SUMMARY REPORT
on the
QUATAM RIVER PROPERTY
of
CAPILANO EXPLORATIONS LTD. (N.P.L.)

by: M.F. Cowan, M.Sc., P.Eng.

June 17, 1970.

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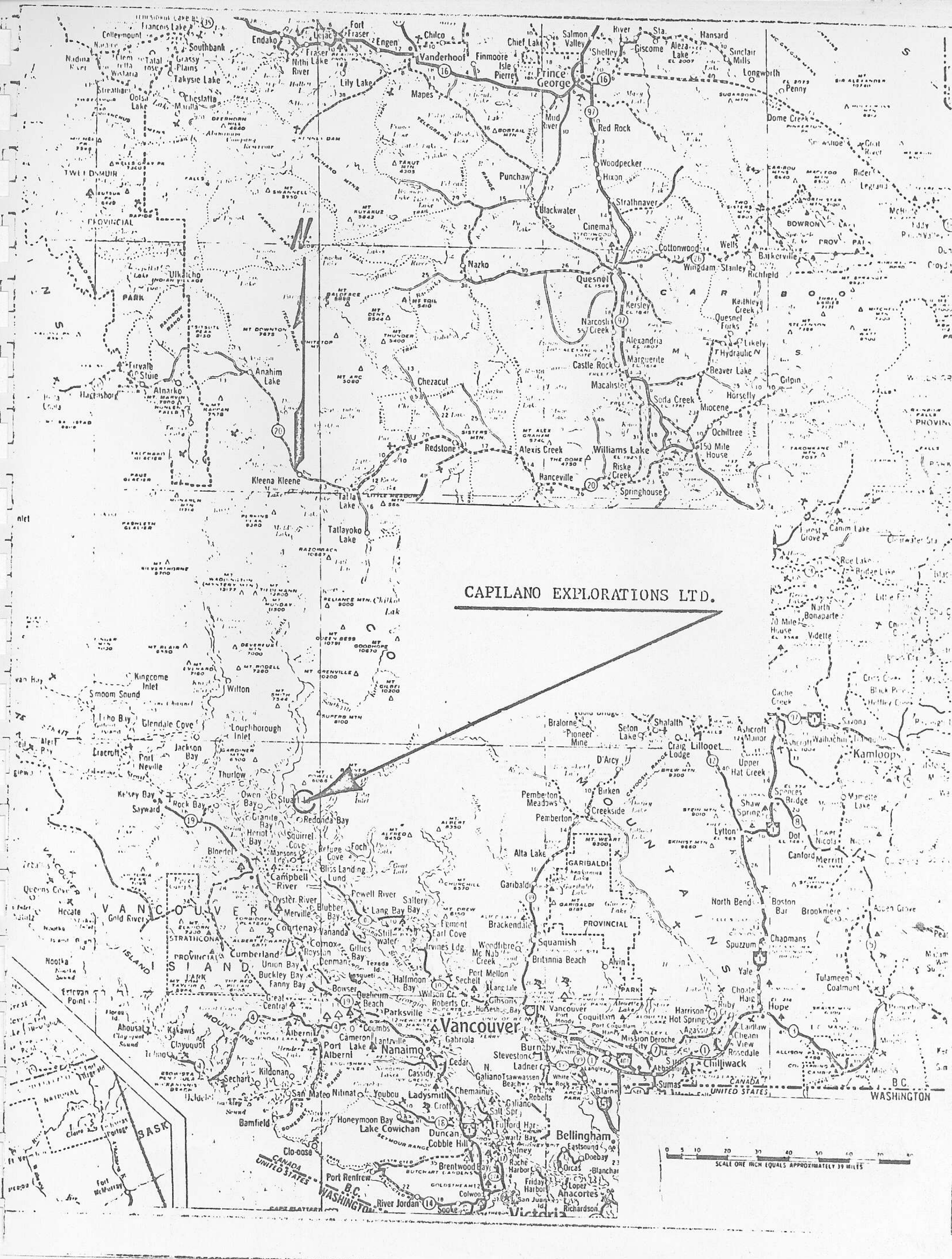
Vancouver, B.C. June 17th, 1970.


