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INTRODUCTION

During the 1971 field season a follow-up exploration program was undertaken by Cordilleran Engineering Limited for Quebec Cartier Mining Company in northern British Columbia. The primary objective of the project was to investigate areas having potential for the occurrence of base metal and ferro-alloy ore deposits. These included primarily, "porphyry" occurrences of copper, molybdenum and tungsten, and, to a lesser extent, replacement deposits of lead, zinc and silver.

Field work included the examination and evaluation of geochemical anomalies indicated by regional stream sediment sampling surveys conducted during the summer of 1970. Target areas were previously outlined by a correlation of multi-element analytical data and geology together with an airphoto study covering each anomalous area.

Rock samples, and, in some instances, additional sediment samples were collected from the areas of interest and submitted for chemical analysis. Favorable areas were staked and subjected to more detailed examination including soil sampling, geologic mapping, and geophysical surveys.

INTRODUCTION (cont'd)

The following report describes the results of the 1971 investigations and recommends further follow-up work. A brief review of previous projects in the area is included; however, geochemical data, maps and more comprehensive discussions of the regional geology and metallogeny are contained in reports on the Atlin-Stikine Project (1970) and the Rancheria-Kechika Project (1970).

NOTE: Re: "Porphyry"

The term "porphyry (copper) deposit", which is used frequently in this report, refers primarily to relatively large, low-grade, epigenetic, hypogene deposits that can be mined by open-pit mining methods. This broad definition includes several unique types of "porphyry" deposits found in British Columbia; however, it is important to note that many of these deposits cannot be thought of in terms of the classic "porphyries" found in the southeast United States. For example, the Brenda deposit, has only a very weak alteration halo and the mineralization is predominantly fracture controlled rather than disseminated. Other examples include the Valley Copper deposit which is characterized by the notable absence of a pyrite halo and the Vavenby deposit where the mineralization occurs primarily as concordant lenticular bodies in metasedimentary host rocks such as gneiss and schist.

HISTORY

The Atlin-Stikine Project (1970) included helicopter-supported reconnaissance stream sediment sampling and geological traversing covering twelve major Mesozoic intrusives and contact boundaries. The area of interest included approximately 1500 square miles of rugged mountainous terrain located on the Stikine Plateau and along the eastern margin of the Coast Ranges.

A total of 924 sediment samples and 678 rock specimens were collected and analyzed for copper, lead, zinc, molybdenum, tungsten and nickel. The project region was subdivided into four areas to allow statistical analysis of the geochemical data. This permitted a more accurate interpretation of the data since the background, threshold, etc., were slightly different for each geologic region.

Significant anomalies were indicated in the vicinity of Kedahda Lake and were believed to be associated with the late stage emplacement of the Glundebery Batholith during the Cretaceous. Geochemical data indicated a prominent regional molybdenum-tungsten concentration within this granitic intrusive

HISTORY (cont'd)

and several strong trends were recognized. Structural evidence, petrology and genetic relationships suggested that this was an area of potential porphyry molybdenum deposits and, for this reason, was selected as a primary target for follow-up work during the 1971 field season.

The Rancheria-Kechika Project (1970) was designed to discover porphyry deposits in the Cassiar Batholith and to investigate the Paleozoic and Proterozoic sediments and meta-sedimentary sequences east of the Cassiar Batholith for stratabound zinc deposits. Approximately 6000 stream sediment samples were collected from a 5000 square mile area covering the Eastern Cassiar Range and part of the Rocky Mountain Trench.

The samples were collected by ground traverses along streams and also by helicopter. Geochemical analyses were subsequently made for copper, molybdenum, zinc and nickel. A total of 60 anomalies were recognized from the analytical data and 30 of these were selected for more detailed follow-up work during 1971.

SUMMARY

A total of 63 anomalies were examined and 5 of these were staked by Cordillera in 1971. The source of most of the anomalies was identified by prospecting and additional sampling. The stratigraphic and genetic relationships of the various anomalies are illustrated in Figure A.

Areas having no recognizable alteration or mineralization but characterized by anomalous concentrations of metal were noted in many instances. Metal concentration in black shale beds (lower Sylvester Group) accounted for 36% of the anomalies which were investigated. Seventeen anomalies (27%) were either partly or completely staked by other companies.

Significant anomalies associated with Middle and Upper Cretaceous intrusives were investigated and porphyry-type mineralization (Cu-W) was indicated on the Wolf and Kedy claims (Glundebery Batholith) and possible "porphyry" Mo mineralization was found on the RB claims (Cassiar Batholith). Widespread traces of copper in Triassic volcanics and meta-volcanics in the vicinity of Kedahda Lake and Tucho Lake indicate that these areas also have considerable potential for "porphyry" Cu mineralization.

SUMMARY (cont'd)

Reconnaissance stream sediment sampling suggests several areas of interest (possible tungsten replacement deposits) in the Logjam Creek area.

The Captain Lake copper prospect, owned by Rackla River Mines, appears to have potential for a large tonnage, low-grade Cu deposit.

FIELD OPERATIONS:

A mobile tent camp was used as a base of operations during the field work. Base camps were located at Dall Lake, Cry Lake, Kedahda Lake and Rancheria, Y.T. A Bell G3B₁ helicopter was chartered from Frontier Helicopters Ltd., Watson Lake, Y.T., and was used for transportation in the field. B.C.-Yukon Air Service Ltd., and Watson Lake Flying Service Ltd. provided float plane support, maintained radio communications and expedited supplies.

SUMMARY (cont'd)PERSONNEL:

Talis E. Kalnins	Geologist, Party Chief
C. Michael Hamilton	Geologist
Michael A. McNeice	Prospector
Edward Balon	Prospector
Bryce Mercredi	Prospector
Edward McVeigh	Field Assistant
Thomas W. Muirhead	Field Assistant
Thomas Volkers	Field Assistant
Ronald Madsen	Helicopter Pilot
Earl Lozo	Helicopter Pilot
Murray Keats	Helicopter Engineer
Ray Hatt	Cook

QUEBEC CARTIER MINING COMPANY
PROPERTIES

Five claim groups were staked to protect areas believed to have some potential for economic mineralization and more detailed work was done on two of these properties (see Figure B). The results of these investigations, which included geologic mapping, geophysical surveys, soil and rock sampling, and trenching are discussed subsequently.

SUMMARY OF PROPERTIES STAKED IN 1971
(NORTHERN BRITISH COLUMBIA)

PROPERTY	LOCATION	No. of CLAIMS	MINERAL OCCURRENCE	WORK DURING 1971
<u>1.) TUCHO</u>	6 mi. S.W. of Tucho Lake	38	Possible Cu Porphyry in Triassic Metavolcanics.	Soil Sampling, Geologic Mapping, Trenching, I.P. Survey.
<u>2.) RB</u>	4 mi. N.W. of Rainbow Lakes	6	Possible Mo Porphyry in Quartz Monzonite (Cassiar Batholith)	Prospecting
<u>3.) WOLF & KEDY</u>	9 mi. E. of Kedahda Lake	104	Possible Cu-W Porphyry in Quartz Monzonite (Glundebery Batholith)	Preliminary Geologic Mapping and Rock Sampling
<u>4.) JAKE</u>	Teslin Lake	4	Possible Cu Porphyry (?); Mississippian Metasediments with Diorite Intrusives.	Soil Sampling, Geologic Mapping

FIGURE B

QUEBEC CARTIER MINING COMPANY PROPERTIES (cont'd)TUCHO CLAIMS

(NTS 94-L)

The "Tucho" claims were staked for Quebec Cartier Mining Company in 1971 on the basis of a copper discovery. They are located in the Liard Mining Division in northern British Columbia, 6 miles southwest of Tucho Lake (58°17'N, 127°58'W). Tucho Lake is accessible by float plane from Watson Lake, Y.T., 120 miles to the NW.

The property status is as follows:

<u>NAME OF CLAIMS</u>	<u>RECORD NUMBERS</u>	<u>ASSESSMENT ANNIVERSARY</u>
Tucho # 1 to #24	51210-51233	June 28/72) Work to) be
Tucho #25 to #28	Not received	Aug. 24/72) applied

A very broad Cu-Mo anomaly (approximately 40 sq. miles) was outlined by reconnaissance stream sediment sampling near Tucho Lake in 1968. Immediate follow-up prospecting did not produce any encouraging results. In 1971 an airphoto study of the anomalous area was undertaken in conjunction with analysis of stream sediment data obtained by the Rancheria-Kechika reconnaissance project. During the early summer of

QUEBEC CARTIER MINING COMPANY PROPERTIES
Tucho Claims (cont'd)

1971 chalcopyrite mineralization accompanied by intense hydrothermal alteration was discovered near the centre of an anomalous fracture pattern indicated by airphoto interpretation.

The Tucho claims were staked immediately and the following investigations were carried out:

- Soil sampling, 167 samples.
- IP survey, 5 line-miles.
- Geological mapping, 1"=1/2 mi. on airphoto base.
- Rock trenching, 135 lineal feet.

Geological and geochemical data and rock trench locations are shown on figures D, E, F, G and Plate III (in pocket). The details of the Induced Polarization survey are described separately in a report by McPhar Geophysics.

The property is situated on a barren alpine plateau at about 5500' ASL (see photo No. 1). Tucho Lake is at 4000' ASL. It is underlain by augite-andesite volcanic flow rocks and pyroxene hornfels. The volcanics are believed to be of Triassic age. They form a roof pendant 10 miles x 4 miles in the Cassiar Batholith and are extensively pyritized, particularly on the ridges to the east of the Tucho group.

QUEBEC CARTIER MINING COMPANY PROPERTIES
Tucho Claims (cont'd)

The area occupied by the Tucho claims is extensively fractured. A mineralized and altered zone 500' x 900', elongated EW was mapped within the fractured area. The altered outcrops are a light brown color. The dark green andesite has been bleached and silicified. Carbonate breccia veins and sericitic shearing also occur in the altered zone. Sulphide mineralization consists of scattered fine disseminations and stringers of chalcopyrite. An isolated outcrop (100' x 30') of similar material is located 5000' to the southeast.

Patches of pyrite and in some cases chalcopyrite, accompanied by epidote and chlorite occur in the volcanic rocks north and east of the principal alteration zone.

The induced polarization survey produced a very weak ENE trending anomaly over the alteration zone. Rock trenching in the anomalous area exposed very minor concentrations of chalcopyrite.

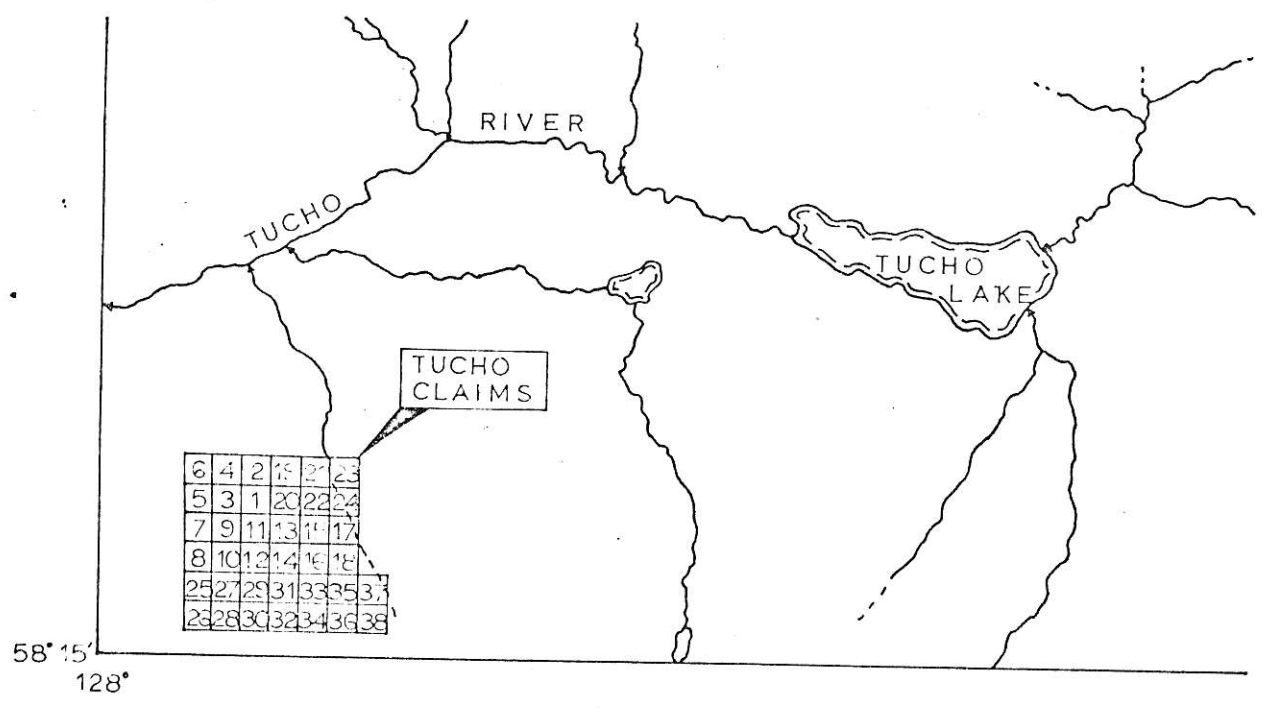
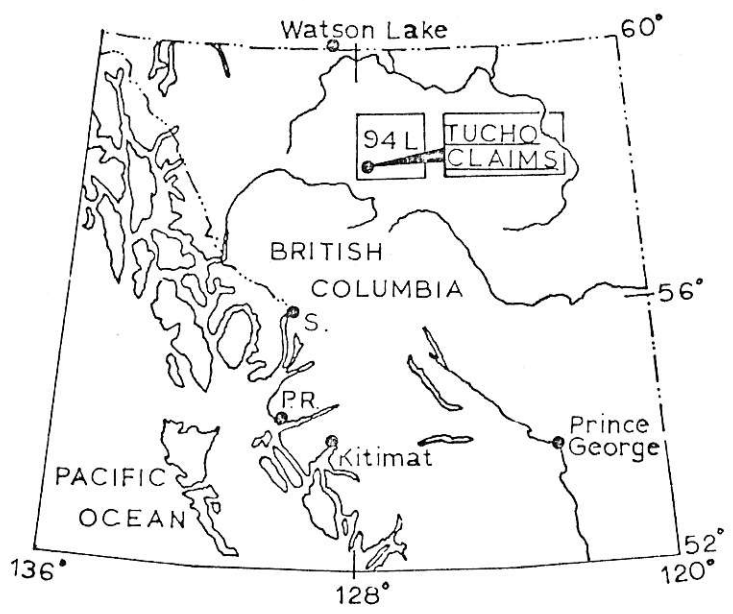
A group of moderately anomalous soil samples form a WNW trending geochemical feature that is subparallel to the alteration zone and IP response. It is approximately 3200' x 500', is open to the NW and seems to be increasing in width

QUEBEC CARTIER MINING COMPANY PROPERTIES
Tucho Claims (cont'd)

and intensity in that direction. About 1/2 mile north of the IP anomaly on the edge of the sampling grid there is a 2nd geochemical feature that is also open to the northwest.

None of the copper mineralization exposed in trenches or outcrops is sufficiently rich or extensive to indicate direct economic potential. Similarly the IP response suggests a very lean mineralized zone in the main altered area. However, the overall geological environment is favorable for the occurrence of "porphyry" Cu mineralization and the results of soil sampling suggest an unexplored geochemical target immediately NW of the 1971 survey grid. The buried intrusive volcanic contact north of the Tucho claims is also of further interest.

An airborne EM-magnetic survey accompanied by additional soil sampling and geological mapping are warranted to further evaluate the original geochemical anomaly.



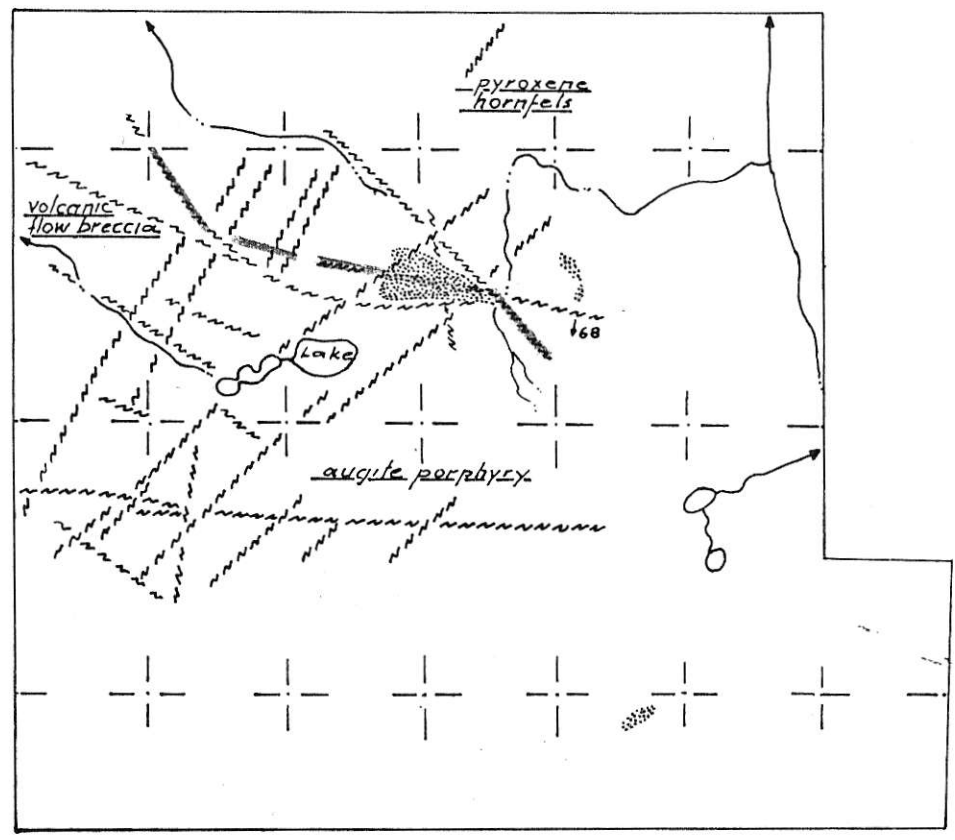
LOCATION MAP
TUCHO GROUP
 Kechika Area (94-L)

SCALE: 1" = 2 mi.

RA Nov. 1971

FIG. C

Tucho Lake 6 mi



LEGEND

- FAULT (TREND OF GEOCHEMICAL ANOMALY)
- COPPER MINERALIZATION
- CLAIM POST
- CREEK

QUEBEC CARTIER MINING COMPANY
 GENERAL GEOLOGY
 Air Photo Base
 TUCHO GROUP

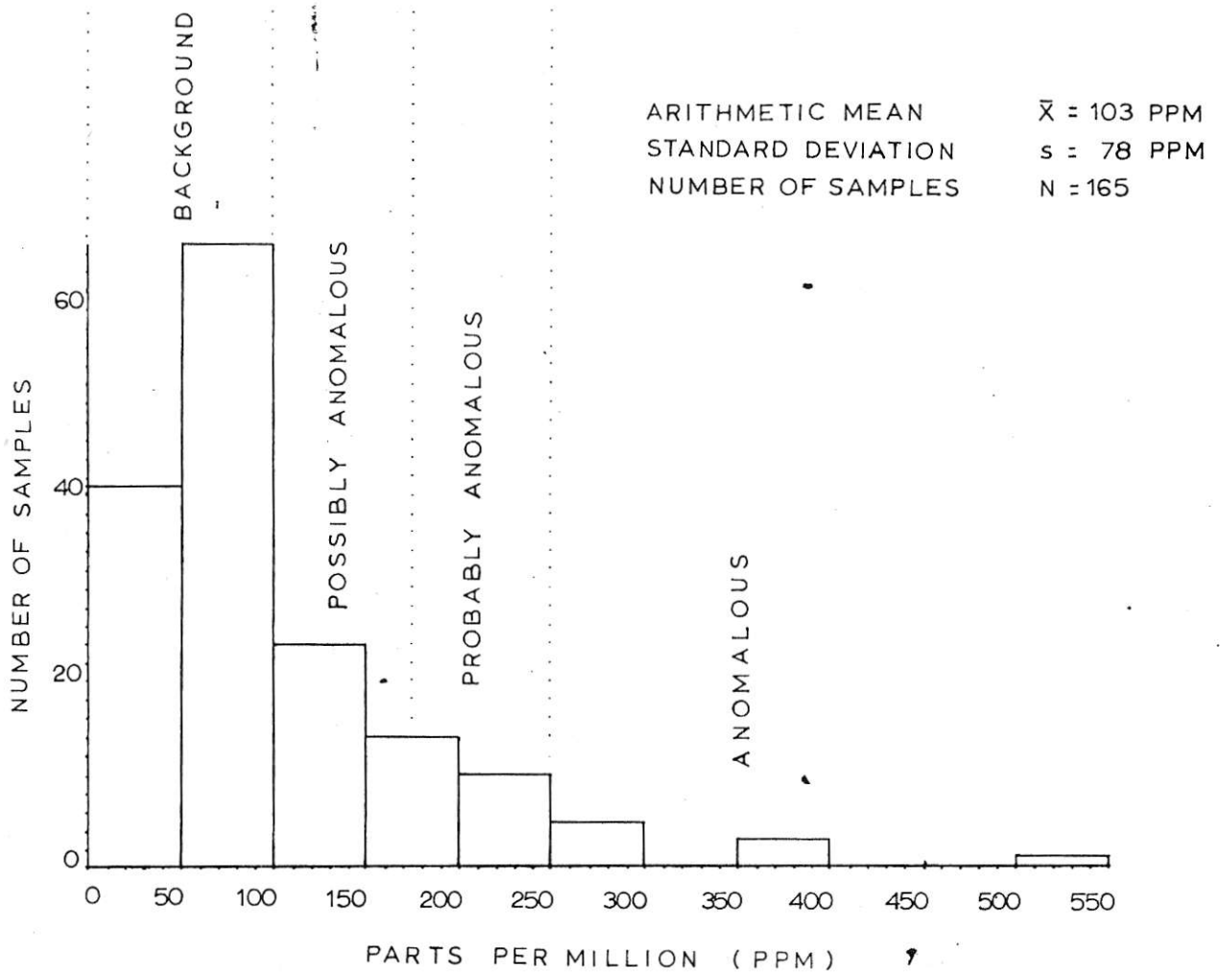
Kechika Area (NTS 94-L)

Approximate Scale: 1" = 2250'

15X Nov. 1971

FIG. D

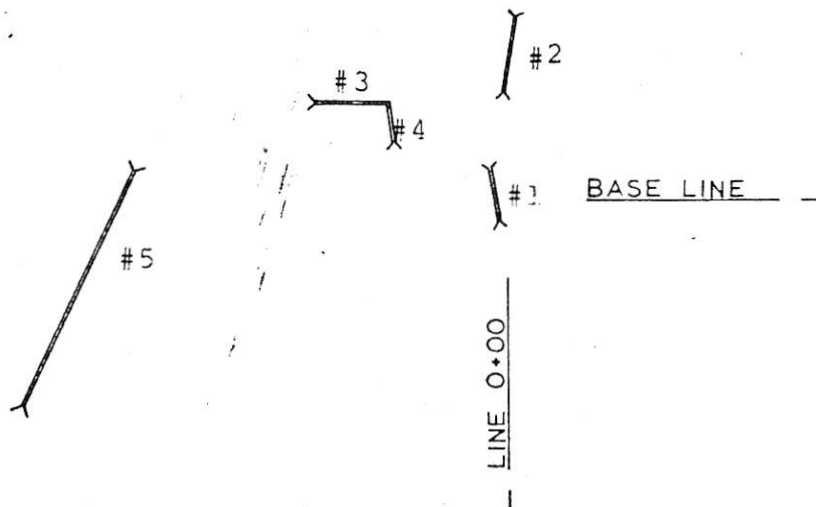
HISTOGRAM OF COPPER CONCENTRATION IN SOIL



QUEBEC CARTIER MINING COMPANY
TUCHO GROUPE
Kechika Area (NTS 94-L)

Feb. Nov. 1971

FIG. E



DATA:

TRENCH #1

Drilled: 29 ft. ("Diamond" rock drill)
 Explosives: 36 sticks Forcite, 40% 50# Amex.
 Rocks moved: 180 cu. ft.
 Remarks: Minor chalcopryrite & magnetite.

TRENCH #2

Drilled: 32 ft.
 Explosives: 36 sticks Forcite 40%
 Rocks moved: 50 cu. ft.
 Remarks: Minor chalcopryrite & magnetite.

TRENCH #3 and #4

Drilled: 93 ft.
 Explosives: 125 sticks Forcite 40%
 Rocks moved: 420 cu. ft.
 Remarks: Disseminations and seams of chalcopryrite in quartz and ankerite (?) gangue trend east-west; silicified fractures.

TRENCH #5

Drilled: 122 ft.
 Explosives: 163 sticks Forcite 40%
 Rocks moved: 840 cu. ft.
 Remarks: Bedrock weakly magnetic; fractures silicified; sparse chalcopryrite.

