PORPHYRY INTRUSIVE SYSTEM
WITH
COPPER-GOLD MINERAL POTENTIAL

HARVEY PROPERTY

TATLAYOKO LAKE, BRITISH COLUMBIA

CONFIDENTIAL OVERVIEW

May, 1991

808 Exploration Services Ltd.
Suite 1451
409 Granville Street
Vancouver, British Columbia
V6C 1T2

Tel: (604) 685-6477
Fax: (604) 685-0147

PORPHYRY INTRUSIVE SYSTEM
WITH
COPPER-GOLD MINERAL POTENTIAL

HARVEY PROPERTY

TATLAYOKO LAKE, BRITISH COLUMBIA

CONFIDENTIAL OVERVIEW

May, 1991

808 Exploration Services Ltd.
Suite 1451
409 Granville Street
Vancouver, British Columbia
V6C 1T2

Tel: (604) 685-6477
Fax: (604) 685-0147

PORPHYRY INTRUSIVE SYSTEM
WITH
COPPER-GOLD MINERAL POTENTIAL
HARVEY PROPERTY
CONFIDENTIAL OVERVIEW

TABLE OF CONTENTS

FIGURES

TABLES

MAPS

1.0 SUMMARY

The Harvey Group property appears to have significant potential for hosting a large copper porphyry deposit or large copper-gold porphyry deposit.

The property may also have high potential for hosting a quartz bearing gold-silver stockworks or vein system.

A serious systematic exploration effort commensurate with the property's significant copper-gold porphyry potential has never been carried out. In general several significant copper with gold mineralized areas on the property remain untested notwithstanding the gold zone which is shown for the first time in Figures 1 and 2.

The pervasiveness and size of the sulphide system hydrothermally introduced by the porphyry can be seen by the extensive gossan development clearly shown in Figure 1.

2.0 SALIENT GEOLOGICAL FEATURES

The claims are located within the Canadian Cordilleran Porphyry Province between two major northwesterly faults, the Tchaikazan Fault to the south west and the Niut Fault to the north east.

Within the fault boundaries a complex sequence of northwesterly trending andesitic and rhyolitic flows, breccias and tuffs of Cretaceous and younger age are episodically intruded and altered by porphyritic quartz diorite and sill like feldspar porphyries.

An extensive easily seen gossan zone of a host of colours including deep brown, reddish brown and yellowish brown as seen in Figure 1 shows the presence of both hematite and limonite over what may be the possible locations of subcropping economic sulphide rich areas.

Copper mineralization in the form of chalcopyrite and its oxidised derivatives, malachite and azurite is found over the central part of the claims both within and adjacent to the porphyritic intrusions where shearing and fracturing is most intense.

A gold bearing zone within a heavily propylitized area as shown in the Figure 1 photograph returned assays of 0.13 ounces gold per ton and 0.18 ounces gold per ton from grab samples taken. These values and their location have never been publicly reported. This gold bearing area is located north of the Ridge copper porphyry which in itself has never been tested for gold content notwithstanding the few samples taken did return anomalous gold.

The copper minerals occur as disseminations and fracture fillings in association with quartz-carbonate-epidote veins and veinlets.

Thin section work on surface samples obtained over a very small part of the claims shows several episodic intrusive phases have occurred with the dominant alteration facies being proplyitic with secondary minerals of chlorite, epidote, carbonates, sericite and pyrite. In zones of mineralization chlorite and sericite alteration predominates, and serpentinite is present.

The best area of mineralization across 200 metres (656 feet) assayed an average of 0.68% copper. A small area nearby was drilled in the summer of 1973 but results showed only very low grade copper values. However the few samples from this zone that were assayed for gold did show geochemically significant gold values.

3.0 EXCERPTS FROM RELEVANT AND PREVIOUS REPORTS

The following excerpts were taken from Bulletin 81, A Mineral Resource Assessment of the Chilko Lake Planning Area, March 1990 and have been altered for brevity to show the specific relevance of the information to the Harvey Claim Group, as this claim group is also found within the same geological and structural units:

> During the mid-Cretaceous period (approximately 100 million years ago) a composite terrane collided with older terranes previously accreted to North America. This collision took place while the North American plate moved relatively westward into various Pacific plates and while Pacific oceanic crust was being subducted[1] beneath the coast of North America. Heat generated by this subduction process resulted in uplift and emplacement of the granitic rocks of the Coast plutonic complex. Immediately prior to this mid-Cretaceous collision an elongate basin, referred to as the Tyaughton-Methow basin developed between the continental landmass and an offshore island arc. Volcanism within the island arc, similar to that seen around the Pacific today, was another result of the collision-subduction process. Rocks deposited in the basin were subsequently wrenched apart along collision-induced fault zones with displacements along these faults exceeding 100 kilometres. As a result, rocks of this basin overlap the junction of a number of accreted terranes in southwestern British Columbia. The Harvey Property is situated on the northwest flank of what was once the Tyaughton Trough. The area records a predominantly Early Cretaceous volcanic island arc environment transitional to a marine sedimentary basin environment. Influxes of externally derived quartz-rich sedimentary material reflect the uplift and erosion of adjacent land masses. Intrusive rocks of the Coast plutonic complex truncate the sedimentary and volcanic sequences across the southern and western parts of the area. Subsidiary splays from major fault zones extend across the area; lateral displacement along one of these structures, the Tchaikazan fault, has been estimated at 30 kilometres. The large fault zones cutting through

---

[1] subduction: the process of one crustal block descending beneath another, by folding, faulting or both (Monger et al., 1982).

the area may also be related to the major faults that exert controls on precious metal vein mineralization in the Bridge River damp, 140 kilometres to the southeast. This area contains numerous old gold mines (Bralorne, Pioneer) and has produced more gold than any other district in British Columbia. Finally, the variety of intrusive rocks and associated mineralization present in the area indicate that the environment for porphyry copper-gold deposits, known to the east at Fish Lake and 200 kilometres east at Poison Mountain, is also present.

