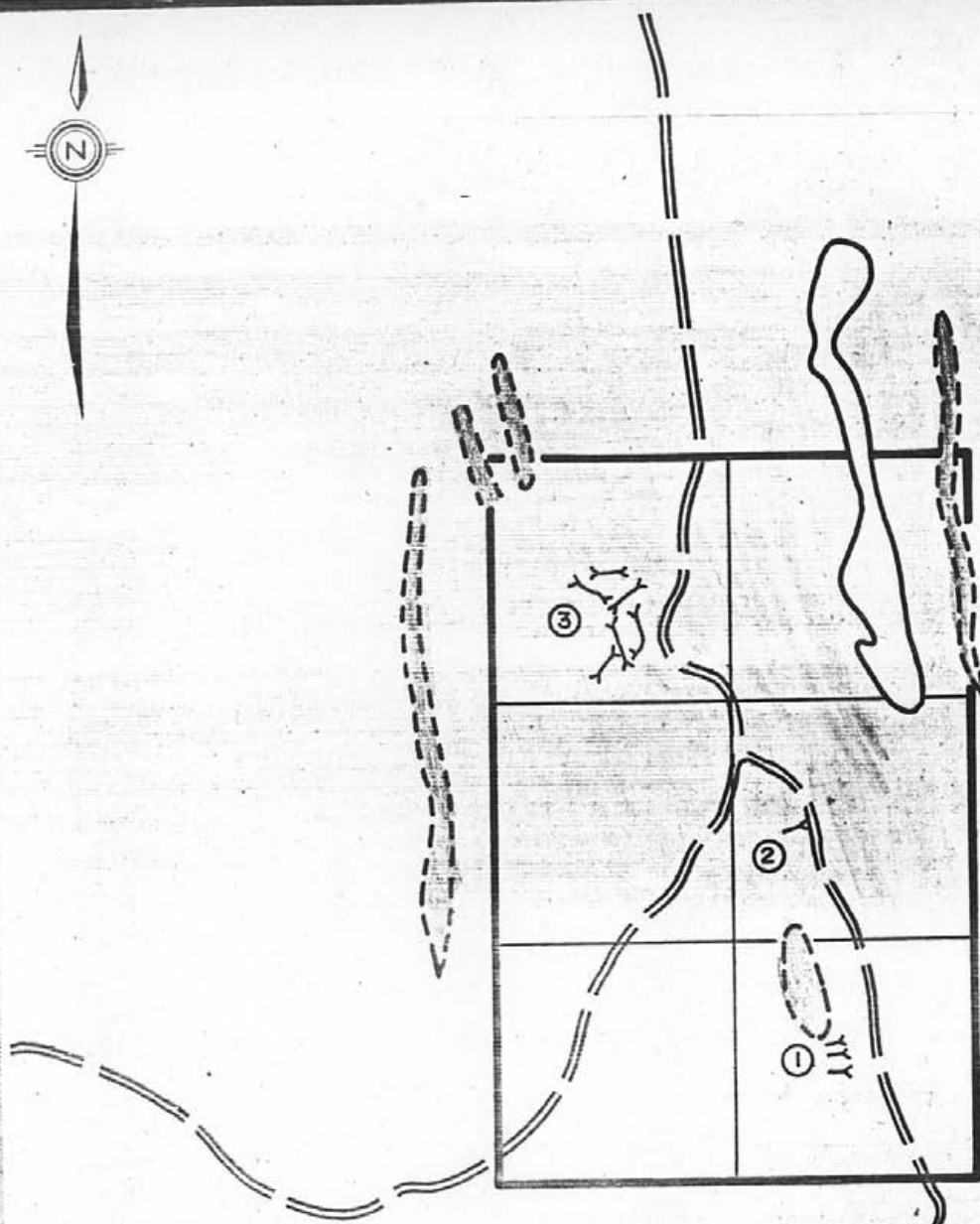
KERR-DAWSON & ASSOCS.

Dwg. No. III - 4

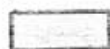
holes have been drilled in this area and south towards area No. 5. The mineralization consists of frequent coatings of malachite on fracture surfaces in rubble in the trenches. Only minor chalcopyrite was seen; however, there is very little fresh rock visible.

Four areas of mineralization were noted on the Bluey property and will be described in order (see figure III-4). Area No. 1 consists of about 6 bulldozer trenches in an area where several much older prospect pits were sunk on outcropping copper mineralization. The area is underlain by a sequence of northwesterly - striking volcanic flows, coarse fragmentals, calcareous conglomerates, graywackes and limestone, intruded by one or more dikes or small intrusions of monzonite. Mineralization consists of fracture coatings of chalcopyrite and malachite; streaks and segregations of chalcopyrite and malachite in calcareous material in the interstices of coarse conglomerates and as stringers and clots in small skarn-like areas in some tuffs and fragmentals. This mineralization does not seem confined to any one zone but occurs in several trenches over an area roughly 200 feet square. Poor exposures in the immediate area preclude tracing the mineralization further.

