

GEOLOGICAL SURVEY BRANCH  
ASSESSMENT REPORTS

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**SUMMARY REPORT  
ON THE  
COP 1-4 MINERAL CLAIMS  
ATLIN MINING DIVISION  
BRITISH COLUMBIA**

**NTS 104J/4**

**Latitude: 58° 13' North  
Longitude: 131° 46' West**

For

**497281 B.C. Ltd.  
580 Metropolitan Place  
10303 Jasper Avenue  
Edmonton, Alberta  
T5J 3N6**



By

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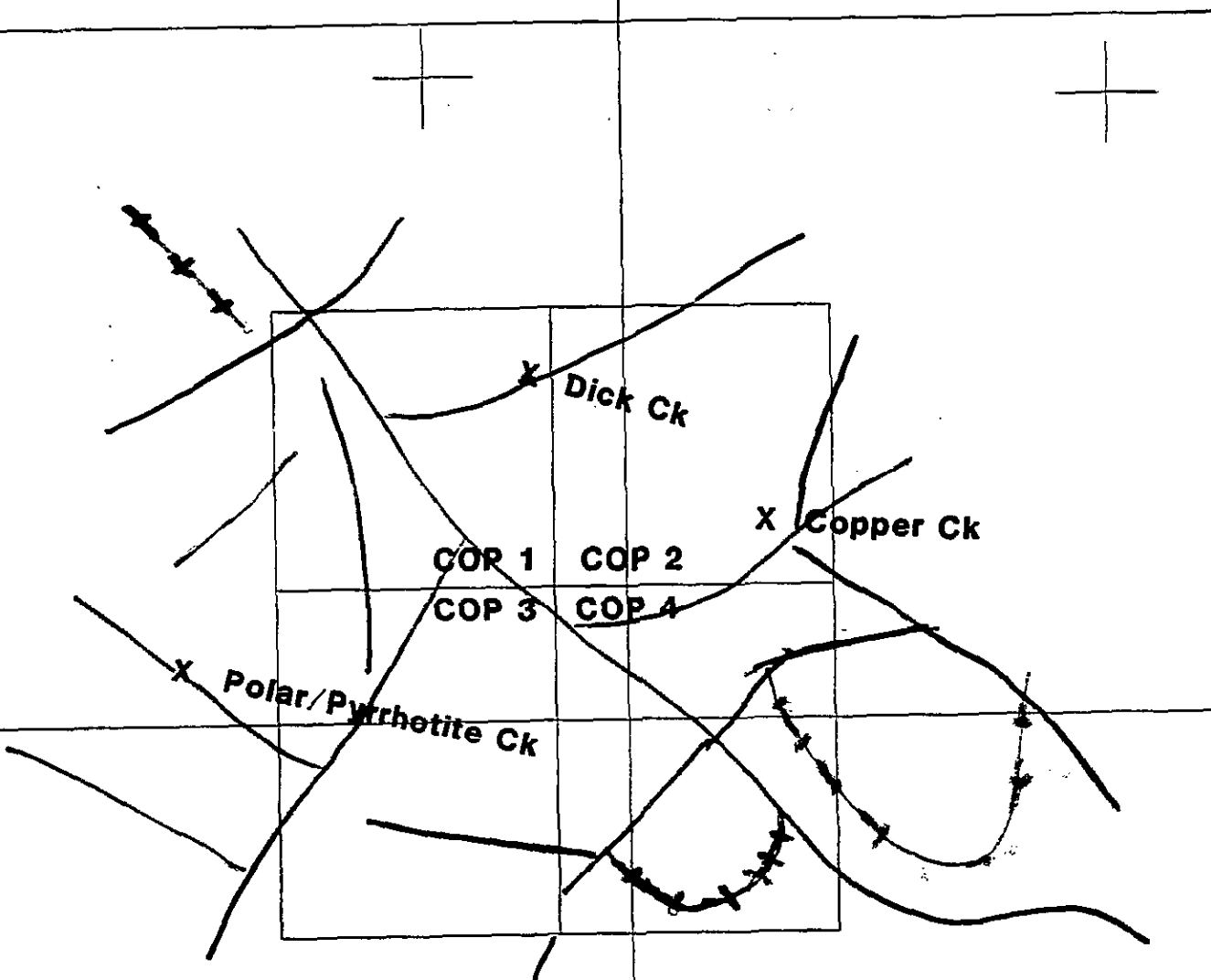
**KURAN EXPLORATION LTD.  
25630 Bosonworth Ave. RR#1  
Maple Ridge, B.C.  
V2X 7E6**

**GEOLOGICAL BRANCH  
ASSESSMENT REPORT**  
January 15, 1996



**FILMED**

24 111 PART 1 OF 2

35+00 40+00 60+00



EXPLANATION

-  Fault
-  Intrusive Border

STRUCTURAL OVERLAY  
COP CLAIMS

0 500 1000 1500 2000 3000

35+00

40+00

50

**SUMMARY REPORT on the COP 1-4 MINERAL CLAIMS**

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## SUMMARY REPORT ON THE COP 1-4 MINERAL CLAIMS

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**Appendix I Chronological List of References**

**Appendix II Statement of Qualifications**

**Appendix III Chapter 5 Interpretation, Section 5.5 Electromagnetics (relevant portion only) Aerodat Report by Dvorak**

## SUMMARY

The Cop 1-4 mineral claims, optioned by 497281 B.C. Ltd., are located 45 km northwest of Telegraph Creek, B.C. The claims lay within the Intermontaine Belt of Upper Triassic intermediate volcanics, tuffs and sediments which have been intruded by granodiorite and monzonitic stocks of Lower Jurassic to Triassic age.

Past exploration programs on the Cop 1-4 claims have outlined extensive porphyry style fracture controlled copper mineralization hosted by diorite and andesite. Trenching on the Dick Creek showing returned 0.41% Cu and low gold values over 179 metres. Diamond drilling on the Copper Creek showing has returned 143 feet of 0.485% Cu with low gold values (including 4.5 feet of 0.13 oz/ton Au and 2.6% Cu).

Geochemical, geophysical and geological surveying adjacent to these showings has outlined two untested targets of coincident copper-gold soil anomalies with coincident I.P. anomalies at the East Dick Creek target and immediately north of the Dick Creek showing. At the Tin can showing, coincident lead-zinc soil anomalies with stratabound lead-zinc mineralization requires further testing. The Cop 1-4 claims were flown by helicopterborne geophysical survey which outlined 12 groups of electromagnetic conductors yet to be explored.

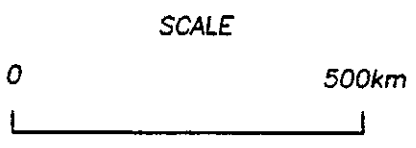
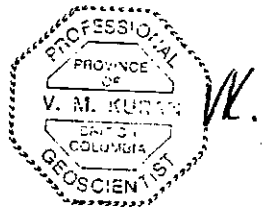
Further work is recommended to follow-up these untested exploration targets including geological, geochemical and geophysical surveying followed by drilling.

## 1.0 INTRODUCTION

Company 497281 B.C. Ltd. has acquired an option from Paul Sorbara and Malcolm Bell to earn a 60% interest in the Cop 1-4 mineral claims situated in the Atlin Mining Division of British Columbia (Fig. 2).

The general area in which the Cop 1-4 claims are situated in was extensively explored for large scale copper deposits in intrusive rocks and contact areas from the mid-1950's to the early 1970's by numerous companies. The Cop 1-4 claims under option to Company 497281 B.C. Ltd. contain two extensive areas of known copper mineralization. Although the area's potential for hosting precious metals and lead-zinc was recognized at that time, exploration efforts were concentrated on searching for copper due to prevailing metal prices and very little attention was paid to significant lead-zinc geochemical anomalies outlined on the claims or gold values obtained in rock and drill core samples. Work completed in the 1980's and most recently in 1991 by Golden Ring Resources Ltd. focused on not only the copper potential of the claims, but the potential for the claims to host copper-gold porphyry mineralization and lead-zinc mineralization hosted by the volcanic and sedimentary rocks underlying the claims.

The writer examined the Cop 1-4 claims during the 1991 exploration program in the vicinity of the Copper Creek showing. To the best of the writer's knowledge, no field exploration work has been completed on the Cop 1-4 claims since August, 1991.



497281 BC Ltd		
Cop 1,2,3,4 Claims Atlin Mining Division		
Property Location Map		
Scale: as shown	Date: 15Jan96	NTS: 104J
KURAN EXPLORATION LTD.		Figure: 1



This report is intended to summarize existing data on the claims and recommends a continued exploration program and budget.

An extensive information base is available on the area underlying the Cop 1-4 claims (Appendix I - Chronological List of References) and reference must be made to these reports for detailed information on the claims. Reports in this list pertaining directly to the Cop 1-4 claims which are dated after August, 1991 summarize field exploration work completed up until August, 1991.

## **2.0 PROPERTY AND OWNERSHIP**

The Cop 1-4 mineral claims are located in the Atlin Mining Division. The recorded owner of a 100% interest in the claims is Paul Sorbara. A verbal agreement between Paul Sorbara and Malcolm Bell exists sharing the ownership of these claims. Company 497281 B.C. Ltd. has acquired an option from Paul Sorbara and Malcolm Bell to earn a 60% interest in the Cop 1-4 mineral claims. The claim data is summarized below and claim boundaries are located in Fig. 2 of this report.

Claim # 125279.