3.2 The following 'Conclusions and Recommendations' were taken from the "Drilling and Geological Report" by Vanco Explorations Limited, January 1974 -[the last meaningful work carried out on the property]:

> Hole V.F.-2 and V.F.-3 have indicated a zone at least 250 feet by 500 feet of below economic grade values in copper with significant gold values. This zone is not delimited and it would appear to have room for extension especially in a northwest and northeast direction. Although the mineralization is not economic, it is nevertheless of interest and indicates a potential. This potential is further enhanced by the numerous copper occurrences and the large area of the main valley where rock exposures are lacking. Diligent prospecting involving much rock breaking will undoubtedly locate new occurrences. As previously mentioned, the occurrence located near the west boundary of claim Fly 9 would not have been noticed without breaking rocks. A full day was spent by the writer logging core that contained a fair amount of chalcopyrite without noticing it. The reason was that the peculiar colour of the finely disseminated chalcopyrite was overtaken by the bright sunshine and mistaken for pyrite colours.
>
> Another drilling program is justified. However, before carrying out such a program or other costly surveys, it is recommended to carry out the program proposal submitted in a memo dated December 5, 1973, a copy of which is appended to this report.

3.3 The following excerpts were taken from an "Alteration Study" by Vanco Explorations Limited, May 1982:

Regionally the area is dominated by epidote alteration with some chlorite, sericite and carbonate development.

Around the area of anomalous copper is more extensive chlorite and sericite alteration with the development of serpentine.

The area of the main showing may be termed a coarsely brecciated and shattered area. Disseminated and fracture filling pyrite mineralization occurs in all rock types. It generally averages approximately 2% in the intruded rocks, less than 1% in the quartz diorite porphyries, and minor amounts in the smaller younger dykes. This mineralization underlies extensive conspicuous areas of gossan formation that remain to be outlined and related to the broad geological features.

Numerous occurrences of copper mineralization consisting of secondary malachite and azurite and primary chalcopyrite, mostly associated with quartz diorite porphyries, are located within the extensive pyrite zones on and outside the claim group. In the main showing, the mineralization is approximately 70% disseminated and 30% fracture filling associated with quartz-carbonate-epidote veinlets.

Definite localizing factors for the mineralization are unknown. In many instances it would appear to be strictly magmatic segregations, and in others as in the main showing area where fracturing is in part important, it is a mixture of both. There is no conspicuous more intense rock alteration associated with the mineralization that could be used as a guide for outlining potential areas. Epidote is a constituent of all rock types, both as disseminations and veinlets."

4.0 GEOLOGICAL CONCEPT

The geological concept is the classic case of the Hypogene Mineralization model as described by C.I. Godwin and A.D. Drummond in Porphyry Deposits of the Canadian Cordillera, C.I.M.M. Special Volume 15, 1976 and depicted in Figure 2, "Zoning in a typical porphyry copper deposit".

This property is exposed at the proplytic alteration level and may represent the classic case where one or more of the phyllic, argillic and potassic zones are developed at depth below the extensive zone of propylitic alteration.

Only detailed geological work will determine the sequence of alteration facies and the relationship with the Classic case, if any.

It is probable that the gold enriched zone shown in Figures 1 and 2 is a zoning feature of the adjacent porphyry intrusive notwithstanding the very anomalous gold assay (0.03 ounces gold per ton) and copper assay (0.36% Cu) obtained from a sample of porphyry material.

The following Table 1, Assay Results, shows assay results from samples taken within and near the gold zone including samples from the porphyry located proximally.

Many samples are very anomalous in copper, gold, and silver; and the gold indicator element, arsenic.

5.0 LOCATION

The Harvey Group mineral claims are located about 3 miles southwest from the north end of Tatlayoko Lake. Tatlayoko Lake is about 100 miles west southwest of Williams Lake, British Columbia. The area is about midway between Williams Lake and the Pacific Coast of British Columbia.

National Topographic reference maps are 92 N/9 W and 92 N/10 E. The claims straddle both sheets.

6.0 ACCESS

Access is by helicopter. Northern Mountain Helicopters have established an operating base for the summer 1991 season at the north end of Chilko Lake about 15 miles east of the property.

The helicopter base is about 112 road miles from Williams Lake.

Logging road from the north end of Tatlayoko Lake along its western shore provides access close to the east claim boundary.

Road access to the area of interest on the claims at about 8,000 feet elevation could be constructed up the Jamison Creek Valley beginning just above lake level and about 2,800 feet elevation. Total road length required is estimated at 9 miles (14.5 km).