CAPILANO EXPLORATIONS LTD.
Fort Fraser
Endako
Engen
Chilco
Vanderhoof
Finmoore
Chief Lake
Salmon Valley
Shelley
Giscome
Aleza Lake
Hansard
Sinclair Mills
Longworth
Penny
Prince George
Southbank
Grassy Plains
Takysie Lake
Lily Lake
Mapes
Cheslatta
Mud River
Red Rock
Dome Creek
Woodpecker
Hixon
Punchaw
TWEEDSMUIR
PROVINCIAL
PARK
Blackwater
Strathnaver
Cinema
BOWRON
Wells
Barkerville
Cottonwood
Wingdam
Stanley
Richfield
Nazko
Quesnel
Ulkatcho
Kersley
Quesnel Forks
Narcosli Creek
Alexandria
Likely
Hydraulic
Marguerite
Castle Rock
Beaver Lake
Gilpin
Firvale
Stuie
Atnarko
Hagensborg
Anahim Lake
Chezacut
Macalister
Soda Creek
Horsefly
Miocene
Ochiltree
150 Mile House
Redstone
Alexis Creek
Williams Lake
Riske Creek
Hanceville
Springhouse
Kleena Kleene
Tatla Lake
Tatlayoko Lake
Forest Grove
Canim Lake
Roe Lake
Bridge Lake
North Bonaparte
70 Mile House
Vidette
Cache Creek
Kingcome Inlet
Wilton
Smoom Sound
Echo Bay
Glendale Cove
Loughborough Inlet
Jackson Bay
Port Neville
Thurlow
Kelsey Bay
Sayward
Rock Bay
Owen Bay
Stuart I.
Granite Bay
Redonda Bay
Heriot Bay
Squirrel Cove
Refuge Cove
Mansons Ldg.
Bliss Landing
Lund
Campbell River
Blondel
Bralorne
Pioneer Mine
Seton Lake
Shalalth
Ashcroft Manor
Ashcroft
Walhachin
Savona
Kamloops
Craig Lodge
Lillooet
D'Arcy
Upper Hat Creek
Pemberton Meadows
Birken
Pemberton
Creekside
MOUNTAINS
Shaw Springs
Spences Bridge
Mamette Lake
Lytton
Lower Nicola
Merritt
Canford
Alta Lake
GARIBALDI
PROVINCIAL PARK
Garibaldi
Brackendale
Squamish
Woodfibre
Britannia Beach
Alvin
North Bend
Boston Bar
Brookmere
Spuzzum
Chapmans
Yale
Tulameen
Coalmont
Hope
Choate
Ruby Cr.
Harrison Hot Springs
Agassiz
Laidlaw
Cheam View
Rosedale
Chilliwack
Sumas
Powell River
Saltery Bay
Lang Bay
Blubber Bay
Oyster River
Merville
Courtenay
Vananda
Stillwater
Egmont
Earl Cove
Irvines Ldg.
Mc Nab Creek
Comox
Royston
Gillies Bay
Denman I.
Cumberland
Union Bay
Buckley Bay
Fanny Bay
Halfmoon Bay
Sechelt
Port Mellon
Gibsons
Wilson Cr.
Roberts Cr.
Horseshoe Bay
Bowser
Qualicum Beach
Parksville
Vancouver
N. Vancouver
Port Moody
Coquitlam
Mission
Deroche
Hatzic
Abbotsford
Coombs
Nanaimo
Gabriola
Burnaby
New Westminster
Steveston
Ladner
Tsawwassen Beach
White Rock
Blaine
Cedar
Galiano
Chemainus
Ladysmith
Cassidy
Crofton
Salt Spring
Fulford Har.
Duncan
Cobble Hill
Lake Cowichan
Youbou
Honeymoon Bay
Brentwood Bay
Sidney
Roche Harbor
Friday Harbor
Bellingham
Eastsound
Doebay
Orcas
Blanchard
Anacortes
Lopez
Richardson
Victoria
Sooke
Colwood
River Jordan
Port Renfrew
Clo-oose
Bamfield
San Mateo
Nitinat
Kildonan
Sechart
Ucluelet
Port Alberni
Alberni
Cameron Lake
Great Central
Kakawis
Clayoquot
Tofino
Ahousat
Estevan Point
Nootka
Gold River
Hecate
Queens Cove
VANCOUVER ISLAND
STRATHCONA PROVINCIAL PARK
MOUNTAINS
CANADA
UNITED STATES
B.C.
WASHINGTON
SCALE ONE INCH EQUALS APPROXIMATELY 39 MILES
0 5 10 20 30 40 50 60 70 80