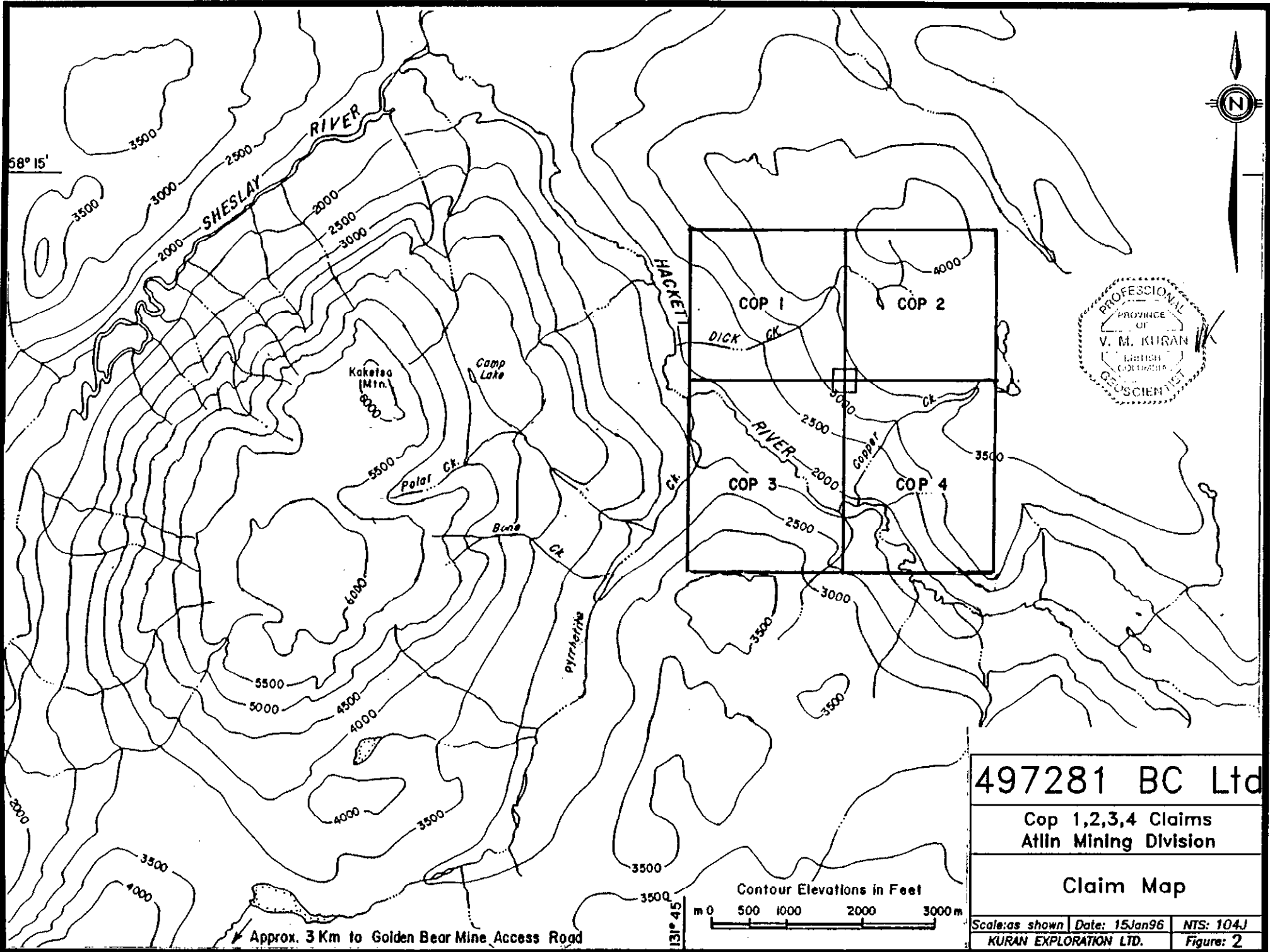
CLAIM NAME	UNITS	RECORD NO.	RECORD DATE	EXPIRY DATE
COP 1	16	203650	April 21, 1991	April 21, 1996
COP 2	16	203651	April 20, 1991	April 20, 1996
COP 3	20	203652	April 21, 1991	April 21, 1996
COP 4	20	203653	April 21, 1991	April 21, 1996

# 720

**3.0 LOCATION, ACCESS, TOPOGRAPHY, CLIMATE, PHYSIOGRAPHY**

The Cop 1-4 claims are located 45 kilometres northwest of Telegraph Creek in northwestern British Columbia at 58° 13' north latitude and 131° 46' west longitude on NTS map sheet 104J/4 (Fig. 1). The claims are centred in the Hackett River valley to the southeast of its confluence with the Sheslay River.

Access to the claims is by fixed wing aircraft from Dease Lake, located 100 kilometres to the east-northeast, or from Telegraph Creek approximately 45 kilometres southeast of the claims to an airstrip at the Hackett-Sheslay River confluence. This airstrip is approximately 4 kilometres northwest of the Cop 1-4 claims and a series of four wheel drive and cat roads leading from the airstrip access the Cop 1 claim while the Cop 2-4 claims must be accessed by helicopter. The airstrip was constructed in 1972. During the 1991 exploration program, vegetation at the south and north ends of the air strip was cut which allowed access to the airstrip by DC-3 aircraft to mobilize the field crew and gear.



The Cop 1-4 claims can also be accessed by float equipped aircraft from Hatchau Lake immediately southeast of the claims. The mining road to the Golden Bear Mine from Telegraph Creek passes some 15 km southwest of the claims.

The topography of the claims varies from 600 metres elevation at the flat bottom of the Hackett River Valley in the southwest corner of the claims to moderately steep valley wall which then generally flattens into a plateau in the northeast corner of the claims with a few knobby hills reaching elevations of 1250 metres.

The claims occur in an area which generally has warm summers and cold winters with moderate to low precipitation compared to coastal areas. The average annual snowfall is 138.0 cm.

The Hackett River valley has been the scene of several forest fires. Only a few small groves of spruce, pine and cottonwood exist while the majority of the claims are covered by immature aspen. At higher elevations, forests are made up of small stunted trees. Water for camp use or drilling was available in side creeks in June 1991 when the writer visited the Cop claims.

#### 4.0 HISTORY AND PREVIOUS WORK

The Copper Creek Showing located on the Cop 4 claim was reportedly discovered in 1937.

The first documented exploration in the area of the showing occurred in 1955 when Brikon Explorations Ltd. drilled four holes with an aggregate length of 149 metres to test the occurrence.

In 1964 Newmont Exploration carried out an airborne magnetometer survey over an area that is presently covered by the Cop 1-4 claims.

During the period of 1968 to 1973, Skyline Explorations Ltd. in conjunction with several joint venture partners, carried out grid geochemical sampling, ground geophysics (magnetics), geological mapping, and diamond drilling on the Copper Creek (6 holes, 1,050 metres) occurrence presently covered by the Cop 4 claim and Pyrrhotite Creek (9 holes, 1,097 metres) occurrence which is presently covered by the White Bear 1 mineral claim contiguous to the west of the Cop claims. The locations of these mineral occurrences is presented in Figure 4 of this report. The best drill intercept of the Copper Creek occurrence (DDH-1970-2) was 43.6 meters containing 0.49% copper. The best drill result at the Pyrrhotite Creek occurrence (DDH-72-8) was an intercept of 113 meters grading 0.35% copper. During this period an induced polarization geophysical survey was also conducted over the Pyrrhotite Creek showing area.

During 1976 and 1977 United Cambridge Mines Ltd. carried out geological and geochemical survey work in the Dick Creek showing area held by the Cop 1 claim.

An extensive follow-up program of 10 km of bulldozer trenching and road construction was carried out as well. The best mineralization encountered in trenching contained 0.42 % copper over 179 meters.

In 1979 Utah Mines Ltd. carried out linecutting, geochemical sampling and geophysical surveying (magnetics, I.P.) immediately south of the Cop 3 and 4 claims.

Further evaluation of the area between the Dick and Copper Creek mineral occurrences was carried out in 1980 by United Cambridge Mines and this program included soil geochemistry and an I.P. geophysical survey. Further geological mapping and geochemical sampling was carried out by United Cambridge in this area during 1983 and 1984. A coincident gold-in-soil and IP anomaly was outlined between the Copper and Dick Creek occurrences. An IP anomaly with scattered gold-in soil values was outlined to the north of the Dick Creek occurrence. These anomalies are presently covered by the Cop 1 and 2 claims.

Between 1987 and 1989 United Cambridge Mines Ltd. shifted their exploration work to the immediate south of the Cop mineral claims in the area in which Utah had worked in 1979. Work included airborne geophysical surveys (magnetics, VLF), geochemical sampling and geological mapping.

In 1991 Golden Ring Resources Ltd. commissioned Aerodat Limited to carry out 870 line-kilometres of airborne geophysics over 22 claims (including the area presently covered by the Cop 1-4 claims). A data compilation of results of previous exploration programs within the project area was also carried out.

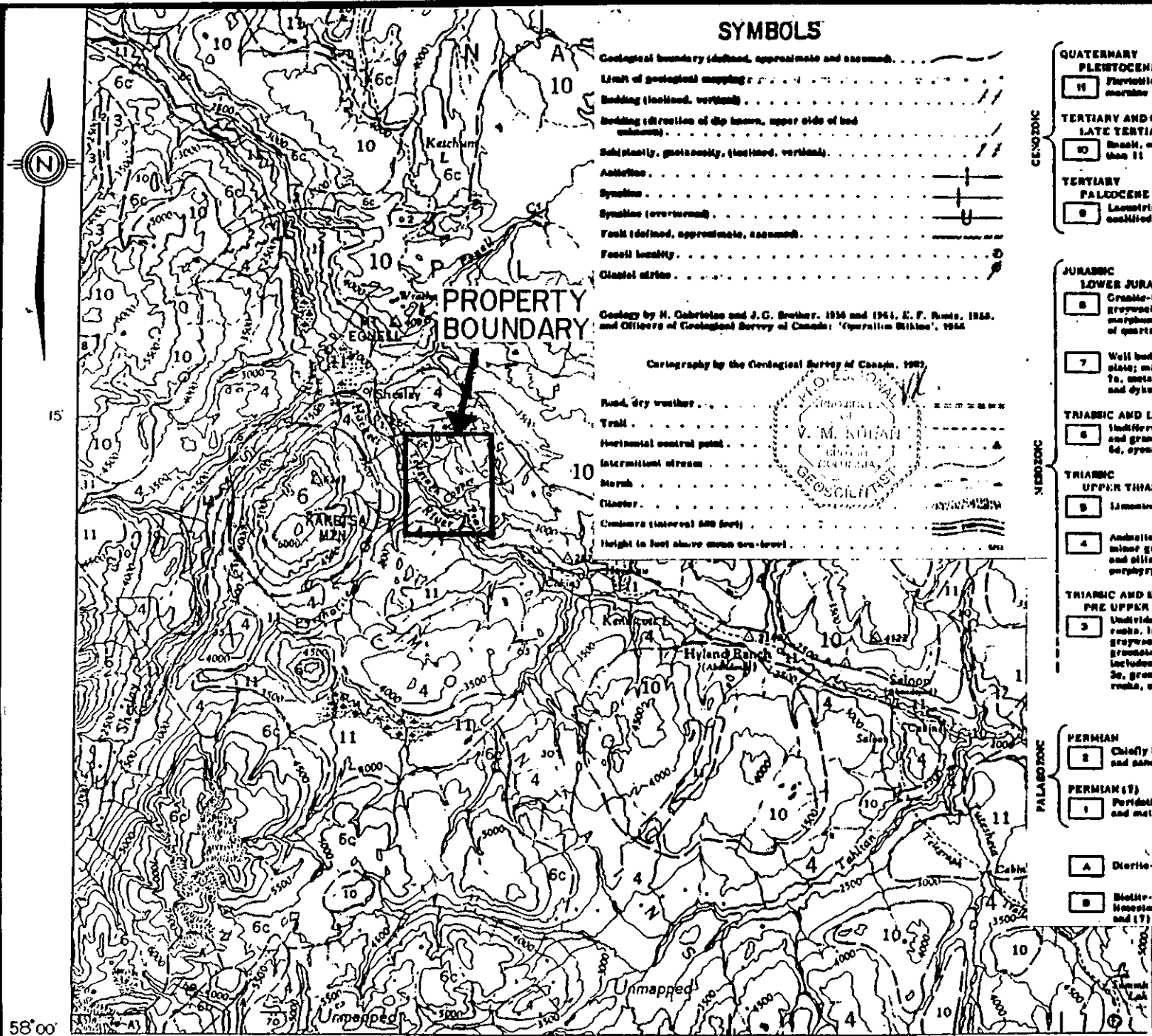
Follow-up work in the vicinity of the gold-in-soil with coincident I.P. anomaly which United Cambridge outlined in 1983-1984 between Dick Creek and Copper Creek occurrences was carried out by Golden Ring Resources. This work confirmed the presence and importance of this anomaly.