QUEBEC CARTIER MINING COMPANY
 DETAILS OF TRENCHING
 TUCHO GROUP






KECHIKA AREA (NTS 94L)

SCALE: 1" = 50'

TEA Nov. 1971

FIG. F

LEGEND

-  Prospect pit
-  Trench
-  Rock outcrop
-  Trend of schistosity
-  Swamp

DATA:

1. Fast Outcrop:

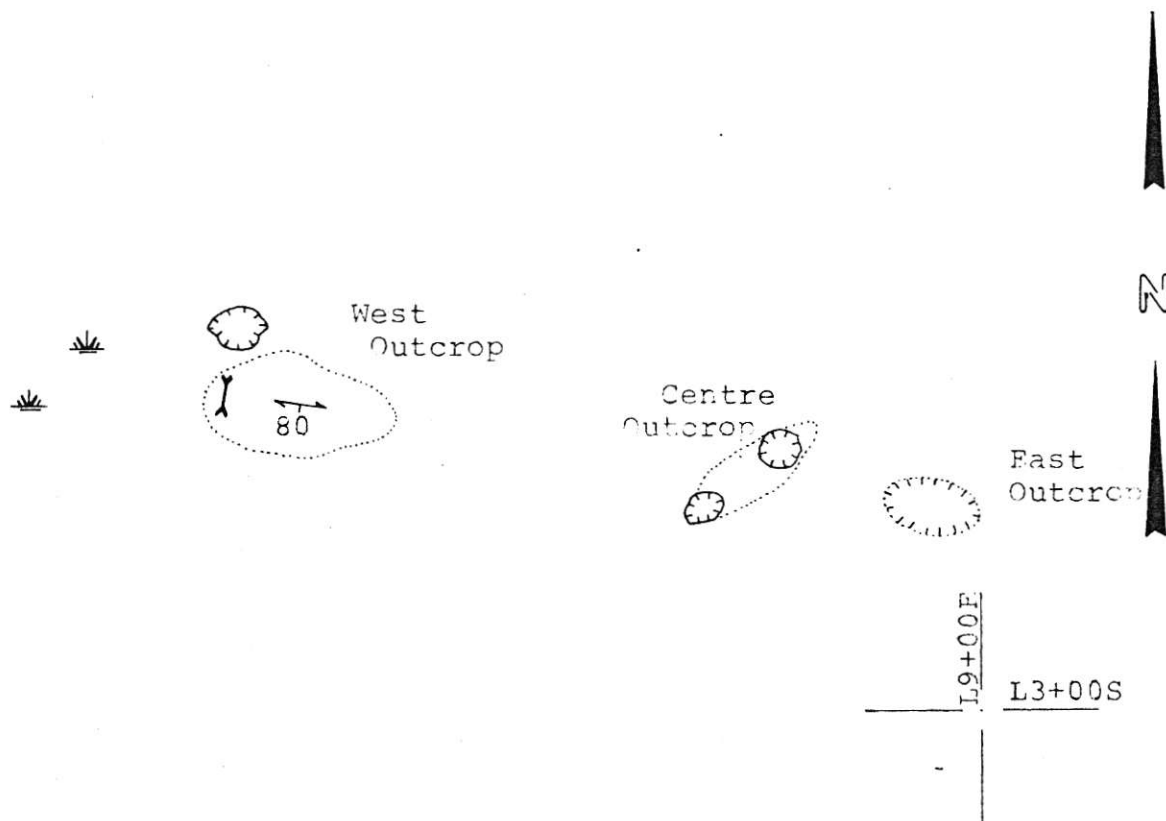
Drilled: 16 ft ("Diamond" rock drill)
 Explosives: 25 sticks Forcite 40%
 50# Amex
 Rocks moved: 375 cu.ft. estimated
 (incl. overburden)
 Remarks: Minor chalcopryrite in
 silicious talc schist.

2. Centre Outcrop:

Drilled: 25 ft.
 Explosives: 42 sticks Forcite 40%
 50# Amex
 Rocks moved: 420 cu. ft.
 Remarks: Silicified, pyritic
 rocks

3. West Outcrop:

Drilled: 10 feet
 Explosives: 17 sticks Forcite 40%
 50# Amex
 Rocks Moved: 370 cu. ft.
 Remarks: The rock is bleached
 talc schist



QUEBEC CARTIER MINING COMPANY

DETAILS OF TRENCHING
TUCHO GROUP

KECHIKA AREA (NTS 94L)

SCALE: 1" = 50'

QUEBEC CARTIER MINING COMPANY PROPERTIES (cont'd)JAKE CLAIMS

(NTS 104-N)

Four mineral claims, Jake #1 to #4, were staked by Cordilleran for Quebec Cartier Mining Company in early August, 1971, on the east shore of Teslin Lake, 1 mile south of the B.C.-Yukon border (59°58.5'N; 132°22.5'W). The current expiry date of these claims is August 24, 1972.

A quartz-chalcopyrite vein about 1 foot thick was found on the lakeshore in 1970 during the Atlin-Stikine reconnaissance project; however, mineral claims owned by others covered the prospect at that time.

The Jake claims were examined for Q.C.M. by a 3-man crew during the period from August 30th to September 1st, 1971. Field work consisted of line cutting, soil sampling, rock-chip sampling and geological mapping. The results of this work are shown on figures H to L.

The objective of the examination was to determine the extent of the copper mineralization. The possibility of a "porphyry" prospect was suggested by the presence of two felsic

QUEBEC CARTIER MINING COMPANY PROPERTIES
Jake Claims (cont'd)

plutonic masses cutting the metavolcanic and metasedimentary rocks in which the copper was found. (See Regional Geology, Figure I).

The Jake claims are underlain by chlorite schist of Upper Paleozoic age. The folia are steeply inclined southwestward and trend NW. Quartz veins and felsite dikes were observed lying parallel to a fracture system that dips steeply NW and strikes NE. Some quartz veins are also concordant with the rock folia.

The property is thickly wooded and bedrock is exposed in less than 10% of the area.

Sparse galena and bornite was found in chlorite schist and quartz veinlets on the shoreline about 500' SE of the discovery vein. Two samples of dike material contain 398 and 280 ppm Cu.

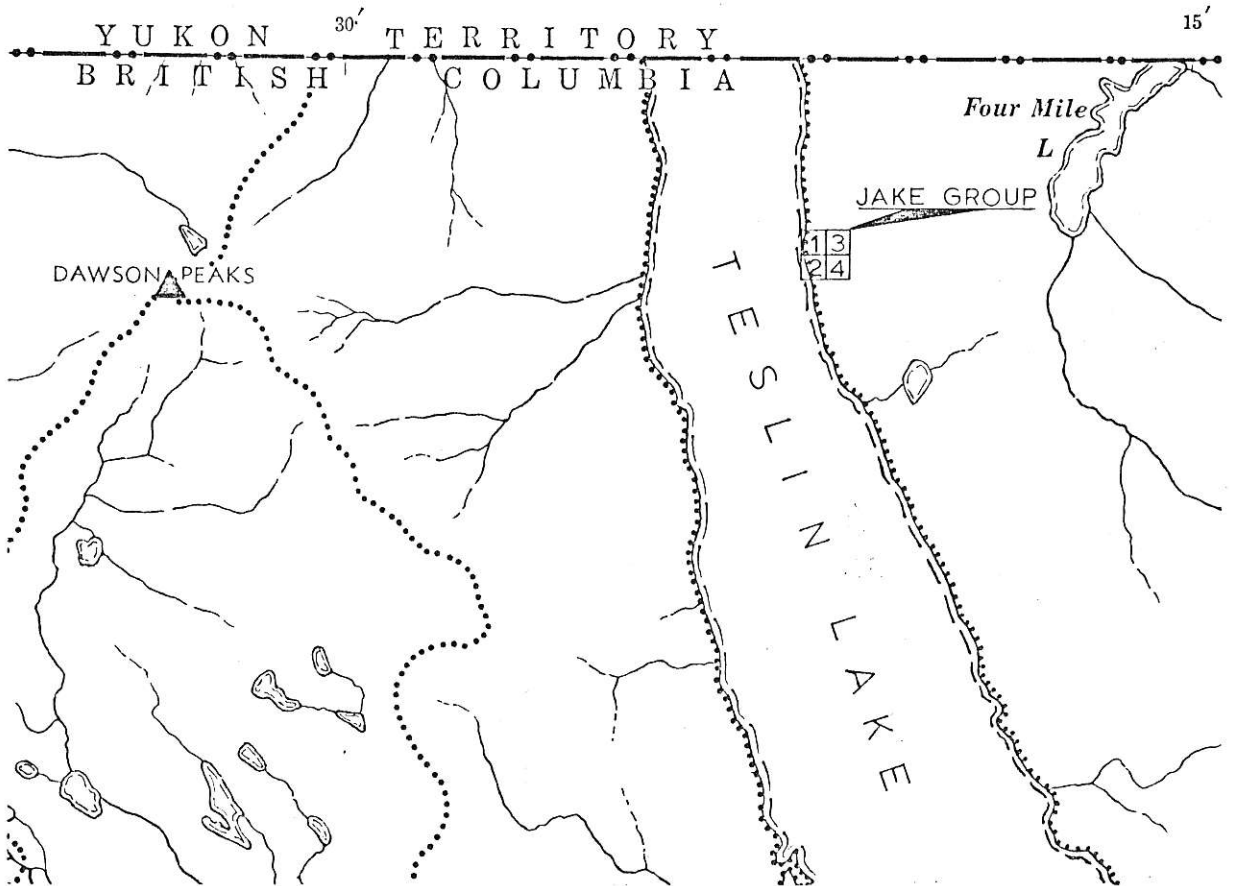
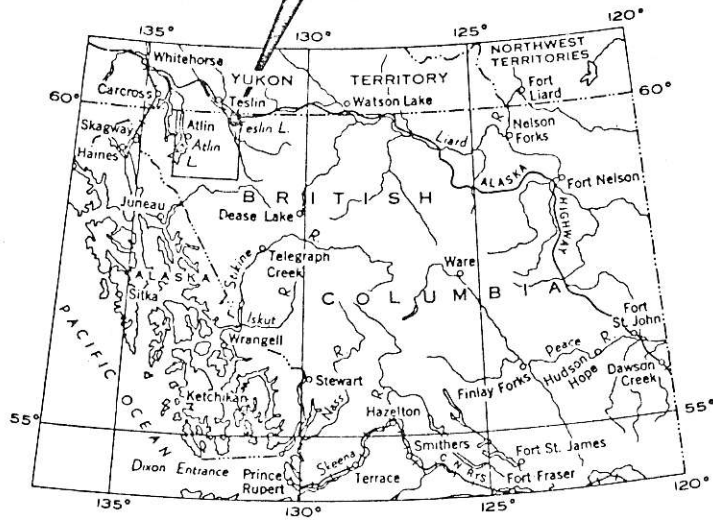
The analysis of 64 "B" horizon soil samples (see Fig. L) produced an irregular distribution of copper values. Eight sample points define 6 centres or peaks of anomalous response. Outcrops which occur in each of the "peak" areas

QUEBEC CARTIER MINING COMPANY PROPERTIES
Jake Claims (cont'd)

suggest that the source is probably not attributable to significant quantities of sulphide mineralization.

No further exploration work is recommended.

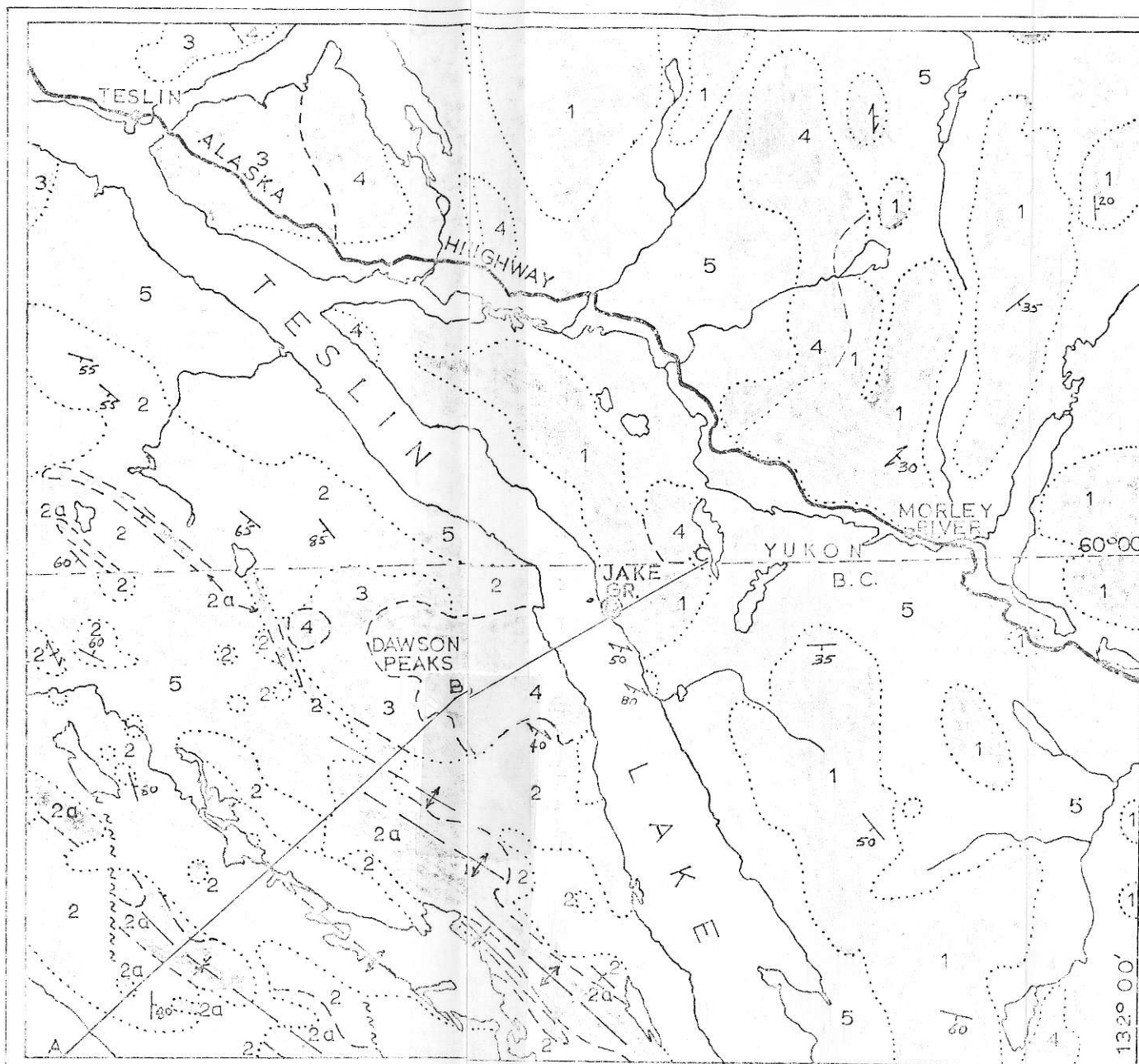
JAKE GROUP



QUEBEC CARTIER MINING COMPANY
 LOCATION MAP - JAKE GROUP

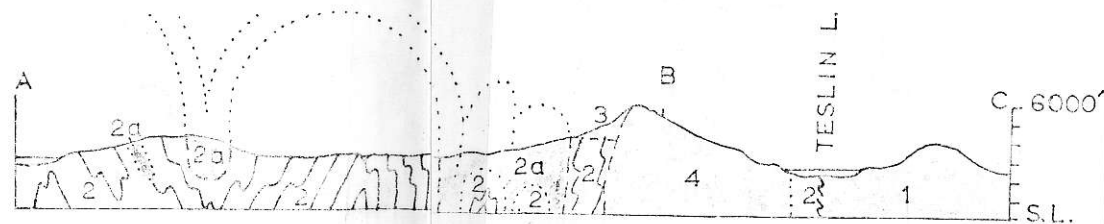
ATLIN AREA - 104-N

Scale: 1" = 2 mi.



REGIONAL GEOLOGY

SCALE: 1 INCH TO 4 MILES



SECTION ALONG A-B-C

VERTICAL SCALE: 1 INCH TO 2 MILES

Modified from G.S.C. maps 1082A and 1125A

LEGEND

- 5 Pleistocene and Recent
Glacial drift and
alluvium
- 4 Cretaceous
Granite, quartz monzonite,
syenite
- 3 Permian and/or Triassic
Andesite, basalt,
agglomerate, tuff and
breccia
- 2/2a Pennsylvanian and/or Permian
Chert, argillite,
chert breccia, conglomerate
2a - limestone and
limestone breccia
- 1 Mississippian and/or Earlier
Greenstone, chlorite
schist, greywacke,
quartzite, quartz-biotite
schist and impure
limestone

X Bedding (horizontal,
inclined,
vertical)

/ Schistosity or slaty
cleavage

Fault (assumed)

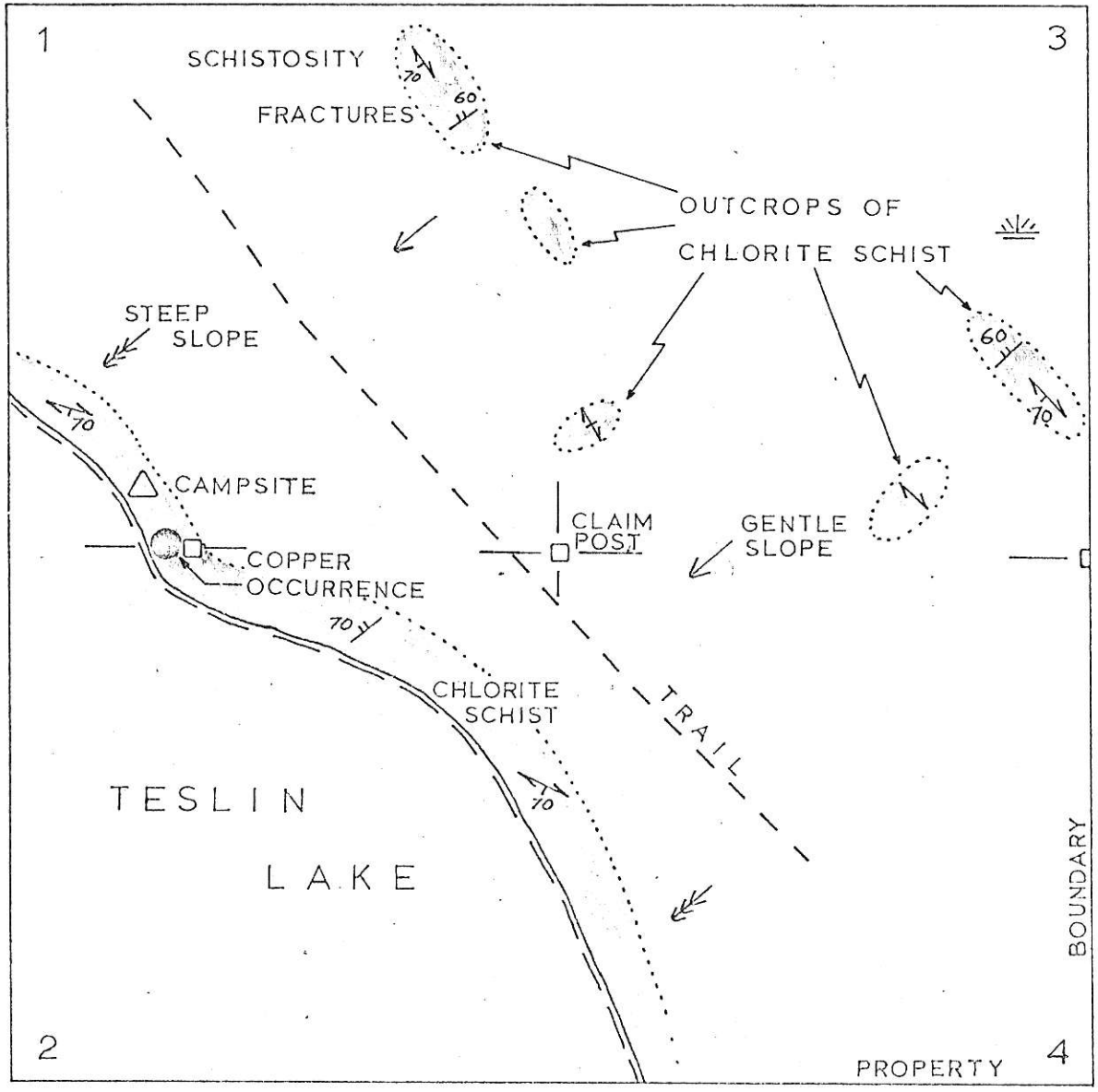
+ Anticline

-+ Syncline

QUEBEC CARTIER MINING COMPANY

JAKE GROUP

Atlin Area - 104-N



LOCAL GEOLOGY

SCALE: 1" = 500'

QUEBEC CARTIER MINING COMPANY

JAKE GROUP

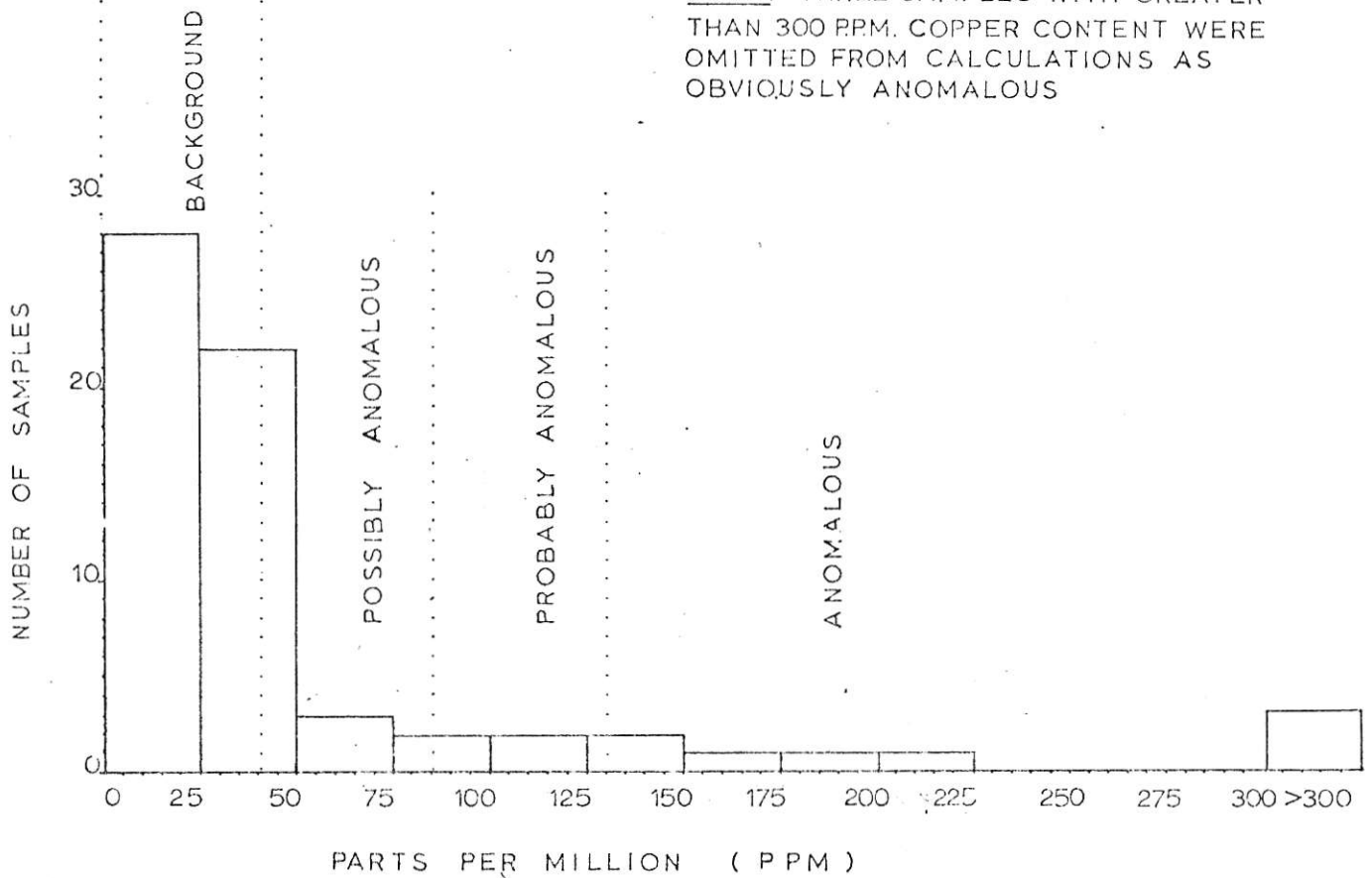
Atlin Area - 104-N

FIG. J

HISTOGRAM OF COPPER CONCENTRATION IN SOIL

ARITHMETIC MEAN \bar{X} = 42 PPM
STANDARD DEVIATION s = 44 PPM
NUMBER OF SAMPLES N = 61

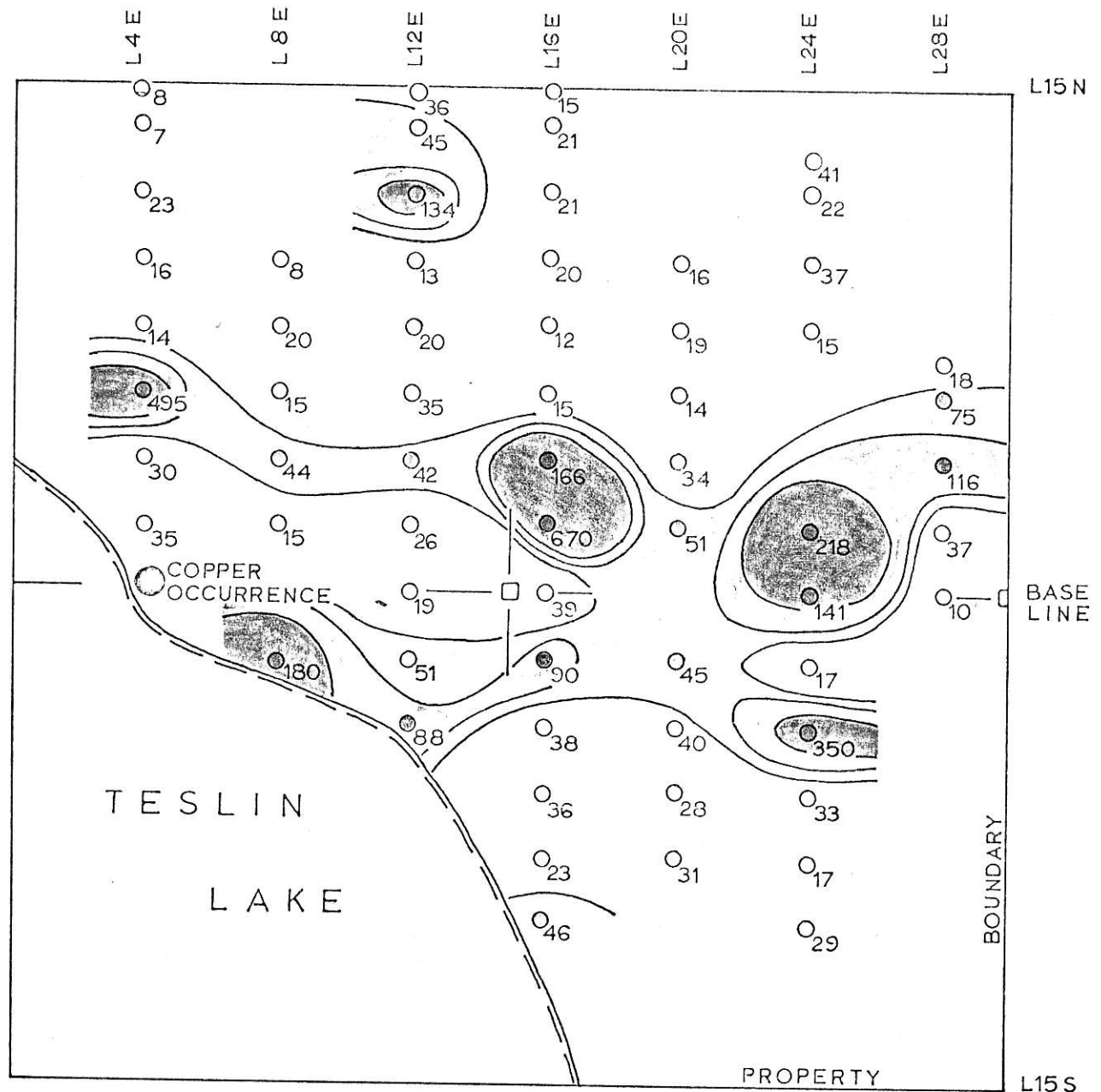
NOTE: THREE SAMPLES WITH GREATER THAN 300 PPM. COPPER CONTENT WERE OMITTED FROM CALCULATIONS AS OBVIOUSLY ANOMALOUS



QUEBEC CARTIER MINING COMPANY

JAKE GROUP

Atlin Area - 104-N



GEOCHEMICAL MAP

SCALE: 1" = 500'

LEGEND:

Copper content in soil samples in parts per million (ppm)

- 0 - 41 ppm background
- 42 - 86 ppm possibly anomalous
- 87 - 130 ppm probably anomalous
- ⊙ greater than 130 ppm anomalous

QUEBEC CARTIER MINING COMPANY
Jake Group

Atlin Area - 104-N

QUEBEC CARTIER MINING COMPANY PROPERTIES (cont'd)WOLF AND KEDY CLAIMS

(NTS 104-0)

A significant copper-tungsten occurrence was located and staked (104 claims) near the headwaters of Tahoots Creek, 8 miles east of Kedahda Lake. Disseminated scheelite and chalcopyrite occur with arsenopyrite in highly fractured and altered quartz monzonite and granite porphyry (Glundebery Batholith). The extent of the mineralization is somewhat difficult to estimate because much of the area is covered by steep talus slopes; however, numerous mineralized boulders and some mineralized outcrops occur within an area measuring roughly 500 x 700 feet on the Wolf #52 claim (see Plate I). In addition, scheelite occurs in quartz veins on the Wolf #1 claim.