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LIST OF ILLUSTRATIONS

SUMMARY AND CONCLUSIONS

Interesting copper mineralization occurs on the south side of the Quatam River valley approximately 3 miles east of Ramsay Arm on the B.C. coast. The copper occurs principally as fine-grained, disseminated chalcopyrite in a silicified intrusive breccia, in narrow shear zones, and in small dioritic bodies. The main area of interest is the breccia because its dimensions are inferred to be about 2000' x 1000'. The extent of the breccia is known approximately in the northeast-southwest direction but it is obscure in the northwest-southeast direction, being a minimum of 2000'. Mineralization to the southwest of this zone is associated with isolated silicified shear zones within pink granite and granodiorite but the prime exploration target is the breccia.

RECOMMENDATIONS

The entire property definitely warrants investigation for its copper potential. In particular, the breccia zone should be prospected, mapped, and soil sampled in detail; tractor trenching should be carried out in this area to define more closely the limits of the zone and obtain fresh rock for assays. A ground magnetometer survey should be undertaken over the breccia zone as a possible aid in delimiting its extent. An induced polarization survey is recommended to verify the extent and intensity of the sulphide mineralization.

Targets outlined by the soil and IP surveys should be diamond drilled.

It is recommended that the sum of $80,000 be provided for the above work.

INTRODUCTION

The Quatam River property of Capilano Explorations Ltd. consists of 68 full-sized and 3 fractional mineral claims on the south side of the Quatam River valley. Copper mineralization on the property was investigated by the writer in March and April, 1970. Exploration work carried out on the property consisted of geological mapping, chip sampling, and soil and silt sampling. The mapping and geochemical survey was limited to elevations below 3000'. At elevations above 3500' snow depth was 10' and more.

The copper occurs as chalcopyrite disseminated in altered and brecciated intrusive rocks, the main area of interest having dimensions of at least 1000' x 2000'.

LOCATION AND ACCESS

The property is located 2-3 miles east of Quatam Bay in Ramsay Arm which is just south of Bute Inlet on the B.C. coast. It is at longitude 124°53' and latitude 50°22½', about 110 air miles northwest of Vancouver.

Access to the property is by 2-3 miles of logging road from a landing in Quatam Bay on the south side of the Quatam River.

A direct flight via charter aircraft to Quatam Bay from Vancouver harbour takes about an hour. Charter aircraft are also available at Campbell River or Powell River. A weekly supply boat will stop at Quatam Bay on request.

HISTORY

No geological information has been published on the area. It shows as a blank on the geological map of B.C. (1 inch = 20 miles) with only the immediate coastline mapped as intrusive rocks of Mesozoic age.

An examination of the latest B.C. Government claim map for the area reveals only limited staking in the vicinity. Fourteen lapsed claims are indicated on the north side of Toba Inlet about 5 miles to the east-southeast of the Capilano property.

GENERAL FEATURES

The property covers a portion of the steep southern side of the Quatam River valley. Slopes range from moderate near the Quatam River to precipitous as one travels south. Vertical cliffs occur with heights of several hundreds of feet. Elevations on the claim group range from near sea level to about 4500' above sea level.

Despite the steepness of the terrain, the main area of interest on the property is accessible. Old logging roads penetrate to within 1000' of the known showings in the breccia zone and cat trails could be pushed through to these with little difficulty.

Approximately three-quarters of the claims cover logged-over areas where foot travel is difficult and slow due to down timber, uprooted stumps and a thick second growth of small timber and underbrush. Hemlock, balsam, Douglas fir, and red and yellow cedar are the principal species in the forested areas. Alder is abundant at the lower elevations. Salal is thick up to about 600' elevation.

Rock exposure in the logged-over areas is limited with soil and rubble generally obscuring much of the geology. Good exposures are found along several of the creeks that flow into the main valley.

GEOLOGY

Mapping of the property indicated that the underlying rocks are exclusively intrusive, as shown on the accompanying geological map (1" = 400'). Various rock types were noted ranging in composition from diorite to pink granite. The dominant rocks are granodiorite, diorite, and pink granite. The granodiorite grades to monzonite and quartz monzonite or quartz diorite at some locations. The quartz content of the intermediate rock types is generally high.