A small ground follow-up program to evaluate the airborne anomalies and known mineral occurrences was also undertaken until the program was cancelled due to a lack of funds to continue the project.

## **5.0 REGIONAL GEOLOGY**

The regional area was mapped by the Ministry of Energy, Mines and Resources of B.C. and presented in Open File 707, 1971 and by the Geological Survey of Canada (Map 21-1962) Dease Lake at 1 Inch = 4 miles. The GSC mapping for this area is presented in Figure 3 of this report.

The Hackett River area, in which the Cop 1-4 claims occur, lays within the Intermontaine Belt.



### SYMBOLS

- Geological boundary (defined, approximate and assumed) . . . . .
- Limit of geological mapping . . . . .
- Bedding (inclined, vertical) . . . . .
- Bedding direction of dip known, upper side of bed unknown) . . . . .
- Substantly, geosynclinal, (inclined, vertical) . . . . .
- Anticline . . . . .
- Syncline . . . . .
- Syncline (overturned) . . . . .
- Fault (defined, approximate, assumed) . . . . .
- Fault locality . . . . .
- Glacial strike . . . . .

Geology by H. Gabrielse and J.G. Brothier, 1954 and 1961, A. F. Rods, 1958, and Officers of Geological Survey of Canada; 'Operational Scheme', 1954.

Cartography by the Geological Survey of Canada, 1962

- Road, dry weather . . . . .
- Trail . . . . .
- Horizontal control point . . . . .
- Intermittent stream . . . . .
- Marsh . . . . .
- Channel . . . . .
- Contours (interval 500 feet) . . . . .
- Height in feet above mean sea-level . . . . .



### LEGEND

- QUATERNARY**
- PLEISTOCENE AND RECENT**
- 11 Fluvial gravel, sand, and silt; glacial outwash; till and other marine
- TERTIARY AND QUATERNARY**
- LATE TERTIARY AND PLEISTOCENE**
- 10 Beach, siliceous basalt, minor trachyte and rhyolite; in part younger than 11
- TERTIARY**
- PALEOCENE AND (?) LATER**
- 9 Laminar sandstone, siltstone, conglomerate, and tuff; contains fossilized wood and thin coal seams
- JURASSIC**
- LOWER JURASSIC**
- 8 Granite-boulder conglomerate, chert-pebble conglomerate, greywacke, quartzite sandstone, siltstone and shale; 8a, meta-morphosed equivalents of 8 and including abundant silt and dykes of quartz-feldspar porphyry
- 7 Well bedded greywacke, graded siltstone and silty sandstone, slate; minor volcanic sandstone and pebbly sandstone; 7a, meta-morphosed equivalents of 7 and including abundant silt and dykes of quartz-feldspar porphyry
- TRIASSIC AND LATER**
- 6 Indifferentially granitic rocks, mainly granodiorite; 6a, granite and granodiorite; 6b, quartz monzonite; 6c, diorite and monzonite; 6d, syenite; 6e, diorite and gabbro
- TRIASSIC**
- UPPER TRIASSIC**
- 5 Limestone; minor sandstone, argillite, and chert
- 4 Andesite, basalt, tuff, breccia, volcanic sandstone and conglomerate; minor greywacke, argillite, and shale; many small dikes, dykes, and sills of porphyritic andesite and basalt; 4a, andesite and basalt porphyry
- TRIASSIC AND EARLIER**
- PRE UPPER TRIASSIC**
- 3 Undivided, fine-grained clastic sediment and intercalated volcanic rocks, largely altered to greenstone and phyllite; chert, paper greywacke, and limestone; 3a, chert, slate, argillite, greywacke, greenstone, and limestone; mainly pre-Permian but probably includes younger rocks; 3b, mainly greenstone; age uncertain; 3c, greenstone, paper, slate, chert, greywacke, fine-grained silicic rocks, conglomerate; mainly post-Permian, in part older than 2
- PERMIAN**
- 2 Chiefly limestone and dolomitic limestone; minor chert, argillite, and sandy limestone; may locally include limestone older than 2
- PERMIAN (?)**
- 1 Peridotite, serpentinite, and small irregular bodies of meta-diorite and meta-gabbro; age uncertain, may be pre-Permian or Triassic
- METAMORPHIC ROCKS**
- A Diorite-gneiss, amphibolite, migmatite
- B Biotite-muscovite-quartz gneiss and schist; minor crystalline limestone, greenstone, and quartzite; probably Devon-Mississippian and (?) Pennsylvanian

**497281 BC Ltd**  
 Cop 1,2,3,4 Claims  
 Allin Mining Division  
 Regional Geology  
 Scale as shown Date: 15Jan96 NTS: 104J  
 KURAN EXPLORATION LTD. Figure: 3



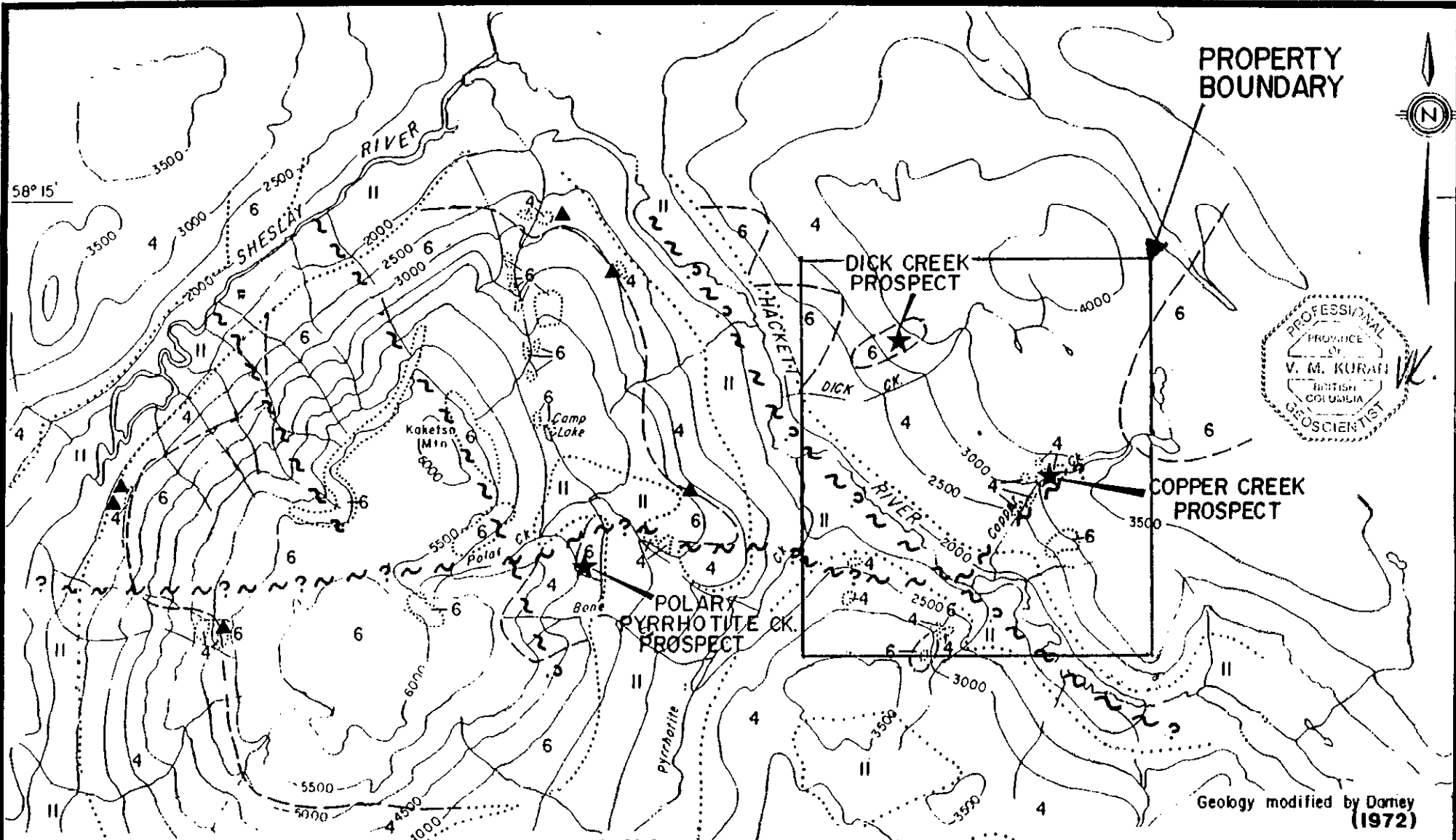
The area is underlain by a broad belt of Upper Triassic intermediate volcanic andesites, tuffaceous andesites and tuffs with members of clastic sediments. These volcanics and sediments have been locally intruded by granodiorite and monzonitic stocks of Lower Jurassic to Triassic age.

A thick sequence of basalts covered the area during Tertiary time; however, subsequent glaciation and erosion has removed these basalts from the Hackett River valley and much of the surrounding area, which has exposed the older volcanics and intrusions.

#### **6.0 LOCAL GEOLOGY AND MINERALIZATION**

The simplified geology and locations of mineral occurrences of the local area surrounding the Cop 1-4 mineral claims by Darney (January, 1972) is presented in Figure 4 of this report.

The area is underlain by andesitic volcanic flows, tuffs, conglomerates and minor greywacke, argillite and shale which have been intruded by rocks of generally dioritic composition and presumed Upper Triassic age. Mount Kaketsa in the west of the area and the highlands on the east side of the area are underlain by diorite. The east and west flanks of the Hackett River Valley in the central portion of the local area are underlain by andesite and related tuffaceous and sedimentary rocks.



**LEGEND**

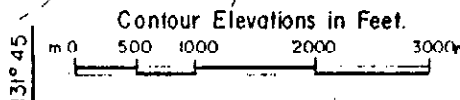
- II PLEISTOCENE & RECENT  
FLUVIATILE GRAVEL, SAND + SILT;  
GLACIAL OUTWASH
- 6 TRIASSIC & LATER  
GRANITIC ROCKS, MAINLY MONZONITE-  
GRANDIORITE
- 4 UPPER TRIASSIC  
MAINLY DARK GREEN PORPHYRITIC  
ANDESITE WITH INTERBEDDED TUFF  
4a: ANDESITE WITH INTERBEDDED VOLCANIC  
SANDSTONE TUFF, CONGLOMERATE & MINOR  
GREYWACKE, ARGILLITE & SHALE

**SYMBOLS**

- OUTCROP
- GEOLOGICAL CONTACT, APPROX.
- OVERBURDEN LIMITS
- FAULT

- ★ MAIN SHOWINGS
- ▲ Cu SHOWINGS

AFTER G.S.C. MAP 21-1962



497281 BC Ltd

Cop 1,2,3,4 Claims  
Atlin Mining Division

Local Geology  
and Mineralization

Scale: as shown Date: 15 Jan 96 NTS: 104J  
KURAN EXPLORATION LTD. Figure: 4

Airphoto linears and topographic expressions appear to indicate moderate block faulting has occurred in the Kaketsa Mountain area.