The claim group is located immediately west of the Kahan claims owned by Kennco and is bounded on the north by the Swan claims, owned by Union Miniere; however, most of the known mineralization in the area occurs within the boundaries of the Wolf claim group. Rock samples were collected from these mineralized areas, but a comprehensive exploration program on the property was not attempted during 1971.

QUEBEC CARTIER MINING COMPANY PROPERTIES
Wolf and Kedy Claims (cont'd)

Traces of very finely disseminated MoS_2 were found in a cirque immediately south of the Wolf claims. Sporadic molybdenite occurs in altered biotite granite over an area measuring roughly 600 x 600 feet. The area was staked (Kedy claims) and forms a continuous claim block with the Wolf claims. The mineralization is marginal but may possibly be associated with the Kahan Creek Fault. There is some possibility of more extensive mineralization in this forest-covered fault valley immediately to the east.

The Kedahda Lake area is covered by a reconnaissance geologic map (Gabrielse, 1967) but the detail (1" = 4 mi.) was not considered adequate for a clear interpretation of the local geology. For this reason, some additional mapping was done during 1971 on airphoto overlays (1" = 0.5 mi.) and an airphoto mosaic was prepared for compiling the geologic data. This has allowed a more complete picture of the regional structure; however, additional mapping and field checks will be required.

The mineralogical association (Cu-W-As) was considered somewhat unique and a typical specimen was submitted to Lakefield Research for spectrographic analysis. In addition, a thin section was prepared to determine the translucent minerals

QUEBEC CARTIER MINING COMPANY PROPERTIES
Wolf and Kedy Claims (cont'd)

and a polished section was made to identify the opaque minerals. (The results of this study are contained in a report by R. W. Deane in the appendix).

Assays of rock chip samples collected from the mineralized zone (Wolf #52) indicated up to 2.47% Cu and 0.48% WO_3 in some samples; however, the overall average appears to be about 0.20% Cu and 0.20% WO_3 . It is important to note that these were mostly heavily oxidized surface samples and provide only a rough estimate of the actual grade.

An attempt was made to prospect the scheelite occurrence at night using a portable short-wave ultraviolet lamp; however, it was discovered that a particular species of lichen, commonly found in the area, also fluoresces with a remarkable resemblance to scheelite. In addition, during the summer months this latitude has only about 2 to 3 hours of darkness at night and, as a result, this method of prospecting is somewhat restricted.

In conclusion, the property is believed to have definite potential for a large-tonnage low-grade copper-tungsten deposit. Although this type of porphyry deposit is uncommon, it is interesting to note that a somewhat similar

QUEBEC CARTIER MINING COMPANY PROPERTIES
Wolf and Kedy Claims (cont'd)

tungsten occurrence (Potatoe Hills, Yukon) is presently being explored by Canex (Placer Development).

The area between Kedahda Lake and the Kahan Creek Fault is undoubtedly in the hood zone of the batholith, as evidenced by the numerous pendants which occur in the Glundebery granite. Geological information indicates that a major structural intersection probably occurs in the vicinity of the Wolf #34 claim, roughly 3000 feet NW of the Cu-W showing on the Wolf #52 claim (see Plate I). Major joint and fracture orientations in the mineralized area are N 70°W, 44°E; N 20°W, 47°E; N 2°W, 30°E and are believed to be the predominant trends controlling mineralization.

The fault intersections are inferred from the airphoto study and field evidence; however, the area is located in a wide, flat valley covered by a thin veneer of glacial till and characterized by few outcrops. An IP survey is recommended to test this area and determine the extent of mineralization NW of the presently known showing. Detailed geologic mapping and prospecting will also be required.

In addition, a continuation of the initial exploration of the Glundebery Batholith and the Triassic units is strongly recommended. (See Conclusions).

QUEBEC CARTIER MINING COMPANY PROPERTIES (cont'd)RB CLAIMS

(NTS 104-I)

A molybdenum occurrence was located and staked (6 claims) 4 miles N of Rainbow Lakes. Disseminated molybdenite (with minor chalcopyrite) was found in a moderately altered siliceous quartz monzonite host rock about 1.5 miles inside the Cassiar Batholith contact. Molybdenite and pyrite also occur along thin fractures and argillic and sericitic alteration are evident in the mineralized area which measures approximately 100 feet by 50 feet. However, the showing is located along the headwall of a cirque and much of the surrounding area is covered by snow and talus.

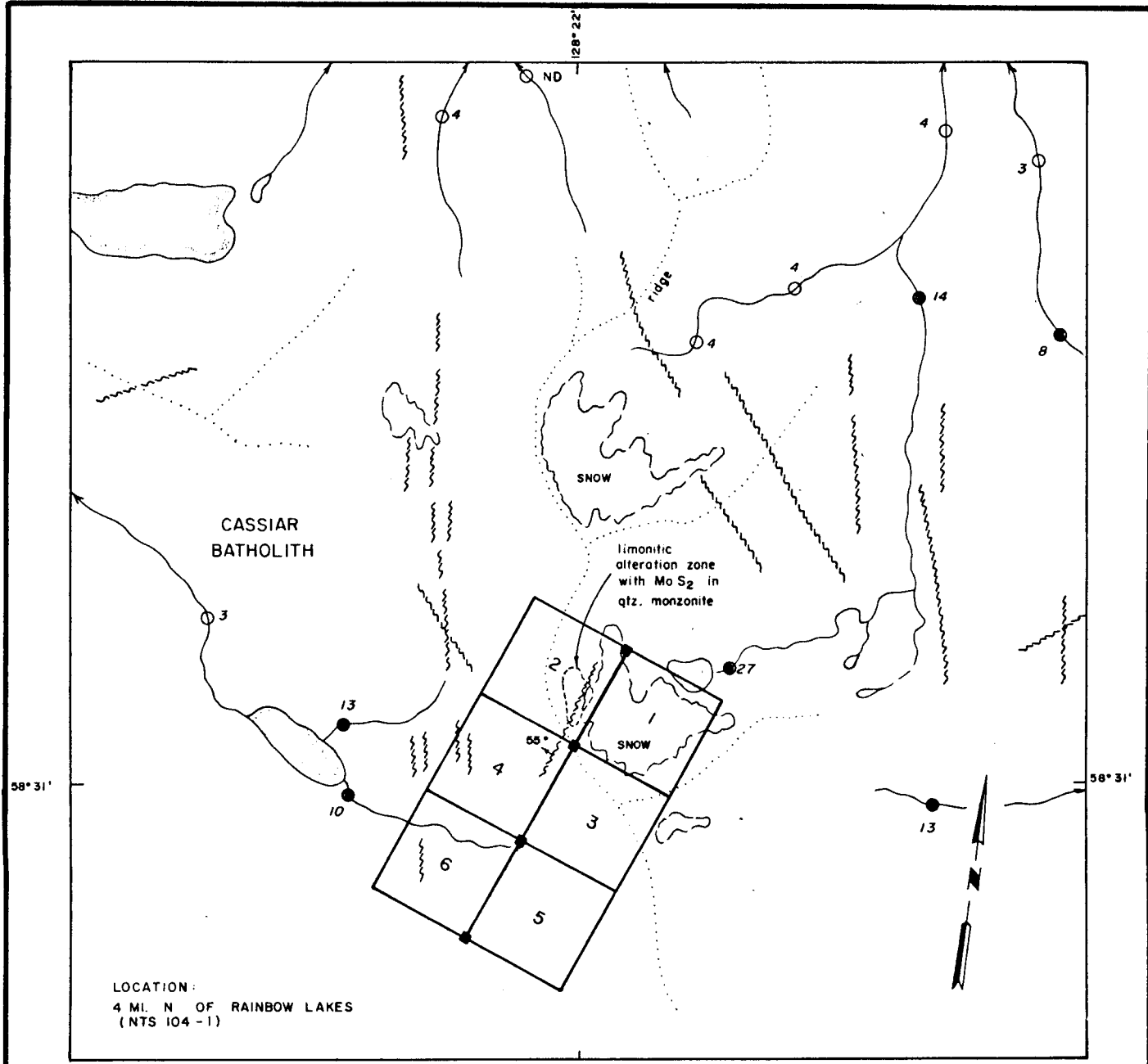
The mineralization is definitely porphyry-type and a typical grab sample assayed .072% Mo. Additional stream sediment samples were collected in order to define the anomalous area more clearly and the results are shown on the following page.

The property will require careful prospecting, detailed geologic mapping, and some rock chip sampling in order to determine the extent of the mineralization. However, rugged

QUEBEC CARTIER MINING COMPANY PROPERTIES
FB Claims (cont'd)

terrain will undoubtedly cause some field problems. The work would have to be done in August because of extensive snow-cover during the early summer months.

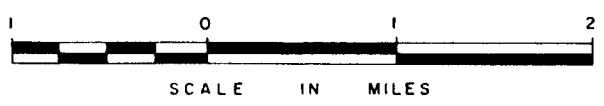
Two large claim groups (Gin and LD claims) were staked 2 miles NE and 2 miles NW of the FB property by Conwest Exploration (1970). These properties were not examined but are probably staked on mineralization similar to that occurring on the FB property.



LOCATION:
 4 MI. N. OF RAINBOW LAKES
 (NTS 104-1)

RB CLAIM GROUP

ADAPTED FROM AIREAL PHOTOGRAPHS A13475, 53-56



CORDILLERAN ENGINEERING LIMITED
 1418-355 BARRARD ST.
 VANCOUVER 1, B.C.

Fig.M

GEOCHEMICAL ANOMALIES

FIELD PROCEDURES

Traditional prospecting was the most commonly used field method for examining the stream sediment anomalies. The two-man prospecting teams were generally made up of an experienced prospector or geologist and a field assistant. This approach was effective since most of the anomalies were located above timberline in alpine terrain with extensive bedrock exposures.

The most probable source areas for each anomaly were determined by plotting the stream sediment sample locations on air photographs and examining the photographs with a stereoscope. Geologic observations, traverse routes, mineralization, etc., were recorded on transparent photo overlays. Particular attention was paid to major faults and fractured areas which were indicated by the airphoto study. The photographs provided valuable information and also served as a convenient 2" = 1 mile scale base map.

GEOCHEMICAL ANOMALIES - Field Procedures (cont'd)

A reconnaissance of each anomaly was made from the air prior to landing with the helicopter. In many cases gossans, structural features, and other obvious prospecting targets were recognized and examined accordingly.

Pock samples were collected from all of the anomalies and many of these were submitted to Bondar-Clegg & Company Ltd. for geochemical analysis (standard atomic absorption). Additional stream sediment samples were collected in several areas where anomalies were poorly defined. The relative intensity of the geochemical anomaly, geologic setting, structure, mineralization and evidence of hydrothermal alteration were taken into consideration in evaluating each anomaly. Additional time was spent on the most favorable anomalies and an attempt was made to discover the source of each anomaly.

The detailed results of the prospecting are discussed subsequently. The following information is largely negative, since all significant prospecting discoveries were staked and are discussed under Properties.

The anomalies are catalogued consecutively according to number designations assigned in previous reports (Atlin-Stikine and Rancheria-Kechika Projects). Analytical results of the rock sampling are included in the appendix of this report.

GEOCHEMICAL ANOMALIES
Rancheria-Kechika - First Priority Anomalies (cont'd)

I-3 BLUE RIVER (Cu 1-5, Ni 10-2)

LOCATION: 5 mi. NW of Blue River near Blue Dome.
 (NFS 104-F)

GEOCHEMICAL
DATA: Cu-Ni anomaly in stream sediments.

GEOLOGY: Upper Devonian and Lower Mississippian
 sediments (Sylvester Group) with
 ultrabasics.

PROSPECTING: Minor malachite, chalcopyrite and pyrite
 occur in altered volcanic (andesite) flow
 rocks. Samples show fracturing, slicken-
 sides and silicification.
 The ultrabasic rocks contain high trace
 amounts of nickel.

ROCK SAMPLING: Samples collected for further study.

INTERPRETATION: The anomaly is apparently caused by a
 very light concentration of metals
 commonly found in volcanics. Abundant
 rock exposures do not indicate a
 major source of mineralization.

EXAMINED BY: M.McNeice, T.Volkers August 28/71
 E.McVeigh, T.Muirhead August 31/71
 M.McNeice, M.Hamilton Sept. 9/71

GEOCHEMICAL ANOMALIES

Rancheria-Kechika - First Priority Anomalies (cont'd)I-4 CRY LAKE (Cu 2-4, Mo 8-10, Zn 5-4)

LOCATION: 9 mi. E of the north end of Cry Lake.
(NTS 104-I)

GEOCHEMICAL
DATA: Complex Cu, Mo, Zn anomaly in stream
sediments.

GEOLOGY: Upper Devonian and Lower Mississippian
sediments (Sylvester Group) with
ultrabasics.

MINERAL CLAIMS: Part of the anomaly is covered by the
Kim claims which are privately owned.

PROSPECTING: Most of the area is underlain by highly
deformed biotite-hornblende gneiss and
amphibolite. Diorite dikes occur in
several places and some of the gneissic
units are partly or totally altered to
serpentinite. Several prominent gossans
were prospected and finely disseminated
pyrite-pyrrhotite with minor chalcopyrite
was found over a fairly wide area.

ROCK SAMPLING: Samples collected for further study.

INTERPRETATION: A considerable amount of time was spent
prospecting this anomaly; however, the
mineralization was considered too sparse
to warrant staking.

EXAMINED BY: M. McNeice, E. McVeigh June 25/71
E. Balon, T. Muirhead June 25/71
M. McNeice, E. McVeigh June 28/71
M. Hamilton, T. Muirhead June 29/71
T. Kalnins, T. Volkers July 6/71

GEOCHEMICAL ANOMALIES

Rancheria-Kechika - First Priority Anomalies (cont'd)

I-4

CRY LAKE (Cu 2-4, Zn 5-4)

LOCATION: 8 mi. NE of the north end of Cry Lake.
(NTS 104-I)

GEOCHEMICAL DATA: Cu-Zn anomaly in stream sediments.

GEOLOGY: Upper Devonian and Lower Mississippian sediments (Sylvester Group) with ultrabasics.

PROSPECTING: Biotite-hornblende gneiss and epidote skarn containing traces of chalcopyrite, malachite, sphalerite and pyrite were found in the headwaters of the anomalous stream. A few felsite dikes and two major fracture trends were recognized, but no significant mineralization was found.

ROCK SAMPLING: Samples collected for further study.

INTERPRETATION: The skarn beds are the most likely source of the anomaly, however, the area does not appear to have much potential for economic mineralization.

EXAMINED BY: T.Kalnins, T.Volkers July 6/71

GEOCHEMICAL ANOMALIES
Fancheria-Kechika - First Priority Anomalies (cont'd)

I-4 CRY LAKE (Cu 2-4, Zn 5-4, Mo 8-6)

LOCATION: 1 mi. E of the north end of Cry Lake.
 (NTS 104-1)

GEOCHEMICAL
DATA: Cu-Mo-Zn anomaly in stream sediments.

GEOLOGY: Roof pendant (Sylvester Group)
 within Cassiar Batholith.

PROSPECTING: A thick sequence of black shale
 beds comprise most of the roof pendant.
 No mineralization was observed.

ROCK SAMPLING: STA 113 (1 sample)

INTERPRETATION: Anomalous concentrations of Cu, Zn
 and Mo were indicated by geochemical
 analysis of the black shale beds
 (STA 113).

EXAMINED BY: T.Muirhead, T.Volkers June 30/71

GEOCHEMICAL ANOMALIES

Rancheria-Kechika - First Priority Anomalies (cont'd)I-5 CRY LAKE (Cu 2-7, Zn 5-3, Mo 8-7, Ni 11-6)LOCATION: 3 mi. SE of Cry Lake, 3 mi. NW of
Three Forks Creek. (NTS 104-I)GEOCHEMICALDATA: Strong Cu-Zn-Mo-Ni anomaly in
stream sediments.GEOLOGY: Lower Paleozoic roof pendant (?) in
Cassiar Batholith.MINERAL CLAIMS: A small part of the anomaly is covered
by the Tor claims owned by T. Johansson.PROSPECTING: This was considered one of the best anomalies
detected by the Rancheria-Kechika sediment
sampling survey (1970) and, for this reason,
a total of 10 man-days were spent prospecting the area. The
results, however, were not encouraging.

The area is underlain by intensely folded and faulted limestone, argillite, slate, and gneiss with numerous granitic dikes and sills. Limonitic alteration is widespread and epidote-grossularite skarn occurs in several localities. Pyrite/pyrrhotite with sparse chalcopyrite was noted in skarn beds near the headwaters of the anomalous stream.

Two granitic stocks were prospected; however, no alteration or significant mineralization was observed within the intrusives. The skarn, argillite beds, and intrusive rocks were sampled.

ROCK SAMPLING: STA 100, 101, 106, 110 and 111 (11 samples).INTERPRETATION: Geochemical analyses indicated that the
black argillite beds average Cu 155 ppm,
Zn 359 ppm, Mo 79 ppm and Ni 214 ppm.

This, together with the skarn beds, are probably the primary source of the stream sediment anomaly. Anomalous Cu, Zn, Mo, Ni are also indicated along the contact margin of a granitic stock (STA 106C) near the E edge; no evidence of hydrothermal alteration or mineralization was observed.

<u>EXAMINED BY:</u>	M. Hamilton, E. McVeigh	.....	June 23/71
	T. Muirhead	.....	June 23/71
	M. Hamilton, T. Volkers	.....	June 25/71
	M. Hamilton, T. Volkers	.....	June 27/71
	T. Muirhead	.....	June 28/71
	E. Balon, T. Volkers	.....	June 28/71

GEOCHEMICAL ANOMALIES

Rancheria-Kechika - First Priority Anomalies (cont'd)

I-6

TURNAGAIN RIVER

(Zn 5-9, Mo 8-17)

LOCATION: 2 mi. N of junction of Turnagain River
and Cassiar River. (NTS 104-I)

GEOCHEMICAL
DATA: Strong Zn anomaly with minor Mo
in stream sediments.

GEOLOGY: Atan Group in contact with
Cassiar Batholith.

MINERAL CLAIMS: Most of the anomaly is claimed by
El Paso Mining and Milling Company.
An extensive drilling program was
conducted during 1970-71.

PROSPECTING: None.

ROCK SAMPLING: None.

INTERPRETATION: The drilling target was apparently
scheelite-bearing skarn beds; however,
the results of the drilling program
are unknown.

EXAMINED BY: Not examined.

GEOCHEMICAL ANOMALIES

Rancheria-Kechika - Second Priority Anomalies (cont'd)

II-2

DEADWOOD LAKE

(Mo 7-9, Cu 1-1)

LOCATION: South end of Deadwood Lake.
(NTS 104-P)

GEOCHEMICAL DATA: Moderate Cu and Mo.

GEOLOGY: Lower Paleozoic limestone (Kechika Group) and dolomite (Sandpile Group). Complex fracturing indicated by airphoto study.

PROSPECTING: Very little alteration and no mineralization was found. Fault breccia was common along the airphoto lineaments, and a few thin black argillite interbeds were noted in the limestone near the headwaters of the anomalous stream. Diagenetic pyrite and a small andesite dike were also noted.

ROCK SAMPLING: STA 7 (3 samples)

INTERPRETATION: The stream sediment anomaly was 19 ppm Mo with the highest value occurring close to the black argillite outcrops in the stream bed. Geochemical analyses indicate 18 ppm Mo in the argillite which is the probable source of the anomaly.

EXAMINED BY: M.McNeice, M.Hamilton June 13/71

GEOCHEMICAL ANOMALIES
Rancheria-Kechika - Second Priority Anomalies (cont'd)

II-3 RAPID RIVER (Cu 1-10)

LOCATION: 5 mi. W of Rapid River, 5 mi. SE of
 Sheep Mountain. (NTS 104-P)

GEOCHEMICAL
DATA: Strong Cu anomaly in stream sediments.

GEOLOGY: Upper Devonian and Lower Mississippian
 sediments (Sylvester Group) with
 minor ultrabasics.

PROSPECTING: The anomalous area was traversed by
 three prospectors with negative results.
 The country rocks are composed of cherts
 and cherty shales which contain minor
 amounts of pyrite and pyrrhotite in
 sparsely distributed quartz veins.

ROCK SAMPLING: Rock samples were not retained.

INTERPRETATION: The anomaly is probably derived from
 high trace amounts of copper in the
 shales and/or the quartz veins; however,
 a definite source was not located.

EXAMINED BY: E. MacVeigh, T. Muirhead
 and T. Volkers July 9/71

GEOCHEMICAL ANOMALIES

Rancheria-Kechika - Second Priority Anomalies (cont'd)

II-3

FOURMILE RIVER (Cu 1-8)

LOCATION: 3 mi. E of Fourmile River.
(NTS 104-P)

GEOCHEMICAL DATA: Moderate Cu with weak Mo in stream sediments.

GEOLOGY: Upper Devonian and Lower Mississippian sediments (Sylvester Group). Intersecting fractures noted on air photographs near the center of the anomaly.

PROSPECTING: No economic mineralization was found in an 8-mile prospecting traverse. Minor amounts of pyrite and pyrrhotite were observed within the Sylvester country rocks.

ROCK SAMPLING: Rock samples were not retained.

INTERPRETATION: The anomaly is probably caused by high background concentrations of metal in the sedimentary rocks; however, a definite source was not found. The Paleozoic country rocks do not appear to be very favorable host rocks.

EXAMINED BY: E. MacVeigh July 7/71
T. Muirhead July 7/71

GEOCHEMICAL ANOMALIES
Rancheria-Kechika - Second Priority Anomalies (cont'd)

II-4 BEALE LAKE (Cu 2-1, Zn 5-1)

LOCATION: Near Beale Mountain, 3 mi. NW
of Beale Lake. (NTS 104-I)

GEOCHEMICAL
DATA: Strong Cu with minor Zn in
stream sediments.

GEOLOGY: NE contact margin of Cassiar
Batholith; Lower Sylvester Group.

PROSPECTING: A minor trace of chalcopyrite was
noted in a thin quartz vein; however,
no significant mineralization was found.
The intrusive and the metasediments
(Sylvester Group) were sampled.
Black argillite with minor diagenetic
pyrite occurs near the intrusive contact.

ROCK SAMPLING: STA 104, 109 (3 samples)

INTERPRETATION: Geochemical analyses indicate that
the black argillite contains anomalous
Cu (89 ppm) and is the probable source
of most of the anomaly which is
underlain by the Lower Sylvester Group.

EXAMINED BY: M.McNeice, E.McVeigh June 26 & 27/71

GEOCHEMICAL ANOMALIES
Rancheria-Kechika - Second Priority Anomalies (cont'd)

II-5

NIZI CREEK (Zn 5-2)

LOCATION: 3 mi. NE of Nizi Creek.
 (NTS 104-I)

GEOCHEMICAL DATA: Strong Zn anomaly in stream sediments.

GEOLOGY: East contact of major satellite intrusive of Cassiar Batholith; metasediments (Sylvester Group).

MINERAL CLAIMS: A large claim group (NIZ claims), owned by Jake Forrester, covers most of the anomaly.

PROSPECTING: The area is characterized by intense hydrothermal alteration, complex geology, and scattered sphalerite mineralization in quartz veins in diorite and metasediments.

ROCK SAMPLING: STA 107 (1 sample)

INTERPRETATION: Minor mineralization and the absence of reactive carbonate rocks render this area low probability for an economic silver-lead-zinc-copper deposit.

EXAMINED BY: M.Hamilton, T.Volkers June 27/71
 T.Kalnins, T.Volkers July 4/71

GEOCHEMICAL ANOMALIES
Rancheria-Kechika - Second Priority Anomalies (cont'd)

II-6

MAJOR HART RIVER

(Cu 2-5, Mo 8-11, Zn 5-6, Ni 11-8)

LOCATION: 4 mi. NW of Major Hart River.
(NTS 104-I)

GEOCHEMICAL DATA: Strong Cu with minor Mo and Zn in stream sediments.

GEOLOGY: Devonian sediments (Lower Sylvester Group).

PROSPECTING: Pyrite, with a minor trace of chalcopyrite, was found in a gossan surrounding a diabase dike; however, no significant mineralization was found. Most of the anomalous area is underlain by black shale beds.

ROCK SAMPLING: STA 118 (1 sample)

INTERPRETATION: Geochemical analysis indicates that the black shale beds contain anomalous Mo (14 ppm). Copper was not anomalous in the sample which was analyzed; however, the shale beds and non-economic chalcopyrite mineralization are believed to be the source of the anomaly.

EXAMINED BY: E. McVeigh, T. Muirhead July 13/71

GEOCHEMICAL ANOMALIES
Rancheria-Kechika - Second Priority Anomalies (cont'd)

II-7 BLUE SHEEP LAKE (Cu 2-6, Mo 8-12, Zn 5-5)

LOCATION: 2 mi. W of Blue Sheep Lake.
 (NTS 104-I)

GEOCHEMICAL
DATA: Large Zn anomaly with some Cu
 and Mo in stream sediments.

