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GEOCHEMICAL REPORT
ON THE
TRAIL MINERAL CLAIM
Babine Lake Area
Omineca Mining Division
British Columbia

NTS: 93M/8W
55°25'N 126°20'W

OWNER: N.C. CARTER

AUTHOR: N.C. CARTER, Ph.D. P.Eng.

DATE: JANUARY 14, 1995

GEOLOGICAL BRANCH
ASSESSMENT REPORT

23,739

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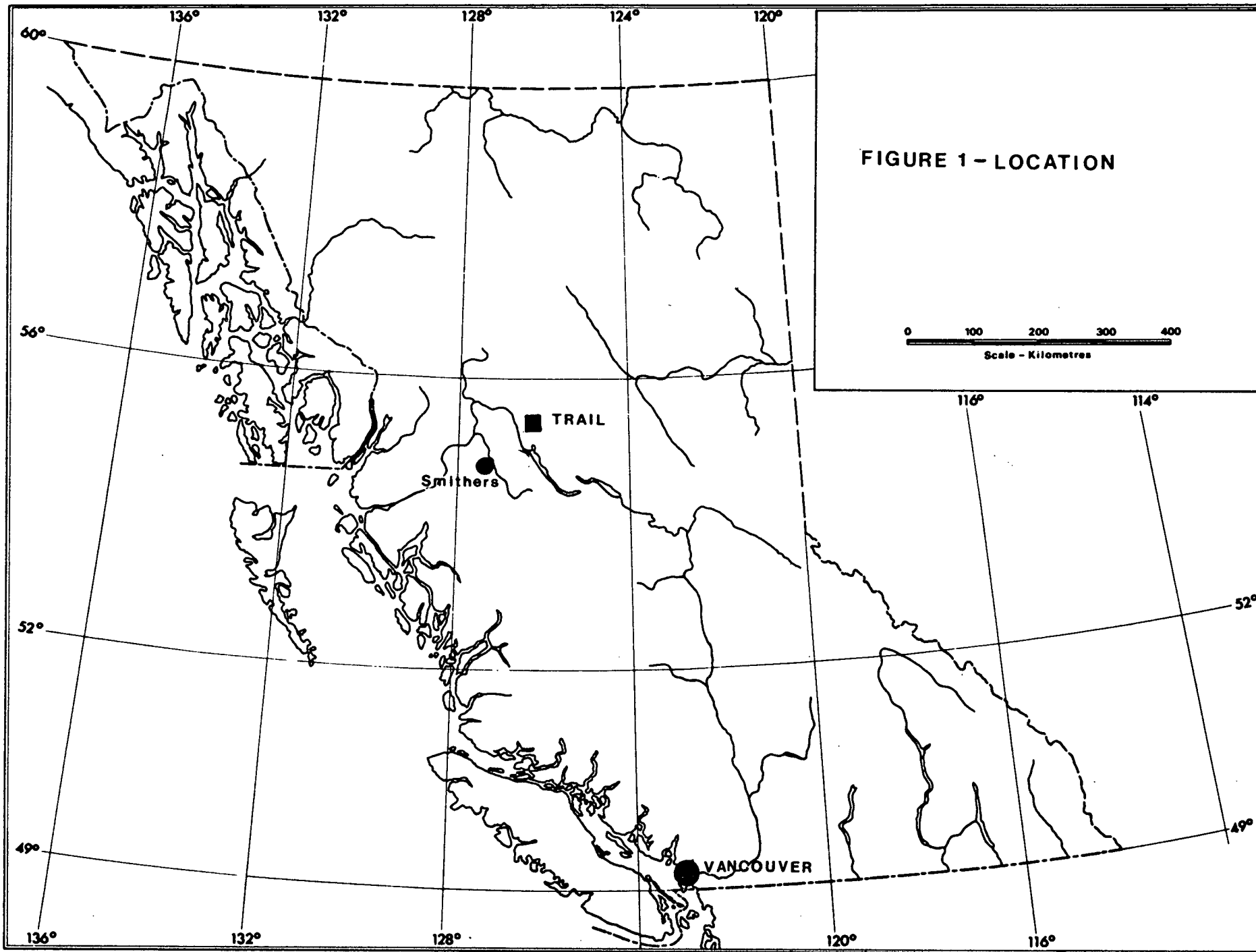


FIGURE 1 - LOCATION

0 100 200 300 400
Scale - Kilometres

INTRODUCTION

Location and Access

The TRAIL mineral claim, centred on Trail Peak north of Babine Lake, is 90 km northeast of Smithers in west-central British Columbia (Figure 1). The geographic centre of the claim is at latitude 55°25' North and longitude 126°20' West in NTS map-area 93M/8W.