A silicified and mineralized intrusive breccia lies within the pink granite on the northeast side of Copper Creek. The breccia consists principally of granodioritic fragments within a dark, silicified matrix of possible dioritic composition. Some fragments of aplite are also found in the breccia. The pink granite is brecciated near location (D) where it is in contact with the main breccia zone.

Diorite porphyry occurs at several isolated locations on the property. The relative age of this rock is not definitely known, but it may be penecontemporaneous with the Burma Creek granodiorite. In the xenolithic breccia, fragments of the porphyry are incorporated in the granodiorite matrix. Southeast of Copper Creek the same porphyry was found and may occur as small intrusive bodies into the granodiorite.

The diorite bodies along Burma Creek may be either intrusive into the granodiorite or older remnants within it. Gradational contacts obscure the relative age interpretation.

Two distinct varieties of granodiorite underlie the property. The Burma Creek granodiorite is medium to coarse grained with a variable quartz content and some monzonitic phases. The Jones Creek granodiorite is finer grained but of apparently similar composition. Both varieties contain varying proportions of hornblende and biotite.

ALTERATION

Silicification is the principal type of alteration associated with the copper mineralization in both the altered breccia and shear zones. A decrease in grain size and incipient obliteration of the original igneous textures has occurred concomitantly with the alteration. Much of the silicified rock is stained with iron oxides.

Several lesser types of alteration were noted. Sericite has developed in the silicified shear zones. Biotite in some of the intrusive rock types appears to be secondary after hornblende. Epidote is fairly widespread in stringers and in shear zones associated with chlorite and kaolinite. Potassium feldspar alteration has occurred along shear and fracture zones.

Evidence of faulting along Copper Creek was found at one location (K on geological map) on the west side of Copper Creek. Here, a 30' wide mineralized shear zone striking northeasterly does not continue across the creek. The showing at location (D) and (E) may be a continuation of this zone, in which case right lateral movement

is indicated. Fracturing occurs in and parallel to Burma Creek and abundant potassium feldspar alteration and epidotization occurs along seams in the creek bed. Evidence of offsetting was not observed.

The straight valley of the Quatam River suggests the possibility of a structural break of some magnitude. The rocks underlying the property have been considerably sheared and fractured but dominant structural trends were not determined.

MINERALIZATION

The principal copper mineralization occurs as disseminated grains of chalcopyrite in the silicified breccia. Very minor bornite occurs at location (E). Discontinuous copper mineralization occurs west of Copper Creek and is confined to isolated, northeasterly striking, silicified shear zones that cut both the pink granite and Burma Creek granodiorite, at intervals, in the area lying between Copper and Burma Creeks. The mineralized rocks are invariably rusty due to oxidation of the associated and ubiquitous iron sulphides (mainly pyrite and minor pyrrhotite). Leaching of the sulphides from the weathered rock appears to have occurred in places and thus some of the assay results for the chip samples may not be truly indicative of the actual copper content.

The altered mineralized breccia east of Copper Creek is apparently extensive as observed in scattered outcrop. Its extent is approximately known in the northeast-southwest direction but entirely inferred in the northwest-southeast direction. As shown on the accompanying

geological map, its dimensions are 1000' x 2000', but may be more in the northwest-southeast direction.

The copper mineralization and alteration is similar in both the breccia zone and the shear zones to the west; sericite, however, has developed in the shear zones but is generally absent in the breccia. Copper mineralization in the form of both disseminated grains and tight seams of chalcopyrite occurs in the diorite bodies along Burma Creek. Scattered, isolated grains of chalcopyrite occur at various places in the pink granite.

Molybdenite occurs in isolated areas of the property as smeared grains along chlorite-lined fractures associated with rusty zones and as large blebs in narrow (1" - 3"), discontinuous, felsic veins. Some of these veins have formed in tension gashes. Interesting molybdenite mineralization was noted in float in Copper Creek.

There is a rather widespread association of magnetite with the copper mineralization. It occurs both in the silicified shear zones and altered breccia as disseminated grains and blebs, and along seams and short fractures. Its occurrence may render a ground magnetometer survey effective in outlining areas of interest beneath the overburden.

GEOCHEMICAL SURVEY

Several anomalous areas are indicated by the reconnaissance soil sampling but correlation of anomalous values with the breccia zone was not entirely successful. This could be due to the extremely disturbed

nature of the overburden as a result of logging operations. A more detailed orientation study will be required to test the effectiveness of soil sampling in the area. The anomalous values at the eastern extremity of the diorite body along Burma Creek warrant further investigation.