GEOLOGY: Devonian sediments (Lower
 Sylvester Group).

PROSPECTING: A minor trace of chalcopyrite was
 found in a quartz vein; however, no
 significant mineralization was noted.
 Extensive exposures of black shale
 beds occur throughout the anomalous
 area.

ROCK SAMPLING: None.

INTERPRETATION: Black shale beds are the most
 probable source of the anomaly.
 Hot springs also occur in the area
 and are apparently associated with
 the anomaly. Although the anomaly
 is quite strong, the area is believed
 to have very little potential for
 economic mineralization.

EXAMINED BY: T.Heard, F.Forgeron 1970.

GEOCHEMICAL ANOMALIES
Rancheria-Kechika - Second Priority Anomalies (cont'd)

II-8 TURNAGAIN RIVER (Cu 2-6, Zn 5-4)

LOCATION: 2 mi. N of Turnagain River near
the headwaters of the Major Hart River.
(NTS 104-I)

GEOCHEMICAL
DATA: Cu anomaly with Zn in stream sediments.

GEOLOGY: Devonian sediments
(Lower Sylvester Group)

PROSPECTING: None

ROCK SAMPLING: None

INTERPRETATION: The area is underlain by argillites
and siltstones which are the probable
source of the anomaly.

EXAMINED BY: This area was considered very low
priority and was not examined.

GEOCHEMICAL ANOMALIES

Rancheria-Kechika - Second Priority Anomalies (cont'd)

II-9

CRY LAKE (Mo 8-4)

LOCATION: 3 mi. E of the north end
of Cry Lake. (NTS 104-I)

GEOCHEMICAL
DATA: Widespread Mo anomaly.

GEOLOGY: NE margin of the Cassiar Batholith.

PROSPECTING: A few traces of MoS_2 and pyrite were
found, however, there is very little
evidence of hydrothermal alteration
or intense fracturing. Biotite gneiss roof pendants were
noted in several localities.

A uranium anomaly (130 ppm), which was partially coincident
with the Mo anomaly was investigated with a geiger counter.
A higher background count was observed in the intrusive
rocks, as opposed to the metasediments; however, no
significant mineralization was found.

Some molybdenum mineralization was observed on the Larsen
Property located at the south edge of the anomaly. The
area is underlain by biotite quartz monzonite and biotite
gneiss which forms a roof pendant. Molybdenite occurs
in quartz veins along fractures and as disseminated MoS_2
near fractures. Rusty reaction veins surrounding the
fractures are a common feature and contain most of the
mineralization. A chill border is evident in some places
and the roof pendant is cut by dikes of quartz monzonite.

A number of outcrops have been exposed by blasting, but
the mineralization appears to be limited to a fairly well
defined zone approximately 200 feet across.

ROCK SAMPLING: STA 114, 115 and 116 (5 samples)

INTERPRETATION: Although no significant mineralization was
found, the area may have some potential.
The geologic setting indicates that the
area is in the roof zone of the Cassiar
Batholith.

EXAMINED BY: M.Hamilton, E.McVeigh July 1/71
T.Muirhead, T.Volkers July 1/71
M.Hamilton, T.Kalnins July 16/71

GEOCHEMICAL ANOMALIES

Rancheria-Kechika - Second Priority Anomalies (cont'd)

II-10

TURNAGAIN RIVER

(Mo 9-1, Zn 6-1)

LOCATION: 19 mi. NW of Dall Lake.
(NTS 104-I, 94-L)

GEOCHEMICAL DATA: Strong Mo-Zn anomaly in stream sediments.

GEOLOGY: Devonian and Mississippian sediments (Sylvester Group).

PROSPECTING: A thick sequence of black phyllitic shale was exposed in the headwaters of the anomalous stream. The beds were intensely folded and faulted. A random rock-chip samples (STA 6A) was collected from colluvial shale near the center of the anomaly; however, no mineralization was found.

ROCK SAMPLING: STA 6 (3 samples)

INTERPRETATION: Geochemical analyses indicate that the black shale averages 22 ppm Mo and is undoubtedly the source of the anomaly.

EXAMINED BY: T.Muirhead, M.Hamilton June 7/71
M.McNeice, E.McVeigh June 7/71

GEOCHEMICAL ANOMALIES
Rancheria-Zechika - Second Priority Anomalies (cont'd)

II-11

DALL RIVER (No 9-4)

LOCATION: 9 mi. NE of Dall Lake.
 (NTS 94-L)

GEOCHEMICAL DATA: Weak Mo anomaly in stream sediments.

GEOLOGY: Cambrian and Ordovician sediments. Airphoto examinations indicate that the sediments strike uniformly NW with moderate dips to the SW.

PROSPECTING: Pyrite with minor chalcopyrite was noted in an ankerite quartz vein and one erratic boulder with minor sphalerite was found along the anomalous stream. A quartz-fluorite vein with minor traces of bornite was also prospected, but no significant mineralization was discovered.

ROCK SAMPLING: STA 8 (3 samples)

INTERPRETATION: The structure and stratigraphy are not believed favorable for economic mineralization. Carbonate units occurring within the sedimentary sequence show very little porosity and the area is characterized by a notable absence of faults and fracturing.

EXAMINED BY: E.Balon, E.McVeigh, T.Muirhead .. June 13/71

GEOCHEMICAL ANOMALIES
Rancheria-Kechika - Second Priority Anomalies (cont'd)

II-12

DALL LAKE

LOCATION: 3 mi. E of Dall Lake.
(NTS 94-L)

GEOCHEMICAL DATA: Moderate Cu-Mo anomaly in stream sediments.

GEOLOGY: Cambrian limestone and sediments.

MINERAL CLAIMS: A group of 56 claims were staked by Cordilleran Engineering Limited in 1970 to protect the anomaly. The anomaly was detected early in the season and staked because of competitive exploration in the area.

PROSPECTING: Three 2-man prospecting teams spent one day examining the Dall Lake property. The anomalous cirque was underlain by folded and moderately fractured dolomitic limestone. Minor traces of malachite were identified in one sample collected from an extensive talus slope near the focal point of the anomaly; however, follow-up prospecting failed to locate any additional mineralization.

ROCK SAMPLING: STA 1, 4 (2 samples)

INTERPRETATION: No intrusive rocks were found and only a minor trace of mineralization was found in the massive, mostly unaltered limestone beds. The claims have been allowed to expire.

EXAMINED BY: M. Hamilton, T. Muirhead, E. Balon,
E. McVeigh, M. McNeice, Al Galloway .. June 5/71

GEOCHEMICAL ANOMALIES
Rancheria-Kechika - Second Priority Anomalies (cont'd)

II-13

TUCHO LAKE

LOCATION: 6 mi. SW of Tucho Lake.
 (NTS 94-L)

GEOCHEMICAL DATA: Strong Cu anomaly.

GEOLOGY: Upper Paleozoic* volcanic roof pendant within Cassiar Batholith. Complex fracturing noted on airphotos.

MINERAL CLAIMS: A group of 38 claims were staked by Cordilleran Engineering Limited on part of the anomaly (July, 1971).

PROSPECTING: A significant copper occurrence was discovered in the fractured area recognized on the air photographs. The host rock is a heavily altered augite porphyry with disseminated chalcopyrite.

ROCK SAMPLING: (See Properties, Tucho Claims)

INTERPRETATION: The area is favorable for the occurrence of porphyry copper deposits. (See Properties, Tucho Claims).

EXAMINED BY: (See Properties, Tucho Claims).

*The GSC geologic mapping places these units in the Paleozoic; however, structural relationships indicate that they are more likely Triassic in age.

GEOCHEMICAL ANOMALIES
Pancheria-Rechika - Second Priority Anomalies (cont'd)

II-15

JACKSTONE CREEK (Zn 6-6)

LOCATION: 6 mi. SE of Jackstone Creek.
(NTS 94-L)

GEOCHEMICAL DATA: Strong Zn anomaly in stream sediments.

GEOLOGY: Cambrian metasediments.

MINERAL CLAIMS: The Linda Claims (1-17), which were staked in 1969 by Cordilleran, and the West and Jennifer Claims (owned by Conwest Exploration) cover most of the anomaly.

PROSPECTING: Silver-lead-zinc mineralization occurs on the property and was drilled in 1971 under a joint venture with Conwest.

INTERPRETATION: The drilling results were largely negative.

EXAMINED BY: Cordilleran Engineering Limited and Conwest Exploration Limited 1969, 1970 and 1971.

GEOCHEMICAL ANOMALIES
Rancheria-Kechika - Second Priority Anomalies (cont'd)

II-16

FROG RIVER (Cu 3-8, Ni 12-2)

LOCATION: 4 mi. SE of Frog River.
(NTS 94-L)

GEOCHEMICAL DATA: Moderate Cu-Ni anomaly
in stream sediments.

GEOLOGY: Cambrian metasediments.

PROSPECTING: Minor pyrrhotite with traces of
malachite were found in a north-
facing cirque. The mineralization
occurs in phyllite and phyllitic
gneiss and is of very limited
extent.

ROCK SAMPLING: STA 10 (1 sample)

INTERPRETATION: The anomaly is probably caused by
minor traces of copper-nickel
mineralization in the metasediments.

EXAMINED BY: M. McNeice, E. McVeigh June 14/71
E. Balon, T. Muirhead June 14/71

GEOCHEMICAL ANOMALIES

Rancheria-Kechika - Second Priority Anomalies (cont'd)

II-17

TURNAGAIN RIVER

(Mo 9-1, Zn 6-1)

LOCATION:19 mi. NW of Dall Lake.
(NTS 104-I, 94-L)GEOCHEMICAL
DATA:Strong Mo-Zn anomaly in stream
sediments.

(See Anomaly II-10)

GEOCHEMICAL ANOMALIES

Rancheria-Kechika - Second Priority Anomalies (cont'd)

II-18

TURNAGAIN RIVER

(Zn 6-3, Ni 12-1)

LOCATION: 1 mi. E of Turnagain River.
(NTS 94-L)

GEOCHEMICAL DATA: Strong Zn-Ni anomaly in stream sediments.

GEOLOGY: Cambrian and Ordovician sediments.

PROSPECTING: None

ROCK SAMPLING: None

INTERPRETATION: The geochemical and geological associations were not very encouraging. An airphoto study indicated that the anomalous area was probably underlain by shale beds.

EXAMINED BY: This was considered a very low priority anomaly and was not examined.

GEOCHEMICAL ANOMALIES

Rancheria-Kechika - Second Priority Anomalies (cont'd)

II-19

MOODIE CREEK (Zn 6-2, Mo 9-3)

LOCATION: 4 mi. NW of Moodie Creek.
(NTS 94-L)

GEOCHEMICAL DATA: Strong Mo-Zn anomaly in stream sediments.

GEOLOGY: Cambrian, Ordovician, and Lower Mississippian sediments.

PROSPECTING: A thick sequence of limestone and siltstone with interbeds of black shale and black argillite occur within the anomalous area. Minor diagenetic pyrite was noted but no other mineralization was found.

ROCK SAMPLING: STA 5 (2 samples)

INTERPRETATION: Geochemical analyses indicate that the black shale/argillite beds contain 18 to 20 ppm Mo and are undoubtedly the source of the anomaly.

EXAMINED BY: M.Hamilton, M.McNeice,
T.Muirhead, E.Palon,
E.McVeigh, A.Gallay June 6/71

GEOCHEMICAL ANOMALIES
Rancheria-Kechika - Second Priority Anomalies (cont'd)

II-20

SHARKTOOTH MTN

(Zn 6-4, Mo 9-5)

LOCATION: Sharktooth Mountain
(NTS 94-L)

GEOCHEMICAL DATA: Moderate Zn-Mo anomaly
in stream sediments.

GEOLOGY: NE margin of Cassiar Batholith;
fractured areas indicated on
air photographs.

PROSPECTING: The fractured areas were barren and
no alteration or mineralization was
evident. Several large unmapped
roof pendants composed of argillite
and skarn beds were noted.

ROCK SAMPLING: STA 13 (4 samples)

INTERPRETATION: A sample of argillite (STA 13D)
collected from one of the pendants
analyzed 140 ppm Mo and 680 ppm Zn.
This is the probable source of the
anomaly.

EXAMINED BY: M.McNeice, E.McVeigh June 18/71
E.Balon, T.Muirhead ... June 18/71

GEOCHEMICAL ANOMALIES
Rancheria-Kechika (cont'd)

ADDITIONAL ANOMALIES

III-1

JACKSTONE CREEK (Mo 9-8)

LOCATION: 12 mi. SSE of Tucho Lake.
 (NTS 94-L)

GEOCHEMICAL DATA: Moderate Mo anomaly in stream sediments.

GEOLOGY: Cassiar Batholith; predominant NE fracture trend with minor N and W trending intersecting fractures indicated on air photographs.

PROSPECTING: Minor diagenetic pyrite and magnetite were observed in medium- to coarse-grained granite. Weathering of biotite has resulted in near-surface limonite stains.

ROCK SAMPLING: Rock samples were not retained.

INTERPRETATION: The moderate Mo anomaly in stream sediments is probably derived from high trace amounts of molybdenum. Prospecting results do not indicate an economic source of the metal.

EXAMINED BY: T.Kalnins June 17/71

GEOCHEMICAL ANOMALIES
Rancheria-Kechika - Additional Anomalies (cont'd)

III-2

JACKSTONE CREEK (Cu 3-5)

LOCATION: 7 mi. SE of Tucho Lake.
(NTS 94-L)

GEOCHEMICAL DATA: Moderate Cu anomaly in stream sediments.

GEOLOGY: Cassiar Batholith,
Devonian metasediments.

PROSPECTING: The anomalous area south of the metasediment contact is underlain by biotite-hornblende-quartz monzonite with some granodiorite. Very minute traces of disseminated chalcopyrite with malachite were noted in several isolated occurrences. Propylitic and chloritic alteration were recognized along the SE wall of the anomalous cirque. A total of 5 man-days was spent examining this anomaly; however, no significant mineralization was discovered.

ROCK SAMPLING: STA 9 (4 samples)

INTERPRETATION: Traces of non-economic mineralization are the probable source of the anomaly.

EXAMINED BY:

M. Hamilton	.....	June 14/71
E. Balon,	T. Muirhead	June 15/71
M. McNeice,	E. McVeigh	June 15/71

GEOCHEMICAL ANOMALIES
Pancheria-Kechika - Additional Anomalies (cont'd)

III-3 TUPNAGAIN RIVER (Mo 8-14, Zn 5-8)

LOCATION: 2 mi. S of Turnagain River,
7 mi. W of junction with Cassiar River.
(NTS 104-I)

GEOCHEMICAL
DATA: Strong Mo-Zn anomaly
in stream sediments.

GEOLOGY: Lower Paleozoic sediments.

PROSPECTING: The anomalous area is underlain
entirely by black shale beds with
some limestone. No mineralization
was observed.

ROCK SAMPLING: None

INTERPRETATION: The shale beds are believed to
be the source of the anomaly.

EXAMINED BY: E. Balon, T. Volkens June 29/71

GEOCHEMICAL ANOMALIES
Rancheria-Kechika - Additional Anomalies (cont'd)

III-4 MEEK LAKE (Mo 8-1, Mo 8-2)

LOCATION: 2 mi. S of Meek Lake.
 (NTS 104-I)

GEOCHEMICAL
DATA: Erratic Mo anomaly
 in stream sediments.

GEOLOGY: NE contact margin of
 Cassiar Batholith.

PROSPECTING: A single specimen of float containing
 MoS₂ was found in talus rocks. Subsequent
 detailed prospecting failed to reveal
 any additional mineralization in this
 area.

ROCK SAMPLING: Rock samples were not retained.

INTERPRETATION: Field evidence indicates minor
 and sporadic molybdenite mineralization.

EXAMINED BY: E.McVeigh, T.Muirhead July 11/71
 T.Kalnins, M.Hamilton July 16/71

GEOCHEMICAL ANOMALIES

Rancheria-Kechika - Additional Anomalies (cont'd)

III-5

MEEK LAKE (No 8-3)

LOCATION: 4 mi. S of Meek Lake.
(NTS 104-I)

GEOCHEMICAL DATA: Moderate Mo anomaly
in stream sediments.

GEOLOGY: Cassiar Batholith, complex
fracturing indicated on
air photographs.

PROSPECTING: A prominent gossan was examined in
the headwaters of the anomalous stream.
Rhyolite porphyry dikes containing
pyrite intrude quartz diorite and
moderate argillic alteration was
evident along the contact zones.
No mineralization was found. Eleven
additional sediment samples were
collected in the vicinity of the
anomaly.

ROCK SAMPLING: STA 108 (3 samples)

INTERPRETATION: Geochemical analyses indicate that
the rhyolite porphyry dikes (STA 108A)
contain up to 30 ppm Mo and are the
probable source of the anomaly. The
sediment sampling results (see Stream
Sediment Sampling, Meek Lake) were
negative.

EXAMINED BY:

E. Balon,	T. Muirhead	....	June 27/71
E. McVeigh,	T. Muirhead	....	July 5/71
T. Volkers	.....	.....	July 5/71

GEOCHEMICAL ANOMALIES

Rancheria-Kechika - Additional Anomalies (cont'd)

III-6

RAINBOW LAKES

LOCATION: 4 mi. N of Rainbow Lakes.
(NTS 104-I)

GEOCHEMICAL DATA: Moderate Mo anomaly in stream sediments.

GEOLOGY: Cassiar Batholith.

MINERAL CLAIMS: Two claim groups, owned by Conwest Exploration, are located in the vicinity of the anomaly. A group of six claims (PB) was staked by Cordilleran Engineering Limited in 1971.

PROSPECTING: Disseminated molybdenite (with minor chalcopyrite) was found in a moderately altered siliceous quartz monzonite host rock about 1.5 miles inside the Cassiar Batholith contact. Additional sediment samples were collected from the area.

ROCK SAMPLING: Samples collected for further study.

INTERPRETATION: The mineralization is definitely porphyry-type; however, the showing is located in the headwall of a cirque and most of the surrounding area is covered by snow and talus. (See Properties, Rainbow).

EXAMINED BY: M. Hamilton, T. Kalnins and
Cordilleran crew July/71

GEOCHEMICAL ANOMALIES (cont'd)ATLIN-STIKINE ANOMALIESKEDAHDA RIVER (AS-1)

LOCATION: 6 mi. SW of Kedahda Lake.
(NTS 104-0)

GEOCHEMICAL DATA: Cu-Pb-Zn-Mo-Ni anomaly in stream sediments.

GEOLOGY: Permo-pennsylvanian sediments (Kedahda Formation); complex fracturing noted on air photographs.

PROSPECTING: Minor traces of pyrite were found in chert and argillite and strong limonitic alteration was noted along a prominent fault which trends N 80°W, 65°N. However, no other mineralization was found. Rock samples were collected from the limonitized argillite and chert beds and submitted for analysis.

ROCK SAMPLING: STA 200 (3 samples)

INTERPRETATION: The geochemical results were negative and the anomaly is presently unexplained. However, no intrusive rocks were noted and the area doesn't look promising.

EXAMINED BY: T.Muirhead, E.McVeigh July 17/71
M.Hamilton July 21/71

GEOCHEMICAL ANOMALIES
Atlin-Stikine Anomalies (cont'd)

CHRISTMAS CREEK (AS-2)

LOCATION: 7 mi. NW of Kedahda Lake.
 (NTS 104-0)

GEOCHEMICAL DATA: Moderate Cu anomaly in stream sediments.

GEOLOGY: Christmas Creek Batholith.

MINERAL CLAIMS: A total of 54 claims were staked on the anomaly by New Jersey Zinc in early June, 1970.

PROSPECTING: The property was examined briefly in 1970. Disseminated chalcopyrite was noted in outcrops of hydrothermally altered hornblende quartz diorite.

ROCK SAMPLING: Samples collected for further study.

INTERPRETATION: The property appears to have some potential for a porphyry deposit.

EXAMINED BY: T.Kalnins, M.Hamilton June, 1970.

KEDAHDA LAKE (AS-3, AS-4)

Low priority anomalies not examined during 1971. (See Atlin-Stikine Project Report, 1970).

GEOCHEMICAL ANOMALIES
Atlin-Stikine Anomalies (cont'd)

WILLIE JACK CREEK (AS-5)

LOCATION: 2.5 mi. W of Kedahda Lake.
 (NTS 104-0)

GEOCHEMICAL DATA: Strong Mo anomaly in stream sediments.

GEOLOGY: Christmas Creek Batholith.

PROSPECTING: Moderately altered biotite hornblende diorite was found immediately west of the anomalous stream. Sausserite and chlorite were common in the altered area.

An augite porphyry roof pendant containing pyrite was also noted; however, no significant mineralization was found.

Ten additional stream sediment samples were collected in the vicinity of the molybdenum anomaly (41 ppm), and four rock samples were collected.

ROCK SAMPLING: STA 202 (4 samples)

INTERPRETATION: The geochemical results of both the stream sediment sampling and the rock sampling were negative. The anomaly is presently unexplained. It is possibly due to an analytical error.

EXAMINED BY: T.Muirhead, M.Hamilton July 20/71
 T.Volkers, E.McVeigh July 20/71

GEOCHEMICAL ANOMALIES
Atlin-Stikine Anomalies (cont'd)

KEDAHDA LAKE (AS-6, AS-7, AS-8)

Low priority anomalies not examined during 1971. (See Atlin-Stikine Report, 1970).

KEDAHDA LAKE (AS-9)

LOCATION: 5 mi. E of Kedahda Lake.
 (NTS 104-0)

GEOCHEMICAL DATA: Mo anomaly in stream sediments.

GEOLOGY: Glundebery Batholith, prominent intersecting fracture lineaments indicated on air photographs.

PROSPECTING: Several large diorite roof pendants, which occur within the anomaly, and several fracture intersections were prospected. Slightly altered granite with minor traces of pyrite was found in the fractured areas; however, no other mineralization was found.

ROCK SAMPLING: STA 215 (4 samples)

INTERPRETATION: Samples of pyritized granite contain 13 to 14 ppm Mo. The anomaly is probably due to local Mo enrichment.

EXAMINED BY:

T.Volkers	.....	August 8, 1971
M.Hamilton	.....	August 12, 1971

GEOCHEMICAL ANOMALIES
Atlin-Stikine Anomalies (cont'd)

JENNINGS RIVER (AS-10)

LOCATION: 10 mi. NE of Kedahda Lake.
 (NTS 104-0)

GEOCHEMICAL DATA: Moderate Cu anomaly in stream sediments.

GEOLOGY: Upper Triassic volcanics
 (Shonektaw Formation).

PROSPECTING: Geologically this area is quite favorable and a considerable amount of time was spent prospecting the exposed areas above timberline. Traces of disseminated chalcopyrite in moderately altered augite porphyry were found about 3 miles N of the Glundebery Granite contact. Additional prospecting along the batholith contact and to the N of the showing failed to turn up sufficient mineralization to warrant staking. Rugged terrain, snow, and heavy forest cover in the fault valley along the E side of the anomaly made prospecting somewhat difficult.

ROCK SAMPLING: Samples collected for further study.

INTERPRETATION: The geologic setting is quite similar to that area SE of Dease Lake near the Lytton Minerals copper deposit (Cu-porphyry in Triassic volcanics). Triassic volcanics which surround the Hotailuh Batholith would undoubtedly correlate with the Shonektaw Formation in the Kedahda Lake area.

Conventional prospecting methods are inadequate for testing the large forest covered areas and, for this reason, some consideration should be given to the use of airborne geophysics. The area definitely needs further work.

EXAMINED BY:

E. McVeigh,	T. Muirhead	.....	August 9/71
E. McVeigh,	T. Muirhead	.....	August 10/71
M. McNeice,	T. Volkers	.....	August 10/71
M. Hamilton	.....	.....	August 10/71
A. Reeve,	M. Hamilton	.....	August 11/71
E. McVeigh,	T. Muirhead	.....	August 11/71
M. Hamilton,	M. McNeice	.....	August 13/71

GEOCHEMICAL ANOMALIES
Atlin-Stikine Anomalies (cont'd)

TAHOOTS CREEK (AS-11)

LOCATION: 7 mi. ENE of Kedahda Lake.
 (NTS 104-0)

GEOCHEMICAL DATA: Strong Mo-W anomaly in stream sediments.

GEOLOGY: Glundebery Batholith.

MINERAL CLAIMS: The northern part of the anomaly is presently held by Union Miniere (Swan Group, 80 claims). The southern part of the anomaly was staked by Cordilleran (Wolf Group, 72 claims) in 1971. See Properties, Wolf and Kedy Claims, for a complete discussion of the area.

SHEEPHORN CREEK (AS-12)

LOCATION: Eight miles SE of Kedahda Lake.
 (NTS 104-0)

GEOCHEMICAL DATA: Large complex Cu, Pb, Zn, Mo, W anomaly in stream sediments.

GEOLOGY: South contact margin of the Glundebery Batholith.

MINERAL CLAIMS: The NE part of the anomaly was staked by Cordilleran (Kedy Group, 32 claims) in 1971. See Properties, Wolf and Kedy Claims, for complete discussion of the area.

GEOCHEMICAL ANOMALIES
Atlin-Stikine Anomalies (cont'd)

KAHAN CREEK (AS-13)

LOCATION: 11 mi. E of Kedahda Lake.
 (NTS 104-0)

GEOCHEMICAL DATA: Moderate Mo-Zn anomaly in stream sediments.

GEOLOGY: Glundebery Batholith.

MINERAL CLAIMS: The anomaly was staked by Kennco
 (Kahan Group, 64 claims) in the
 fall of 1970.

PROSPECTING: The property was briefly examined,
 but no visible mineralization was noted.
 A prominent rusty gossan which occurs
 near the center of the claim group is
 associated with a quartz-biotite gneiss
 roof pendant within the batholith.

ROCK SAMPLING: STA 205 (2 samples)

INTERPRETATION: The claim group is situated in a very
 favorable location along the N contact
 of the Glundebery Batholith. A large
 embayment containing Triassic volcanics
 occurs here and is also cut by a major
 NE trending fault valley.

EXAMINED BY: M. Hamilton July 28, 1971

GEOCHEMICAL ANOMALIES
Atlin-Stikine Anomalies (cont'd)

GLUNDEBERY CREEK (AS-14)

LOCATION: 12 mi. ESE of Kedahda Lake.
 (NTS 104-0)

GEOCHEMICAL DATA: Moderate Mo anomaly in stream sediments.

GEOLOGY: South contact margin of Glundebery
 Batholith.