Access is by helicopter from Smithers. The property is 45 km north of Bell Copper mine (Figure 2) and about 10 - 20 km from the end of present logging roads which extend to Morrison Lake to the south and into the Nilkitkwa River valley north of the claim. Trail Peak is immediately north of the historic Hudson's Bay trail linking Hazelton with the Omineca gold fields and this route has been used more recently to walk bulldozers into the area from Fort Babine. A recently constructed power line between Fort Babine and Takla Landing also follows this route.

Mineral Property

The TRAIL property consists of one 4-post mineral claim of 16 units as shown on Figure 3. Details of the mineral claim are as follows:

<u>Claim Name</u>	<u>Units</u>	<u>Record Number</u>	<u>Date of Record</u>
TRAIL	16	240188	October 16, 1988

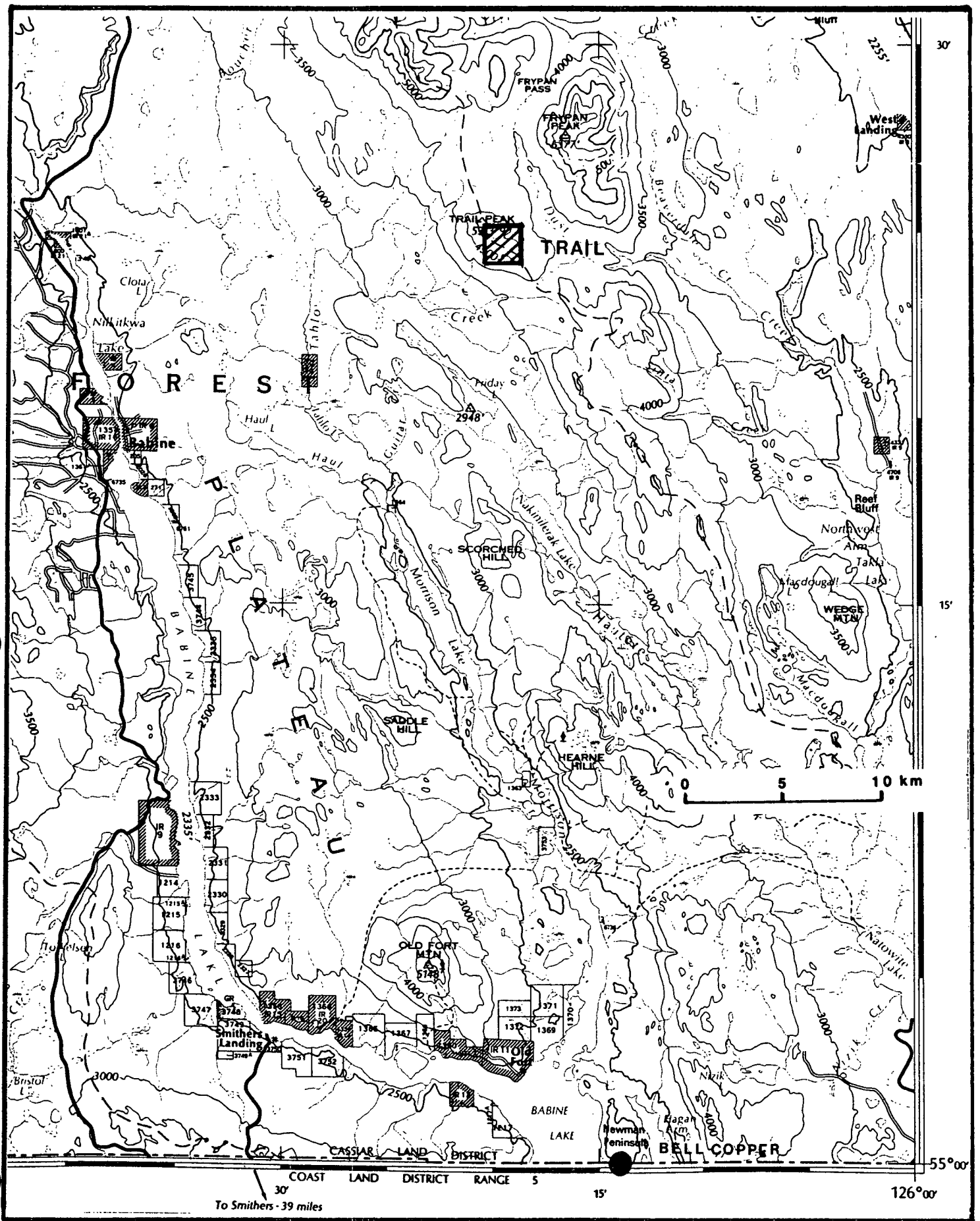


FIGURE 2 - LOCATION - TRAIL CLAIM

History

Several hand trenches 2 km southeast of Trail Peak expose a polymetallic vein and are evidence of work prior to the investigation of porphyry copper mineralization by Texas Gulf Sulphur Company between 1968 and 1975. Work by this company included geological mapping, geophysical surveys, soil and rock geochemistry, 3600 metres of bulldozer trenching and 1086 metres of diamond drilling in 12 holes. Results of some of this work are contained in Assessment Reports 1672 and 5706.

Present Status

The TRAIL mineral claim was located by the writer October 16, 1988. Work in 1989 included geological mapping and the collection and analyses of bedrock and drill core samples (Carter, 1990).

A 1992 program (Carter, 1993) included re-sampling of diamond drill cores recovered by the previous operator in 1967 and 1975. Thirty-eight samples, collected from hole intervals containing better copper grades, were analyzed for gold and 31 major and trace elements.

The 1992 program also included the collection of nineteen soil and two rock samples along two flagged lines in the northeastern claim area where previous sampling had