7.0 PROPERTY

The property consists of four (4) modified mineral claims as follows:

Claim Name	Units	Record Number	Record Date
Harvey 1	12	3633	30 April 1991
Harvey 2	12	3634	30 April 1991
Harvey 3	6	3635	30 April 1991
Harvey 4	6	3636	30 April 1991

8.0 RECOMMENDATIONS

An extensive and detailed exploration program is warranted for this property and should include the following work:

1. A detailed geological mapping program with particular attention paid to the mapping of alteration facies. X-ray diffraction procedures could provide a rapid means of obtaining useful quantitative alteration mineralogy to determine mineral zoning.

2. Surface trenching and sampling.

3. Geochemical survey.

4. Magnetometer survey.

5. Drilling of selected targets including drilling to depth within the projected phyllic and potassic alteration zones should geological interpretation enable their identification.

9.0 REFERENCES

McLaren, G.C., 1990. A Mineral Resource Assessment of the Chilko Lake Planning Area, Mineral Resources Division Province of British Columbia, Bulletin 81.

Roddick, J.A., Tipper, H.W., 1985. Geological Compilation N.T.S. Sheet 92N, Mount Waddington, Geological Survey of Canada, Open File 1163.

Simpson, H.J. and Price, P., 1982. Thin Section Alteration Study on the Fly 1 to 36 Mineral Claims for Vanco Explorations Ltd. Assessment Report 10, 303 Clinton Mining Division.

Watson, I.M., 1988. A Geochemical Reconnaissance of the Gossan Claims, Mt. Niut Area Tatlayoko Lake, B.C., Assessment Report 17,200, Clinton Mining Division.