Area No. 2 consists of 3 old prospect pits and one more recent bulldozer trench in an area of massive fine grained diorite or dioritized volcanics. These rocks are brecciated or fragmental in a few places and the interstices between fragments are filled with massive to semi-massive blebs and stringers of bornite, chalcocite and magnetite. The zone seems to trend northwesterly and has been tested by one -45° drill hole transverse to its strike. The ultimate width of this zone or zones is unknown due to overburden cover;



- LEGEND -



PLEISTOCENE VALLEY BASALT.

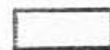


MONZONITE & SYENITE ; MEDIUM GRAINED & PORPHYRITIC.

NICOLA GROUP



GREEN & RED VOLCANIC BRECCIA & LAHAR DEPOSITS.



RED & GREEN ANDESITE & BASALT FLOWS.

--- GEOLOGICAL CONTACT

—> OLD WORKINGS - ADIT

—> TRENCH

③

MINERAL OCCURRENCE DESCRIBED
IN ACCOMPANYING REPORT.

To Accompany A Report By J.M. DAWSON, P. Eng.

GEOLOGY & MINERAL OCCURRENCES
PRIZE MINERAL CLAIM
ASPEN GROVE AREA
NICOLA MINING DIVISION
BRITISH COLUMBIA

Date: JULY 4, 1975

Scale: 1" = 1/4 MILE

Tech. Work By:
KERR-DAWSON & ASSOCS.

Dwg. No. III - 5

similarly very little can be said about extensions along strike.

Area No. 3 consists of 4 prospect pits in an outcrop area of diorite or dioritized flows. Mineralization consists of scattered coatings of malachite and chalcocite along fractures in several narrow shear zones. A drill hole inclined at -45° in a northeasterly direction was drilled under one of the prospect pits.

Area No. 4 consists of 3 very old prospect pits in an outcrop of diorite or dioritized greenstone which lies just east of the prominent fault which cuts through the entire claim block. Mineralization consists of scattered malachite and chalcocite on fractures which are oriented in a northeasterly direction.

Three areas of mineralization were noted on the Prize property and are described in order (see figure III-5). Area No. 1 consists of one caved adit about 30 to 40 feet long and three nearly prospect pits. A drill hole inclined at -45° was drilled in a westerly direction under the caved adit. The mineralization consists of coatings of malachite and chalcocite on fractures and associated with westerly trending calcite stringers in sheared buff to reddish andesite flows. Lack of outcrop prevents the tracing of the mineralization along strike.

Area No. 2 consists of 2 old pits in fairly massive, greenish gray andesite. Mineralization consists

of malachite and minor chalcocite on westerly trending fractures. Malachite staining on fractures was seen in outcrops both north and south of the prospect pits in an area about 100 feet long in a north-south direction.

Area No. 3 consists of about 6 bulldozer trenches in fairly massive reddish pillowed andesite. Scattered blebs and semi-massive lenses of chalcocite occur in small breccia zones and interstices between pillows. Some malachite staining occurs on fractures and associated with calcite stringers. Mineralization was seen only in the 3 lowermost trenches.

ECONOMIC POTENTIAL

Copper mineralization in widely separated localities occurs on all three properties. Many of these occurrences are of themselves insignificant; however, they do indicate the widespread nature of the mineralization and if a favorable structure or "trap" were present at depth or in areas currently obscured by overburden, more extensive areas of mineralization might occur. Two areas in particular seem to offer greater potential for the discovery of possible economic zones. Areas 5 & 6 on the Snowflake property seem to indicate the presence of a mineralized zone of appreciable strike length. Area No. 1 on the Bluey property contains several different modes of mineralization and might be expanded to a mineralized area of appreciable size.

In general, the presence of intrusives of several different types, of abundant volcanic fragmentals and breccias, of potentially favorable, reactive calcareous horizons and the location of major faults and shear zones which could act as channelways for mineralizing fluids gives the Aspen Grove area in general the potential for discovery of possible economic copper deposits.

SUMMARY AND CONCLUSIONS

- (1). The Snowflake, Bluey and Prize properties consist of eighteen full sized claim units and one fraction located in three separate areas of the Aspen Grove copper camp. All properties are road accessible and close to major supply centres.
- (2). The Aspen Grove copper camp has been extensively explored since the early 1900's and evidence of several exploration programmes is present on all three of the subject properties.
- (3). The properties are underlain by volcanic flows, fragmentals and intercalated sediments of the Nicola Group intruded by several types of intrusives - some of which may be comagmatic with the volcanics. Extensive faulting is a feature of the region.
- (4). Copper mineralization occurs in a number of environments in widely scattered localities on all three properties and in numerous other locations throughout the district. Two of the showings

examined - Areas 5 & 6 on the Snowflake property and Area 1 on the Bluey property seem to have particular merit.