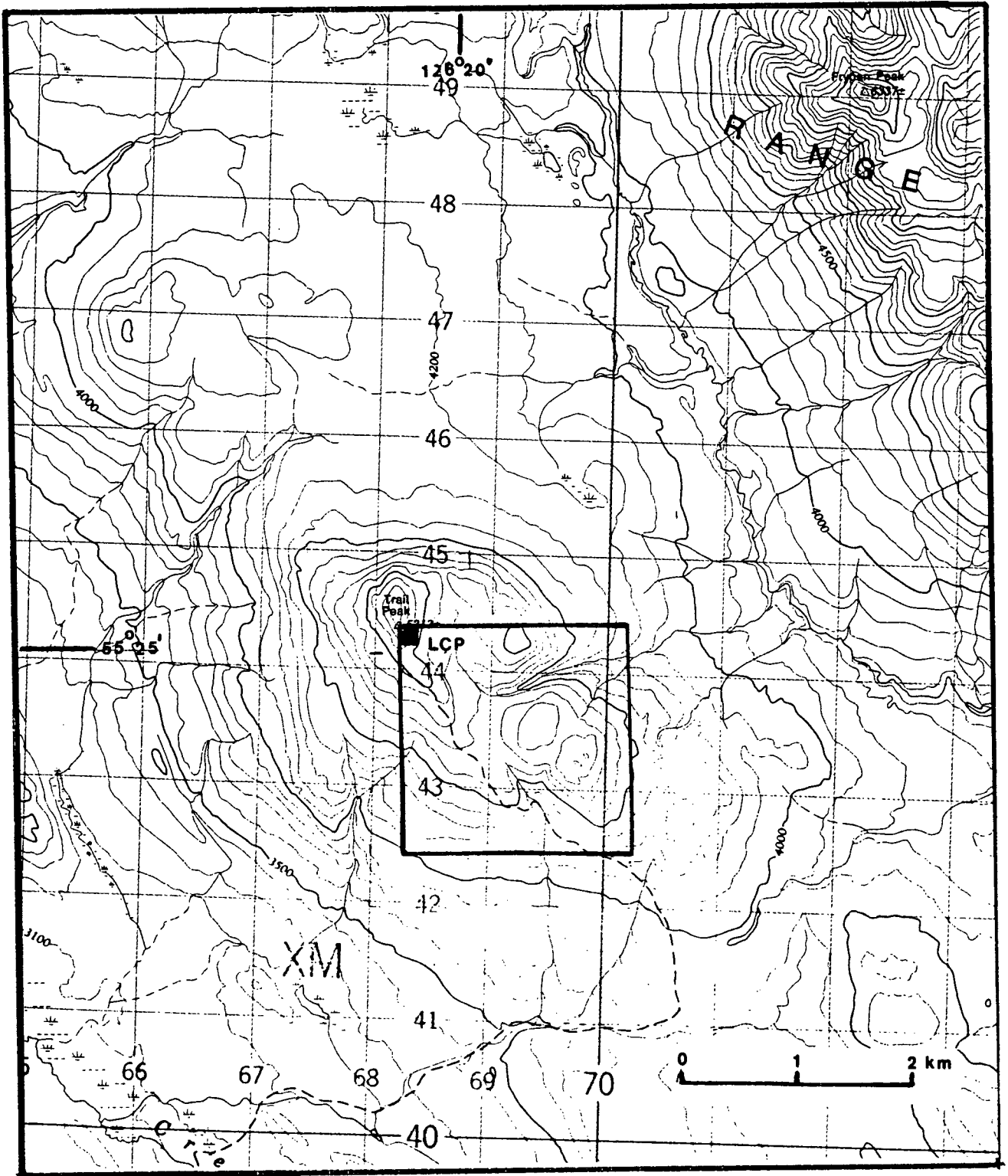


FIGURE 3 - TRAIL MINERAL CLAIM

indicated anomalous copper values in soils which were not followed up during earlier work on the property. 1992 work indicated the presence of a northwesterly trending zone of undetermined dimensions containing +100 ppm copper and +10 ppb gold values.

The 1994 soil sampling program, designed to further evaluate this anomalous zone, involved the collection of 24 soil and one rock sample September 25, 1994.

GEOLOGY AND MINERALIZATION

Physical Setting

Trail Peak is an isolated topographic high near the northern margin of the Nechako Plateau. The summit of Trail Peak rises some 600 metres above an area of gentle relief north of Babine Lake. Elevations within the claim area range from 1200 metres above sea level at the southwest corner of the claim to 1620 metres at the Legal Corner Post at the Trail Peak survey monument (Figure 3).

Much of the northern half of the claim is above tree line of about 1460 metres. Bedrock is well exposed in the vicinity of Trail Peak and other areas above tree line. 23-year old bulldozer trenches in the central and western claim area afford reasonably good bedrock exposure (Figure 4).

Regional Geological Setting

The northern Babine Lake area is within the Intermontane tectonic belt which is underlain principally by Mesozoic and older layered rocks, the most widespread in this area being volcanic and sedimentary rocks of the Jurassic Hazelton Group. These are intruded by plutonic rocks of various ages including lower Jurassic Topley intrusions, Omineca intrusions of early Cretaceous age, late Cretaceous rhyolite and granodiorite porphyries and Babine intrusions of early Tertiary age.