FIGURES

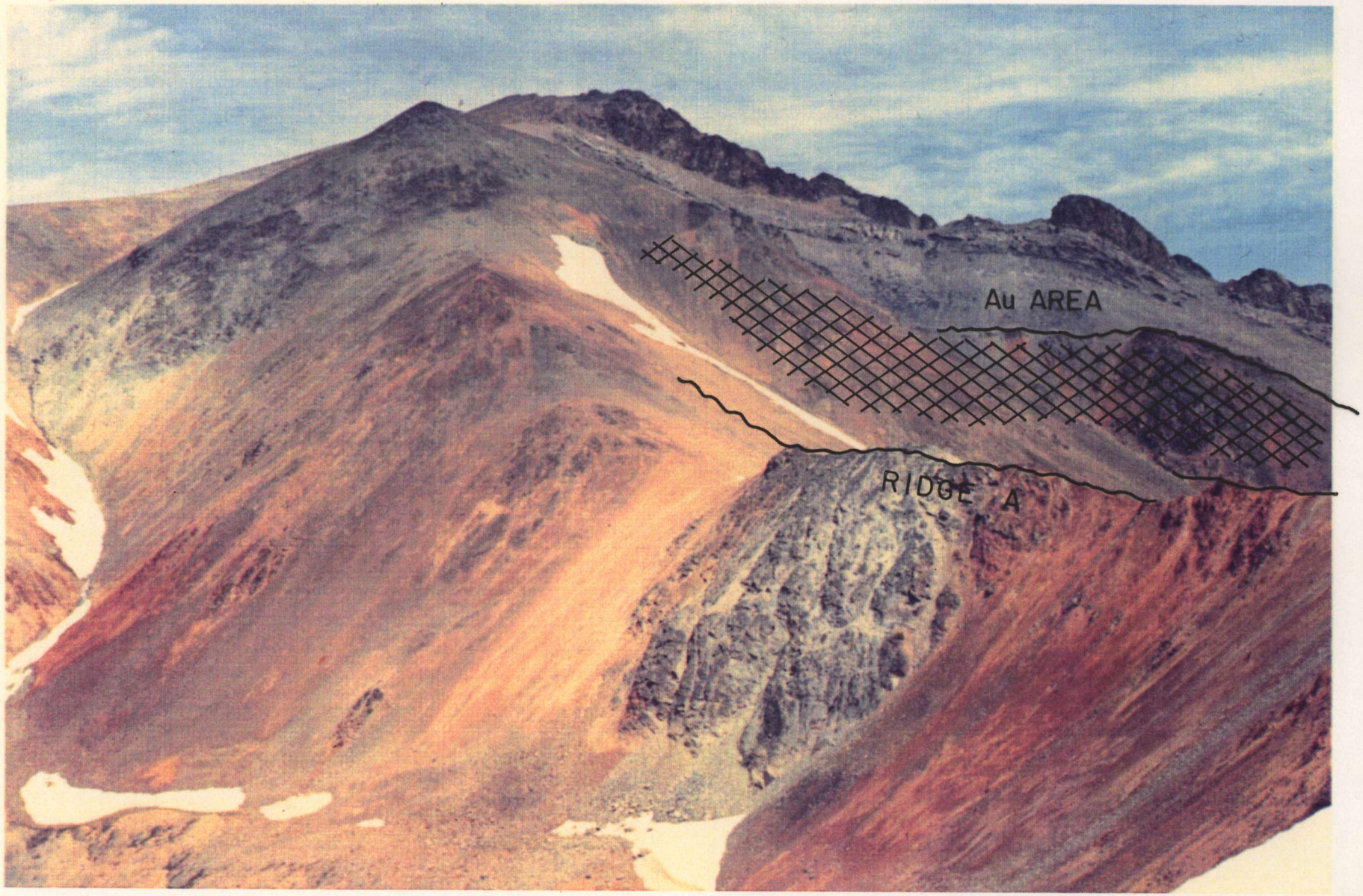


FIGURE 1 - PART OF GOSSAN ZONE SHOWING UNEXPLORED GOLD BEARING AREA

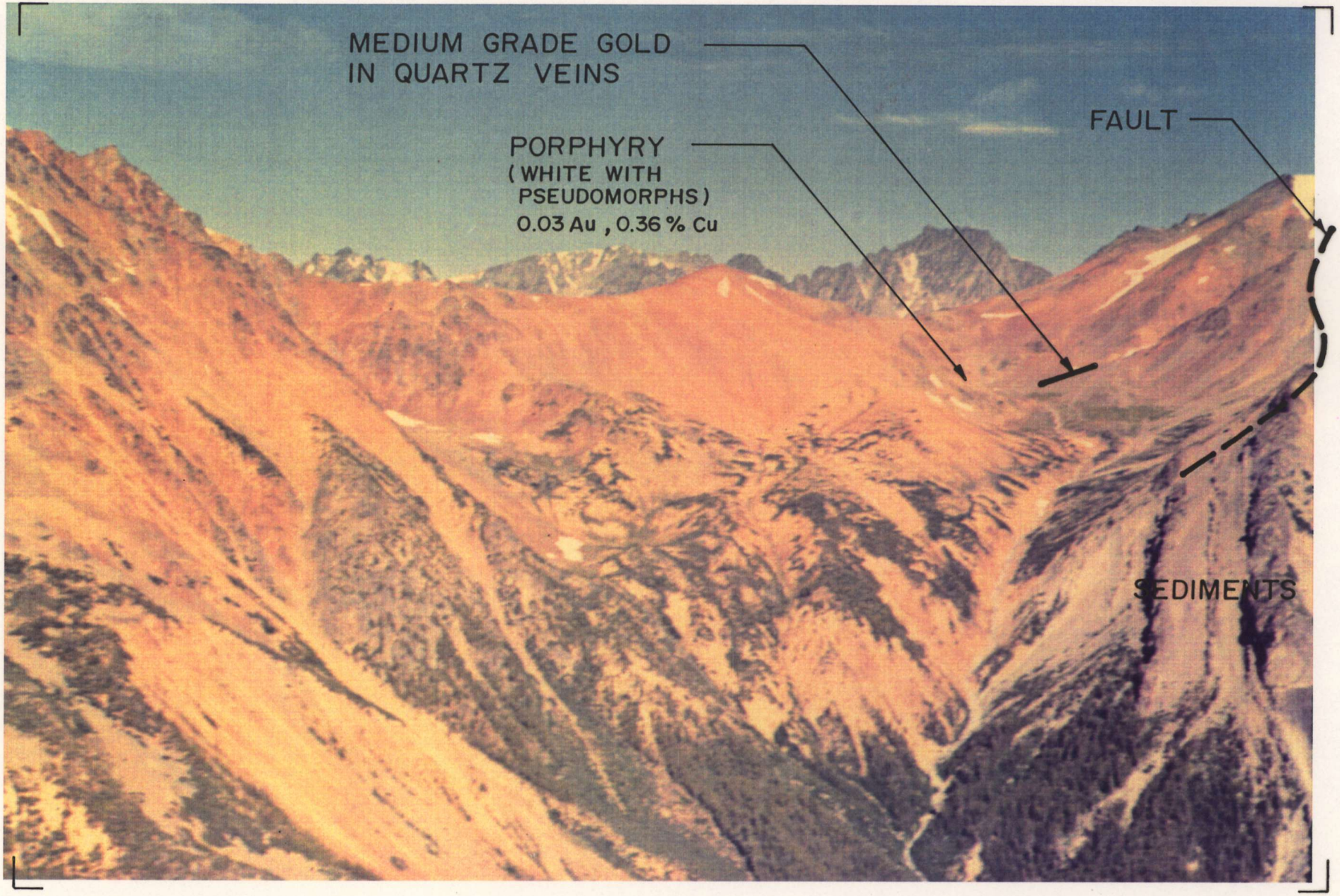


FIGURE 2 — COPPER - GOLD PORPHYRY ZONE AND MEDIUM GRADE GOLD IN QUARTZ VEINS