PROSPECTING: A roof pendant of metasedimentary rocks
 (Kedahda Formation) was found near the
 headwaters of the anomalous stream.
 Slightly altered hornblende granite
 with a minor trace of Mo oxide was found
 adjacent to the pendant; however, no
 significant mineralization was discovered.

ROCK SAMPLING: STA 213 (2 samples)

INTERPRETATION: The anomaly is probably due to localized
 Mo enrichment caused by reactive units
 within the roof pendant.

EXAMINED BY: M. Hamilton August 7, 1971.

GLUNDEBERY CREEK (AS-15, AS-16)

Low priority anomalies not examined
 during 1971. (See Atlin-Stikine
 Project Report, 1970).

GEOCHEMICAL ANOMALIES
Atlin-Stikine Anomalies (cont'd)

CHOKATAH CREEK (AS-17)

LOCATION: 15 mi. E of Kedahda Lake.
 (NTS 104-0)

GEOCHEMICAL DATA: Strong Mo anomaly in stream sediments.

GEOLOGY: Glundebery Batholith.

PROSPECTING: Most of the anomaly is underlain by granite porphyry with several small irregular hornblende-diorite roof pendants. An area of moderate hydrothermal alteration (sericite/limonite) was prospected and sampled along the E side of the anomaly and a few minor traces of molybdenite were noted in quartz float in the headwaters of the anomalous stream. However, no significant mineralization was found.

ROCK SAMPLING: STA 207 (5 samples)

INTERPRETATION: The geochemical results on rock samples taken from the altered area were negative. The anomaly is probably due to non-economic molybdenum mineralization in quartz veins.

EXAMINED BY: T.Muirhead July 25/71
 M.Hamilton, T.Volkers Aug. 1/71

GEOCHEMICAL ANOMALIES
Atlin-Stikine Anomalies (cont'd)

CHOKATAH CREEK (AS-18)

LOCATION: 8 mi. W of Blackfly Lake.
 (NTS 104-0)

GEOCHEMICAL DATA: Pb-Zn-Mo-W anomaly in stream sediments.

GEOLOGY: Glundebery Batholith; fracture lineament indicated on aerial photos.

PROSPECTING: Minor pyrite and traces of molybdenite were found in a small augite porphyry roof pendant within the Glundebery Granite. A major NW trending fault occurs within the anomalous area and was also prospected. No evidence of hydrothermal alteration or significant mineralization was found.

ROCK SAMPLING: Samples collected for further study.

INTERPRETATION: Non-economic mineralization occurring in the volcanic roof pendant is believed to be the source of the anomaly.

EXAMINED BY: E.McVeigh, T.Volkers, T.Muirhead .. July 24/71
 E.McVeigh, T.Volkers July 25/71

GEOCHEMICAL ANOMALIES
Atlin-Stikine Anomalies (cont'd)

BLACKFLY CREEK (AS-19)

LOCATION: 6 mi. W of Blackfly Lake.
 (NTS 104-0)

GEOCHEMICAL DATA: Strong W-Zn anomaly with Mo in
 stream sediments.

GEOLOGY: Glundebery Batholith; fracture lineament
 indicated on air photographs.

PROSPECTING: Minor traces of molybdenite were found
 in quartz veins in altered Glundebery
 Granite. Limonitic alteration was noted;
 however, the mineralization was considered
 insufficient to warrant staking.

ROCK SAMPLING: STA 214 (2 samples)

INTERPRETATION: Geochemical analyses indicate that the
 altered granite contains 33 to 35 ppm W.
 Non-economic Mo mineralization in quartz
 veins and local W enrichment are the most
 probable sources of the anomaly.

EXAMINED BY:

M. McNeice, E. Balon	.....	Aug. 8/71
M. McNeice	.....	Aug. 9/71
M. McNeice, T. Volkers	.....	Aug. 11/71

GEOCHEMICAL ANOMALIES
Atlin-Stikine Anomalies (cont'd)

BLACKFLY LAKE (AS-20)

LOCATION: 2.5 mi. W of Blackfly Lake.
(NTS 104-0)

GEOCHEMICAL DATA: Strong W anomaly with Mo in stream sediments.

GEOLOGY: NE contact margin of Glundebery Batholith.

PROSPECTING: The E side of the anomaly is underlain by a diorite roof pendant within the Glundebery Granite and is partially covered by Tertiary volcanics. No mineralization or evidence of hydrothermal alteration was found.

ROCK SAMPLING: Samples collected for further study with ultraviolet light.

INTERPRETATION: No fluorescent tungsten minerals (scheelite) were found and the anomaly is presently unexplained.

EXAMINED BY: M. McNeice, T. Volkers August 12/71

GEOCHEMICAL ANOMALIES
Atlin-Stikine Anomalies (cont'd)

SCREW CREEK (AS-21)

LOCATION: 5 mi. NE of Swan Lake.
 (NTS 104-0)

GEOCHEMICAL DATA: Cu anomaly in stream sediments.

GEOLOGY: Pennsylvanian sediments intruded
 by diorite stock.

PROSPECTING: The small diorite stock was prospected
 and sampled; however, no mineralization
 was found. Limestone beds observed along
 Screw Creek dip toward the NE and probably
 intersect the intrusive at a depth of 500
 to 1000 feet. Recrystallization of some
 of the limestone beds indicates an extensive
 metamorphic aureole around the intrusive.
 Limonitic alteration was observed in the
 contact zone.

ROCK SAMPLING: STA 303 (1 sample)

INTERPRETATION: Geochemical analyses indicated 94 ppm Cu
 in the unaltered diorite. The structural
 relationships are very favorable for the
 occurrence of sulfide replacement mineral-
 ization at a depth of 500 to 1000 feet.

EXAMINED BY: M. Hamilton July, 1970
 M. McNeice, E. McVeigh Aug. 30/71

LOGJAM CREEK (AS-22)

Low priority anomalies not examined
 during 1971. (See Atlin-Stikine Project
Report, 1970).

GEOCHEMICAL ANOMALIES
Atlin-Stikine Anomalies (cont'd)

TEH CREEK (AS-23)

LOCATION: 18 mi. S of Swan Lake.
(NTS 104-0)

GEOCHEMICAL DATA: Extensive Zn anomaly in stream sediments.

GEOLOGY: South contact margin of Simpson
Peak Batholith.

PROSPECTING: The anomaly first detected by the "total
heavy metals test" during the 1970 field
season. Four additional sediment samples
and nine rock samples were collected from
the northern part of the anomaly which
had the highest geochemical response.
The area was prospected in detail and
numerous rock samples were collected.

ROCK SAMPLING: (See Atlin-Stikine Project Report, 1970).

INTERPRETATION: No further exploration is warranted.
Pyrite-bearing calcareous shale and limy
argillite contained 225 ppm Zn and
137 ppm Cu. Graphitic shale and
argillite contained 60-70 ppm Mo and
up to 500 ppm Zn.

EXAMINED BY: M. Hamilton July, 1971.

GEOCHEMICAL ANOMALIES
Atlin-Stikine Anomalies (cont'd)

BUTSIH CREEK (AS-24)

LOCATION: 19 mi. SSE of Swan Lake.
(NTS 104-0)

GEOCHEMICAL DATA: Moderate Cu anomaly with Mo
in stream sediments.

GEOLOGY: Carboniferous sediments.

PROSPECTING: The anomalous area is underlain by
highly metamorphosed volcanic greenstones
with minor limestone and some chert.
A prominent gossan coincident with the
Mo anomaly was prospected and sampled.
Pyrite occurs in quartz-calcite veins
and as elongate disseminations in the
greenstone. No chalcopyrite or
molybdenite was found.

ROCK SAMPLING: STA 210 (4 samples)

INTERPRETATION: The rock samples contained 140 to 300 ppm
Cu but showed no visible mineralization.
Anomalous trace Cu in the volcanic
greenstone is apparently the source
of the anomaly.

EXAMINED BY: M. Hamilton, T.Volkers August 5, 1971.

GEOCHEMICAL ANOMALIES
Atlin-Stikine Anomalies (cont'd)

TALIS LAKE (AS-25, AS-26, AS-27, AS-28)

Low priority anomalies not examined during 1971. (See Atlin-Stikine Project Report, 1970).

NOME LAKE (AS-29)

LOCATION: 5 mi. E of the south end of Nome Lake.
 (NTS 104-0)

GEOCHEMICAL DATA: Strong Cu-Pb-Zn anomaly in stream sediments.

GEOLOGY: South contact margin of Nome Lake Batholith.

PROSPECTING: A magnetite grossularite-epidote skarn bed 15 to 20 feet in thickness was prospected during 1970 but no significant mineralization was found. The anomaly was again examined in 1971. Minor traces of chalcopyrite were found in a large biotite quartz gneiss boulder located about 100 feet upstream from the highest geochemical response (875 ppm Cu).

ROCK SAMPLING: STA 204 (2 samples)
 (See also Atlin-Stikine Project Report, 1970).

INTERPRETATION: The boulder is believed to be the primary source of the anomaly. No other mineralization was found.

EXAMINED BY: M.Hamilton, T.Kalnins July, 1970.
 M.Hamilton, T.Volkers July 23/71

GEOCHEMICAL ANOMALIES
Atlin-Stikine Anomalies (cont'd)

TOOTSEE LAKE (AS-30, AS-31)

See Rancheria-Kechika anomalies,
Zn 4-1, Mo 7-1.

JENNINGS LAKES AREA (AS-32 through AS-45)

Low priority anomalies not examined
during 1971. (See Atlin-Stikine
Project Report, 1970).

GEOCHEMICAL ANOMALIES
Atlin-Stikine Anomalies (cont'd)

COTTONWOOD RIVER (AS-46, AS-47)

LOCATION: 18 mi. SE of Jennings Lakes.
 (NTS 104-0)

GEOCHEMICAL DATA: Cu-Mo-Zn anomaly in stream sediments.

GEOLOGY: Oblique Creek Formation (Mississippian)
 intruded by Cretaceous hornblende
 diorite stocks.

PROSPECTING: Two intrusive stocks were prospected.
 The northernmost stock, which appears
 to be a satellite of the Cassiar Batholith,
 was characterized by abundant sausseritic
 alteration and disseminated pyrite. A
 minor trace of chalcopyrite was found in
 quartz float. The southernmost stock
 (not shown on GSC maps) was associated
 with a prominent gossan containing
 disseminated pyrite; however, no other
 mineralization was found.
 The anomaly was located in a remote area,
 43 miles from the nearest base camp,
 making access difficult. The area was
 not completely prospected.

ROCK SAMPLING: Samples collected for further study.

INTERPRETATION: The prospecting results were negative;
 however, geologically the area still
 looks promising. Tertiary volcanics
 occur nearby and the intrusives show
 evidence of extensive hydrothermal alteration
 and pyrite mineralization.

EXAMINED BY: T.Kalnins, M.McNeice August 27/71
 M.Hamilton, M.McNeice August 31/71

GEOCHEMICAL ANOMALIES
Atlin-Stikine Anomalies (cont'd)

COTTONWOOD RIVER (AS-48 through AS-51)

Low priority anomalies not examined during 1971. (See Atlin-Stikine Project Report, 1970).

JENNINGS RIVER (AS-52)

LOCATION: 17 mi. N of Tuya Lake.
 (NTS 104-0)

GEOCHEMICAL DATA: Moderate Mo-W anomaly in stream sediments.

GEOLOGY: NE contact margin of Tuya Batholith; fractures indicated on air photographs.

PROSPECTING: Most of the area is underlain by quartz monzonite, which is well exposed in the anomalous cirque, and intensely folded biotite gneiss and schist. Limonitic alteration is widespread in the metasediments; however, no mineralization was found.

ROCK SAMPLING: Samples collected and examined with ultraviolet light.

INTERPRETATION: The Mo-W geochemical association suggests that the most probable source of the anomaly is a skarn bed; however, the actual source is presently unexplained.

EXAMINED BY: M. Hamilton, T. Volkers August 9/71

TUYA LAKE (AS-53 through AS-65)

Low priority anomalies not examined during 1971. (See Atlin-Stikine Project Report, 1970).

GEOCHEMICAL ANOMALIES
Atlin-Stikine Anomalies (cont'd)

TESLIN LAKE (AS-66)

LOCATION: East shore of Teslin Lake, 3 mi. S
of the B.C.-Yukon border.
(NTS 104-N)

GEOLOGY: Copper occurrence.
Mississippian metasediments with
intrusive dikes.

MINERAL CLAIMS: Four claims (Jake group) were staked
on the copper prospect by Cordilleran
in August, 1971.
See Properties, Jake Claims, for a
complete discussion of the area.

DAWSON PEAKS (AS-67, AS-68)

Low priority anomalies not examined
during 1971. (See Atlin-Stikine
Project Report, 1970).

WILLISON GLACIER (AS-69, AS-70)

No follow-up work was attempted
during 1971. (See Atlin-Stikine
Project Report, 1970).

GEOCHEMICAL ANOMALIES
Atlin-Stikine Anomalies (cont'd)

HOBO CREEK (AS-71)

LOCATION: 28 mi. SW of Atlin, B.C.
 (NTS 104-M)

GEOLOGY: Copper occurrence. East contact margin of Coast Range intrusives.

MINERAL CLAIMS: The main copper showing was drilled by Cominco during 1971. Moderate porphyry copper-molybdenum mineralization was indicated in drill core examined on the property. The area looks very promising but is very difficult to explore because of rugged terrain and glaciers.

ADANAC (AS-72)

LOCATION: 5 mi. NW of Surprise Lake.
 (NTS 104-N)

GEOCHEMICAL DATA: Strong Mo-W-Pb anomaly in stream sediments, extensive molybdenite occurrence.

GEOLOGY: Surprise Lake Batholith (alaskite).

MINERAL CLAIMS: Kerr Addison Mines has terminated their agreement with Adanac Mining and Exploration and no work is presently being done on the property. The contract required that Kerr Addison bring the property into production in order to retain their 60% interest. The work performed by Kerr increased the estimated mineable open pit reserves from 69,000,000 tons averaging 0.14% MoS₂ to 104,000,000 tons averaging 0.16% MoS₂. Reasons given for Kerr's decision were substantially higher estimated capital and operating costs and the currently soft market for molybdenum.

GEOCHEMICAL ANOMALIES
Atlin-Stikine Anomalies (cont'd)

CONSOLATION CREEK (AS-73, AS-74, AS-75)

These anomalies are presently
claimed. (See Atlin-Stikine
Project Report, 1970).

CLADYS LAKE (AS-76, AS-77)

Low priority anomalies not examined
during 1971. (See Atlin-Stikine
Project Report, 1970).

SURPRISE LAKE (AS-78 through AS-83)

Anomalies not examined during
1971. (See Atlin-Stikine
Project Report, 1970).

GEOCHEMICAL ANOMALIES
Atlin-Stikine Anomalies (cont'd)

TROUT LAKE (AS-84)

LOCATION: 3.5 mi. SW of Trout Lake.
 (NTS 104-N)

GEOCHEMICAL DATA: Large complex Cu, W, Pb, Zn
 anomaly in stream sediments.

GEOLOGY: Surprise Lake Batholith (alaskite).

MINERAL CLAIMS: Most of the anomaly is held by
 Johns-Manville.

PROSPECTING: A trace of disseminated chalcopyrite with
 malachite was found along a N 55°E, 60°W
 fracture near the East edge of the anomaly.
 The mineralization was discontinuous and
 very little evidence of hydrothermal
 alteration was noted.

ROCK SAMPLING: STA 400 (1 sample)

INTERPRETATION: The observed mineralization was not
 significant; however, some consideration
 should be given to the possibility of
 mineralization along the west side of
 the Trout Lake Graben. Boundary faults
 on the west side of the graben are located
 one mile east of the anomaly in a heavily
 forested valley.

EXAMINED BY: M. Hamilton September 4, 1971.

SURPRISE LAKE (AS-85, AS-86)

Low priority anomalies not examined
 during 1971. (See Atlin-Stikine
 Project Report, 1970).

GEOCHEMICAL ANOMALIES
Atlin-Stikine Anomalies (cont'd)

McKEE CREEK (AS-87)

LOCATION: 13 mi. SE of Atlin.
 (NTS 104-N)

GEOCHEMICAL DATA: Strong Ni-Pb anomaly with
 copper in stream sediments.

GEOLOGY: Pennsylvanian and Permian ultrabasics.

PROSPECTING: Minor garnierite was found along numerous
 fractures within the anomalous area.
 No other mineralization was found.

ROCK SAMPLING: STA 500 (1 sample)

INTERPRETATION: The sample that was assayed contained
 0.12% Ni. The mineralization is not
 considered economic.

EXAMINED BY: M. Hamilton 1970
 M. McNeice, T. Muirhead Sept.3/71

WARM BAY (AS-88)

A silver-lead anomaly in active
 hot springs. Not examined during
 1971. (See Atlin-Stikine Project
 Report, 1970).

STREAM SEDIMENT SAMPLING

Additional stream sediment samples were collected from five areas. The fine, dark sediments from the bank or underbank were obtained where possible. The samples were subsequently dried, sieved to -80 mesh, and analyzed for several different elements using standard atomic absorption methods. Background and threshold for each area was determined by statistical results from the Rancheria-Kechika and Atlin-Stikine Projects.

LOGJAM CREEK

(NTS 105-B)

A total of 38 stream sediment samples were collected from the Logjam Creek area and analyzed for six elements. The reconnaissance sampling was carried out to provide geochemical data in the vicinity of the Pure Silver Mines property. Mineralization on the Pure Silver property consists of chalcopyrite, sphalerite, galena (w/silver), and pyrrhotite occurring as disseminations and fracture fillings in a diorite stock.

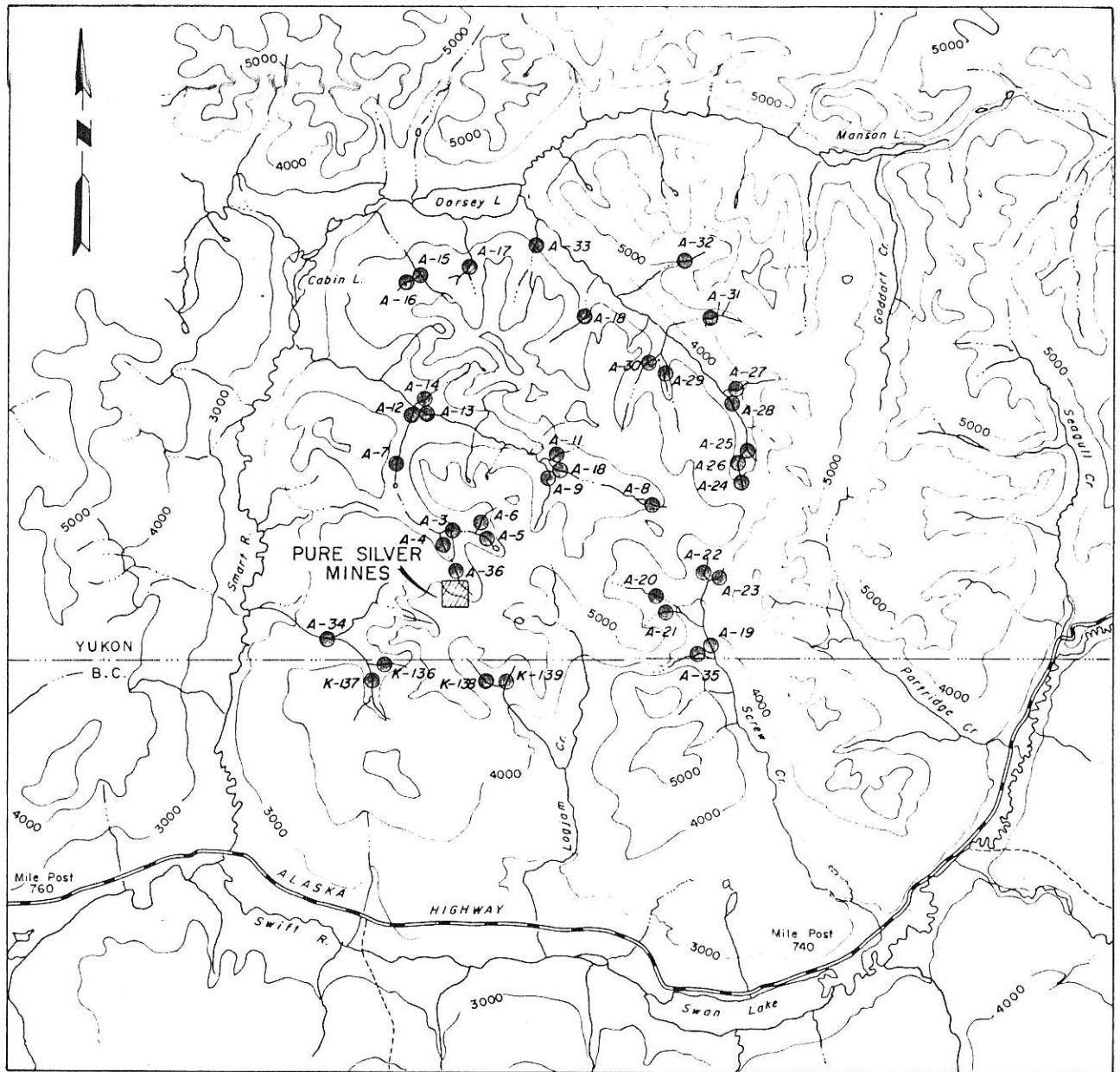
STREAM SEDIMENT SAMPLING - Logjam Creek (cont'd)

Low ceilings and a lack of suitable helicopter landing spots resulted in rather sporadic sampling intervals in some places. However, seven anomalies were indicated by the data.

B.C.-YUKON BORDER (Anomaly L-1)

A strong tungsten anomaly (125 ppm) with moderate lead and molybdenum is recognized two miles SW of the Pure Silver property near the B.C.-Yukon border. Upper Devonian and Lower Mississippian sediments (Sylvester Group) are intruded by dioritic rocks in the headwaters of the anomalous stream. The geologic environment and geochemical association indicate that mineralized skarn beds are the probable source of the anomaly. (The Canada-Tungsten Mine, N.W.T., is located in a similar structural setting).

The tungsten anomaly (60 x background) is exceptional and follow-up work is recommended. Prospecting and additional stream sediment sampling will be required.



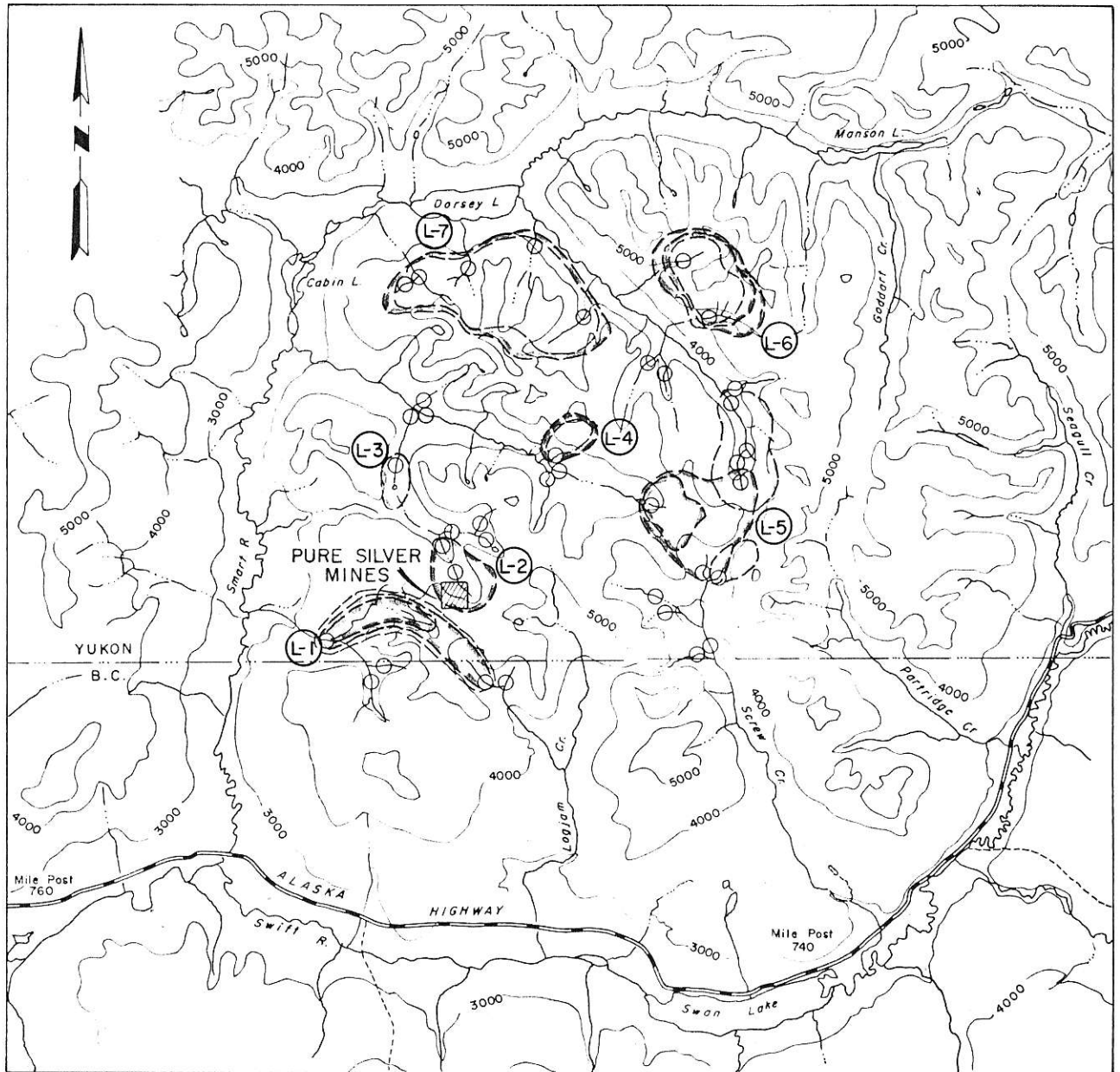
STREAM SEDIMENT SAMPLE LOCATION MAP

**LOGJAM CREEK AREA, YUKON
(NTS 105 B)**



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VANCOUVER 1, B.C.