Porphyry copper mineralization in the Babine Lake area is well documented and is associated with three ages of intrusive activity. The most significant are the Eocene Babine intrusions which occur as small stocks and dyke swarms and host more than a dozen known porphyry copper deposits and occurrences including the former Granisle mine (1966 - 1982 production - 52.2 million tonnes grading 0.41% copper) and Bell Copper mine which to the end of 1991 had produced 29.9 million tonnes of copper and 12597 kg of gold from 75.5 million tonnes milled. Some 100 million tonnes of additional reserves of similar grade are estimated to be within and adjacent to the present Bell open pit.

Drill-indicated reserves at the Morrison deposit, 20 km north of Bell Copper, are estimated to be between 40 and 80

million tonnes grading 0.42% copper and 0.34 g/t gold.

Copper-molybdenum mineralization is also known to occur in late phases of the Topley intrusions and in late Cretaceous granodiorite porphyries. Other deposit types in this well mineralized district include narrow veins with base and precious metals values, which commonly occur marginal to known porphyry deposits and disseminated copper mineralization in Hazelton Group volcanic rocks. Deposits with volcanogenic massive sulphide affinities include Topley Richfield 10 km north of Topley, the RED prospect 5 km northeast of the dormant Granisle copper mine and the Fireweed silver-lead-zinc prospect 12 km west of the Bell copper mine.