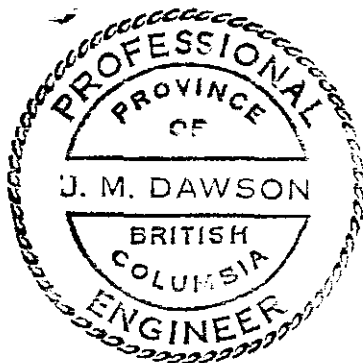
- (5). Many factors, including the presence of several types of intrusives, of areas of fragmental and brecciated volcanics, of potentially reactive calcareous rocks and of strong through-going faults give the properties added potential for the discovery of possible economic copper mineralization.

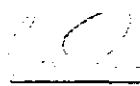
RECOMMENDATIONS

- (1). Compile all data from previous exploration programmes on the subject properties from government and private industry sources.
- (2). Carefully prospect and trace with soil geo chemistry the extensions and boundries of the mineralized zones.
- (3). Integrate previous geological, geochemical and geophysical data with results from initial prospecting and delineate areas for surface trenching.
- (4). Based on the results of trenching, selectively drill the most promising areas.

Respectfully Submitted:

KERR, DAWSON & ASSOCIATES LTD.,




J. M. Dawson, P. Eng.,
GEOLOGIST

A P P E N D I X A

REFERENCES

REFERENCES

- Rice, H. M. A. (1960): - Geology and Mineral Deposits of the Princeton Map Area; G. S. C. Memoir #293.
- Christopher, P. A. (1973): - Preliminary Geological Map of the Aspen Grove Area; B. C. Dept. Mines and Petroleum Resources, Preliminary Map #10.
- Preto, V. A. G. (1975): - Geology of the Central Part of the Nicola Group, British Columbia; B. C. Department of Mines and Petroleum Resources, Preliminary Map #18.
- Annual Reports of B. C. Department of Mines and Petroleum Resources, 1950 - 1973.
- Personal Communication: - N. B. Vollo, Craigmont Exploration, Kamloops, B. C.

A P P E N D I X B

WRITER'S CERTIFICATE

JAMES M. DAWSON, P. ENG.
GEOLOGIST

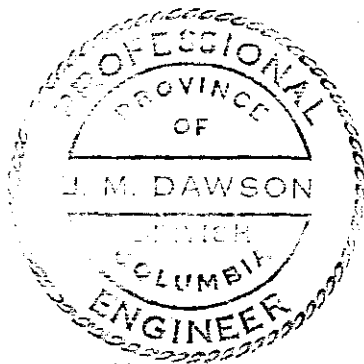
9-219 VICTORIA STREET
KAMLOOPS, B.C.

PHONE (604) 374-6427

CERTIFICATE

I, JAMES M. DAWSON OF KAMLOOPS, B. C., DO HEREBY CERTIFY THAT:

- (1). I am a geologist residing at 2753 Sunset Drive, Kamloops, and employed by Kerr, Dawson and Associates Ltd., of Suite #1 - 219 Victoria Street, Kamloops, B. C.
- (2). I am a graduate of the Memorial University of Newfoundland, B. Sc. (1960), M. Sc. (1963), a fellow of the Geological Association of Canada and a member of the Association of Professional Engineers of B. C. I have practised my profession for 12 years.
- (3). I am the author of this report which is based on personal examination of all three properties discussed as well as a perusal of various government reports and maps.
- (4). I have no beneficial interest in the properties discussed in this report nor do I expect to receive any.



July 9th., 1975,
KAMLOOPS, B. C.

KERR, DAWSON & ASSOCIATES LTD.,

J. M. Dawson, P. Eng.,
GEOLOGIST

APPENDIX "B"

REFERENCES

- Rice, H. M. A. (1960): Geology and Mineral Deposits of the Princeton Map Area; G. S. C. Memoir 243.
- Preto, V. A. (1974): Geology of the Aspen Grove Area - Descriptive Notes and Preliminary Map #15.
- Kelly, Sherwin F. (1970): Geophysical - Geochemical Report to Dawood Mines Ltd. - DOAT Claims near Merritt, B. C.

Varied assessment reports related to claims in the vicinity of the Snowflake claim.

Personal Communication: J. M. Dawson, P. Eng.
Kerr-Dawson and Associates Ltd.
#1-219 Victoria Street
Kamloops, B. C.