Fig.N



ANOMALIES



LEAD

ZINC



MOLYBDENUM

TUNGSTEN

ANOMALY MAP

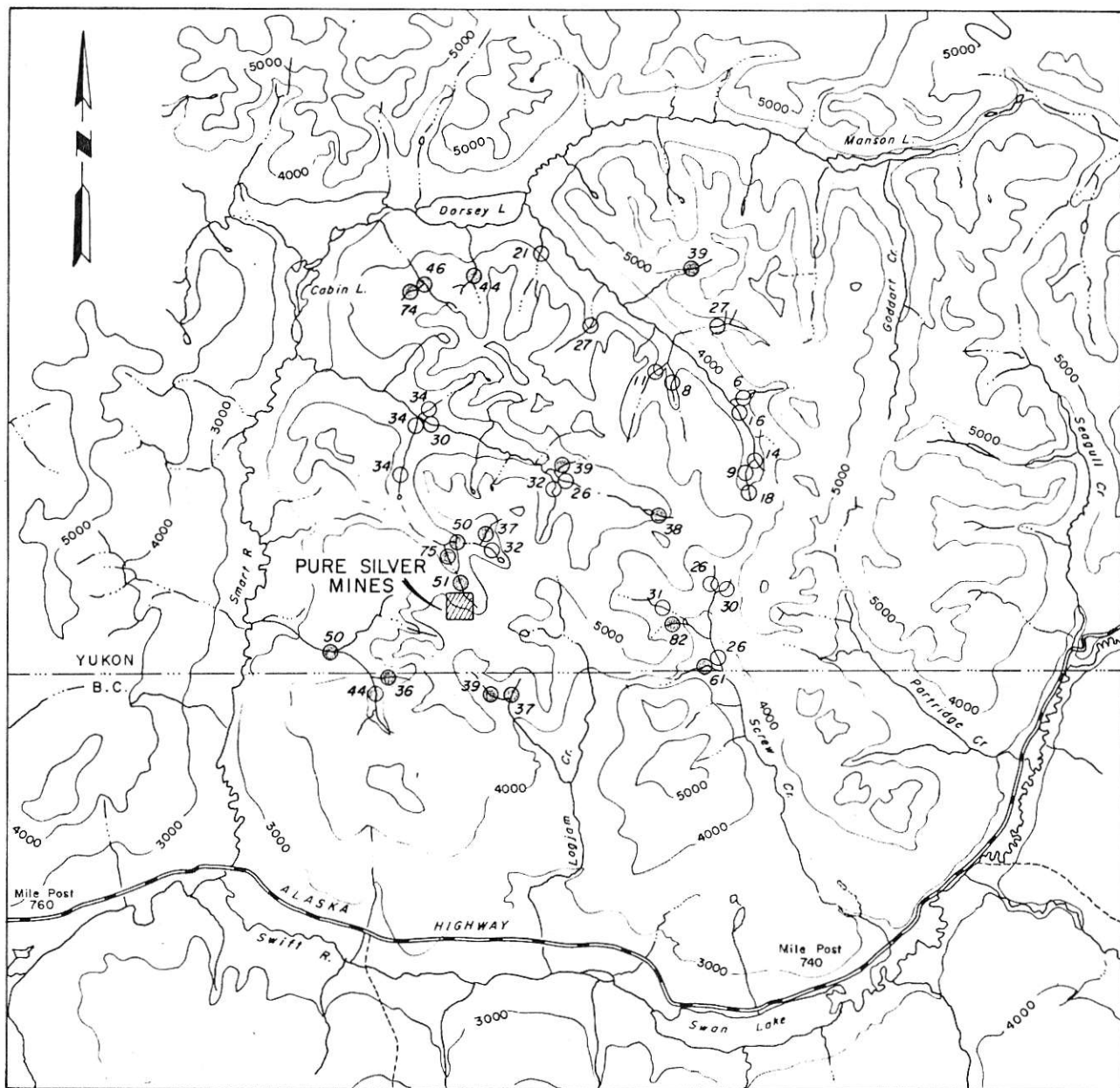
LOGJAM CREEK AREA, YUKON
(NTS 105 B)



SCALE IN MILES

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Fig.0



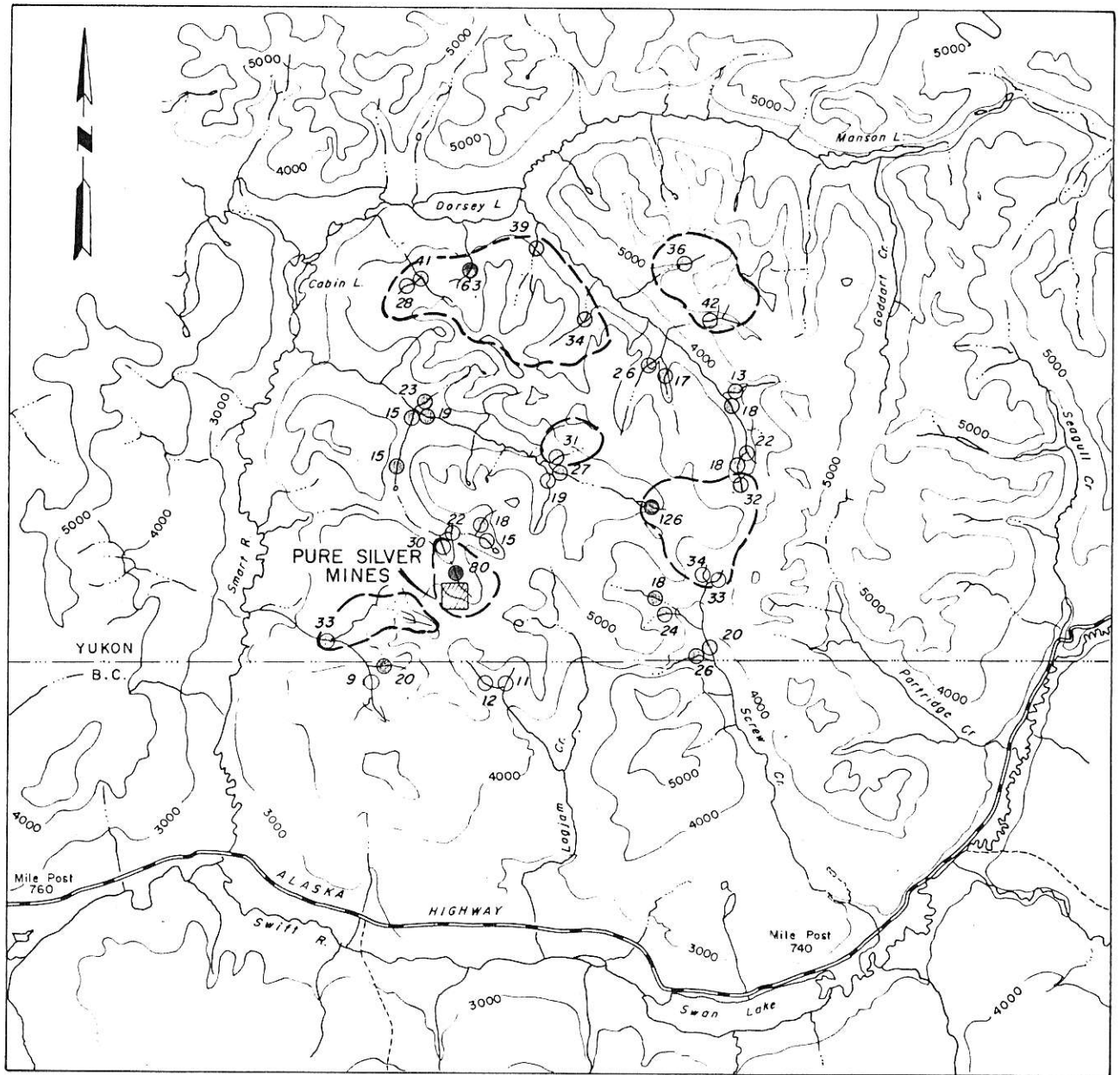
- | | | |
|---|------------------|----------------|
| ○ | BACKGROUND | 0 - 37 ppm. |
| ⊗ | ABOVE BACKGROUND | 36 - 84 ppm. |
| ⊙ | POSSIBLE ANOMALY | 85 - 107 ppm. |
| ⊕ | PROBABLE ANOMALY | 108 - 155 ppm. |
| ● | STRONG ANOMALY | 156 + ppm. |

**COPPER CONTENT OF STREAM SEDIMENTS
LOGJAM CREEK AREA, YUKON
(NTS 105 B)**



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Fig.P



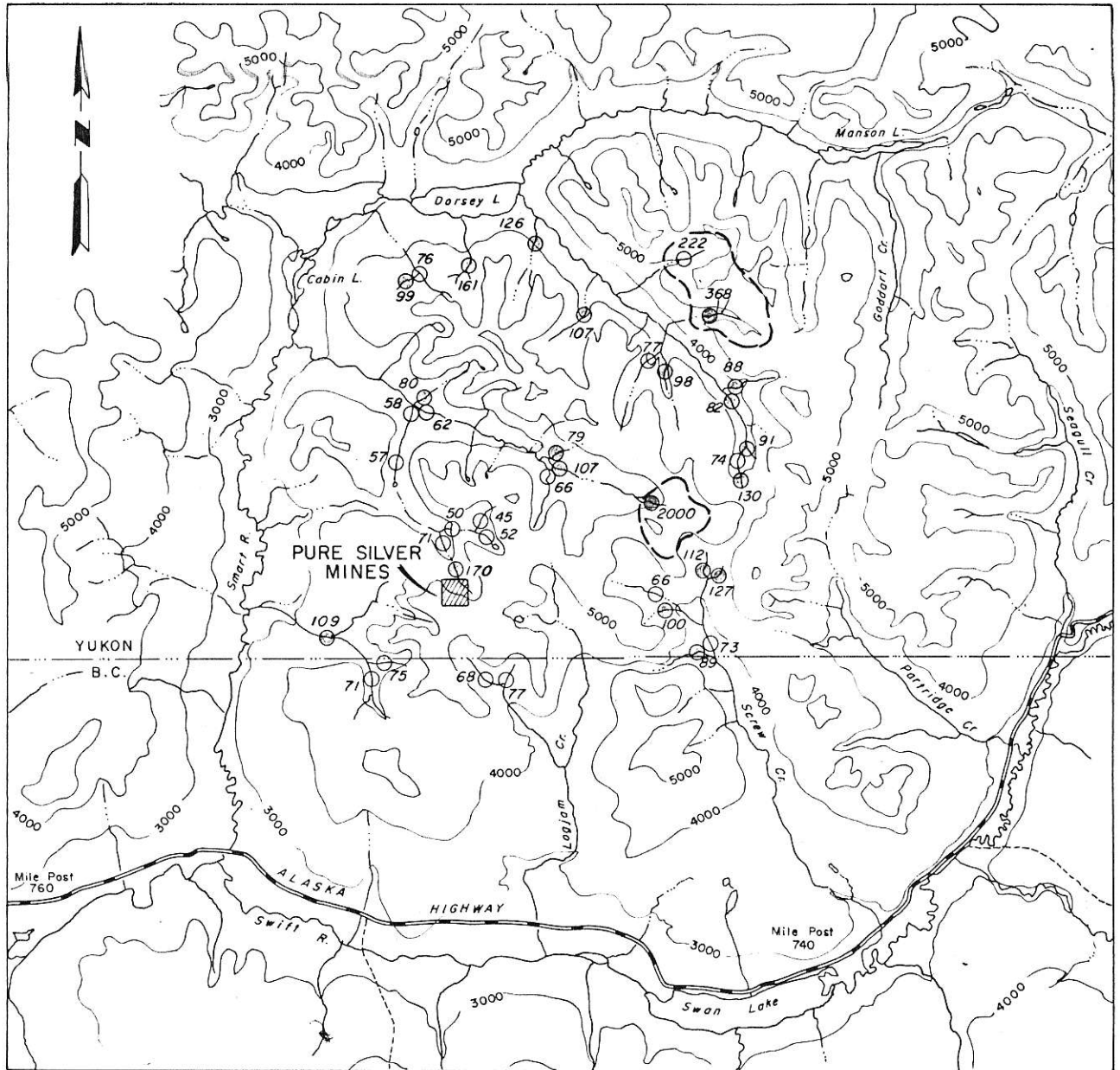
- | | | |
|---|------------------|--------------|
| ○ | BACKGROUND | 0 - 12 ppm. |
| ⊗ | ABOVE BACKGROUND | 13 - 22 ppm. |
| ⊙ | POSSIBLE ANOMALY | 23 - 27 ppm. |
| ⊚ | PROBABLE ANOMALY | 28 - 49 ppm. |
| ⊛ | STRONG ANOMALY | 50 + ppm. |

LEAD CONTENT OF STREAM SEDIMENTS
LOGJAM CREEK AREA, YUKON
 (NTS 105 B)



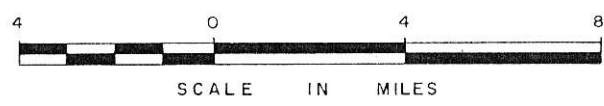
CORDILLERAN ENGINEERING LIMITED
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 VANCOUVER 1, B.C.

Fig. Q



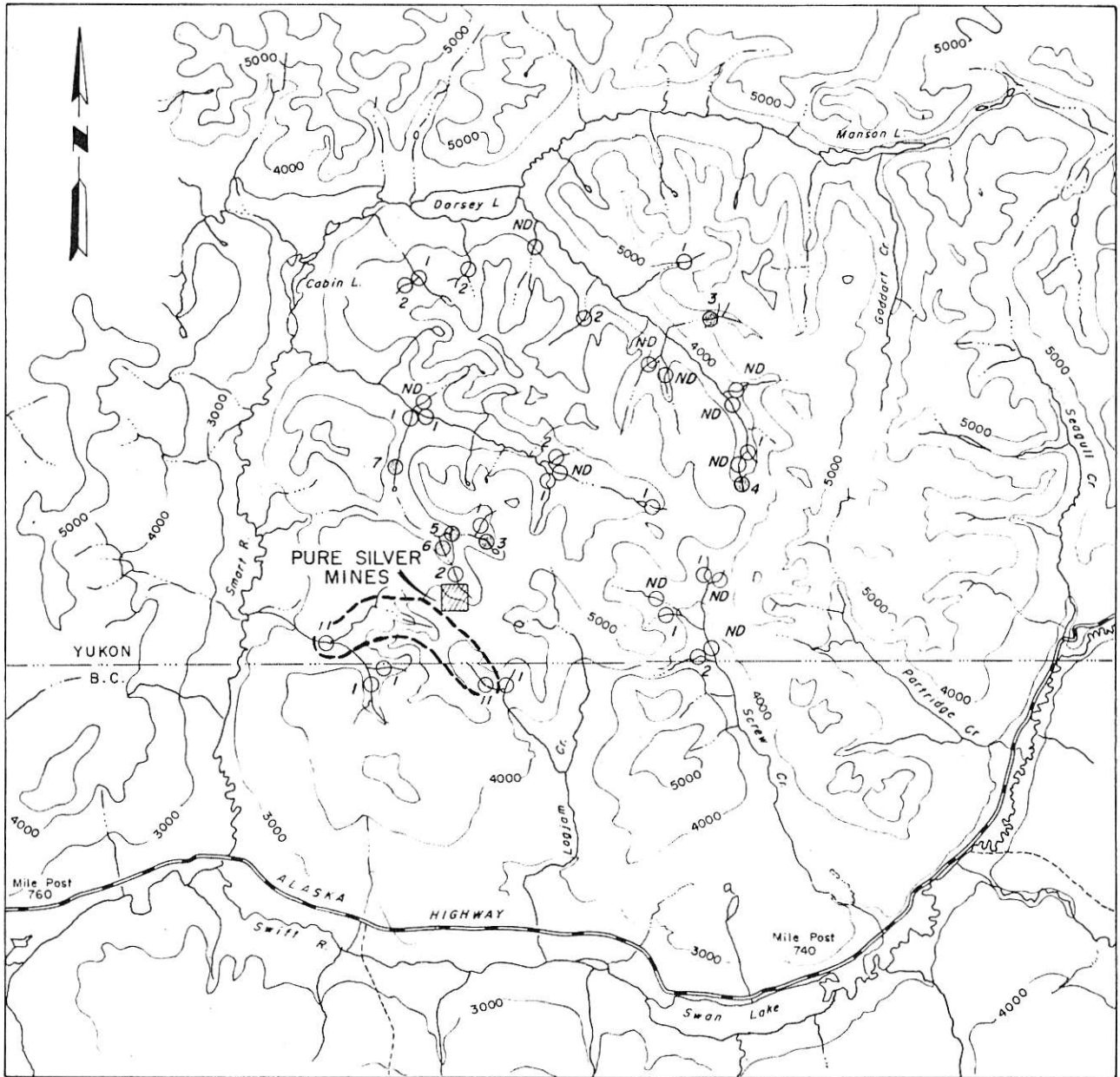
- BACKGROUND 0 - 78 ppm.
- ⊖ ABOVE BACKGROUND 79 - 143 ppm.
- ⊗ POSSIBLE ANOMALY 144 - 176 ppm.
- ⊙ PROBABLE ANOMALY 177 - 242 ppm.
- STRONG ANOMALY 243 + ppm.

**ZINC CONTENT OF STREAM SEDIMENTS
LOGJAM CREEK AREA, YUKON
(NTS 105 B)**



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Fig.R



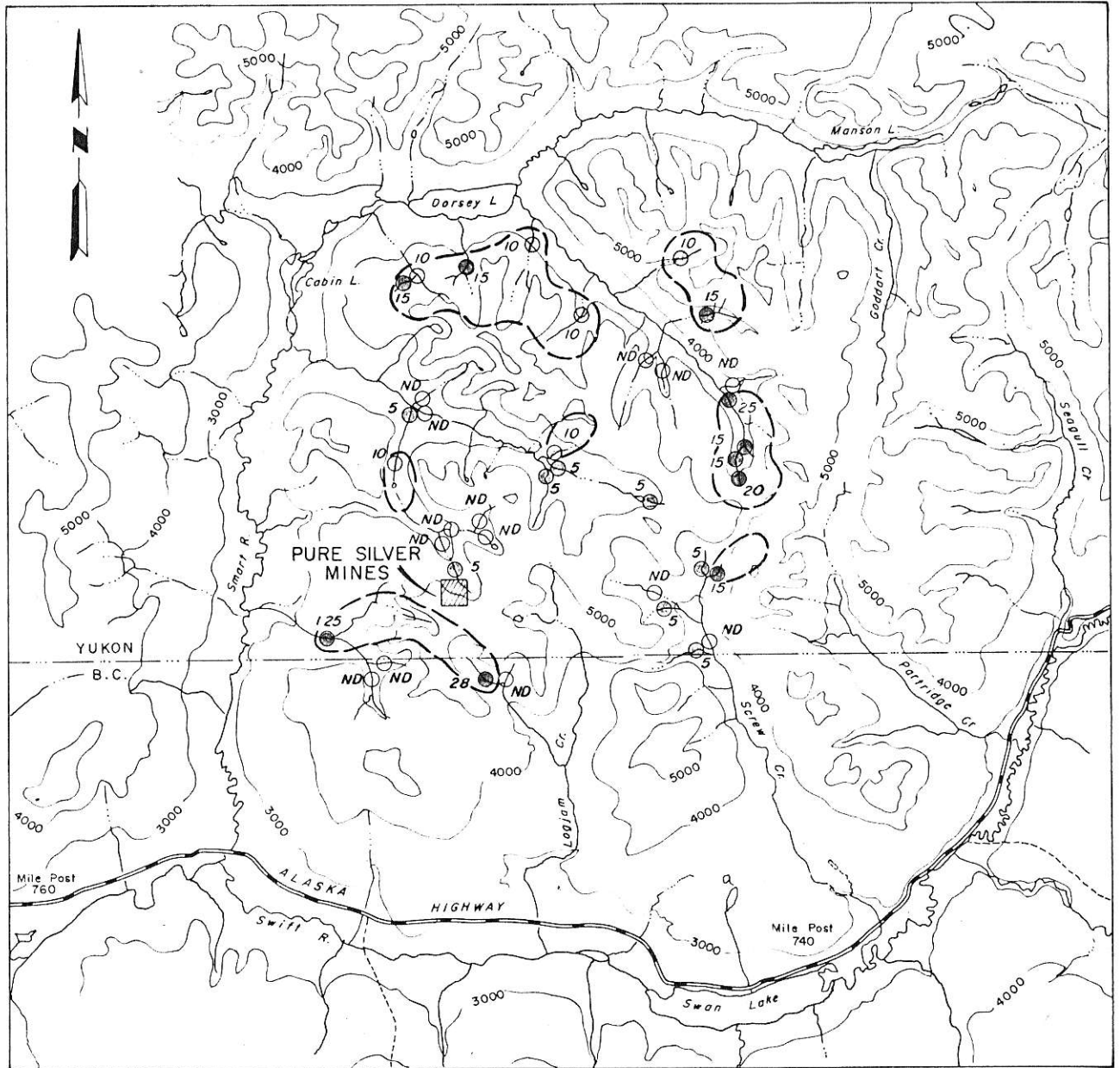
- BACKGROUND 0 - 2 ppm.
- ABOVE BACKGROUND 3 - 5 ppm.
- POSSIBLE ANOMALY 6 - 8 ppm.
- PROBABLE ANOMALY 9 - 12 ppm.
- STRONG ANOMALY 13 + ppm.
- ND NONE DETECTED

MOLYBDENUM CONTENT OF STREAM SEDIMENTS
LOGJAM CREEK AREA, YUKON
 (NTS 105 B)



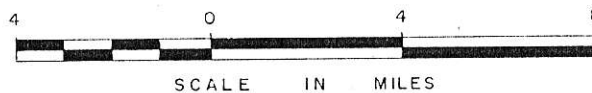
CORDILLERAN ENGINEERING LIMITED
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Fig.S



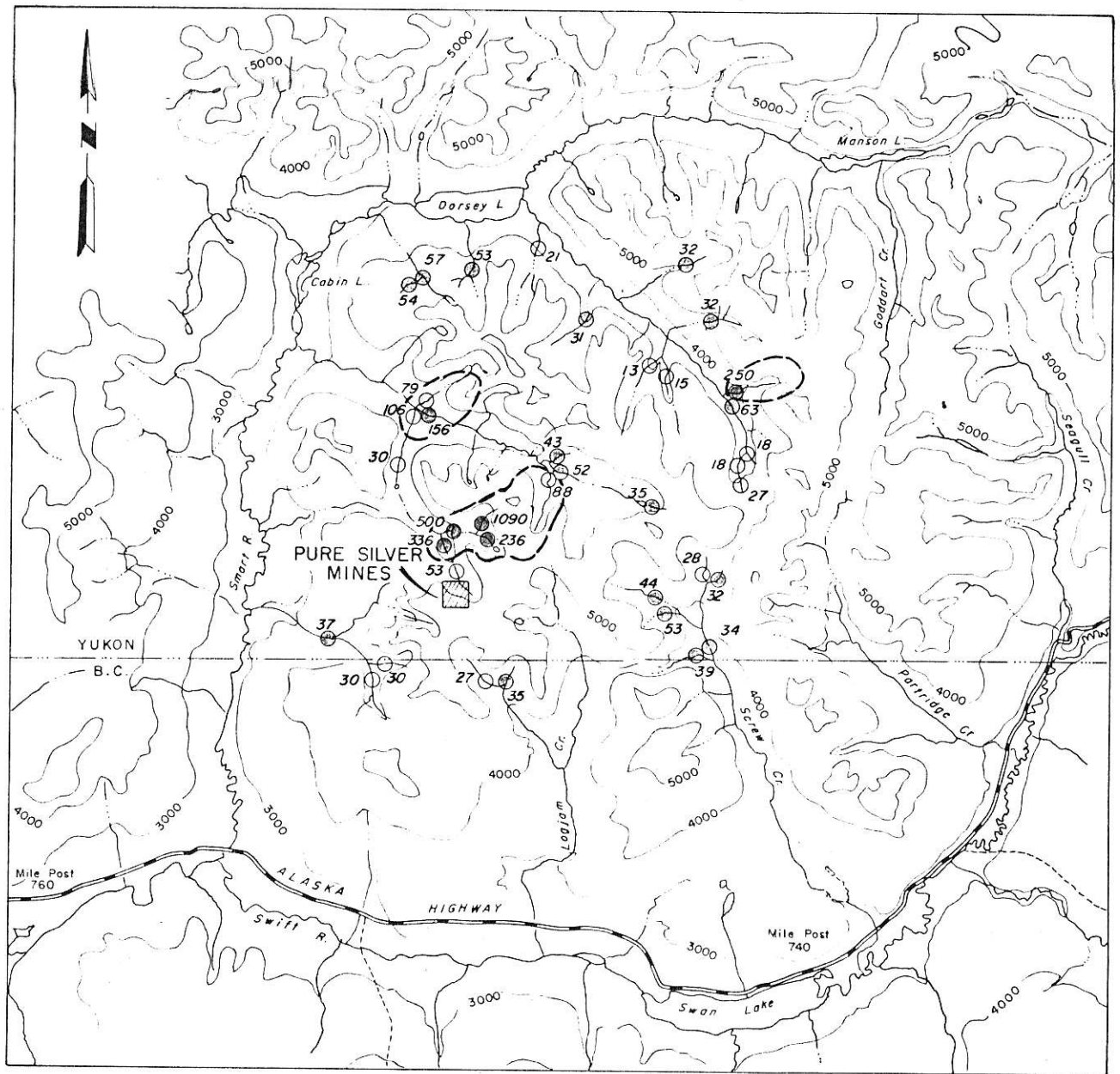
- | | | | |
|---|------------------|---------------|--|
| ○ | BACKGROUND | 0 - 2 ppm. | |
| ⊕ | ABOVE BACKGROUND | 3 - 7 ppm. | |
| ○ | POSSIBLE ANOMALY | 8 - 9 ppm. | |
| ⊙ | PROBABLE ANOMALY | 10 - 13 ppm. | |
| ● | STRONG ANOMALY | 14 + ppm. | |
| ○ | ND | NONE DETECTED | |

**TUNGSTEN CONTENT OF STREAM SEDIMENTS
LOGJAM CREEK AREA, YUKON
(NTS 105 B)**



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Fig.T



- BACKGROUND 0 - 30 ppm.
- ⊗ ABOVE BACKGROUND 31 - 61 ppm.
- ⊙ POSSIBLE ANOMALY 62 - 77 ppm.
- ⊕ PROBABLE ANOMALY 78 - 109 ppm.
- STRONG ANOMALY 110 + ppm.

NICKEL CONTENT OF STREAM SEDIMENTS LOGJAM CREEK AREA, YUKON (NTS 105 B)



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Fig.U

STREAM SEDIMENT SAMPLING - Logjam Creek (cont'd)PURE SILVER PROPERTY (Anomaly L-2)

A lead anomaly occurs on the Pure Silver Mines property two miles north of the B.C.-Yukon border. Extensive sphalerite/galena showings occur on the property which is presently in good standing. No follow-up work is required.