Property Geology and Mineralization

The TRAIL claim is underlain principally by dark grey cherty siltstones which are variably iron-stained due to the presence of finely disseminated pyrite. Volcanic crystalline tuffs are interbedded with the sediments at the base of Trail Peak (Figure 4).

The sedimentary and lesser volcanic sequence, part of the Hazelton Group of mid to late Jurassic age (Richards, 1974), is contained in a northwest-trending synform (Carter, 1970) which has been transected by northwest and

east-northeast faults (Figure 4).

Thinly bedded siltstones and mudstones in the southeast claim area are less indurated than the more prevalent cherty siltstone unit and may be part of a younger (Albian Skeena Group?) sequence.

Intruding the layered rocks are small, fault-bounded plugs of medium-grained diorite - granodiorite and dykes and irregular bodies of finer-grained biotite-(hornblende)-feldspar porphyry (Figure 4). Sedimentary rocks marginal to these intrusions have been converted to biotite hornfels.

The diorite - granodiorite intrusions are of Cretaceous age (104 Ma - Carter, 1981) and were localized at the intersection of northwest and northeast faults on Trail Peak. These and the sedimentary sequence are intruded by predominantly northwest striking dykes of multiple-phase biotite-(hornblende)-feldspar porphyry of Eocene age (49 Ma - Carter, 1981) which are typical of the Babine intrusions. A large outcrop area of trachytic-textured hornblende-feldspar porphyry, exhibiting crude columnar jointing in the eastern claim area (Figure 4), is interpreted to be a late phase, extrusive equivalent of the Babine intrusions.

Both the diorite - granodiorite plugs and porphyry dykes are offset by later movements along faults, particularly the east-northeast fault extending through the central part of

the claim (Figure 4). Abundant tourmaline occurs in quartz veinlets and in stringers and irregular clots both within and marginal to this fault.

Copper mineralization, mainly as disseminations of chalcopyrite and lesser bornite on fractures and in quartz veinlets within and marginal to biotite-(hornblende)-feldspar porphyries, is exposed in bulldozer trenches in two areas of the property along and south of the aforementioned fault zone (Figure 4). Potassic alteration, in the form of locally abundant secondary biotite, plus some K-feldspar and sericite, is coincident with the copper mineralization and a pyrite halo extends outward some 600 to 1200 metres.

Rock chip sampling at 300 metre centres, undertaken over most of the property area in 1973, indicated a central copper zone (centred on the two trenched areas) with locally anomalous molybdenum values flanked by higher lead, zinc and silver values, typical of a porphyry environment.

Limited rock sampling of the two trenched areas was carried out in 1988 and 1989 (Carter, 1990) principally to determine if gold values were present within the porphyry system. Twenty samples from the western trench area included values of up to 1350 ppm copper and 155 ppb gold. Better gold values were indicated within and near the eastern trench area. Two rock samples from the northernmost trench returned

values of 1910 and 3606 ppm copper and 698 and 1160 ppb gold. A sample from a bedrock exposure in the creek 150 metres north of the trench yielded 1663 ppm copper and 52 ppb gold and soil sample collected between the trench and the creek returned values of 4100 ppm copper and 1075 gold (subsequent re-analysis indicated 2000 ppb gold).

The eastern and western trench areas were investigated in 1969 by limited diamond drilling. Seven of ten inclined holes were drilled to average depths of 60 metres in the western trench area. Three of these holes, drilled within a 200 square metre area near the west end of these trenches and immediately north of the east-northeast fault (Figure 4), intersected copper values ranging from 0.15 to 0.62%. Two inclined holes of 76 metres each, drilled in the eastern trench area (figure 4), intersected low copper values. One inclined hole, near the northern boundary of the present claim (Figure 4) and drilled to test a soil geochemical anomaly, was entirely within relatively unmineralized diorite, indicating that the diorite intrusions are more widespread than shown on Figure 4. Two 1975 inclined holes with depths of depths of 344 and 132 metres, were drilled in the western and eastern trench areas respectively (Figure 4).