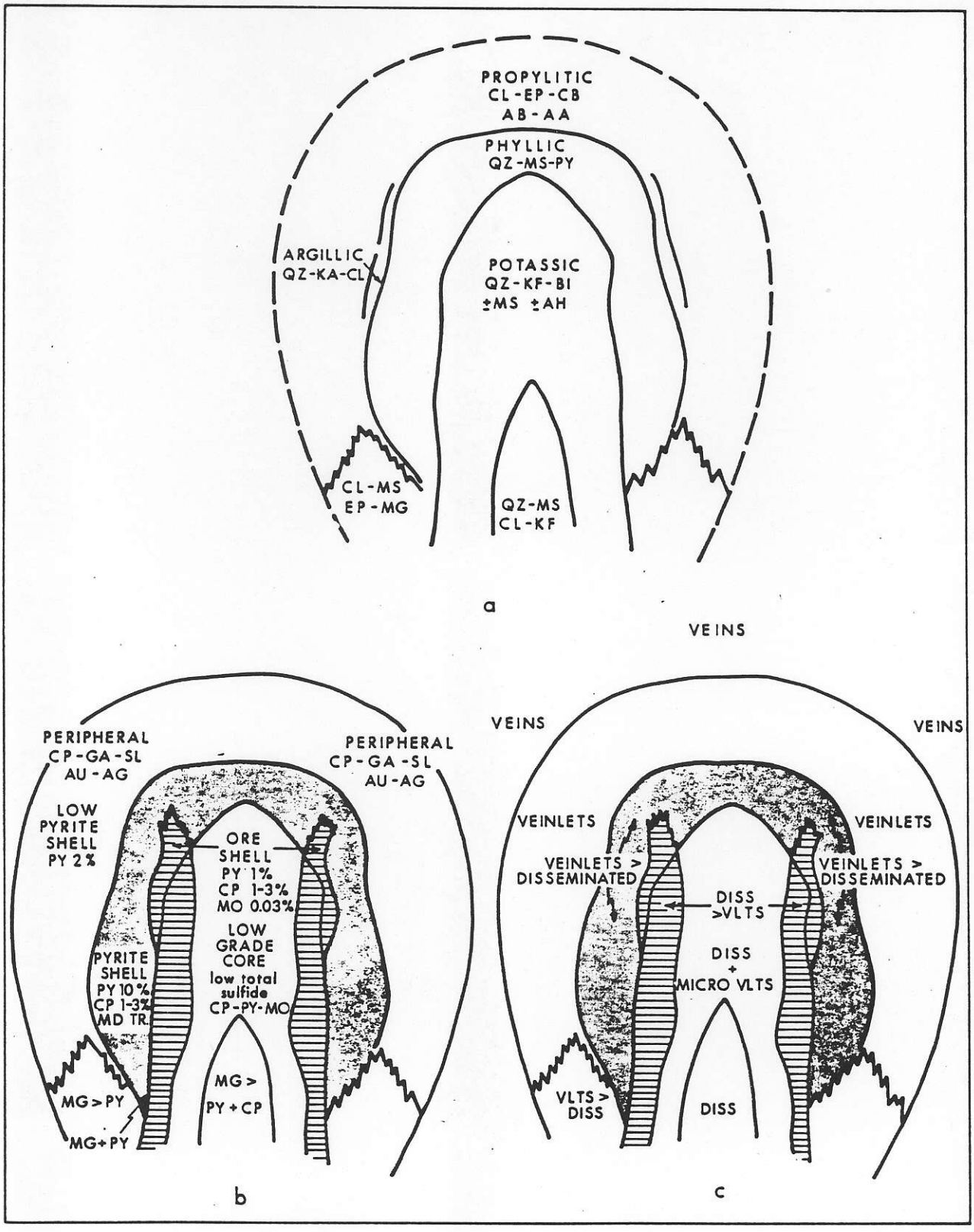


FIGURE 3, GEOLOGICAL CONCEPT

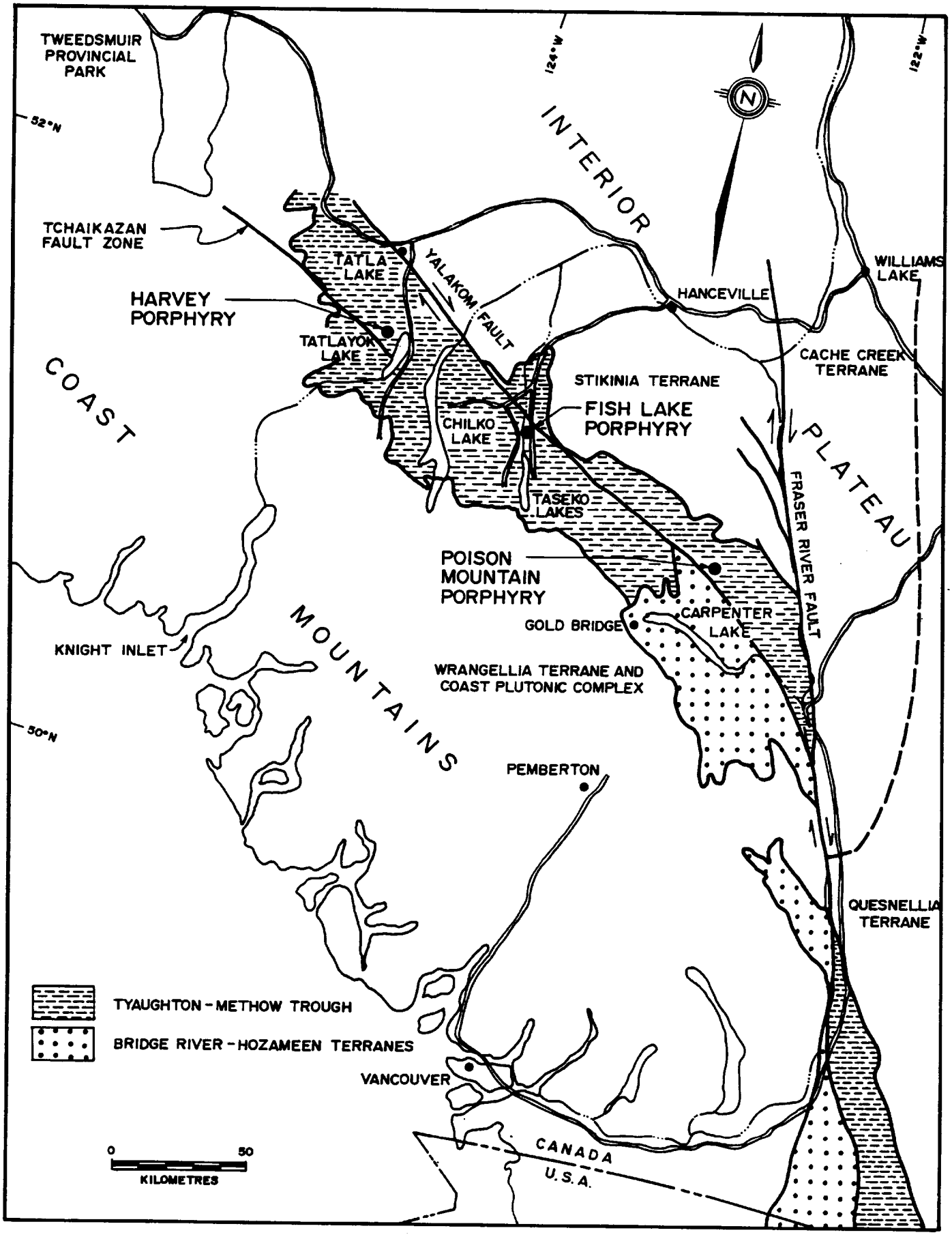
—Zoning in a typical porphyry copper deposit. (a) Schematic drawing of alteration zones. (b) Schematic drawing of mineralization zone. (c) Schematic drawing of the occurrence of sulphides [modified after Lowell and Guilbert (1970), p. 379, and Guilbert and Lowell (1974) p. 100]. Two-letter mineral names and mineralogical assemblages are defined in Figures 2 and 3.