The Hackett River and tributaries of the Sheslay River and Hackett River appear to indicate a northwest-southeast fracture system.

Northeast-trending fractures are less evident, but the drainages of Pyrrhotite Creek, Dick Creek and Copper Creek appear to be controlled by them.

The three main mineral showings in the local area are referred to as Pyrrhotite/Polar Creek, Dick Creek, and Copper Creek. Pyrrhotite Creek occurs on the west side of the Hackett River while the Dick Creek and Copper Creek occur on the east side of the Hackett River. All of these copper occurrences have mineralization which is related to fractures. The Dick Creek occurrence is hosted by diorite, the other two are hosted by andesite flows. Several other minor copper mineral occurrences are reported and their locations are presented in Figure 4 of this report.

A possibly stratabound lead-zinc occurrence referred to as the Tin Can showing is hosted by tuffaceous rocks and is located 1 km southeast of the Copper Creek showing.

## 7.0 PROPERTY GEOLOGY, STRUCTURE AND ALTERATION

The simplified geology of the property is presented in Figure 5 of this report.

### 7.1 Copper Creek Area

A comprehensive discussion of the geology of the Copper Creek area by Gutrath (1969) is given in his Report on Geochemical and Geological Surveys of the GO Claim Group (June 1 to August 15, 1969):

#### "Volcanics

The GO claim group is underlain by highly fractured, altered Triassic volcanics and interbedded related sediments.

The volcanics range in composition from rhyolite to basalt, with andesitic varieties dominating.

A fine bedding-banding is commonly found in both the andesitic and rhyolitic rocks indicating that they are waterlain sediments derived from what was probably an active volcanic terrain.

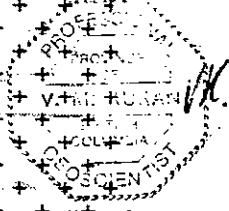
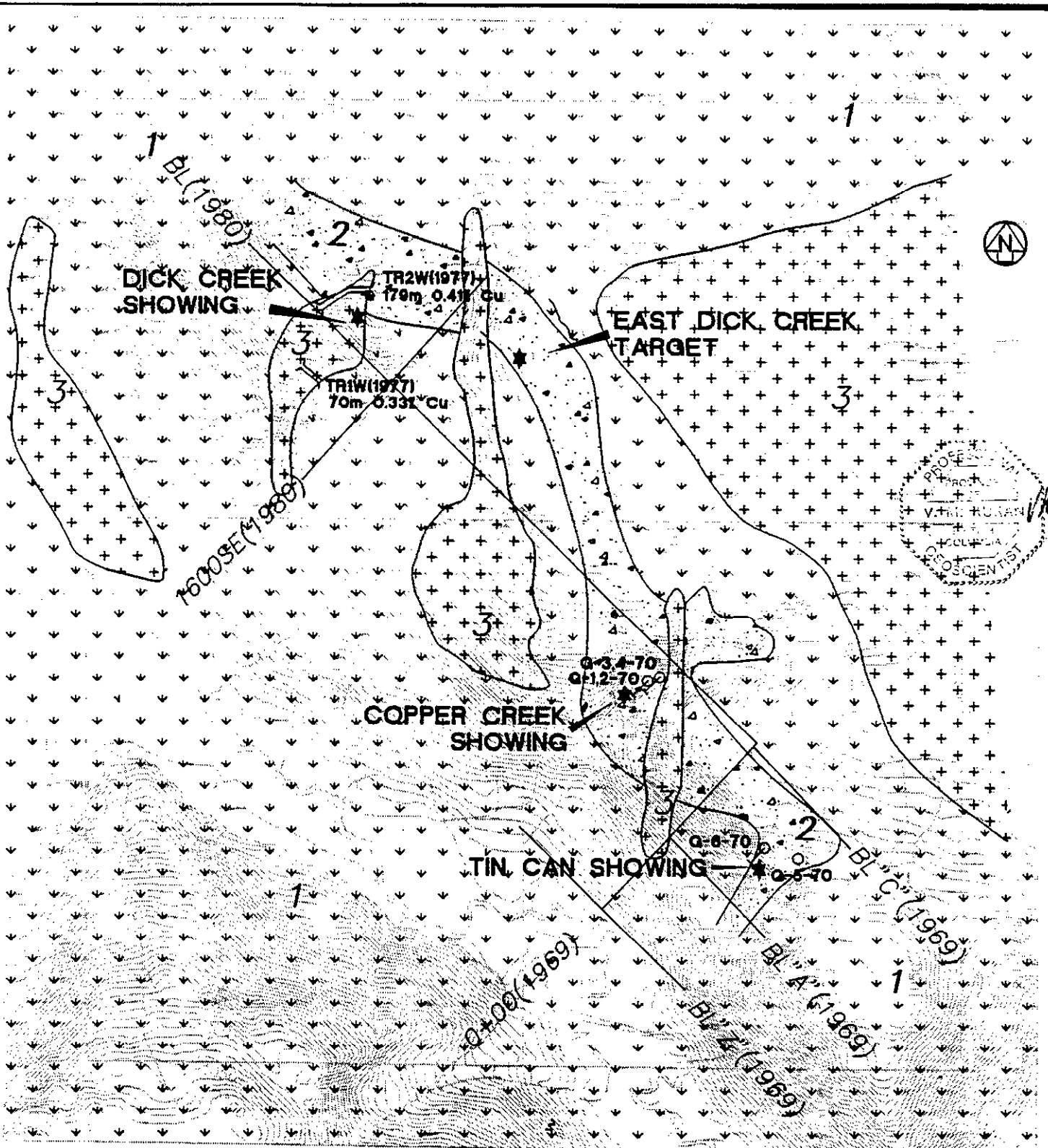
Massive sections of andesite porphyry occur with the finely bedded volcanic sediments. Some of these sections may be flows or intrusives but in the writers' opinion, the majority of these andesitic rocks are welded crystal tuffs that have been weakly dioritized.

#### Intrusives

There are a number of Jurassic stocks and dykes intruding the layered volcanic sequence.

The largest intrusive is of monzonite composition and outcrops along the northwest and northerly side of the GO claim group.

A number of large monzonite-syenite dykes, up to 400 feet wide outcrop along the northwest side of Copper Creek in a northwesterly direction.



**LEGEND**

- Triassic and Later  
Granodiorite, Syenite, Hornblend Diorite
- Upper Triassic  
Volcanic Breccia, Tuff Breccia,  
Agglomerate, Chert Breccia  
Fine Grained Tuff, Cherty Tuff  
Banded Tuff, Siltstone, Greywacke  
Coarse Tuff, Chert
- Porphyritic Andesite, Augite Basalt  
Undifferentiated Volcanics, commonly  
dark green-gray locally feldspathic  
or fine grained, Rhyolite

**Symbol List**

- Drill Hole  
Inclined, vertical
- Trench
- Geological Contact

contour interval  
in metres



**497281 BC Ltd**

Cop 1,2,3,4 Claims  
Atlin Mining Division

Simplified Property Geology  
Drill Hole Locations  
Trench Locations

Scale: as shown	Date: 15Jan96	NTS: 104J
KURAN EXPLORATION LTD.		Figure: 5

A number of small dykes and sills, ranging from 10 feet to 20 feet wide, cut the volcanics in the vicinity of the copper mineralized zone.

These dykes are fine to medium grained, massive, fresh, and have not undergone the intense fracturing and alteration so prevalent in the volcanic sequence.

Coarse, euhedral hornblende laths are randomly orientated in a fine to medium grained groundmass composed primarily of K-feldspar, lesser amounts of plagioclase, and little or no quartz.

A few basaltic dykes have been recognized in the vicinity of the copper mineralized zone. However, the andesitic and basaltic dykes are difficult to distinguish from the altered, layered volcanic rocks of similar composition. It is possible that more detailed mapping would identify a great many more basic dykes.

### Structure

The most dominant features are the related and irregular fracturing, shearing, and faulting in the vicinity of the copper mineralized zone. The zone appears to have an overall north-south trend but there are no apparent major structural controls.

There appears to be at least two shearing-fault trends; one in a northeasterly direction with an indefinite dip, and one in a northwesterly direction with a steep to 50° northeast dip.

The bedding and banding is usually obscured by the intense fracturing, shearing, and surface weathering. Bedding attitudes were recorded only if actual banding could be seen on a freshly broken surface.

### Alteration

The weathered surface of the fractured, pyritic volcanics is coated by a reddish-brown limonitic alteration material. Epidote, actinolite, chlorite, and some garnet alteration is found in close association with the copper mineralization in the main mineralized zone. It would appear that the original volcanic sediments in this area were slightly limy resulting in the formation of skarn minerals when they were cut by basic dykes. The slight excess of lime in this area may also account for, or at least assisted in the weak serpentinization of the more basic rocks."

## 7.2 Dick Creek Area

Gutrath's work at Copper Creek is supported by Lisle and Seraphim (1977) noted that in the vicinity of Dick Creek the volcanic and sedimentary rocks have been intruded by a massive dyke or stock ranging in composition from diorite to quartz diorite with an exposed width of about 400 metres. Copper mineralization occurs in and around the outer margins of this dyke or stock.

Trenching at Dick Creek exposed augite andesite to be overlain by fine grained locally porphyritic andesite containing a few interbeds of sedimentary rocks. The andesite is overlain by predominantly tuff siltstone and chert with minor andesite. These sedimentary rocks were observed to be mainly concordant with the intrusion.

The Dick Creek mineralized zone trends northeast, parallel to the upper part of Dick Creek which follows a southwest lineament which may be a fault zone. A strong cluster of lineaments occurs on the upper west flank of Dick Creek where trenching has shown that these lineaments are caused by fault systems. Where these fault systems intersect, the rocks are strongly shattered.

Alteration surfaces of the Dick Creek mineralized zone is oxidized and highly weathered to a bright yellow to deep red; it is locally copper stained, green and blue. Argillic alteration is developed along some faults zones near the limits of the intrusion as well as sericite-quartz-pyrite in fractures.

Secondary potash feldspar only occurs in narrow, rare quartz aplite zones of up to a metre in width. Hematite stained feldspar was proposed as the cause of the pervasive pink alteration in fresh intrusions in the lower trenches. Fine grained biotite occurred erratically within the intrusion, but was more abundant in the northeast of the Dick Creek zone. To the north of the zone, strongly pyritized rocks were evident.

## **8.0 PROPERTY MINERALIZATION**

### **8.1 Copper Creek**

The following description of the mineralization at Copper Creek is presented by Gutrath (1969):

"Chalcopyrite, associated with pyrite and pyrrhotite, is the most important economic mineral. It is found disseminated and as irregular veinlets in the altered volcanics. Chalcopyrite is commonly found associated with epidote, actinolite, and chlorite alteration minerals, and with the weakly serpentized and chloritized basic volcanics. Chalcopyrite is found in the massive pyrrhotite lenses and has been found in float for approximately 500 feet up Copper Creek from the north end of the main mineralized zone.

Secondary azurite and malachite is found in close association with the chalcopyrite mineralization throughout the main mineralized copper zone. These minerals are commonly leached on surface or masked by limonitic material. However, on digging into the limonitic material it is common to find spectacular amounts of azurite and malachite.