Re-sampling of previously drilled core, undertaken in 1992 (Carter, 1993), indicated better copper and gold grades

in the western trench area. Best values were obtained from 1969 holes 3 and 4, and results demonstrated the consistency and coincidence of both copper and gold within the sampled sections. Results obtained from this sampling program are as follows:

Table 1 - Sample Results

<u>Sample Number</u>	<u>Hole Number</u>	<u>Interval(m)</u>	<u>Cu(ppm)</u>	<u>Au(ppb)</u>
60501	11-75	161.8-164.9	1081	43
60502	"	173.1-176.2	753	53
60503	"	182.3-185.3	1343	82
60504	"	201.8-204.8	1191	62
60505	"	234.4-237.4	1379	72
60506	"	337.7-340.8	511	23
60507	"	15.2-18.3	1620	119
60508	"	100.9-103.9	1881	90
60509	"	150.3-153.3	1562	66
60510	"	283.5-286.5	2143	118
60511	"	249.9-253.0	1863	78
60512	12-75	32.3-35.4	275	23
60513	"	39.6-42.7	736	88
60514	"	54.9-57.9	681	78
60515	9	67.1-74.7	256	36
60516	1	4.0-9.1	509	23
60517	2	4.6-6.4	3954	272
60518	"	6.4-10.7	1284	86
60519	"	10.7-15.2	1640	82
60520	"	36.6-39.6	1971	91
60521	"	42.7-47.2	1522	74
60522	"	47.2-51.8	1513	55
60523	3	3.7-6.1	3709	173
60524	"	6.1-9.1	4054	170
60525	"	9.1-12.2	3703	170
60526	"	12.2-15.2	7067	333
60527	"	15.2-18.3	3752	188
60528	"	18.3-21.3	2261	119
60529	"	21.3-24.4	1615	111
60530	"	24.4-27.4	2554	180
(3.7 - 27.4m - 0.36% Cu, 0.181 g/t Au) including 3.7 - 18.3m - 0.45% Cu, 0.207 g/t Au)				

<u>Sample Number</u>	<u>Hole Number</u>	<u>Interval(m)</u>	<u>Cu(ppm)</u>	<u>Au(ppb)</u>
60531	4	21.3-27.4	5046	241
60532	"	27.4-33.5	4113	233
60533	"	33.5-39.6	2220	122
60534	"	39.6-45.7	3276	122
60535	"	45.7-51.8	4044	179
(21.3 - 51.8m - 0.37% Cu, 0.179 g/t Au)				
60536	7	5.2-13.7	37	22
60537	8	27.4-30.5	775	76
60538	6	19.8-24.4	118	28

Geochemical Response

Results of a 1968 soil sampling program carried out by Texas Gulf are shown on Figure 5. 679 samples, collected at 60 - 120 metre intervals, were analyzed for total copper and statistical analysis indicated a background of 35 ppm or less, thresholds in the 35 - 50 ppm range and anomalous values of +50 ppm. Three principal areas with anomalous copper values of up to 1300 ppm were outlined adjacent to the east-northeast trending fault (Figure 5). Scattered anomalous values occur north and south of the main anomalous areas.

Notwithstanding the variations in overburden which is transported glacial drift rather than true soils, "soil" geochemistry appears to be a fairly reliable exploration tool on the TRAIL property in contrast to most other areas in the Babine Lake area. This is no doubt due to the relatively thin overburden cover.

Two of the areas with higher copper values were subsequently trenched and drilled. The easternmost anomalous area (Figure 5), where previous work by Texas Gulf had indicated a northerly trending, 400 x 250 metre area with +50 ppm copper in soils, was the subject of a limited follow-up sampling program in 1992 (Carter,1993). This work, which consisted of the collection of samples along two east-west flagged lines, indicated a northwesterly trending zone containing +100 ppm copper and flanked on the east and west by +10 ppb gold values. Elevated zinc values were present in the eastern part of the sampled lines.

1994 GEOCHEMICAL PROGRAM

The 1994 soil sampling program was designed to expand upon results obtained in 1992. Samples were collected at 50 metre intervals along two 600 metre east-west lines 150 metres apart (Lines 3+00S and 4+50S - Figure 4) and south of the lines sampled in 1992. Samples were collected at depths of between 15 and 15 cm, placed in kraft paper bags and submitted to Min-En Laboratories for determination of 31 major and trace elements by induced coupled argon plasma (ICP) techniques. Gold values were determined by atomic absorption.

Results for copper and gold are shown on Figure 6 and complete analytical results are included in Appendix I. To facilitate interpretation, copper and gold results for the 1992 program are also plotted on Figure 6.