Most of the silt samples were taken from Burma Creek and did not indicate any anomalous areas. There is almost no silt in Copper Creek. The two samples taken from the lower reaches were of dry silt. Silt sampling does not appear to be a very useful exploration tool for this area.

COST ESTIMATE

Camp construction	$3,000
Lincutting (10 miles @ $100/mile)	1,000
Geological mapping	3,000
Prospecting	2,000
Soil sampling	2,000
Analyses of soil and rock samples	2,000
Induced polarization survey (10 miles @ $500/mile)	5,000
Ground magnetometer survey	1,000
Tractor trenching	8,000
Transporting tractor	2,000
Blasting and sampling	4,000
Diamond Drilling (8 holes of 400' length @ $10/foot)	32,000
Camp administration costs (3 months @ $2,000/month)	6,000
Engineering	2,000
	73,000
Contingencies (10%)	7,000
Total estimated cost	$80,000

Respectfully submitted,

BACON & CROWHURST LTD.

M.F. Cowan, M.Sc., P.Eng.

PROFESSIONAL ENGINEER PROVINCE OF BRITISH COLUMBIA M. F. COWAN

APPENDIX A

LIST OF CLAIMS

Note: All claims full-sized unless noted otherwise

Claim	Record Nos.	Expiry Date
Quatam #1	15572	March 3, 1971
#2	15573	"
Ellen #1	15594	March 10, 1971
#2	15595	"
Morrison #1	15596	March 10, 1971
#2	15597	"
Quatam #3	15598	March 10, 1971
#5	15600	"
Jones #1	15602	March 10, 1971
#2	15603	"
#3	15700	March 14, 1971
#4	15701	"
#6	15703	"
V.L. #1	15706	"
#2	15707	"
Cyndie #5	15853	April 8/71
#6	15854	"
Ramsay #1	15552	Feb. 5, 1971
#2	15553	"
Oliver #1	15708	March 14, 1971
#2	15709	"
Cyndie #1	15710	"
#2	15711	"
#3	15712	"
#4	15713	"
Ramsay #3	15714	"
#4	15715	"
Oliver #3	15779	March 27, 1971
#4	15780	"

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Claim	Record Nos.	Expiry Date
A.C. #1	16077	May 20, 1971
#2	16078	"
#3	16079	"
#4	16080	"
Cap #1	17045	April 8, 1971
#2	17046	"
#3 (Fractional)	17047	"
#4	17048	"
#5	17049	"
#6	17050	"
#7	17051	"
#8	17052	"
#9	17053	"
April #1	17054	"
#2	17055	"
#3 (Fractional)	17056	"
#4	17057	"
#5	17058	"
#6	17059	"
#7	17060	"
#8	17061	"
#9	17062	"
#10	17063	"
#11	17064	"
#12	17065	"
#13	17066	"
#14	17067	"
#14A	17068	"
#15	17069	"
#16	17070	"
#17	17071	"
#18	17072	"
#19	17073	"
#20	17074	"
#21	17075	"
#22(Fractional)	17076	"
#23		April 28, 1971
#24		"
#25		"
#26		"
#27		"
#28		"

APPENDIX B

CHIP SAMPLE ASSAYS

Note: Samples E, F and G all assayed less than 0.003 oz. Au/ton

* Showing	Footage	% Cu	Average	Oz. Ag/ton
A	0-5	0.03		
	5-10	0.03		
	10-15	0.04	0.03/15'	
B	0-10	0.04		
	10-20	0.08		
	20-30	0.03		
	30-40	0.01	0.04/20'	
C	0-10	0.03		
	10-20	0.02		
	20-30	0.04		
	30-40	0.04	0.03/20'	
D	0-10	0.04		
	10-20	0.09	0.07/20'	
E	0-5	0.03		0.03
	5-10	0.04		0.03
	10-15	0.20		0.08
	15-20	0.36		0.42
	20-25	0.09	0.14/25'	0.03
F	0-6	0.21	0.21/6'	0.13
G	0-6	0.19	0.19/6'	0.41
H	0-10	0.06		
	10-20	0.04		
	20-25	0.02	0.04/25'	
I	0-5	0.07	0.07/5'	
J	0-10	0.38		
	10-15	0.93		
	15-20	0.14	0.46/20'	
K	0-5	0.10		
	5-10	0.11		
	10-15	0.16		
	15-20	0.33		
	20-25	0.22		
	25-30	0.24	0.19/30'	