Small amounts of galena and sphalerite are associated with the massive pyrrhotite, pyrite and chalcopyrite mineralization.

From 2% to 5% of finely disseminated magnetite is associated with the chalcopyrite at the north end of the main mineralized zone.

From 2% to 10% pyrrhotite and pyrite is disseminated in the majority of the volcanic rocks exposed along Copper Creek.



Pyrrhotite, with smaller amounts of pyrite and chalcopyrite, occurs as massive lenses up to 3 feet wide and 12 feet long in the highly fractured and altered volcanics located to the southeast of the main copper mineralized zone. Massive mineralization has also been found in the outcrops on the west side of Copper Creek."

### 8.2 Dick Creek

Lisle and Seraphim's report dated November 14, 1977 describes the mineralization at Dick Creek:

"Chalcopyrite, pyrite and magnetite occur mainly in fractures and occasionally in quartz veinlets in intrusive and volcanic rocks in the upper trenches. These minerals also form minor disseminations in the intrusive rocks. Much of the copper mineralization in this area occurs as malachite, azurite or a black oxide, (tenorite?). Chalcopyrite, with magnetite, pyrite, and minor bornite in the lower trenches are disseminated mainly around the mafic minerals in the intrusion. Only minor amounts are evident on fractures. Chalcopyrite also occurs to a minor extent in adjoining fractured volcanic rocks, particularly where intrusive stringers are present.

Minor amounts of chalcopyrite and pyrite occur with magnetite, epidote and orthoclase (?) in a highly fractured, but distinctly bedded sequence of tuff, siltstone, chert and interbedded flows on the east side of Dick Creek. This mineralization appears to be in part stratigraphically controlled."

### 8.3 Tin Can

The Tin Can showing was examined by Mosher (July, 1991). He observed that the showing is a possibly stratabound 2-3% lead-zinc occurrence hosted by tuffaceous rocks. Mineralization, controlled by fractures, is restricted to a vertical interval of 15 metres and appears to be of limited strike length.

## 9.0 SURFACE SAMPLING

### 9.1 COPPER CREEK

The following table of preliminary surface sampling on Copper Creek is presented by Gutrath:

Sample Number	Description	Au oz/ton	Ag oz/ton	Cu (%)	Pb (%)	Zn (%)	Ni (%)
S-1	Chip sample across 12' of weakly ser-pentized volcanics; chalcopryite and malachite	0.01	tr	0.25			
S-2	Chip sample across 55' of altered volcanics; some sections well miner-alized with chal-copyrite	0.01	0.01	0.35			
S-3	Weighted average of earlier chip samp-ling across 58.3' of main mineralized zone			1.15			

Sample Number	Description	Au oz/ton	Ag oz/ton	Cu (%)	Pb (%)	Zn (%)	Ni (%)
S-4	Representative sample of massive 2' wide lens of pyrrhotite, pyrite, galena and sphalerite	0.10	0.9	1.04	0.60	1.84	
S-5	Picked sample of chalcopyrite-actinolite float from talus slope	0.02	0.7	1.57			
S-6	Representative sample of massive pyrrhotite from float and in place	0.02	0.1	0.72	0.15		tr
S-7	25' chip sample	0.01	0.10	0.26			
S-8	25' chip sample	0.005	0.10	0.09			
S-9	5' chip sample	tr	0.04	0.44			
S-10	15' chip sample	0.005	0.28	1.2			
S-11	10' chip sample	0.005	0.10	0.26			
S-12	2' width chip sample	0.12	0.80	1.2	3.6		15.6

## 9.2 Dick Creek

Lisle and Seraphim (1977) report a weighted average grade of 0.417% Cu over 179 metres in Trench 2 west and 0.33% Cu over 70 metres in Trench 1 west.

Accompanying gold values ranged between 0.003 oz/ton to .01 oz/ton, while most of the gold values ranged between .003 to .005 oz/ton. The locations of these trenches is shown in Figure 5 of this report. These two trenches are located approximately 420 metres apart.

Copper results from trenching 300 to 400 metres further to the west provided lower, but measurable results in copper. Road cuts 300 metres to the north of Trench 3W indicated strongly pyritized cherts, tuffs and andesites.

#### 10.0 DIAMOND DRILLING

The location of previous drill holes on the Cop 1-4 claims are presented in Figure 5 of this report. Darney and Ikona (1991) provide the following complete summary of drilling in the Copper Creek Area:

"The Copper Creek area has been drilled during two different time periods. The first of these were by Brikon in 1955 and 1956. The second drill program was conducted by Skyline for the Colorado Corporation in 1970.

Records and hole locations are not available for the Brikon drilling although the Annual Report for the Minister of Mines of B.C. show that two holes totalling 204' were drilled in 1955 and two holes totalling 286' were drilled in 1956. Drilling was most probably with standard rods of A size given the period in which this drilling took place. Dr. Sevensma states in his report of November 18, 1968 that core recovery was 35% and holes were stopped due to caving. He also states that copper was noted in all the recovered core with the highest assay being 1.15% Cu across 11 feet.

In the period April through June of 1970 Skyline Explorations drilled six holes in the Copper Creek area. Four of these were in the area of the original Copper Creek showing and two approximately 2,500' to the southeast of the Copper Creek showing apparently to test a molybdenum soil geochemical anomaly."

Sevensma (1971) presents sections for these six drill holes in the Copper Creek Area along with incomplete drill logs which cannot be meaningfully interpreted at this time. Copper and minor precious metal values are present in portions of the drill holes, but the most significant of these were in DDH G-2-70 which showed the following reported values.

Intercept (feet)	Length (feet)	Cu (%)
28 - 171 Including:	143	0.485
28 - 53	25	1.38
28 - 87	59	0.85
160 - 171	11	0.69

Gold and silver values were generally low except for a 4.5 foot intersection between 28' and 32.5' which assayed 0.13 oz/ton Au and 2.6% Cu. During the 1991 exploration program, the core from this drilling was located and this gold assay was confirmed. Mosher states (July, 1991) that the gold-rich portion of this hole is contained within a massive pyrrhotite and chalcopyrite lens.

## 11.0 GEOCHEMISTRY

Geochemical soil sampling results for the Cop 1-4 claims are based on geochemical grids sampled by Skyline, United Cambridge and Golden Ring Resources. These grids have different locations, orientations, sample spacing and different elements were analyzed in each survey and cannot be directly correlated.

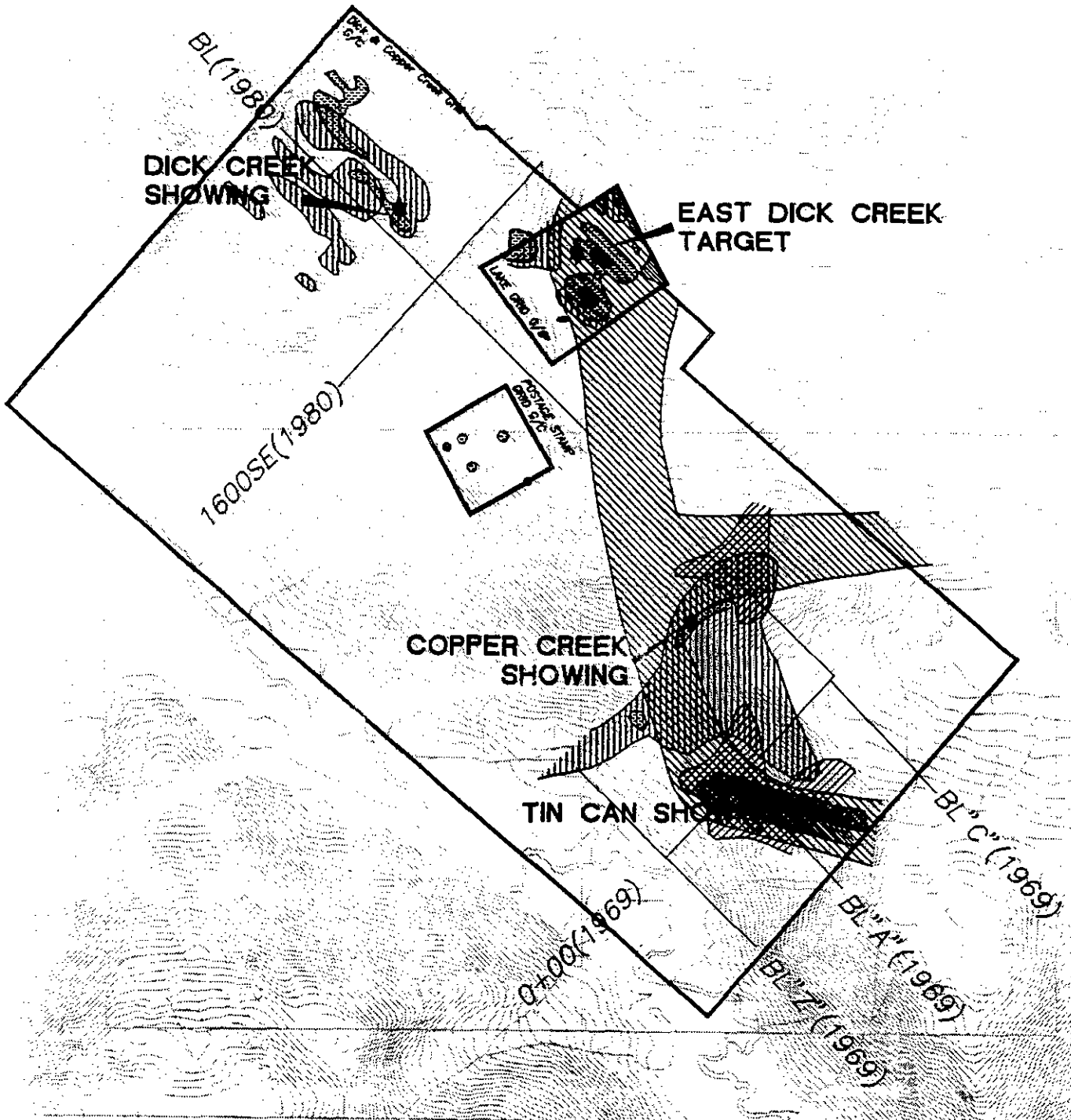
However results from the different generations of sampling support each other as they show similar broad area of anomalous results in several elements some of which are coincidental.

During the 1991 program a compilation of areas considered geochemically significant was produced and is presented in Figure 6 of this report. The base metal values are presented by contour lines except for the 500 ppm Zinc trend. This notation has been chosen by the author of this report as the values of greater than 500 ppm Zinc could not be contoured, but were numerous enough over a broad area that they portrayed an important trend. The 1991 exploration program also concentrated on areas of sporadic high gold values from previous work reported by Lisle (July, 1984) in which a sampling interval of 50 metres was used. The Postage Stamp and Lake Grids were sampled in 1991 to follow up these high gold values and the results have been contoured.

### 11.1 Copper Creek

A broad copper geochemical anomaly of 600 metres by 600 metres of greater than 350 ppm is located over the Copper Creek Showing.

In the immediate vicinity of the showing a narrow (one line width) 300 metre gold geochemical anomaly of greater than 50 ppb is outlined. The copper anomaly is flanked to the north, west and south by lead and zinc anomalies.