APPENDIX "C"

STATEMENT OF EXPENDITURES

Transportation - 4 X 4 Jeep, 6 days @ \$35.00/day	\$ 210.00
Geochemical analysis	308.00
Printing and office expenses	176.82
Total labour	<u>2150.00</u>
TOTAL EXPENSES	<u><u>\$2844.82</u></u>

EMPLOYMENT EXPENSES

Name & Address	Dates Employed	Job Done	Rate of Pay	Total
J. M. Dawson, P. Eng. 1-219 Victoria Kamloops, B. C.	June 16 to July 9, 1975.	Property examination and report (Appendix "A")	\$1045.00	\$ 520.00 Snowflake portion
R. W. Yorke- Hardy, MTCET Box 325 Logan Lake, B.C.	June 16, 1975 ($\frac{1}{2}$ day)	Project Management	\$ 120.00/ day	\$ 20.00 Snowflake portion
	April 17 to June 11, 1976 9 days 3 days	Project Management Sampler	\$ 120.00/ day \$ 65.00/ day	\$1080.00 \$ 195.00
Gordon Knight 815 Morven Kamloops, B. C.	April 21 - 28, 1976 2 days	Sampler	\$ 55.00/ day	\$ 110.00
Steve Gapp 37 Amber St. Logan Lake, B.C.	May 2, 1976	Sampler	\$ 55.00/ day	\$ 55.00
Greg Knight 203 King St. Kamloops, B. C.	April 28, 1976	Helper	\$ 35.00/ day	\$ 35.00

Name & Address	Dates Employed	Job Done	Rate of Pay	Total
L. Lindquist Chartrand Apt. Logan Lake, B.C.	May 2, 1976	Chairman	\$ 45.00/ day	\$ 45.00
A. Yorke-Hardy Box 325 Logan Lake, B.C.	April 24 to May 2, 1976 2 days	Helper	\$ 35.00/ day	\$ 70.00
M. LeFlufy Box 134 Logan Lake, B.C.	June 3 - 10, 1976 $\frac{1}{2}$ day	Typist	\$ 40.00/ day	\$ 20.00

APPENDIX "D"

Apr. 73 - Dec. 74 Geological draftsman and assistant to geological staff.
IPEC - B. C. Hydro, P. O. Box 160,
Mica Creek, B. C.

Nov. 71 - Apr. 73 Draftsman for forest engineering department.
Evans Products Ltd., Golden, B. C.

Jan. 70 - Nov. 71 Assistant mine geologist and field geologist on drill projects.
Sherritt-Gordon Mines Ltd., Lynn Lake,
Manitoba.

May 67 - Jan. 70 Geological assistant and project supervisor.
Manex Mining Ltd., Vancouver, B. C.

June 63 - May 67 Miner, mining exploration worker.
- - - Various companies - - -

Clayton H. King M.T., C.E.T.

QUALIFICATIONS OF PERSONNEL

Gordon Knight: Pumpman at the Gulf Oil Refinery, Kamloops, B. C. Previous experience related to mining industry - crusher operator, claim staker. No previous experience in taking soil samples - trained by R. W. Yorke-Hardy for one day on the job prior to working alone.

Steve Gapp: Surveyor at Lornex Mining Corp. Ltd., Logan Lake, B. C. No previous experience related to the mining industry. Trained by R. W. Yorke-Hardy for one-half day on the job prior to working alone.

Lloyd Lindquist: Surveyor at Lornex Mining Corp. Ltd., Logan Lake, B. C. Previous experience related to mining industry - diamond drill helper. Supervised by sampler.

Greg Knight: Student - no previous experience related to mining industry. Supervised by sampler.

Alana Yorke-Hardy: Housewife - no previous experience related to mining industry. Supervised by sampler.

**JAMES M. DAWSON, P.ENG.
GEOLOGIST**

9-219 VICTORIA STREET
KAMLOOPS, B.C.

PHONE (604) 374-6427

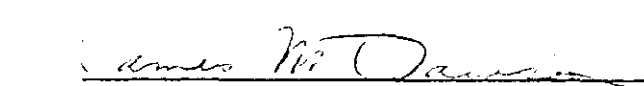
CERTIFICATE

I, JAMES M. DAWSON OF KAMLOOPS, BRITISH COLUMBIA DO HEREBY CERTIFY THAT:

- (1). I am a geologist residing at 1523 Robinson Crescent, Kamloops, and employed by Kerr, Dawson and Associates Ltd. of Suite #1 - 219 Victoria Street, Kamloops, British Columbia.
- (2). I am a graduate of the Memorial University of Newfoundland, - B. Sc. (1960), M. Sc. (1963), a fellow of the Geological Association of Canada and a member of the Association of Professional Engineers of British Columbia. I have practised my profession for 13 years.
- (3). The geochemical survey on the Snowflake Claim and the report prepared by Mr. R. W. Yorke-Hardy was done under my supervision.



KERR, DAWSON & ASSOCIATES LTD.,


James M. Dawson, M. Sc., P. Eng.,
GEOLOGIST

Kamloops, B. C.,
June 4th., 1976.