* See geological map for location

APPENDIX C

CERTIFICATION

I, Michael F. Cowan, of the City of Vancouver in the Province of British Columbia, DO HEREBY CERTIFY THAT

1. I am a registered Professional Engineer in the Province of British Columbia.

2. I am a graduate of Michigan Technological University, Houghton, Michigan, with a Bachelor of Science degree (1963) in Geological Engineering.

3. I am a graduate of Queen's University, Kingston, Ontario, with a Master of Science degree (1966) in Geology.

4. I have been practising my profession as a geological engineer since 1963 in Ontario, British Columbia, Northwest Territories, Yukon Territory, Alaska and Montana.

5. I have personally investigated the Quatam River property of Capilano Explorations Ltd. (N.P.L.).

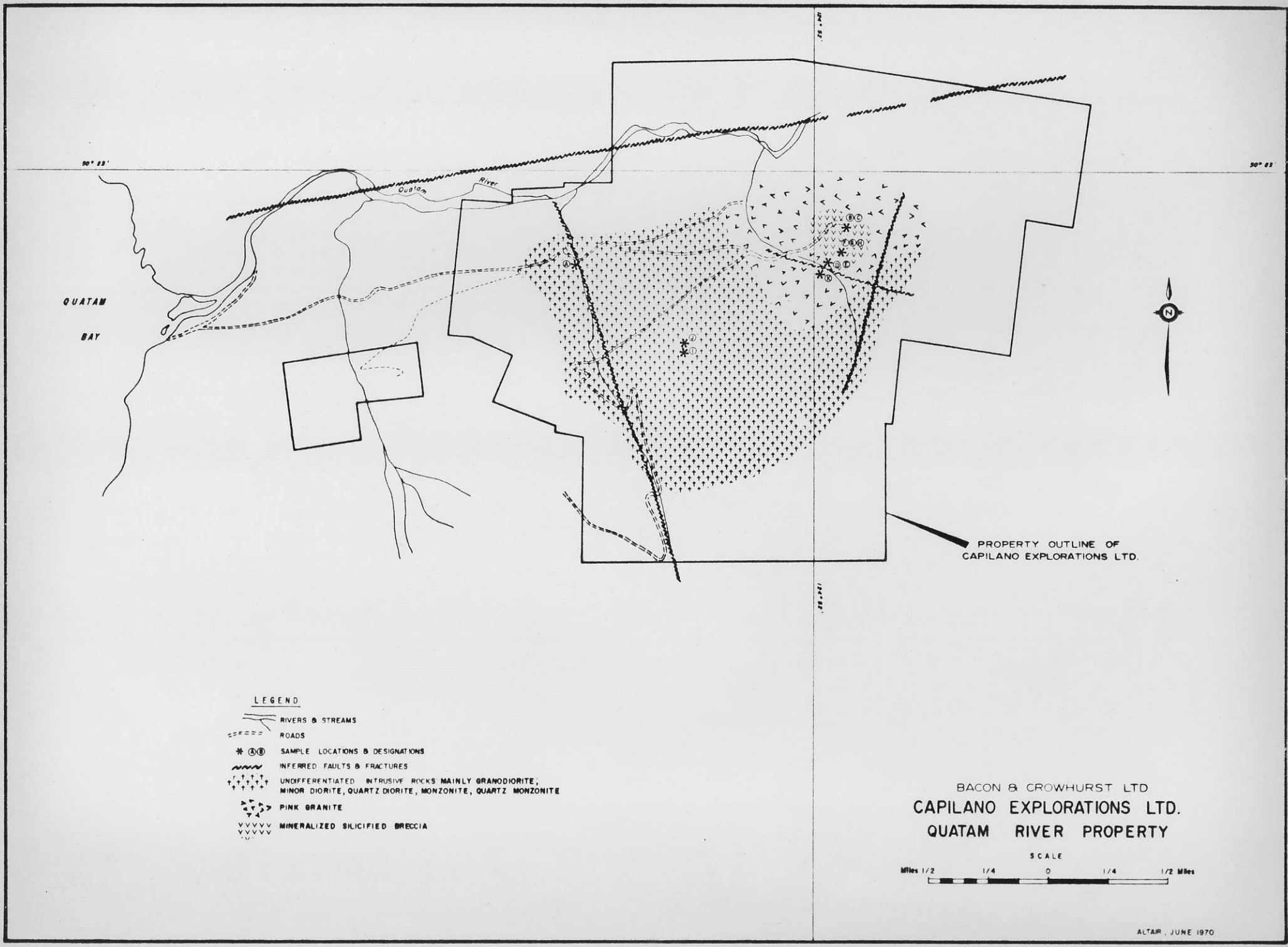
6. I have not directly or indirectly received or expect to receive any interest direct or indirect in the property of the company or any affiliate, nor do I beneficially own directly or indirectly any securities of the company or any affiliate.