**LEGEND**

-  50 ppb Au contour
-  100 ppm Pb contour
-  100 ppb Au contour
-  1000 ppm Pb contour
-  500 ppm Zn trend
-  350 ppm Cu Contour
-  1000 ppm Zn contour

contour interval  
in metres

**Scale**



**497281 BC Ltd**

**Cop 1,2,3,4 Claims  
Atlin Mining Division**

**Property Geochemical  
Compilation**

Scale: as shown	Date: 15 Jan 96	NTS: 104J
KURAN EXPLORATION LTD.		Figure: 6

A coincident 600 metre long by 100 metre wide anomaly of greater than 1000 ppm lead and 1000 ppm zinc cuts across topography on the south end of the Copper Creek copper anomaly. The Tin Can Pb-Zn showing is located directly above the far east end of this anomaly.

### 11.2 East Dick Creek Target

Soil sampling on the Lake Grid in 1991 has outlined a 300 metre by 300 metre area of gold anomalies greater than 50 ppb which is coincident with three disjointed copper geochemical anomalies of greater than 350 ppm. This area is flanked to the immediate north by an open ended zinc geochemical anomaly of greater than 1000 ppm.

### 11.3 Dick Creek

Soil sampling completed in 1984 over the Dick Creek mineral occurrence outlined two separate narrow (50 metre wide) gold geochemical anomalies over a length of 300 metres each. These gold anomalies are coincident with 350 ppm Cu anomalies of the same length and 200 metre width.

## 12.0 HELICOPTERBORNE GEOPHYSICAL SURVEYS

Aerodat Limited was contracted to complete an helicopterborne geophysical survey. A total of 870 line kilometres of recorded data were compiled on the Cop 1-4 claims and surrounding area.



Compilations of the results of this survey for the Cop 1-4 claims are presented in Figure 7 and Figure 8 of this report. Detailed results of this survey can be found in the Report on Combined Helicopterborne Magnetic, Electromagnetic and VLF Survey by Zbynek Dvorak, Aerodat Limited dated August 1991.

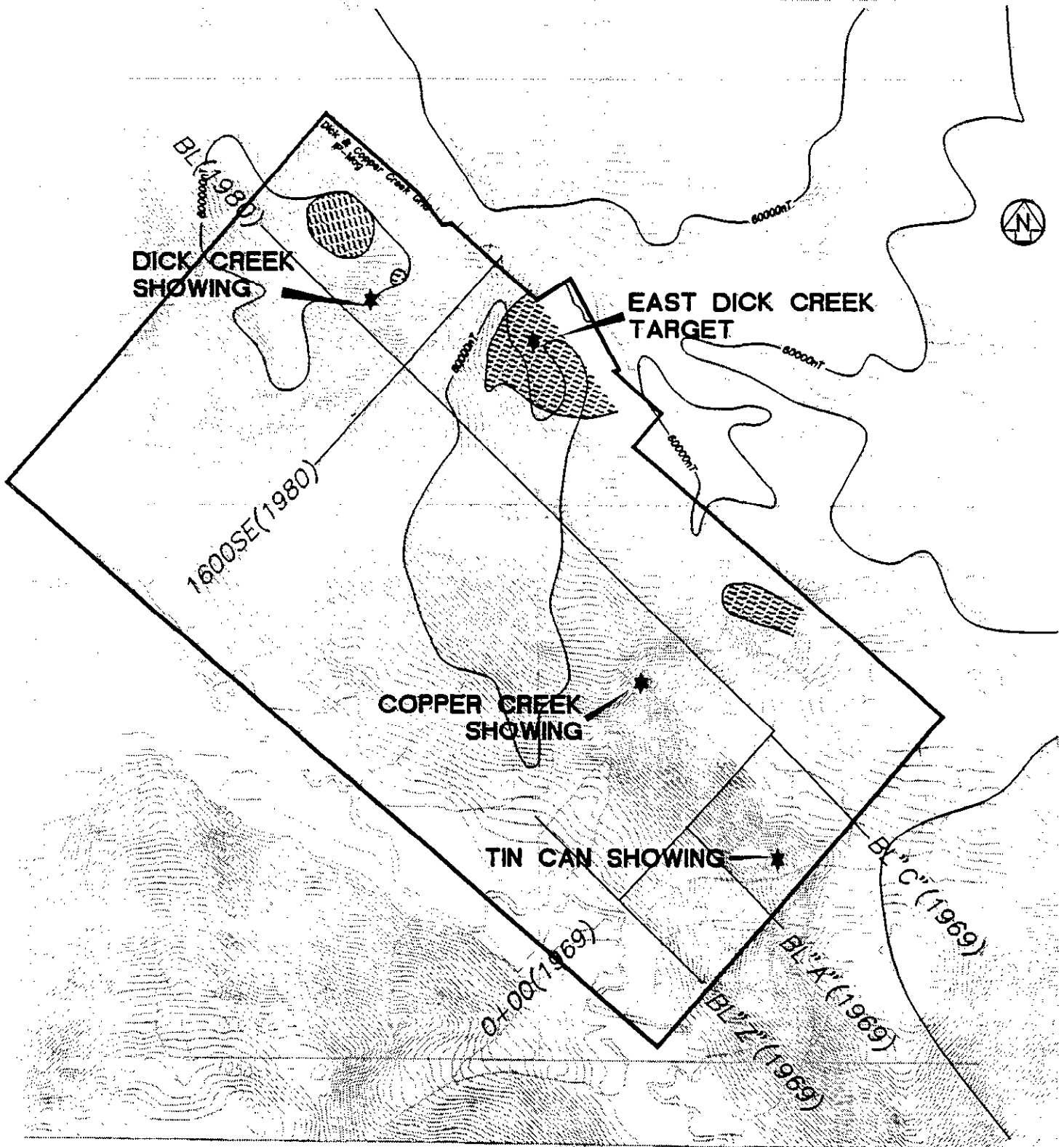
### 12.1 Total Field Magnetics

Total field magnetic values vary over the survey area from less than 58,375 nT to greater than 64,700 nT. Values of greater than 60,000 nT correlate well with known exposures of intrusives. Satellite intrusives to the main stock are also shown clearly by the 60,00 nT contour in the vicinity of known porphyry copper showings. The magnetic patterns appear to indicate that the intrusives dip shallowly beneath overlying volcanics and sediments and that the intrusive bodies may all connect at depth.

Narrow disjointed magnetic lows, which are probably indicative of faulting, follow the Hackett River drainage. A narrow magnetic low trends north-northeast through the East Dick Creek geochemical target and within 300 to 400 meters of the Copper Creek and Dick Creek showings.

### 12.2 Calculated Magnetic Vertical Gradient

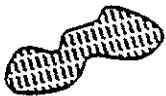
The calculated magnetic vertical gradient patterns are busy, confused and intersecting.



**LEGEND**



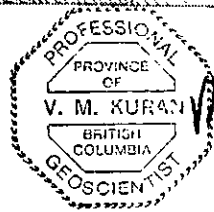
60000nT Total Field Magnetic Intensity Contour



60 mV induced Polarization Contour

contour interval  
in metres

**Scale**



**497281 BC Ltd**

**Cop 1,2,3,4 Claims  
Atlin Mining Division**

**Helicopter Borne Magnetic Survey  
and Ground IP Survey  
Compilation**

Scale: as shown	Date: 15 Jan 96	NTS: 104J
KURAN EXPLORATION LTD.		Figure: 7

The principal feature is a northwest-southeast trending belt of anomalies along the Hackett River valley. Dvorak (1991) states that the vertical gradient data requires detailed structural analysis to help define new exploration targets which are structurally controlled.

### 12.3 Total Field VLF-EM

Intermittent operation of the VLF transmitters did not allow complete coverage of the survey area on both the Jim Creek and Cutler channels. Practically all anomalies are directed to the Jim Creek station indicating a directional bias.

A very pronounced northwest trend to the VLF contours crosses known geological boundaries and is probably reflecting structural trends.

### 12.4 Apparent Resistivity

Apparent Resistivity patterns are similar to the total field magnetics with the exception that the intrusive dikes are not very well defined. Zones of narrow low (< 100 ohm-m) resistivity occur along the Hackett River valley and have been interpreted by Dvorak to be caused by near surface conduction due to the conductive river sediments and bedrock conductors. The Dick Creek drainage associated with the Dick Creek showing and the East Dick Creek showing contains a resistivity low.

### 12.5 Electromagnetic Anomalies

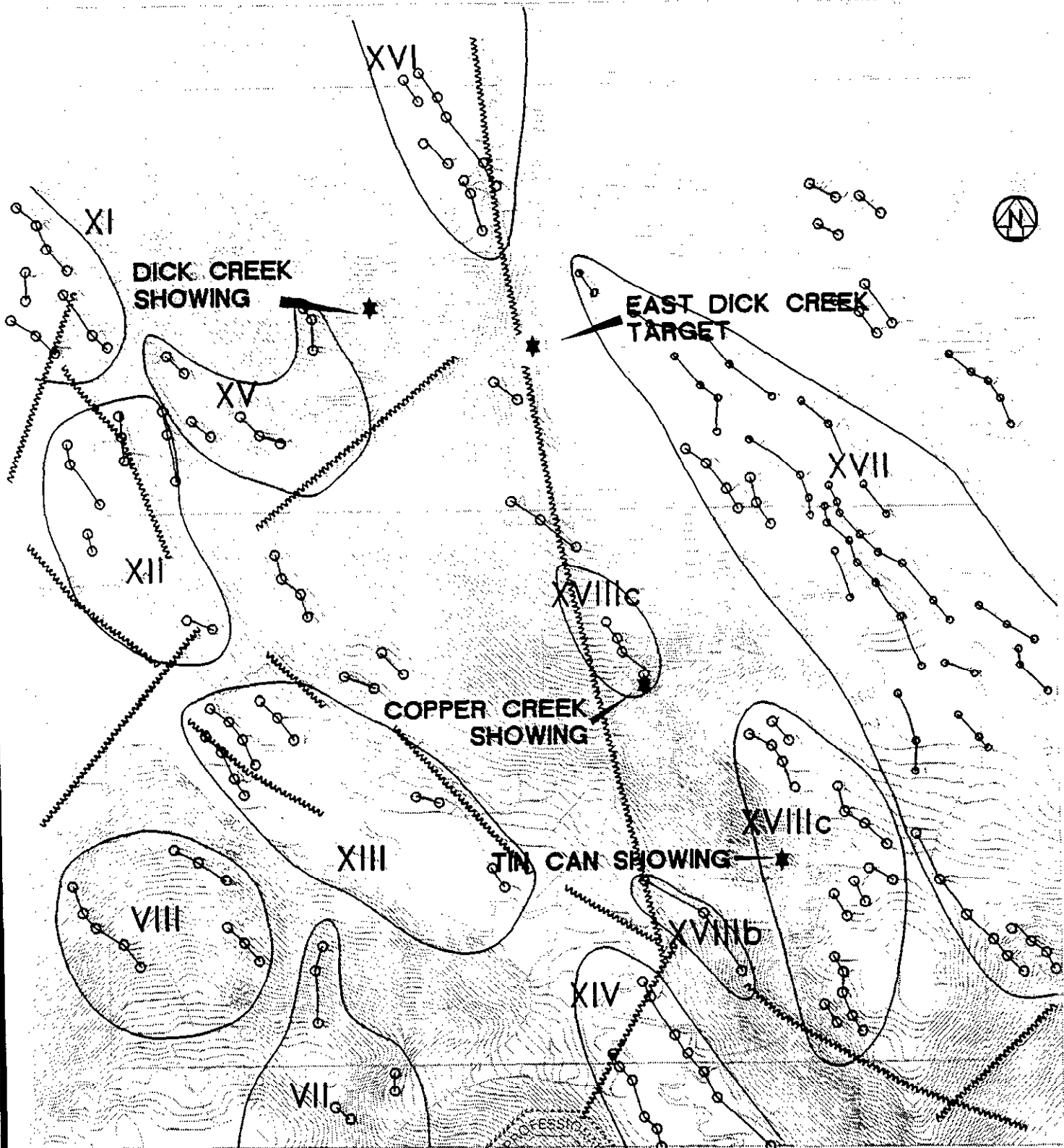
Dvorak's interpretation of the airborne geophysical data identified 12 groups of electromagnetic conductors on the Cop 1-4 claims that are considered to be significant targets. Very few EM anomalies in the survey area had distinct responses on the 935 Hz channels which indicates relatively low conductance. Many of the conductors are well defined and developed on the mid-frequency 4,000 Hz. Dvorak concluded that the bedrock conductors are structurally controlled since the EM anomalies could be grouped according to proposed structural features. Areas of known mineralization do not appear to correlate directly, but instead occur marginally to electromagnetic anomalies. Figure 8 of this report presents labelled groups of conductors as grouped by Dvorak. The relevant section of the Aerodat report which discusses individual groups is attached as Appendix III in this report.