TABLES

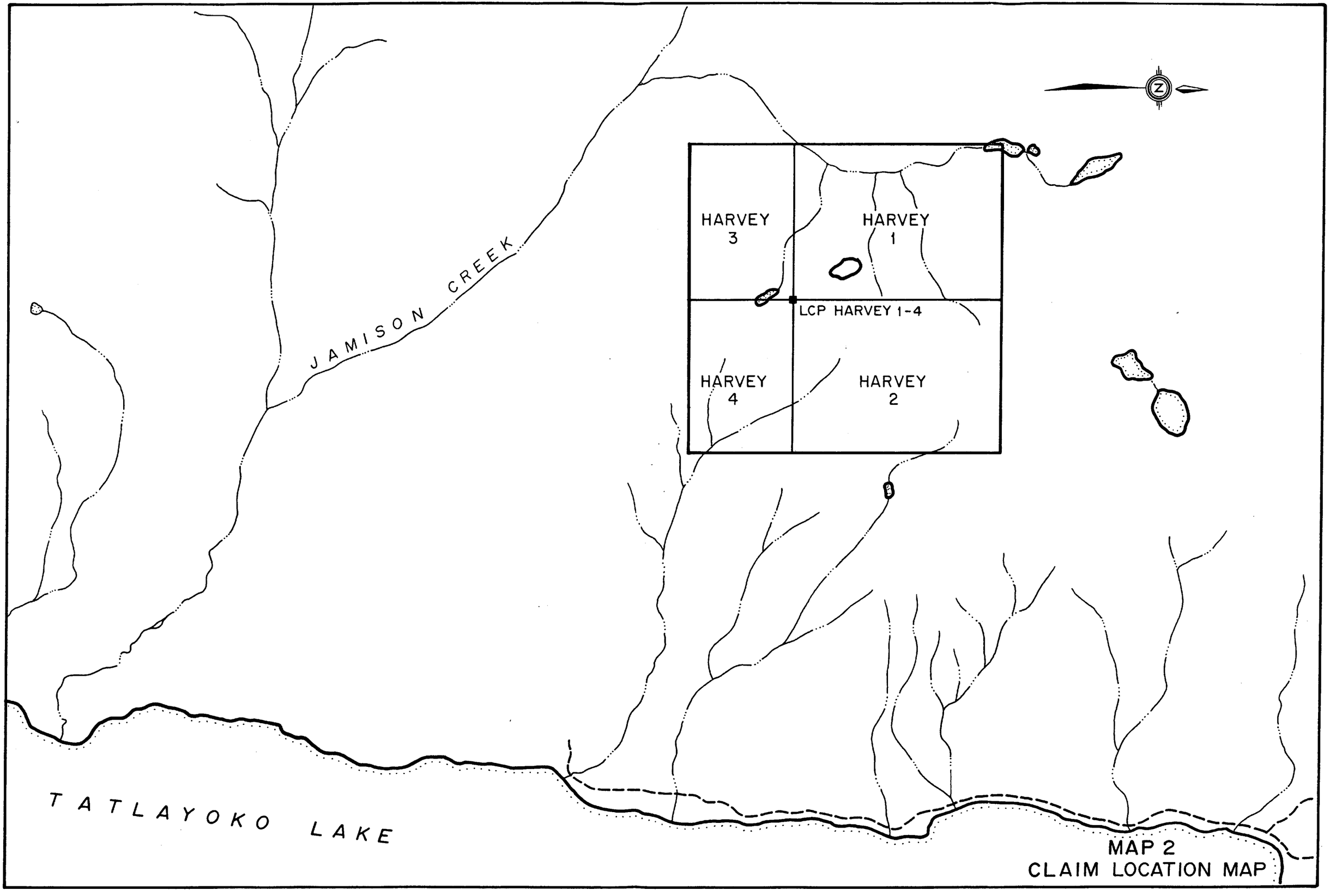
TABLE 1
ASSAY RESULTS

SAMPLE:	Mo PPM	Cu PPM	Pb PPM	Zn PPM	Ag PPM	Co PPM	As PPM	Sb PPM	Bi PPM	W PPM	Au PPB
HS-1	3	139	25	171	.3	23	26	2	2	1	29
HS-2	10	535	33	1280	.5	25	40	2	2	1	35
HS-3	8	163	36	316	1.2	16	40	2	2	1	36
HS-4	13	235	25	236	.1	46	22	2	5	1	29
HS-5	4	188	27	169	.2	29	88	2	2	1	220
HS-6	3	85	20	177	.2	22	28	2	4	1	15
HS-7	3	81	21	174	.3	23	27	2	2	1	32
HS-8	12	272	48	267	.8	47	87	2	2	1	160
HS-9	9	192	104	265	1.9	31	120	3	2	1	70
STD C/AU 0.5	20	59	40	132	6.9	28	39	15	21	11	480
H-1	3	3635	7	61	1.8	28	9	2	3	1	965
H-3	50	18	6	3	0.3	3	2	2	2	1	11
H-5	2	1153	8	53	2.3	18	128	2	3	1	470
H-7	2	2393	28	52	16.4	15	31	2	3	1	4220
H-12	3	6247	40	552	8.0	39	94	2	7	1	670
H-19	6	12338	51	132	17.4	41	44	2	7	1	380
H-20	6	23706	60	75	19.4	61	31	2	2	1	300
H-24	8	3004	3313	5701	8.4	12	34	8	2	1	230
BCS-554	600	165	20	28	.3	7	41	2	2	1	130
BCS-556	5	105	36	109	.6	19	72	2	2	1	140
BCS-560	14	2179	19569	16332	34.1	14	142	28	8	1	910
BCS-566	15	20972	225	409	47.1	34	3085	337	2	1	215
BCS-570	10	2124	1255	5058	6.4	10	121	4	3	1	170
BCS-571	124	910	1514	3674	5.8	7	68	4	2	1	125
BCS-572	134	7866	6217	7575	19.3	21	60	10	3	1	115
BCS-574	6	600	124	55	9.2	7	23	2	5	1	490
BCS-578	14	5352	46	274	5.0	37	21	2	2	1	80
BCS-579	4	15811	48	1101	5.4	51	28	2	2	1	85
MCL-1	2	81	11	18	.2	3	8	3	2	1	26
SPAN-1	2	8878	18	18	2.4	234	2	2	14	1	102
SPAN-2	2	2272	10	35	.7	40	2	2	7	1	24
STD C/AU 0.5	20	58	452	136	6.8	29	38	15	20	11	500

MAPS



MAP 1
LOCATION MAP



MAP 2
CLAIM LOCATION MAP

LEGEND

VOLCANIC AND SEDIMENTARY ROCKS

QUATERNARY
PLEISTOCENE AND RECENT

Q — TILL, GRAVEL, SAND, AND ALLUVIUM

CRETACEOUS
CENOMANIAN AND (?) YOUNGER
KINGSVALE GROUP

uKKv — DIVISION B: ANDESITIC AND BASALTIC BRECCIA AND TUFF

uKKpw — DIVISION A: SILTSTONE, GREYWACKE, AND CONGLOMERATE

ALBIAN
JACKASS MOUNTAIN GROUP

lKJM — GREYWACKE, SILTSTONE, AND CONGLOMERATE

HAUTERIVIAN AND (?) YOUNGER

lKvbl — ANDESITIC AND BASALTIC BRECCIA AND TUFF; MINOR SHALE, GREYWACKE, AND CONGLOMERATE; lKms: METASEDIMENTS AND MIGMATITE

lKpwl — SILTSTONE, GREYWACKE, AND CONGLOMERATE

JURASSIC
HETTANGIAN (?), SINEMURIAN, BAJOCIAN, AND CALLOVIAN

lmJpw — SILTSTONE, SHALE, GREYWACKE, GRIT, AND CONGLOMERATE

TRIASSIC
UPPER NORIAN

uTrp — SHALE, SILTSTONE, GREYWACKE, CONGLOMERATE, VOLCANIC BRECCIA, AND TUFF; uTrcg: CONGLOMERATE, LIMESTONE AND GREYWACKE

PLUTONIC AND METAMORPHIC ROCKS (AGE UNCERTAIN)