M.F. Cowan

M.F. Cowan, M.Sc., P.Eng.

PROFESSIONAL ENGINEER PROVINCE BRITISH COLUMBIA M. F. COWAN

Vancouver, Canada,
June 17th, 1970,


50° 23'
50° 23'
Quatam River
QUATAM
BAY
PROPERTY OUTLINE OF
CAPILANO EXPLORATIONS LTD.
LEGEND
RIVERS & STREAMS
ROADS
SAMPLE LOCATIONS & DESIGNATIONS
INFERRED FAULTS & FRACTURES
UNDIFFERENTIATED INTRUSIVE ROCKS MAINLY GRANODIORITE; MINOR DIORITE, QUARTZ DIORITE, MONZONITE, QUARTZ MONZONITE
PINK GRANITE
MINERALIZED SILICIFIED BRECCIA
BACON & CROWHURST LTD
CAPILANO EXPLORATIONS LTD.
QUATAM RIVER PROPERTY
SCALE
Miles 1/2 1/4 0 1/4 1/2 Miles
ALTAIR, JUNE 1970

QUATAM RIVER

COPPER CREEK

BURMA CREEK

JONES CREEK

APPROXIMATE N

LEGEND

GEOLOGY

- 1 Diorite; quartz diorite
- 2 Diorite porphyry
- 3 Granodiorite; monzonite, quartz monzonite
  - 3a Burma Creek Granodiorite
  - 3b Jones Creek Granodiorite
  - 3c Granodiorite – diorite porphyry breccia
- 4 Granite
  - 4a White weathering
  - 4b Pink weathering
- 5 Dikes, sills
  - 5a Basic dikes & sills
  - 5b Aplite dikes & sills
- 6 Silicified zones
  - 6a Silicified breccia
  - 6b Silicified shear zones

SYMBOLS

- Creeks
- Logging roads
- Slash, approximate extent
- Major faults, fractures; observed, inferred
- Contacts, observed, inferred
- Joints, fractures
- Sheeting
- Dikes, sills
- Shear zones
- (A) Chip sample location
- X X X Xenolithic breccia
- Copper mineralization, sparse
- Copper mineralization, abundant

BACON & CROWHURST LTD.

VANCOUVER BRITISH COLUMBIA

CAPILANO EXPLORATIONS LTD.

GEOLOGICAL MAP

QUATAM RIVER PROPERTY

FIG. 1

FEET 400 200 0 400 800 1200 FEET

ALTAIR drafting services, May–70

QUATAM RIVER

COPPER CREEK

BURMA CREEK

Line 54 N.

Line 50 N.

Line 46 N.

Line 42 N.

Line 38 N.

Line 34 N.

APPROXIMATE

LEGEND

- Soil Sample Location
- Silt Sample Location

Values in ppm. Cu

- Creeks
- Logging roads
- Slash approximate extent

inches
centimetres

This reference scale bar has been added to the original image. It will scale at the same rate as the image, therefore it can be used as a reference for the original size.

BRITISH COLUMBIA GEOLOGICAL SURVEY

BACON & CROWHURST LTD.

VANCOUVER BRITISH COLUMBIA

CAPILANO EXPLORATIONS LTD.

RECONNAISSANCE SOIL AND SILT SAMPLE MAP

QUATAM RIVER PROPERTY

FIG. 2

FEET 400 200 0 400 800 1200 FEET

PROFESSIONAL ENGINEER PROVINCE OF BRITISH COLUMBIA M. F. COWAN

ALTAIR drafting services, May-70