Discussion of Results

Additional soil sampling has further defined the area with anomalous (+50 ppm) copper values initially indicated by 1992 work. This zone continues in a southeasterly direction through line 3+00S before turning abruptly southwest and extending through the central part of line 4+50S (Figure 6). In summary, this anomalous zone is crescent-like in plan, convex to the east, and with widths of up to 400 metres on line 0 and narrowing to about 150 metres on line 4+50S.

Higher gold values (+10 ppb) tend to flank the northern part of the copper zone. The highest gold value in soils (19 ppb) is coincident with a 133 ppm copper value on the southernmost (4+50S) line sampled. Higher zinc values (+300 ppm - Appendix I) are partly coincident with the copper anomaly.

One rock sample (10293 - Appendix I - Figure 6) of iron-stained siltstone yielded low base metal values and 23 ppb gold.

The four soil sampling lines are immediately north of an

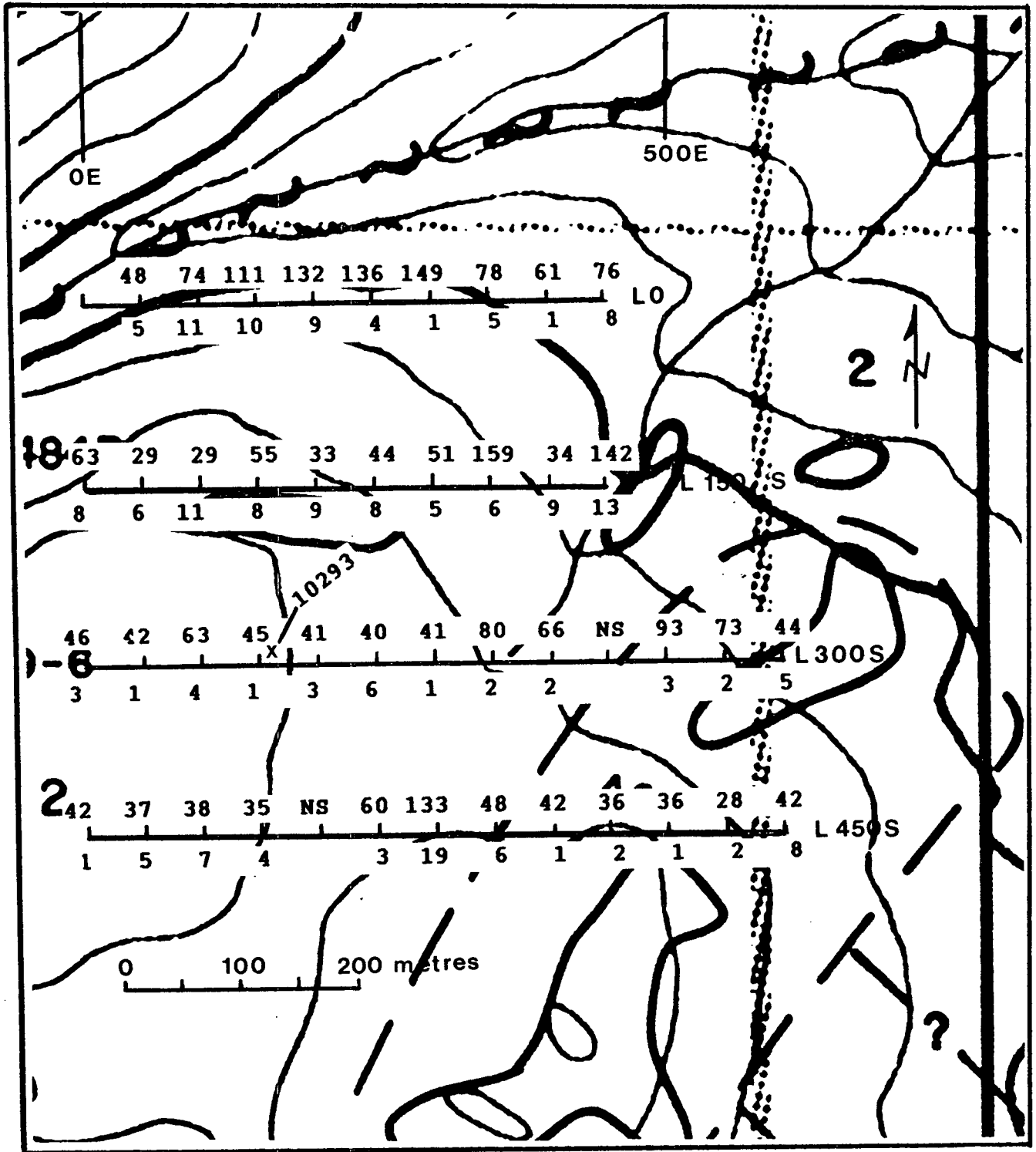


FIGURE 6 - SOIL GEOCHEMISTRY

133	Cu (ppm)
19	Au (ppb)

area underlain by extrusive equivalents of Babine biotite-feldspar porphyry intrusions. These rocks, similar to those exposed on Newman Peninsula between the Granisle and Bell copper deposits, are at the very top of the intrusive system and may be masking a mineralized zone.

Possible evidence of this is the highest gold value obtained from the soil sampling (+19 ppb) situated at 3+00E on line 4+50S immediately north of the northern limits of these extrusive equivalents (Figure 6). In addition, a 10 cm wide quartz vein containing 547.3 ppm silver and 3.1% zinc occurs in sediments marginal to the southern limits of these extrusive equivalents (Figure 4 -sample TR89-9).

CONCLUSIONS AND RECOMMENDATIONS

Work to date on the Trail Peak property indicates the presence of porphyry copper mineralization in a geological setting typical of the Babine Lake district. Principal host rocks are crowded biotite-feldspar porphyries of Eocene age which range in composition from quartz diorite to granodiorite. Multiple intrusion is evident and secondary biotite is widespread within a central potassic alteration zone which grades outward to a quartz-sericite-pyrite (phyllic) zone best developed in the sediments underlying Trail Peak. Extrusive equivalents of the porphyry, similar to