Of all of the 12 groups of conductors, Dvorak states that the non-magnetic conductors of Group XVI are among the most attractive conductors in the survey area. The conductors have produced an attractive low resistivity zone and display easterly dips. They occur on the west side of a proposed north-south oriented fault.

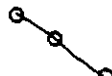


A discussion of each group of electromagnetic conductors except for Group VII and VIII on which there is no information is given by Mosher (1991):

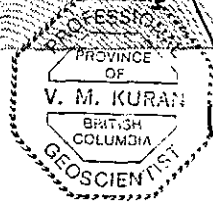
**"Group XI:** This group of conductors lies in the Hackett River Valley which is filled alluvium of unknown thickness, and contains no known outcrops. The conductors may, however, be presumed to follow bedrock structures.

**Group XII:** This anomaly is coincident with a diorite intrusive and which may extend into the southern portion of Group XI.



**LEGEND**

-  Interpreted Bedrock Conductor Axis
-  Label and Boundary of a Group of Interpreted Bedrock Conductor Axes
-  Interpreted Fault



contour interval  
in metres

**Scale**



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Cop 1,2,3,4 Claims  
Atlin Mining Division

Helicopter Borne  
Geophysical Interpretation

Scale: as shown	Date: 15 Jan 96	NTS: 104J
KURAN EXPLORATION LTD.		Figure: 8

**Group XIII:** These conductors are underlain by Hackett River valley alluvium, although it is probable they are ultimately underlain by andesite.

**Group XIV:** This group of anomalies is underlain by Hackett River alluvium. Bedrock is probably andesite.

**Group XV:** The Dick Creek copper occurrence lies immediately to the northeast of this anomaly. The anomaly is underlain by diorite that may be connected to the Group XII intrusive.

**Group XVI:** This anomaly is underlain by massive andesite flows that contain less than one percent disseminated pyrite. No obvious source of the conductors is known.

**Group XVII:** The southwest edge of this group of conductors lies along a diorite-andesite contact. The main portion of the group of conductors is underlain by diorite that is cut by abundant northwest-trending lineaments.

**Group XVIIIa:** The Copper Creek showing lies on the southern end of this anomaly so that it is improbable that the anomaly reflects mineralization. Instead the conductors may be responding to structure or to the probable contact between sediments and underlying andesites.

**Group XVIIIb:** This anomaly occurs at a break in slope and may correspond to a structure. Although bedrock is masked by a substantial thickness of talus, the area is probably underlain by andesite flows.

**Group XVIIIc:** These conductors are interpreted to correspond to an andesite flow unit that here caps the hill and overlies sedimentary and tuffaceous rocks."

In the opinion of the writer, the most important structural feature interpreted from the geophysical data on the Cop 1-4 claims is a proposed northwest-southeast fault which intersects the Cop claims as shown in Figure 8 of this report. The Dick Creek East Target and Copper Creek showing occur on the margins of this interpreted fault.

As well the coincident lead-zinc (1000 ppm) is truncated on its west end by the fault.

### 13.0 GEOPHYSICAL GROUND SURVEYS

A magnetometer survey and an Induced Polarization survey were conducted over the Dick Creek-Copper Creek grid area and are reported on by Walcott and Lisle (1981). The results of the magnetometer survey show a series of complex magnetic anomalies. However, if a threshold of 2000 gammas is used for high magnetics and 1000 gamma threshold is used for lows magnetics, distinct patterns emerge. Sporadic magnetic highs occur over the area of Dick Creek while an area of high magnetics trends northwest over the area between Dick Creek and Copper Creek showings. This trend ends at the East Dick Creek target. The Copper Creek occurrence occurs in a magnetic low which flanks and curves around the intrusive to the immediate east of the Copper Creek showing. The ground magnetic results are reflected in the Helicopterborne Magnetic Survey results. Due to the complicated patterns of the ground magnetics and the general agreement between the ground magnetic results and the helicopterborne magnetics, only the helicopterborne magnetics are shown in Figure 7 of this report.

The IP survey was conducted over the entire Dick/Copper Creek Grid. A contour threshold of 60 milli-second outlines three pronounced areas of I.P. anomalies and these are shown on Figure 7 of this report. The far west anomaly occurs directly north of the known Dick Creek showing.

The north central anomaly occurs over the East Dick Creek target. The third anomaly occurs 500 metres northeast of the Copper Creek showing.

#### **14.0 DISCUSSION AND CONCLUSIONS**

The Cop 1-4 claims under option to company 497281 B.C. Ltd. are known to contain two areas of extensive copper mineralization referred to as the Copper Creek and Dick Creek showings.

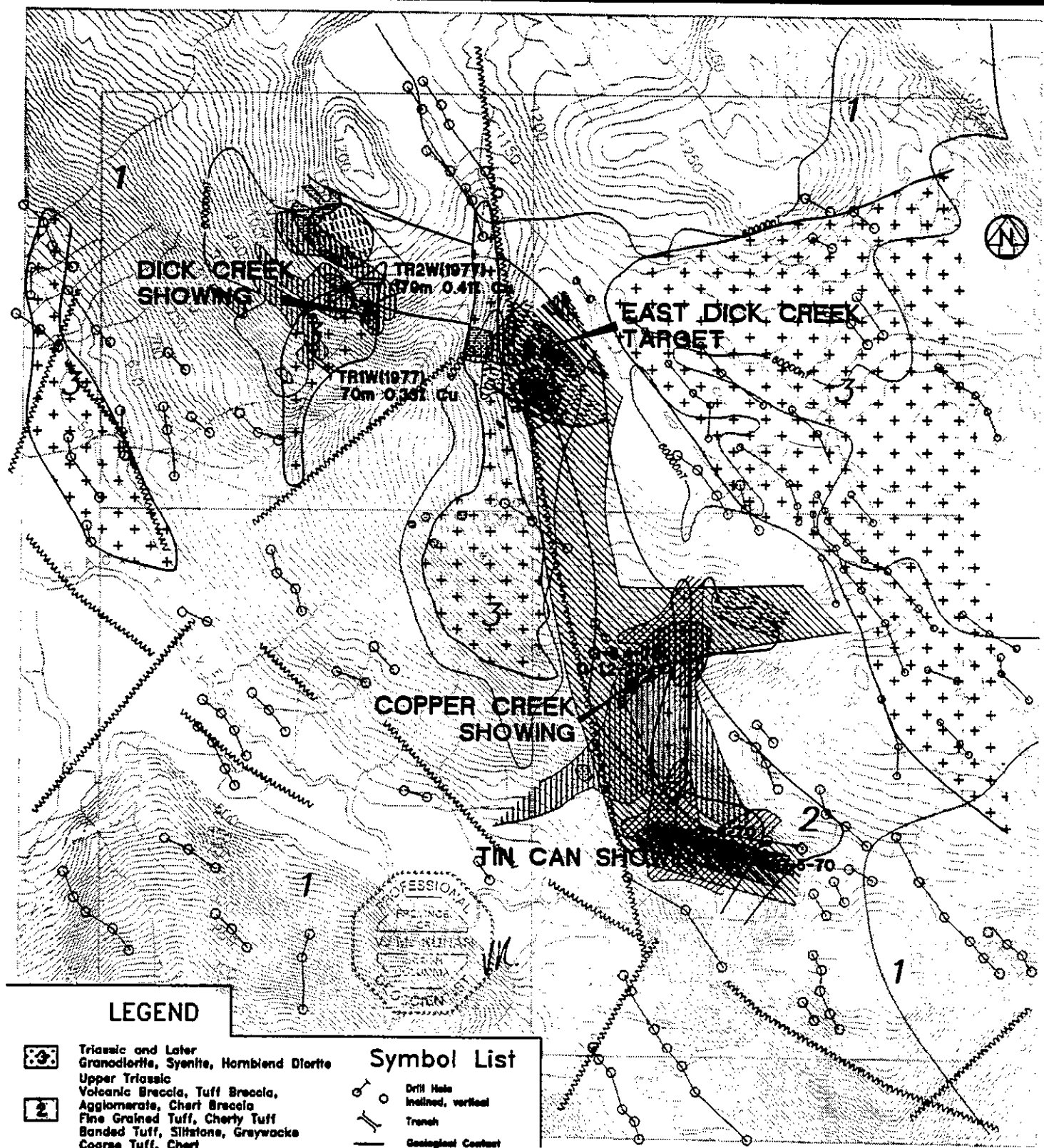
Past work programs have provided information on the specific showings as well as indicating areas of untested potential in the immediate vicinity of the main mineral occurrences. Figure 9 of this report compiles the more significant aspects of this work.

A 60 milli-second I.P. anomaly is coincident with a 300 metre by 400 metre area containing anomalous gold and copper in soils remains untested between Copper and Dick Creeks. This target, referred to as the East Dick Creek anomaly, exhibits gold values greater than 100 ppb in places and is flanked to the north by an open ended, greater than 1000 ppm zinc anomaly. The 1991 field examination failed to identify a cause for the anomalies as most of the area is covered with extensive overburden (Mosher, 1991).

Soil geochemical sampling has also outlined a coincident copper-gold in soil geochemical anomaly directly north of the known Dick Creek showing.

This copper-gold anomaly is partially overlapped with a 60 milli-second I.P. anomaly.