SMART RIVER (Anomaly L-3)

A weak tungsten anomaly occurs four miles NW of the Pure Silver property in an area underlain by sedimentary rocks (Sylvester Group). No follow-up work is warranted.

SMART RIVER (Anomaly L-4)

A weak tungsten-lead anomaly is indicated six miles NE of the Pure Silver property. The area is underlain by the Sylvester Group, and no follow-up work is justified.

SCREW CREEK (Anomaly L-5)

A strong lead-zinc anomaly with minor tungsten is recognized 8 miles NE of the Pure Silver property. The anomaly is located along the SW contact margin of the Cassiar Batholith in a favorable environment for lead-zinc replacement deposit. Limestone and dolomite occur along the intrusive contact. Follow-up prospecting is warranted for this anomaly.

STREAM SEDIMENT SAMPLING - Logjam Creek (cont'd)MUNSON LAKE (Anomaly L-6)

A moderate lead-zinc-tungsten anomaly occurs seven miles SE of Dorsey Lake along the NE flank of the Cassiar Batholith. The occurrence of roof pendants and contact embayments suggests that this area is in the roof zone of the batholith. Metasedimentary rocks (Sylvester Group) occur in the embayments which could host replacement deposits. Additional sediment sampling will be required to more clearly define the anomalous area; however, this anomaly should be given second-order priority.

DORSEY LAKE (Anomaly L-7)

An extensive lead-tungsten anomaly occurs three miles south of Dorsey Lake. The anomaly is located on the SW margin of the Cassiar Batholith and is underlain by Cassiar intrusive rocks and metasedimentary rocks (Sylvester Group). Several diorite plugs, which predate the Cassiar intrusives, also occur in the area.

Skarn beds are the probable source of the anomaly, prospecting and some sediment sampling will be required in order to locate the source. However, the anomaly should be considered second-order priority.

In addition to the preceding anomalies, several nickel anomalies were recognized. The anomalies are apparently associated with ultrabasics which occur in the area, and no follow-up work is warranted.

STREAM SEDIMENT SAMPLING (cont'd)TERESA ISLAND

(NTS 104-N)

An attempt was made to collect stream sediment samples from Teresa Island. The island is located in Atlin Lake and is underlain by a Late Cretaceous quartz monzonite stock, which was believed to be a possible target for porphyry copper mineralization. However, poor landing sites below timberline did not allow a complete survey of the area.

Five sediment samples were collected from the island but no anomalies were detected. (See Appendix (Samples B1-B5) for geochemical data).

RAINBOW LAKE

(NTS 104-I)

Additional stream sediment samples were collected in the vicinity of the RB claims, located four miles north of Rainbow Lakes. (See properties, RB claims, for geochemical results).

STREAM SEDIMENT SAMPLING (cont'd)MEEK LAKE

(NTS 104-I)

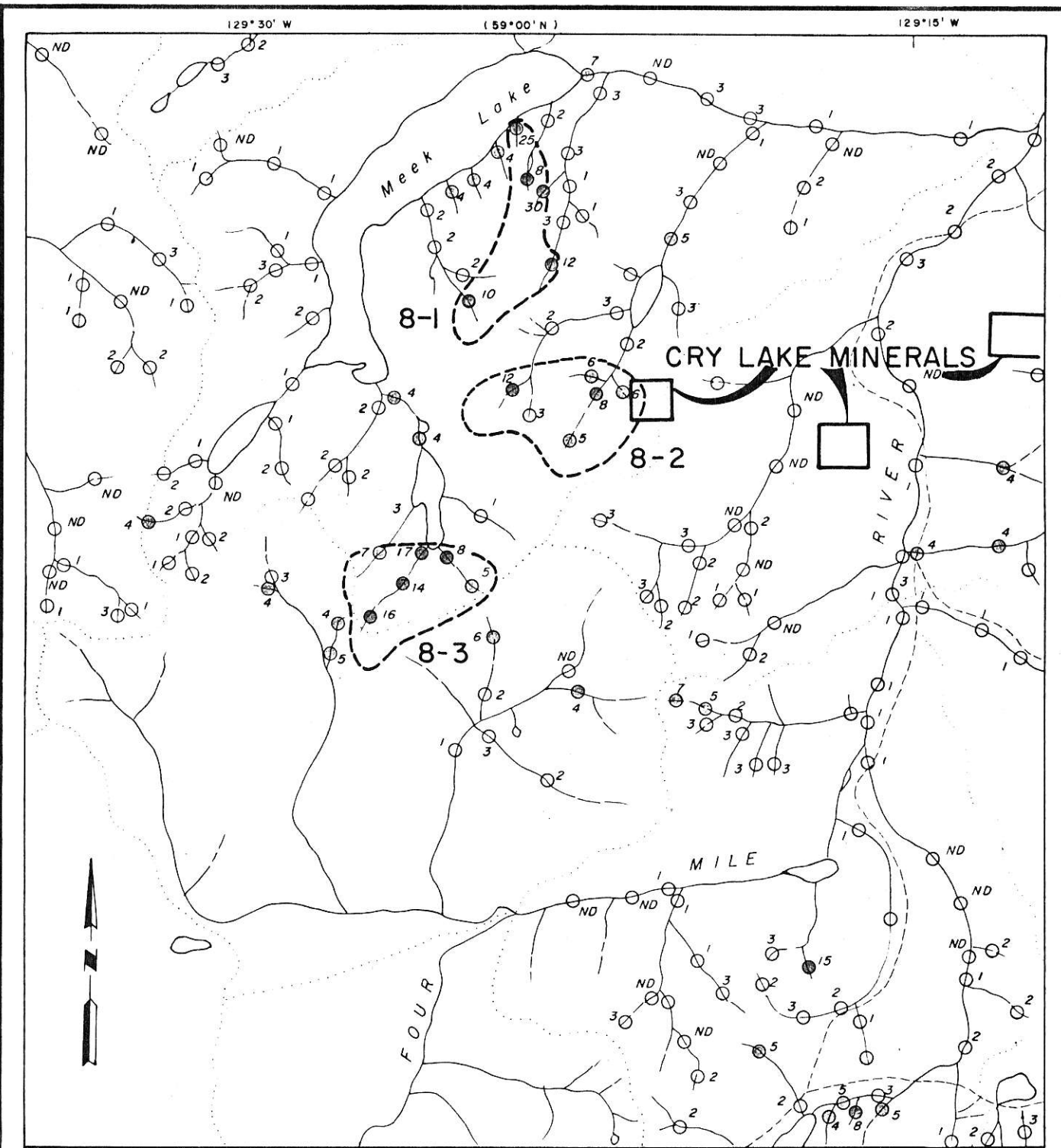
Eleven additional stream sediment samples were collected in the vicinity of Anomaly No 8-3 and analyzed for molybdenum. The results, shown on the following page, were negative. (See also Geochemical Anomalies, Meek Lake).

KEDAHDA LAKE

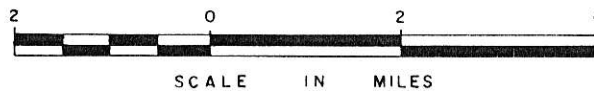
(Anomaly AS-5)

Ten additional stream sediment samples were collected in the vicinity of a significant molybdenum anomaly (41 ppm); which was indicated by the Atlin-Stikine Project results. However, the previous results could not be duplicated and the geochemical data were negative. The anomaly is presently unexplained; however, it is possibly due to analytical error.

(See Geochemical Anomalies, Kedahda Lake for prospecting results and Appendix (Samples M1-10) for geochemical data).



MOLYBDENUM CONTENT OF STREAM SEDIMENTS
 MEEK LAKE AREA, B.C.
 (NTS 104 I)



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Fig.V

STREAM SEDIMENT SAMPLING (cont'd)TUCHO RIVER

(NTS 94-L, 104-I)

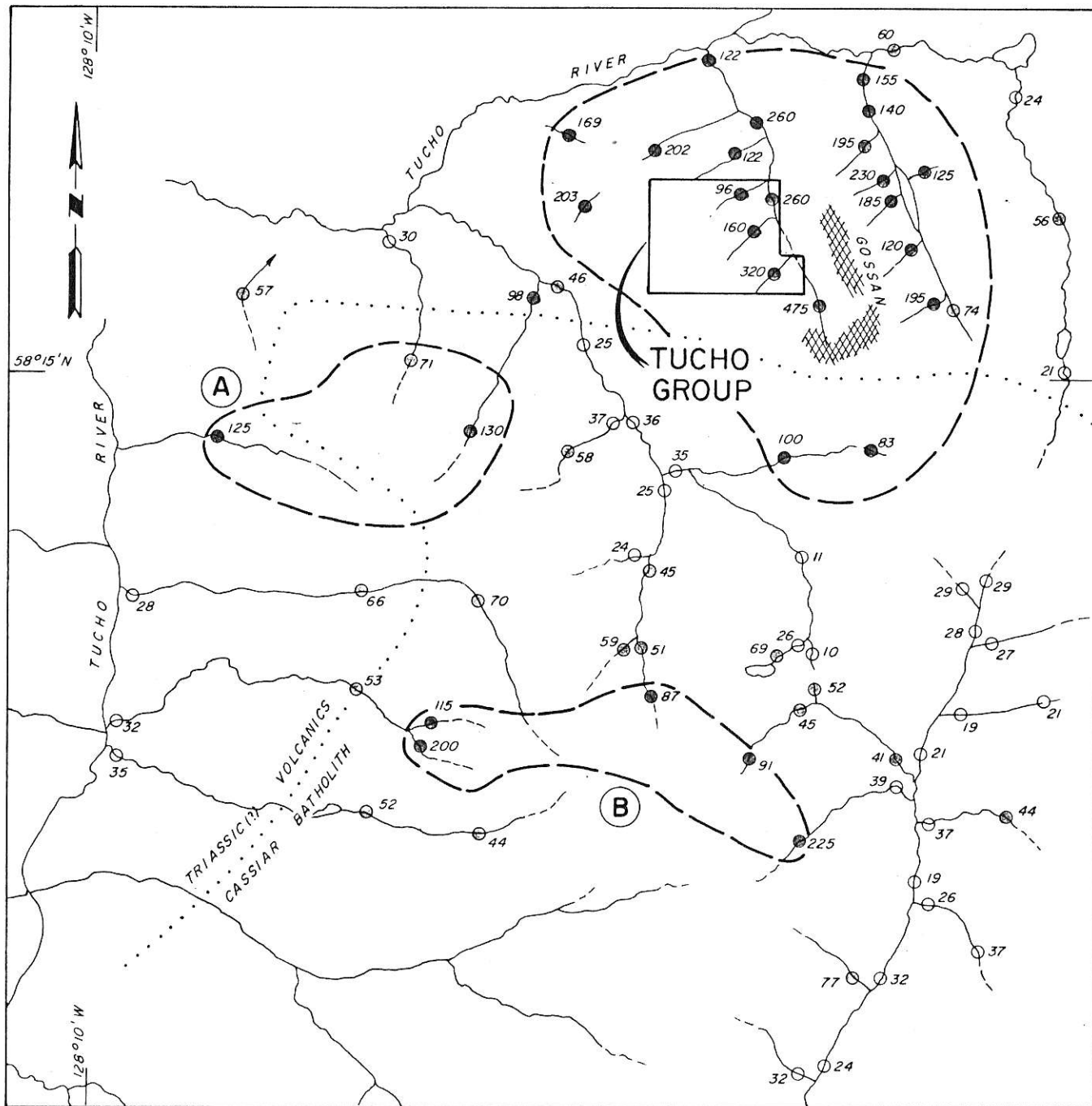
A total of 18 additional stream sediment samples were collected near the Tucho claims and analyzed for copper. Two new anomalies were indicated:

HOTTAH LAKE (Anomaly "A")

A moderate copper anomaly is recognized along the Cassiar Batholith contact 6 miles SSE of Hottah Lake. Although the anomaly is not as strong as the Tucho anomaly, it should be checked out.

MT. BLAIR (Anomaly "B")

A strong copper-molybdenum anomaly is recognized within the Cassiar Batholith, 8 miles NNE of Mt. Blair. Follow-up prospecting and additional sampling is warranted.



- | | | |
|---|------------------|--------------|
| ○ | BACKGROUND | 0 - 40 ppm. |
| ◐ | ABOVE BACKGROUND | 41 - 60 ppm. |
| ◑ | PROBABLE ANOMALY | 61 - 80 ppm. |
| ● | STRONG ANOMALY | 81 ppm. + |

COPPER CONTENT OF STREAM SEDIMENTS
TUCHO RIVER AREA
 (NORTHERN BRITISH COLUMBIA)



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Fig.W

PROPERTY SUBMISSIONS AND EXAMINATIONS

The following properties owned by others were examined for Quebec Cartier Mining Company during the 1971 field season:

CAPTAIN LAKE COPPER PROSPECT

LOCATION: 40 mi. SW of Watson Lake, Yukon (NTS 104-P).

MINERAL CLAIMS: Bell and Blu Group (10 claims).

OWNED BY: Rackla River Mines Ltd.

PROPERTY EXAMINATION: The Rackla River Mines property was examined in the company of Mr. A. H. Groat of Watson Lake. Most of the claims are covered by a relatively thin veneer of glacial till with forest and soil cover.

Four trenches (see report by J. F. Irwin, Fig. 4) were examined and found to contain disseminated copper mineralization over a fairly wide area (150 x 300 feet). The entire area is intensely fractured and chalcopyrite occurs in a brecciated quartz-calcite stockwork in siliceous Cambro-Ordovician limestone.

No definite boundary to the mineralized zone was observed and the mineralization is probably more extensive than indicated by the trenching. No intrusives were noted; however, the property appears to have some potential for a large-tonnage low-grade copper deposit. Additional assay data is available from Mr. Gordon Dickson, Rackla River Mines Ltd.

EXAMINED BY: M. Hamilton, September 17, 1971.

REFERENCES: Report on Blu and Bel Claim Groups, Cassiar District, British Columbia for Rackla River Mines Ltd., by J. Foster Irwin, P.Eng.

PROPERTY SUBMISSIONS AND EXAMINATIONS (cont'd)OLD GOLD CREEK COPPER PROSPECT

LOCATION: Liard River valley near the headwaters of Old Gold Creek, approximately 100 miles NW of Watson Lake, Yukon. (NTS 105-C).

MINERAL CLAIMS: Val and Rabo Group (4 claims).

OWNED BY: Wye Lake Resources.

PROPERTY EXAMINATION: The Val and Rabo claims were visited in the company of Mr. Jake Melynychuk of Watson Lake.

A prominent shear zone with chalcopyrite and quartz is exposed for about 1100 feet along a SE trend. The structure averages about 20 to 30 feet in width and is surrounded by highly fractured phyllitic wall rocks. Some of the showings are fairly impressive; however, the mineralization appears to be rather intermittent along strike.

The property was drilled by Newmont in 1956 and later held by Atlas Explorations. A total of \$150,000 has been spent with negative results. A large Cretaceous granodiorite/quartz monzonite stock occurs roughly 1000 feet NE of the main showings; however, no mineralization has been noted in the intrusive and the property is believed to have very limited potential for a porphyry-type deposit. No further consideration of this prospect is warranted.

EXAMINED BY: M. Hamilton, September 16, 1971.

PROPERTY SUBMISSIONS AND EXAMINATIONS (cont'd)GNAT LAKES PROPERTY

LOCATION: 20 mi. S of Dease Lake, B.C.
(NTS 104-I)

MINERAL CLAIMS: Jake Group (40 claims)

OWNED BY: Cliff Turner, Watson Lake, Yukon

PROPERTYEXAMINATION:

The property is located along a contact embayment on the NW contact margin of the Hotaluh Batholith. A favorable geologic setting is indicated by the occurrence of two nearby copper deposits (Lytton Minerals) which contain an indicated 15,000,000 tons of 0.5 percent copper. Mineralization on the Lytton property consists of disseminated chalcopyrite in highly fractured and altered Triassic volcanics near the batholith contact.

Chapparral Mines Ltd., has recently completed an extensive exploration program on the Bell claims which are located immediately east of the Jake claims. The work included an IP survey, soil geochem survey, air and ground magnetometer survey, photo geology, and three diamond drill holes. The drilling results were negative and no further work is planned by Chapparral (Mr. E.B. Baker, personal communication).

Mr. S. S. Tan (J. J. Manning Associates) says that the IP and mag anomalies were due to disseminated magnetite in the andesite. He also noted that feldspar porphyry dikes and associated hydrothermal alteration, which are characteristic of the Lytton property, do not occur on the Bell property.

A small air mag anomaly and a possible fracture anomaly are indicated on the Jake claims and a few specimens of mineralized float were noted. However, the absence of porphyry dikes, hydrothermal alteration, and intense fracturing indicate that the Jake property has only marginal potential as an exploration target. No additional work appears to be warranted.

EXAMINED BY: M. Hamilton, September 15, 1971.

CONCLUSIONS

Several important conclusions can be made from the results of the Atlin-Stikine, Rancheria-Kechika, and Northern Reconnaissance projects. The regional stream sediment sampling surveys conducted during 1970 were effective in outlining local and regional metallogenic areas, and follow-up investigations in 1971 were successful in determining the source of most of the geochemical anomalies. However, intensive competitive exploration by other companies using similar techniques has limited the over-all effectiveness of this approach. (27% of the anomalies investigated were either partly or completely staked by others).

Areas having no recognizable alteration or mineralization but characterized by anomalous concentrations of metal were noted in many instances. Trace elements in black shale beds (Lower Sylvester Group) accounted for 36% of the anomalies which were examined.

From a geological standpoint, one fundamental conclusion can be drawn: The most promising environment for the occurrence of "porphyry" Cu deposits is undoubtedly the

CONCLUSIONS (cont'd)

Triassic volcanics and metavolcanics which are intruded by intermediate to acidic intrusives. This situation is recognized in three important areas:

1. KEDAHDA LAKE

Geologic evidence indicates that major structural intersections occur within the Shonektaw Formation (Triassic) approximately eleven miles NE of Kedahda Lake. The volcanics in this area are intruded by the Glundebery Batholith (Upper Cretaceous). The Kahan Creek Fault, which splits the batholith, intersects a major NW trending fault near the Jennings River (see Geological Map, NTS 104-0). The Triassic units possibly occur in contact with the Klinkit Batholith (quartz monzonite) in this area and Tertiary volcanics occur nearby. Additional fault intersections are also indicated along Kahan Creek, north of the Kennco property. These fault valleys, which are undoubtedly more fractured than the surrounding peaks, are largely unmapped and forest covered.

Triassic volcanics (Nazcha Formation) also occur in contact with the Glundebery Batholith 7 miles SW of Blackfly Lake. The volcanics include tuff, agglomerate, feldspar porphyry, and siltstone but have not been explored. Much of the area is covered by marsh and shallow lakes.

CONCLUSIONS (cont'd)2. TUCHO LAKE

Triassic volcanics occur in contact with the Cassiar Batholith. The Tucho River valley, located just north of the Tucho claims, is covered by forests and has not been adequately tested.

3. DEASE LAKE

The geologic setting of the Hotailuh Batholith, located roughly 30 miles SE of Dease Lake, B.C., suggests a prime exploration target for porphyry-type copper deposits.

Triassic volcanic rocks (Takla ?) are intruded by a multi-phase quartz monzonite-granodiorite intrusive complex which is locally characterized by a predominance of potash feldspar and, in some localities, alaskite. This indicates a fairly late-stage emplacement, possibly a late differentiate of the Cassiar Batholith.

The erosional level appears to be relatively shallow, particularly along the north margin of the Hotailuh Batholith. This is evidenced by the occurrence of numerous satellite intrusions which should also be included in any exploration program.

CONCLUSIONS (cont'd)

These three areas are commonly characterized by widespread occurrences of copper and consistently contain very high trace amounts of copper even in the absence of sulphide mineralization. The Triassic volcanic units comprise an environment which is typical of several known copper deposits (Galore Creek, Copper Mt., Schaft Creek, etc.). Two copper occurrences (Lytton Minerals) are located on the NW contact margin of the Hotailuh Batholith and contain chalcopyrite in highly fractured and altered Triassic volcanics.

In addition to copper occurrences in the Triassic rocks, favorable environments for "porphyry" molybdenum deposits are recognized in intermediate to acidic intrusives in three areas:

1. Surprise Lake - The Surprise Lake Batholith is the host rock for "Adanac-type" occurrences where disseminated MoS_2 occurs in altered alaskite. However, most of this area is presently held by other companies.
2. Rainbow Lakes - Geochemical data indicates numerous molybdenum anomalies along the NE margin of the Cassiar Batholith. Most of these were examined during 1971 and one was staked (RB claims).

CONCLUSIONS (cont'd)

3. Kedahda Lake - A prominent regional molybdenum concentration occurs within the Glundebery Batholith. Traces of MoS_2 in leucogranite were found in several localities and one occurrence was staked (Kedy Claims).

Two types of possible tungsten deposits are recognized:

1. Kedahda Lake - A possible copper-tungsten occurrence was located eight miles east of Kedahda Lake (Wolf claims) where disseminated chalcopyrite and scheelite were found in altered quartz monzonite (Glundebery Batholith). Follow-up work will be required to determine the extent of the mineralization.
2. Logjam Creek - Possible scheelite-bearing skarn deposits of tungsten are indicated by geochemical data in this area. Upper Devonian sediments are intruded by diorite stocks.

These areas have considerable potential for economic mineral deposits and follow-up work is justified.

RECOMMENDATIONS

KEDAHDA LAKE AREA:

WOLF AND KEDY CLAIMS

Detailed geologic mapping and prospecting is recommended to define the mineralized areas. Since the copper-tungsten mineralization is apparently associated with disseminated sulfides (arsenopyrite), an IP survey is also recommended.

GLUNDEBERY BATHOLITH

A continuation of the initial exploration of the Glundebery Batholith is strongly recommended. Second and third priority geochemical anomalies not examined during 1971 should be investigated. Weak molybdenum anomalies in the vicinity of a large circular topographic feature immediately west of the Wolf claims should be prospected.

TRIASSIC VOLCANICS

Air magnetometer surveys have been used successfully to test similar Triassic units near Gnat Lake, B.C., and, for this reason, it is believed that this is the most logical approach for the area NE of Kedahda Lake. Geologic mapping and prospecting

RECOMMENDATIONS (cont'd)Kedahda Lake Area - Triassic Volcanics (cont'd)

are also recommended; however, these methods will be somewhat limited since most of the area of interest is heavily forested.

RAINBOW LAKES AREA:RB CLAIMS

Careful prospecting and geologic mapping is recommended to outline areas of alteration and molybdenum mineralization.

TESLIN LAKE AREA:JAKE CLAIMS

Follow-up work in this area produced negative results and it is recommended the Jake claims be allowed to expire.

RECOMMENDATIONS (cont'd)LOGJAM CREEK AREA:ANOMALIES L-1, L-5

Prospecting and stream sediment sampling should be used to locate the source of the tungsten and lead-zinc anomalies.

HOTAILUH BATHOLITH AREA:

A regional stream sediment sampling program covering the batholith and surrounding Triassic volcanics is strongly recommended. Although presently known deposits occur primarily in the volcanics, consideration should also be given to the possible occurrence of disseminated deposits within the batholith. This is a realistic possibility in view of contemporary ideas regarding source beds and possible remobilization of copper derived from the Triassic units. In addition, several major porphyry copper deposits in the Highland Valley, B.C., occur well within the margins of the Guichon Batholith.

RECOMMENDATIONS (cont'd)TUCHO LAKE AREATUCHO CLAIMS

Detailed prospecting and soil sampling is recommended for the drift covered valley NW of the Tucho property. An airborne magnetic-EM survey is also recommended.

TUCHO RIVER - HOTTAH LAKE AREA

Two geochemical anomalies SE of Hottah Lake should also be checked.

CAPTAIN LAKE AREARACKLA RIVER MINES PROPERTY

An IP survey and soil sampling is recommended for this property, pending a satisfactory option agreement.