those observed nearby the Granisle and Bell Copper deposits, are exposed in the eastern claim area. A 10 cm wide quartz vein, immediately south of the exposed extrusive equivalent and near the periphery of the alteration zone, contains polymetallic mineralization and is similar to peripheral veins at Granisle and Bell Copper.

Soil sampling in the eastern claim area has partially defined a crescent-like area with anomalous copper and gold values flanking an area of porphyry extrusive equivalents which further confirms that the Trail Peak mineralized system is gold-bearing. Additional soil and rock sampling is warranted.

COST STATEMENT

Wages

N.C. Carter - September 24,25,1994 - 1.5 days @ \$400/day	\$600.00
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Transportation

Victoria - Smithers (split airfare)	\$237.23
Helicopter - Smithers - TRAIL claim	<u>\$1,215.00</u>
	\$1,452.23

Accomodation, Meals

September 24,25,1994	\$107.28
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Analytical Costs

24 soil samples @ \$16.85	\$404.40
1 rock sample @ \$19.53	<u>\$19.53</u>
	\$423.93

Report Preparation

N.C. Carter - 1.5 days	\$650.00
Word processing, duplicating, map copies	<u>\$84.36</u>
	\$734.36

TOTAL EXPENDITURES	\$3,317.80
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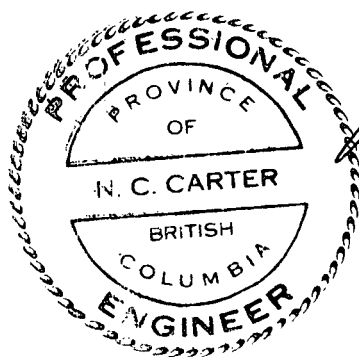
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AUTHOR'S QUALIFICATIONS

I, NICHOLAS C. CARTER, of 1410 Wende Road, Victoria, British Columbia, do hereby certify that:

1. I am a Consulting Geologist, registered with the Association of Professional Engineers and Geoscientists of British Columbia since 1966.
2. I am a graduate of the University of New Brunswick with B.Sc.(1960), Michigan Technological University with M.S.(1962) and the University of British Columbia with Ph.D.(1974).
3. I have practised my profession in eastern and western Canada and in parts of the United States for more than 25 years.
4. Collection of soil samples as described in the foregoing report was carried out by the undersigned between September 25,1994.



N.C. Carter
N.C. Carter, Ph.D. P.Eng.

Victoria, B.C.
January 14,1995

APPENDIX I
Analytical Results