**LEGEND**

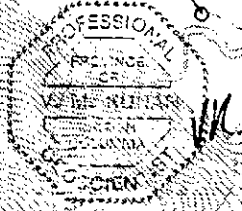
- Triassic and Later Granodiorite, Syenite, Hornblend Diorite
- Upper Triassic Volcanic Breccia, Tuff Breccia, Agglomerate, Chert Breccia
- Fine Grained Tuff, Cherty Tuff Banded Tuff, Siltstone, Greywacke Coarse Tuff, Chert
- Porphyritic Andesite, Augite Basalt Undifferentiated Volcanics, commonly dark green-gray locally feldspathic or fine grained, Rhyolite
- 50 ppb Au contour
- 100 ppb Au contour
- 500 ppm Zn trend
- 1000 ppm Zn contour
- 100 ppm Pb contour
- 1000 ppm Pb contour
- 350 ppm Cu Contour

**Symbol List**

- Drill Hole
- Inclined, vertical
- Trench
- Geological Contact
- Interpreted Fault
- Interpreted Bedrock Conductor Axis
- 80000nT Total Field Magnetite Intensity Contour
- 80 millisecond Induced Polarization Contour

contour interval in metres

**Scale**



497281 BC Ltd

Cop 1,2,3,4 Claims  
Atlin Mining Division

Property Compilation

Scale: as shown	Date: 15 Jan 96	NTS: 104J
KURAN EXPLORATION LTD.		Figure: 9

Gold values in trenches in the Dick Creek showing area trenches are very low, while gold in soil geochemical results from work completed in 1984 have outlined gold values in excess of 50 ppb near areas of trenching and in particular one value of 820 ppb was obtained and has not been explained.

Six hundred metres south of the Copper Creek showing and directly south of the Tin Can lead-zinc showing, an open ended coincident lead-zinc anomaly of greater than 1000 ppm Pb and 1000 ppm Zn cuts across topography and is 600 metres in length and 100 metres in width. This anomaly has been explored very little even though lead-zinc haloes surrounding porphyry copper deposits can vary from non-existent to geochemical anomalies to visible vein swarms and skarns, to major producers (Jones, 1994).

Areas of known copper mineralization do not appear to correlate directly with any of the groups of EM conductor anomalies discussed in this report. The two known mineral occurrences, Copper and Dick Creeks, are located directly at the northwest-southeast trending interpreted fault (Fig. 9). The coincident lead-zinc (1000 ppm) anomaly is truncated on its west end by this fault. Group XVI EM conductors which occur 400 metres to the north of the East Dick Creek target and abut against this fault have been followed up by VLF ground survey and confirmed, but no mineralization has been outlined to date.

## **15.0 RECOMMENDATIONS**

Further exploration work on the Cop 1-4 claims is warranted and recommended. The East Dick Creek target has been explored by magnetic and I.P. geophysical surveys and soil geochemically sampled at sufficient detail for gold, copper, lead and zinc. An EM ground survey covering this target should be carried out, as well as detailed geological mapping and prospecting followed by a small diamond drill program.

Detailed geological mapping, prospecting, EM surveying and soil geochemical sampling should be carried out over the untested coincident gold-copper in soil anomaly with the overlapping I.P. anomaly located directly north of the Dick Creek showing followed by a small drill program.

Detailed geological mapping, prospecting and EM surveying over the coincident lead-zinc (1000ppm) soil geochemical anomaly should be carried out to determine the cause of this significant anomaly and at the same time to better explore the Tin Can showing.

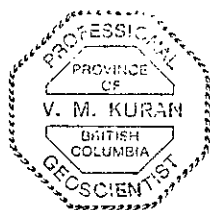
Geological mapping, prospecting and EM surveying should be carried out over and in the area surrounding group XVI EM conductors, especially in the area where the conductors are truncated by the interpreted northwest-southeast fault.

**16.0 PROPOSED BUDGET****Salaries**

Senior geologist -40 days @ 400 (20 days preparation and report)	\$16,000.	
Junior geologist - 20 days @ 250	5,000.	
Linecutters/samplers 4x20 days @ 200	16,000.	
Camp support for above - 120 mandays @ \$100/day	\$12,000.	
Mobilization and demobilization	15,000.	
Camp construction and purchase	20,000.	
Helicopter support 2 hours/day x 20 days = 140 hours @ 575/hour	23,000.	
Assays and geochem for soil and rock samples	8,000.	
Allowance for geophysical surveys	10,000.	
Allowance for diamond drilling 1,800 feet @ 40/foot (all inclusive)	72,000.	
Contingency factor 5%	<u>9,850.</u>	
		\$ 206,850.
	GST @ 7%	<u>14,480.</u>
	Subtotal	\$ 221,330.
	Say:	\$ 222,000.

Respectfully submitted,

*Virginia Kuran*  
V.M. Kuran, P. Geo.



APPENDIX I  
CHRONOLOGICAL LIST OF REFERENCES

## CHRONOLOGICAL LIST OF REFERENCES

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1971: H. Gabrielse; Department of Mines, Energy and Resources, Open File 707.

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July 19, 1983: E.A. Ostensoe; Geological Report on Parts of the Star 1-13 Mineral Claims, Hackett River Area.

July 6, 1984: T.E. Lisle, Geochemical Report on the STAR 1,2,3,4,5,6,7,8,9A,10,11,12, 13 and VON Mineral Claims.

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June, 1991: Darney, R.J. and Charles K. Ikona, Summary Report on the Sheslay River Project for Golden Ring Resources Ltd.

July, 1991: Mosher, G., Progress Report - Summary of Prospect Examinations for Golden Ring Resources Ltd.

August, 1991: Mosher, G., Report on the Phase I Exploration Program, Sheslay Project for Golden Ring Resources Ltd.

August, 1991: Dvorak, Zbynek, Report on Combined Helicopterborne Magnetic, Electromagnetic and VLF Survey, Sheslay Area, British Columbia for Golden Ring Resources Ltd.

December, 1991: Foster, J. Sheslay Project Quarterly Report for the Period April 1 - June 30, 1991 prepared for Silver Talon Mines Ltd.

December, 1991: Foster, J., Sheslay Project Quarterly Report for the Period July 1 - September 30, 1991 prepared for Silver Talon Mines Ltd.

May, 1992: Kuran, Virginia M., Summary Report on the 1991 Sheslay River Project for Silver Talon Mines Ltd.

November, 1994: Jones, Brian K., Geochemistry of Porphyry Copper Deposits presented at the Northwest Mining Association Short Course, Models in Base & Precious Metals

**Appendix II Certificate of Qualifications**



STATEMENT OF QUALIFICATIONS

I, VIRGINIA M. KURAN, of the Municipality of Maple Ridge, in the Province of British Columbia, hereby certify:

1. THAT I am a geologist residing at 25630 Bosonworth Avenue RR#1, Maple Ridge, British Columbia, Canada, V2X 7E6.
2. THAT I obtained an Honors Bachelor of Science degree in Geology from the University of British Columbia, in the City of Vancouver, in the Province of British Columbia, in 1980.
3. THAT I have practiced geology professionally since 1980.
4. THAT I am a registered member of the Association of Professional Engineers and Geoscientists.
5. THAT this report is based upon a thorough review of published and private reports and maps on the subject property and the surrounding area. The writer visited the property in June 1991. To the best of the writer's knowledge no work except for data compilations has been completed on the property since August 1991.
6. THAT I have not received, nor do I expect to receive any direct or indirect interest in the mineral claims, which are the subject of this report.
7. THAT I do not have, nor do I expect to receive any direct or indirect interest or securities in 497281 B.C. Ltd.
8. THAT I consent to the use of this report in a Prospectus or Statement of Material Facts for the purpose of a private or public financing.

SIGNED: Virginia Kuran  
VIRGINIA M. KURAN, B.Sc., P. Geo.



January 15, 1996

**Appendix III**  
**Chapter 5 Interpretation, Section 5.5 Electromagnetics**  
**(relevant portion only) Aerodat Report by Dvorak**

Appendix III  
Chapter 5 Interpretation, Section 5.5 Electromagnetics (relevant portion only)  
Aerodat Report by Dvorak

"Group VII - The unifying feature of these anomalies is their apparent association with a pronounced magnetic low. The conductors occur on the flanks of the associated magnetic highs and within a broad resistivity low. The group may be intersected by an east-west oriented lineament discussed previously in conjunction with group IIIc.

Group VIII - Convolved magnetic patterns, double VLF-EM anomaly, and indistinct resistivity low accompany this conductor grouping."

"Group XI - The EM anomalies of this grouping reflect a suite of mostly non-magnetic bedrock and possible bedrock conductors. They occur in the north part of the central fault/shear zone, and a places show easterly dips. The conductors, which do not merely follow the river bed, are recommended for ground follow-up.

Group XII - This group of weak and intermediate quality bedrock conductors is confined to the central fault/shear zone contained between a pair of northeasterly cross faults. Most of these anomalies are non-magnetic. The conductors occur on the east bank of Hackett River and display possible easterly dips. Ground follow-up work is recommended.

Group XIII - The bedrock and possible bedrock conductors of this grouping constitute continuation of the main conductive horizon (groups XI to XIV) which is associated with the central fault/shear zone. Overall, the group does not correlate with any particular VLF-EM anomaly. The conductors which are situated near the east edge of the group occur on the flanks of magnetic anomalies. Those which occur on lines 10500 to 10550 may be fault related. Ground follow-up is recommended.

Group XIV - The structural setting within group XIV is not clear. The group is believed to reflect the same or similar conductive horizon as groups XI to XIII, but the preliminary structural interpretation may place these conductors just outside the central fault/shear zone. The conductors appear to be of bedrock origin, non-magnetic and structurally controlled. In the south part of the group, the EM data suggests easterly dips. Ground follow-up is recommended.

Group XV - This is an intriguing grouping of weak conductors of possible bedrock origin. many of the EM anomalies are associated with local concentrations of magnetite. The individual EM anomalies were correlated from line to line in a direction perpendicular to the flight line orientation. It would appear, however, that the individual anomalies can be correlated in a curved fashion, parallel to topography. Should this prove to be the correct interpretation, the conductors would be stratabound. Ground follow-up is recommended.

Group XVI. - The non-magnetic bedrock conductors of this grouping are among the most attractive conductors in the survey area. They occur in the area of a small hill, mostly on the west side of a proposed north-south oriented fault. The conductors, which have produced an attractive low resistivity zone, display easterly dips. They are recommended for follow-up work.

The area to the west and north of group XVI, and up to groups XI and XV, contains a number of weak and poorly defined conductors. Almost all are non-magnetic. Their follow-up is not recommended at this time.

Group XVII - This is an extensive group of weak non-magnetic bedrock conductors which are confined to a topographic high plateau. From the south, the group terminates at an ENE-WSW oriented fault and from the north it abuts against a northwesterly oriented lineament. The most attractive part of the group occurs in its central portion on lines 10560 to 10680. The main attraction of these conductors is the possibility that they reflect the same conductive horizon which hosts group XVI. Selective ground follow-up should be considered based on the results obtained from group XVI.

Groups XVIIIa to XVIIIc - Located immediately west of group XVII, these groupings of weak bedrock and possible bedrock conductors are bordered by north-southerly and northwesterly oriented faults. The conductors are mostly non-magnetic, associated with VLF-EM trends, and with generally moderately conductive zones. Their ground follow-up is recommended."