Respectfully submitted

CORDILLERAN ENGINEERING LIMITED

C. Michael Hamilton

C. Michael Hamilton, Geol.Eng.

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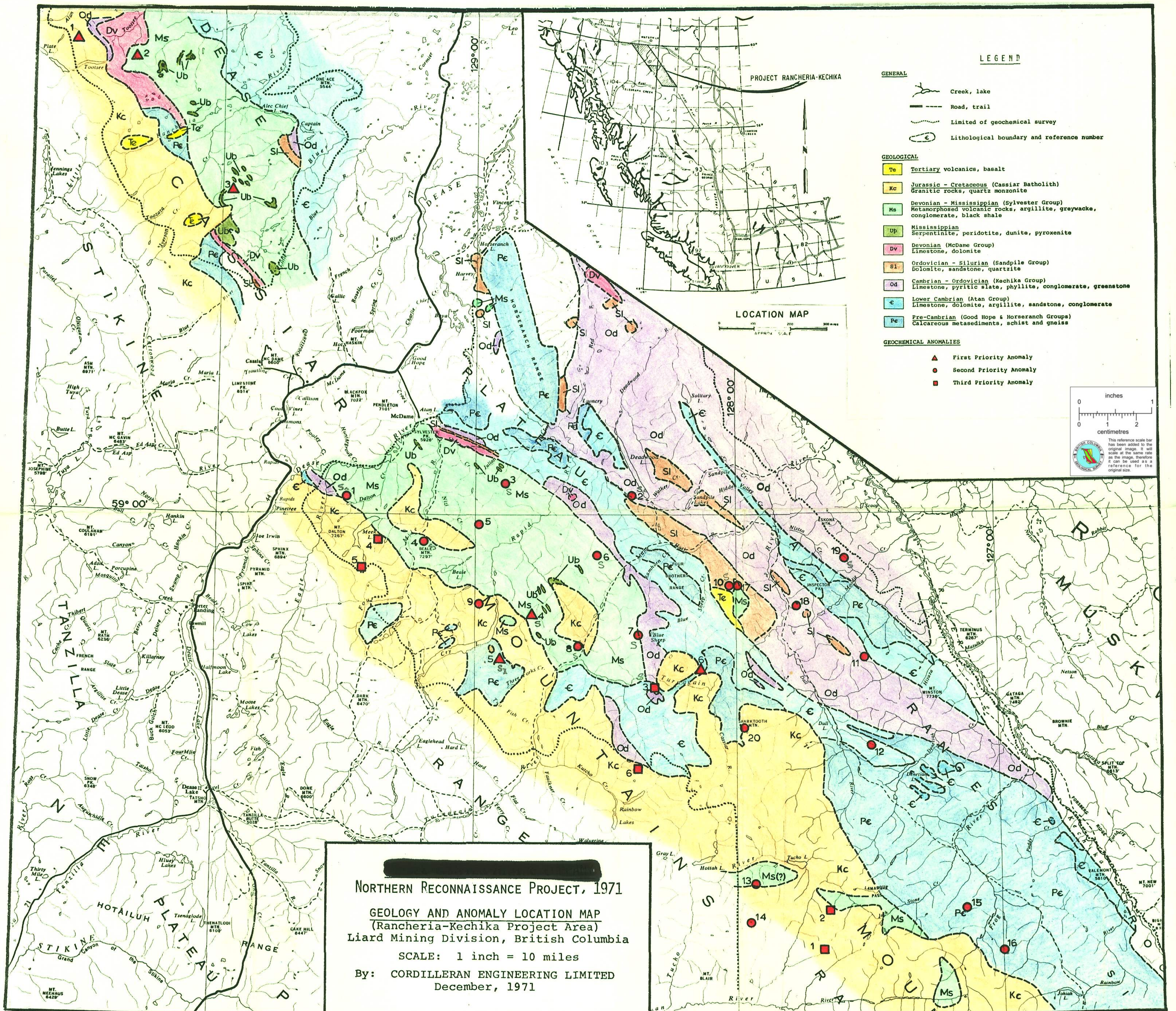
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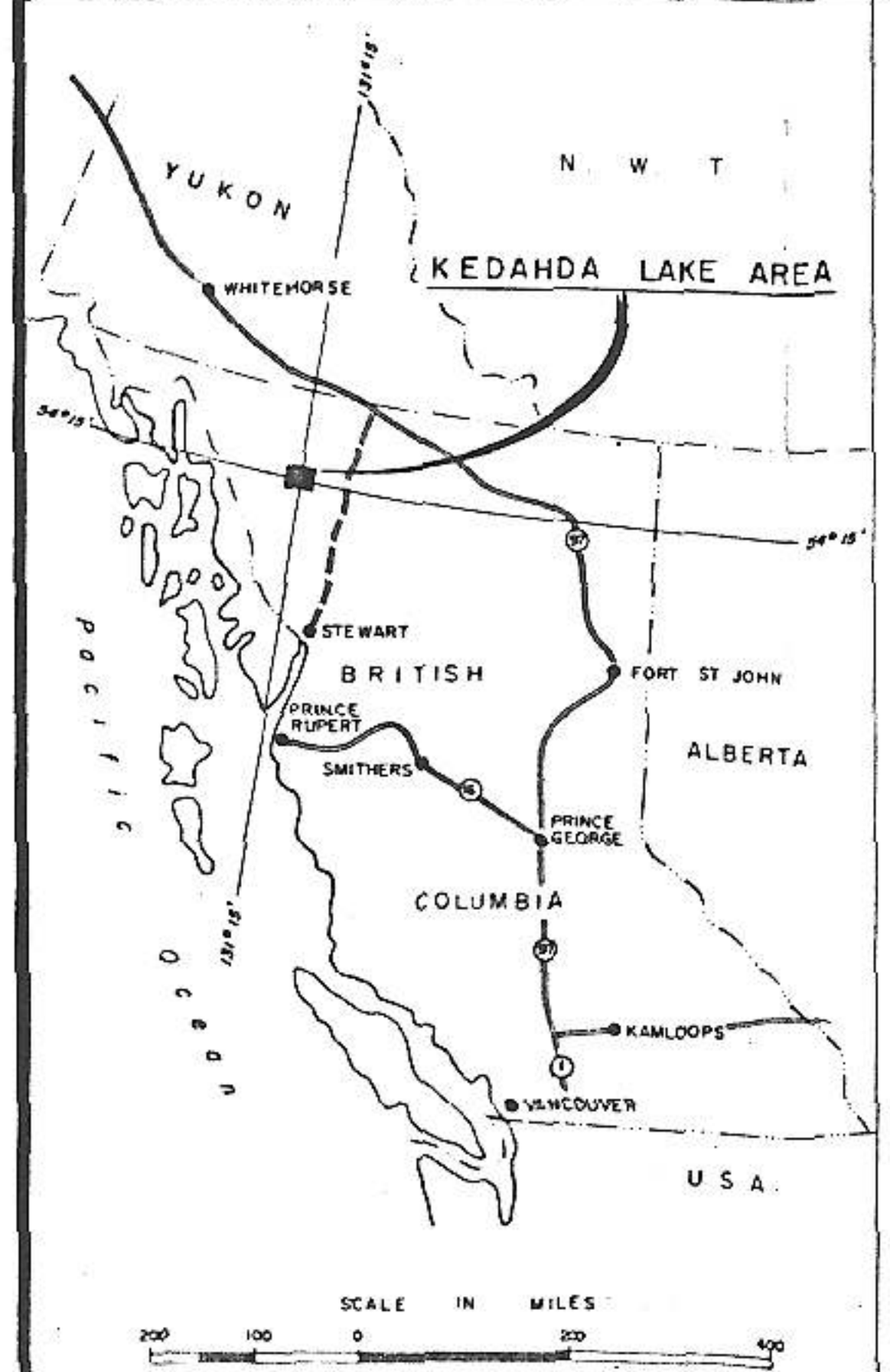
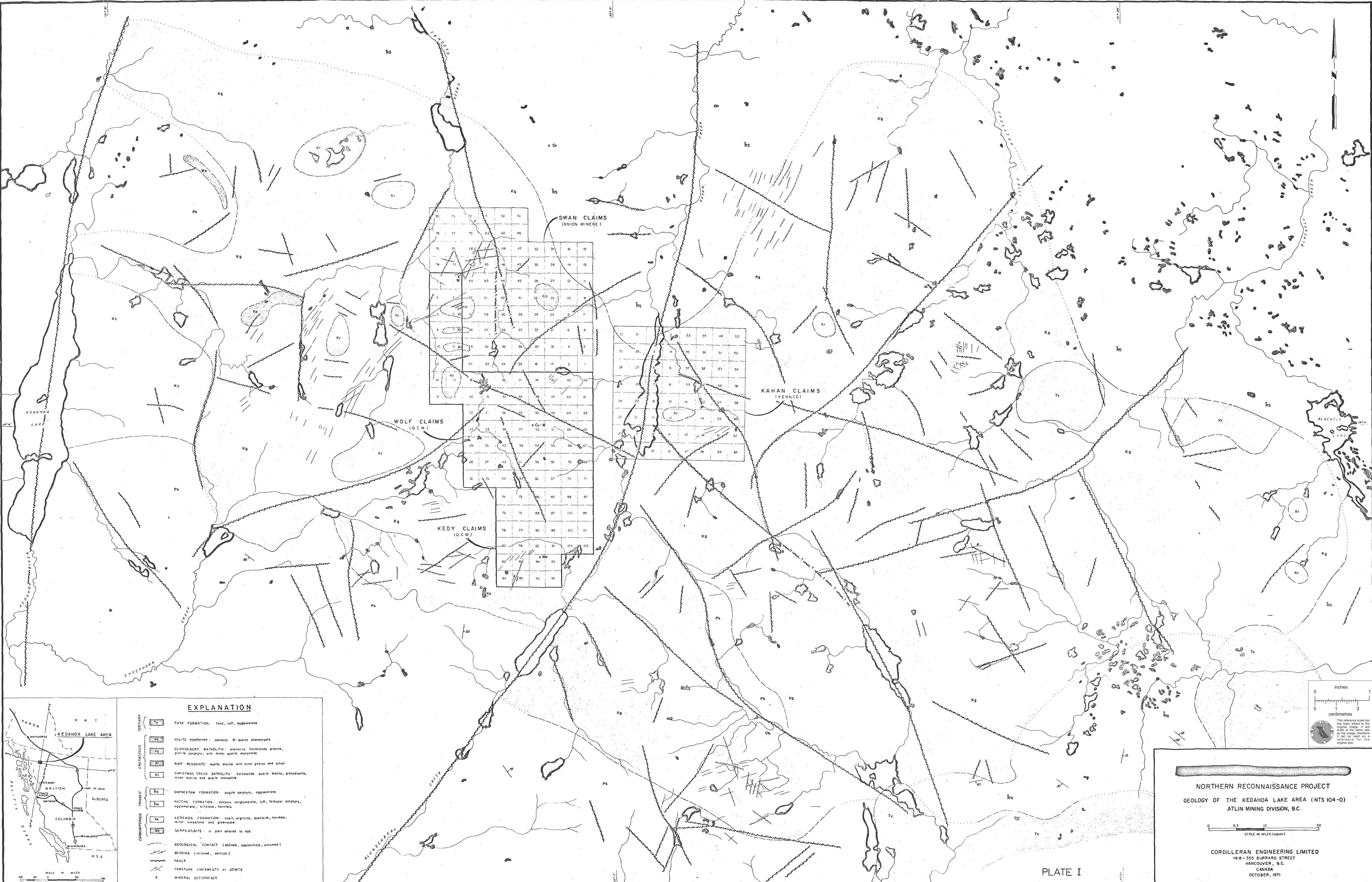
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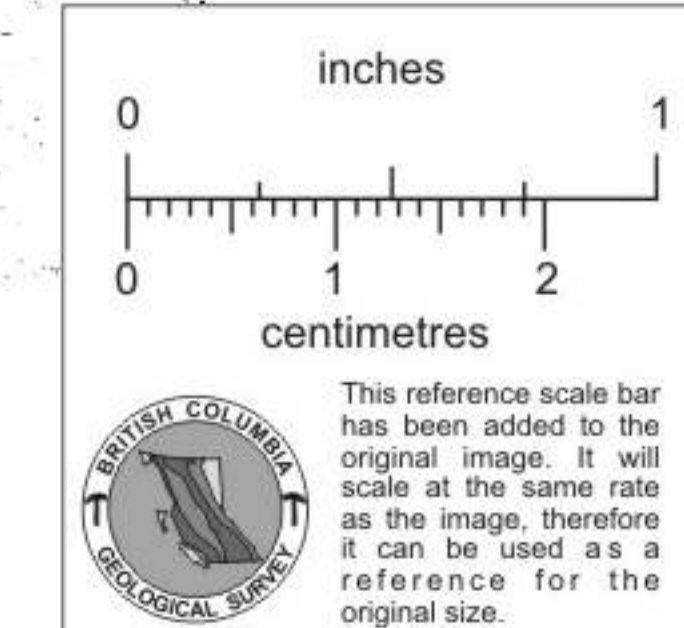
APPENDIX I





EXPLANATION

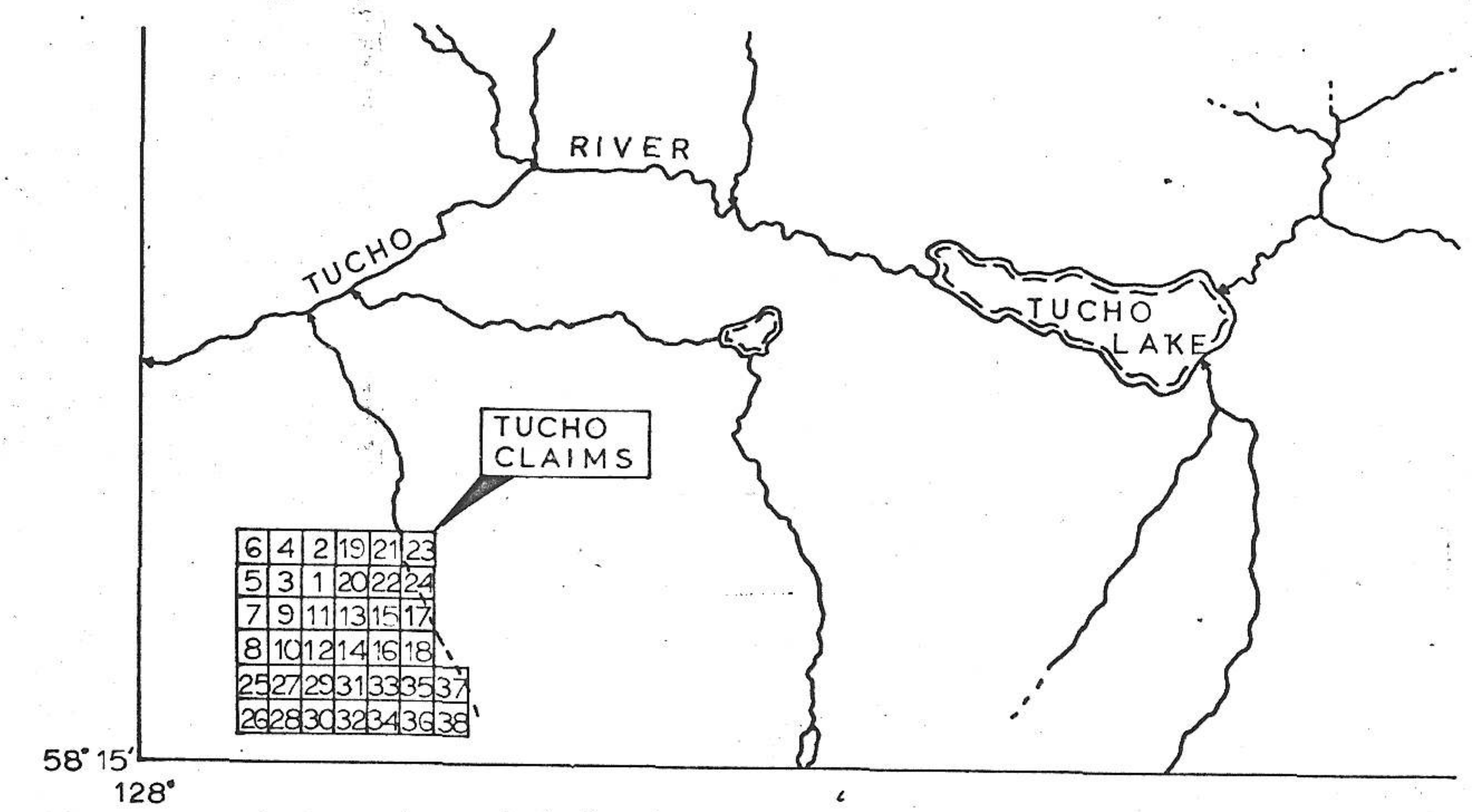
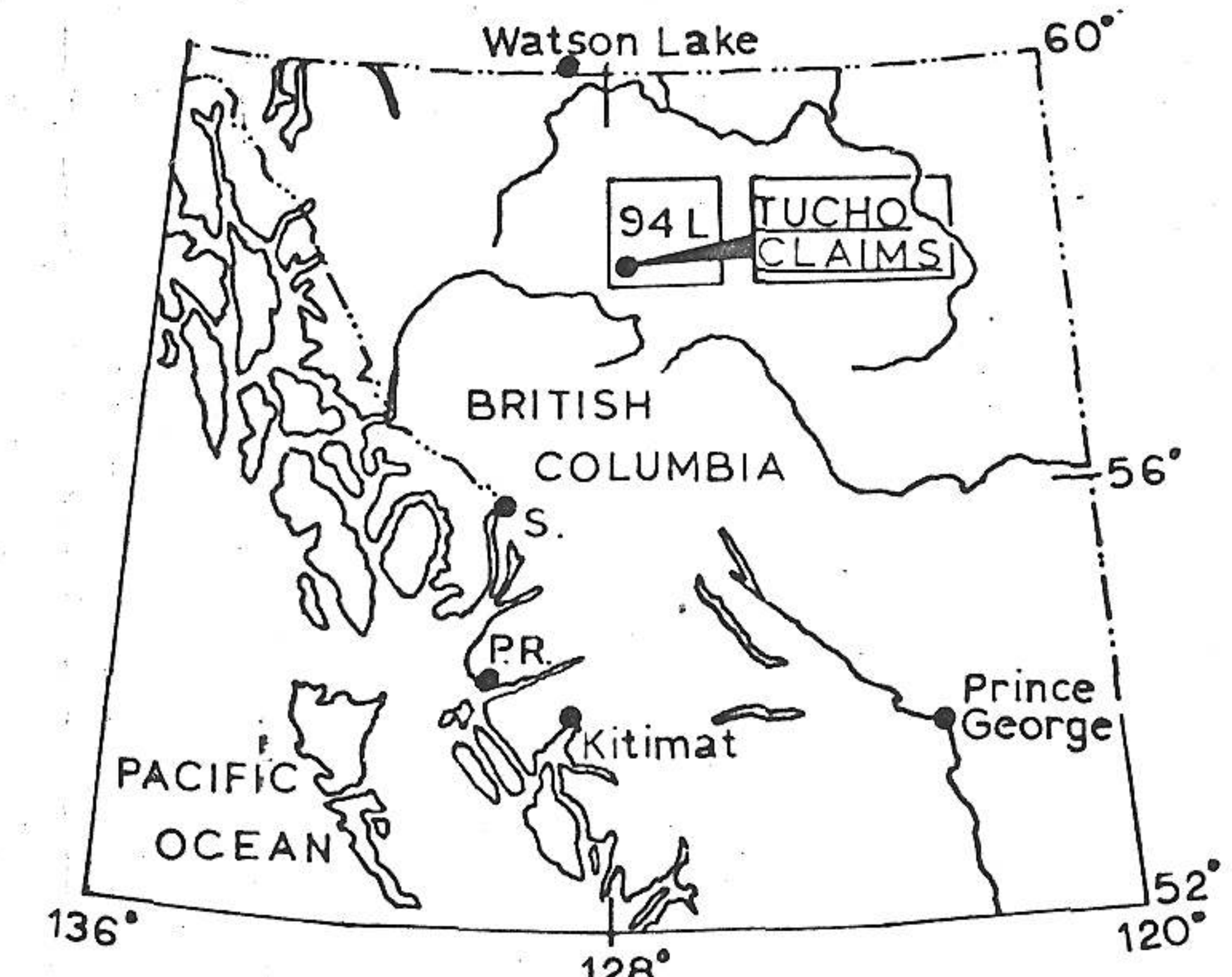
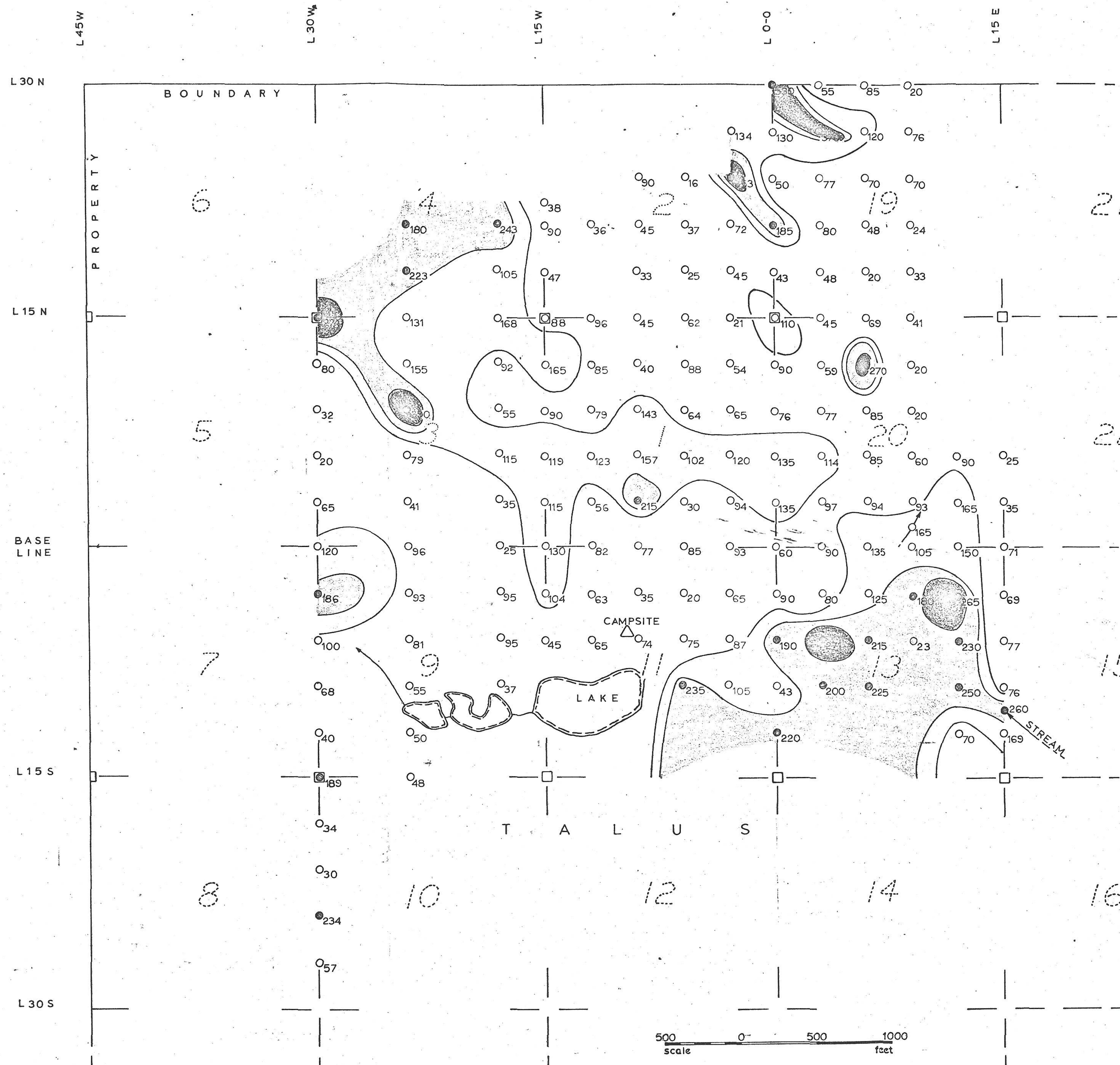
- | | |
|--|---|
| <p>PROTEROZOIC</p> <p>OPPLANDIC</p> <p>PRECAMBRIAN</p> | <p>Tv TUYA FORMATION: lava, tuff, agglomerate</p> <p>Kg APLITE PORPHYRY: contains quartz phenocrysts</p> <p>Kr KLONDIKE BATHOLITH: microcline hornblende granite, granite porphyry, with minor quartz monzonite</p> <p>Kc ROOF PENDANTS: mostly diorite with minor gneiss and schist</p> <p>Kc CHRISTMAS CREEK BATHOLITH: hornblende quartz diorite, granodiorite, minor diorite and quartz monzonite</p> <p>Rs SHONKETAU FORMATION: augite porphyry, agglomerate</p> <p>Rn NAZCHA FORMATION: volcanic conglomerate, tuff, felsic porphyry, agglomerate, siltstone, hornfels</p> <p>Pk KEDAHDA FORMATION: chert, argillite, quartzite, hornfels, minor limestone and greenstone</p> <p>M SERPENTINITE: in part altered to talc</p> |
| <p>GEOLOGICAL CONTACT (defined, approximate, assumed)</p> <p>BEDDING (inclined, vertical)</p> <p>FAULT</p> <p>FRACTURE LINESMENTS or JOINTS</p> <p>X MINERAL OCCURRENCE</p> | |



NORTHERN RECONNAISSANCE PROJECT
GEOLOGY OF THE KEDAHDA LAKE AREA (NTS 104-0)
ATLIN MINING DIVISION, B.C.

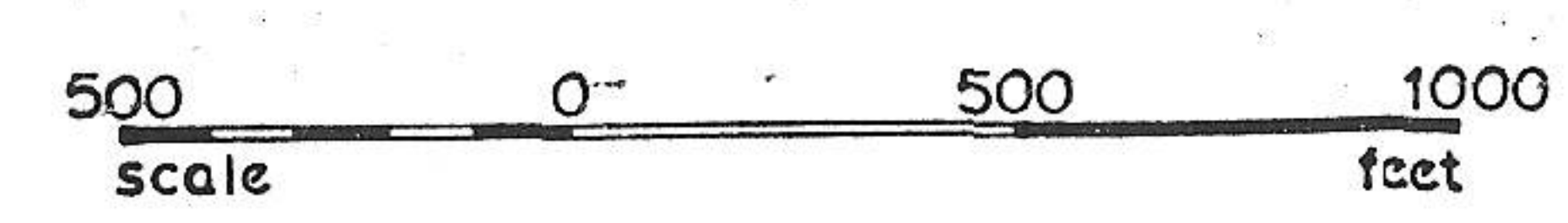
0 0.5 1 2 3
 SCALE IN MILES (approx.)

CORDILLERAN ENGINEERING LIMITED
 1418-355 BURHARD STREET
 VANCOUVER, B.C.
 CANADA
 OCTOBER, 1971

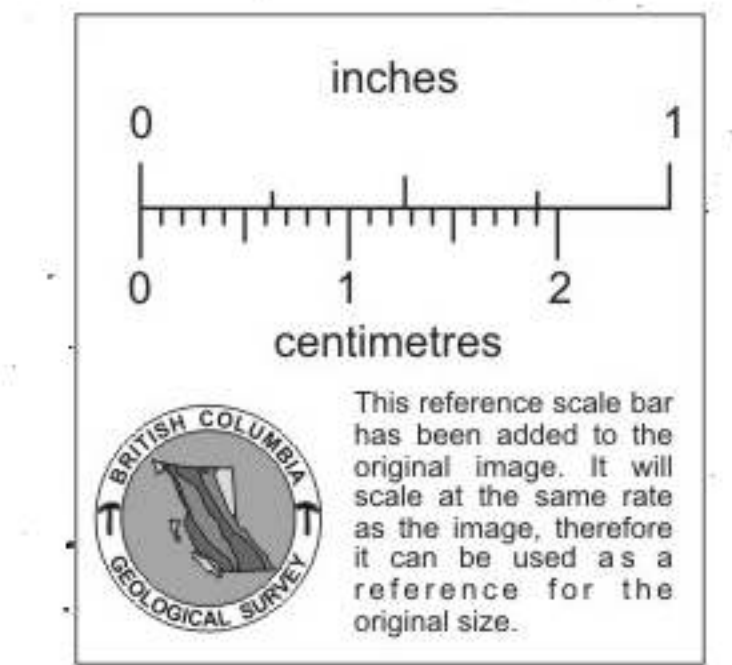


LOCATION MAP
Scale 1 in. to 2 mi.

- LEGEND**
- COPPER CONTENT IN SOIL SAMPLES IN PPM.
- 0 - 100 BACKGROUND
 - 101 - 175 POSSIBLY ANOMALOUS
 - 176 - 250 PROBABLY ANOMALOUS
 - GREATER THAN 250 ANOMALOUS
- CLAIM POST
 - OUTLINE OF ANOMALY



TUCHO CLAIM GROUP
KECHIKA AREA, 94 L, LIARD MINING DIVISION, B.C.
GEOCHEMISTRY - COPPER
by
CORDILLERAN ENGINEERING LIMITED
Vancouver, B.C., Canada



NOVEMBER 1971

To accompany Geological and Geochemical Report on the
Tucho Mineral Claims by T. E. Kainins