COAST PLUTONIC COMPLEX

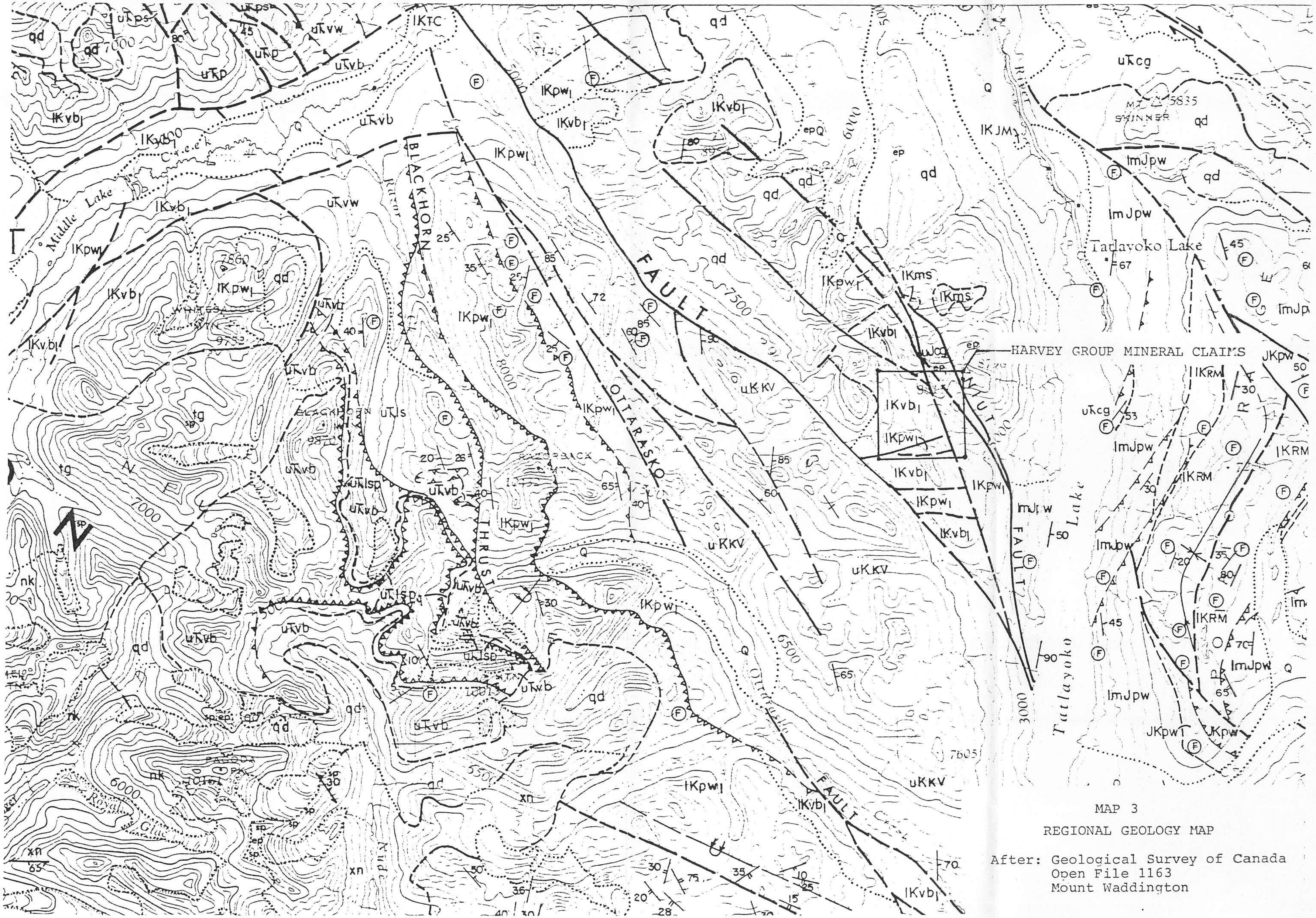
qd — QUARTZ DIORITE;
qdd: QUARTZ DIORITE AND DIORITE;
qdl: QUARTZ DIORITE AND TONALITE;
qm: QUARTZ MONZODIORITE;
qmdap: APLITIC QUARTZ MONZODIORITE;
lKqd QUARTZ DIORITE DATED BY K-Ar

SYMBOLS

GEOLOGICAL BOUNDARY (DEFINED, APPROXIMATE, ASSUMED)
LIMIT OF GEOLOGICAL MAPPING
BEDDING, TOPS KNOWN (INCLINED, VERTICAL, OVERTURNED, DIP UNKNOWN)
SCHISTOSITY, GNEISSOSITY (HORIZONTAL, INCLINED, VERTICAL)
FAULT (DEFINED, APPROXIMATE, ASSUMED; (SOLID CIRCLE INDICATES DOWNTHROW SIDE, ARROWS INDICATE RELATIVE MOVEMENT)
THRUST FAULT (DEFINED, APPROXIMATE, ASSUMED)
ANTICLINE (DEFINED, APPROXIMATE; ARROW INDICATES DIRECTION OF PLUNGE)
SYNCLINE (DEFINED, APPROXIMATE; ARROW INDICATES DIRECTION OF PLUNGE)
ANTICLINE AND SYNCLINE (OVERTURNED)
FOSSIL LOCALITY (F)
K-Ar AGE DETERMINATION ●bK67
BIOTITE - b HORNBLENDE - h

CHLORITE - cl EPIDOTE - ep
SPHENE - sp GARNET - ga

Regional Geology
LEGEND



MAP 3

REGIONAL GEOLOGY MAP

After: Geological Survey of Canada
Open File 1163
Mount Waddington