MINTEK RESOURCES LTD.

QUADRA COPPER PROJECT

PHOTO-LINEAR ANALYSIS

QUADRA ISLAND B. C.

N.T.S.92K/3W

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FORDEX MANAGEMENT INC.

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INTRODUCTION

Copper mineralization in the Quadra Copper Project area consists of primary Chalcosite with lessor amounts of Malachite, Azurite, Bornite and Chalcopyrite. Historically the area has been noted for the occurrence of Chalcosite filled amygdules along the tops of amygdaloydal lava flows forming strataform copper deposits.

E.P. Sheppard P. Eng. in his 1973 report on the area noted that while strataform copper mineralization was present in many of the known copper deposits the bulk of the copper mineralization in the area was fracture controlled.

Plots of the copper deposits locations on topographic plans suggests a correlation with northwest trending topographic lows. Mapping of the individual deposits by the author however showed that while the overall trend of some deposits was in a northwesterly direction the bulk of the copper mineralization was often in east west trending fractures. There also appears to be a relationship between mineralized bedrock fracturing and the strataform disseminated mineralization. In order to evaluate these observations on a property scale. low level government aerial photographs of the area were obtained and utilized in an analysis of the bedrock structure visible on the photos as linear features. The results of this analysis is the subject of this report.

PROPERTY

The Quadra Copper Project consists of the claims listed below, sited to cover the most of the important copper deposits on western Quadra Island.

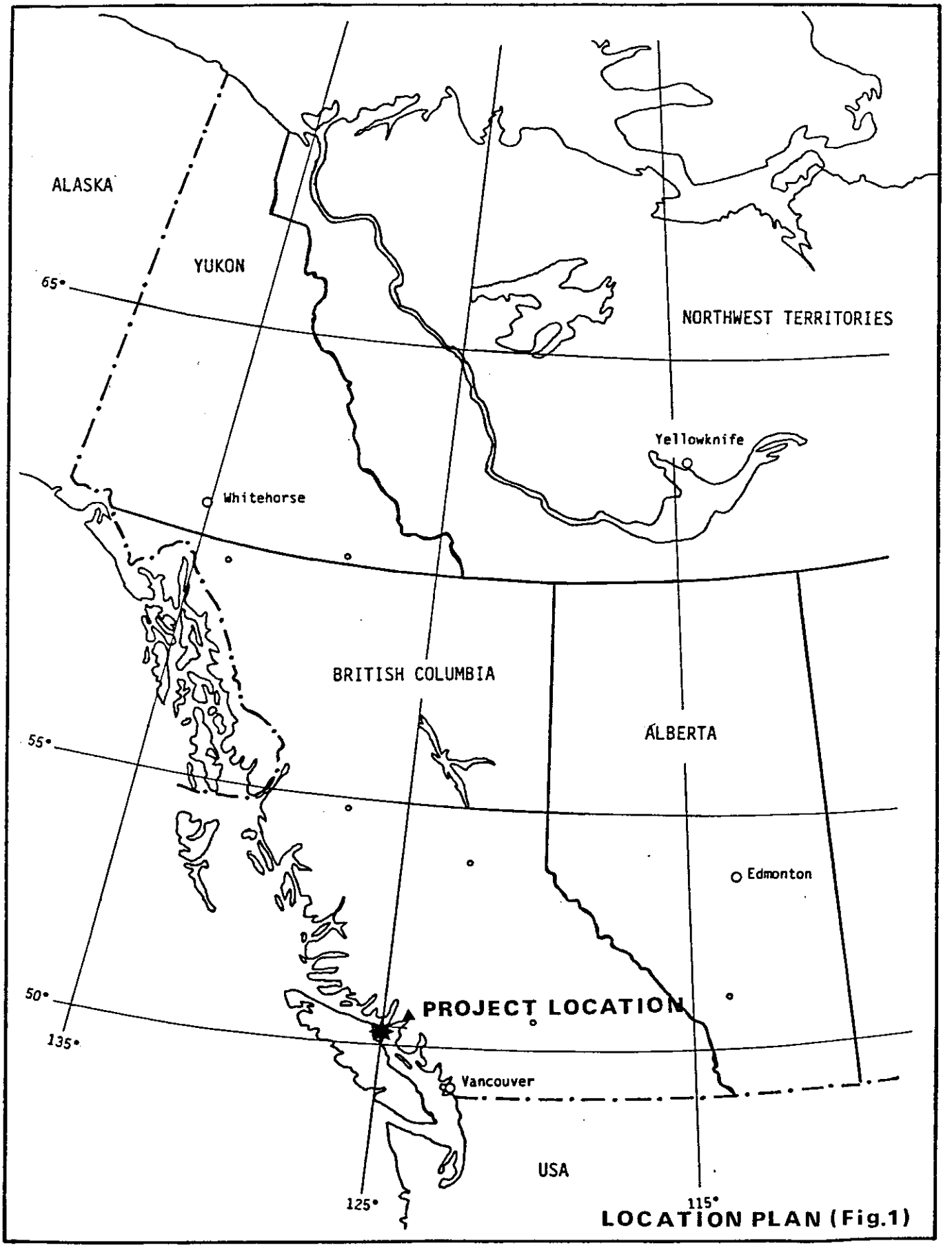
CLAIM	TAG #	RECORD #	DATE	UNITS	AREA Ha.
CCT	206149	4162	APR.12/91	20	500
MCT 1	638033	4182	APR.28/91	1	25
MCT 2	638034	4183	APR.28/91	1	25
BN-1	638035	4184	APR.29/91	1	25
BN-2	638036	4185	APR.29/91	1	25
BN-3	638037	4186	APR.29/91	1	25
BN-4	638038	4187	APR.29/91	1	25
BN-6	638041	4188	APR.29/91	1	25
BN-7	638042	4189	APR.29/91	1	25

The claims were staked by the author, and are leased to Mintek Resources Ltd. The author was the Vice-President of Exploration of Mintek and was a Director of the corporation. The claim locations are shown on the property geology plan (fig.3) with the exception of claims BN-2, 1 and 7 which are contiguous on the north of claims BN-4, 3 and 6 respectively.

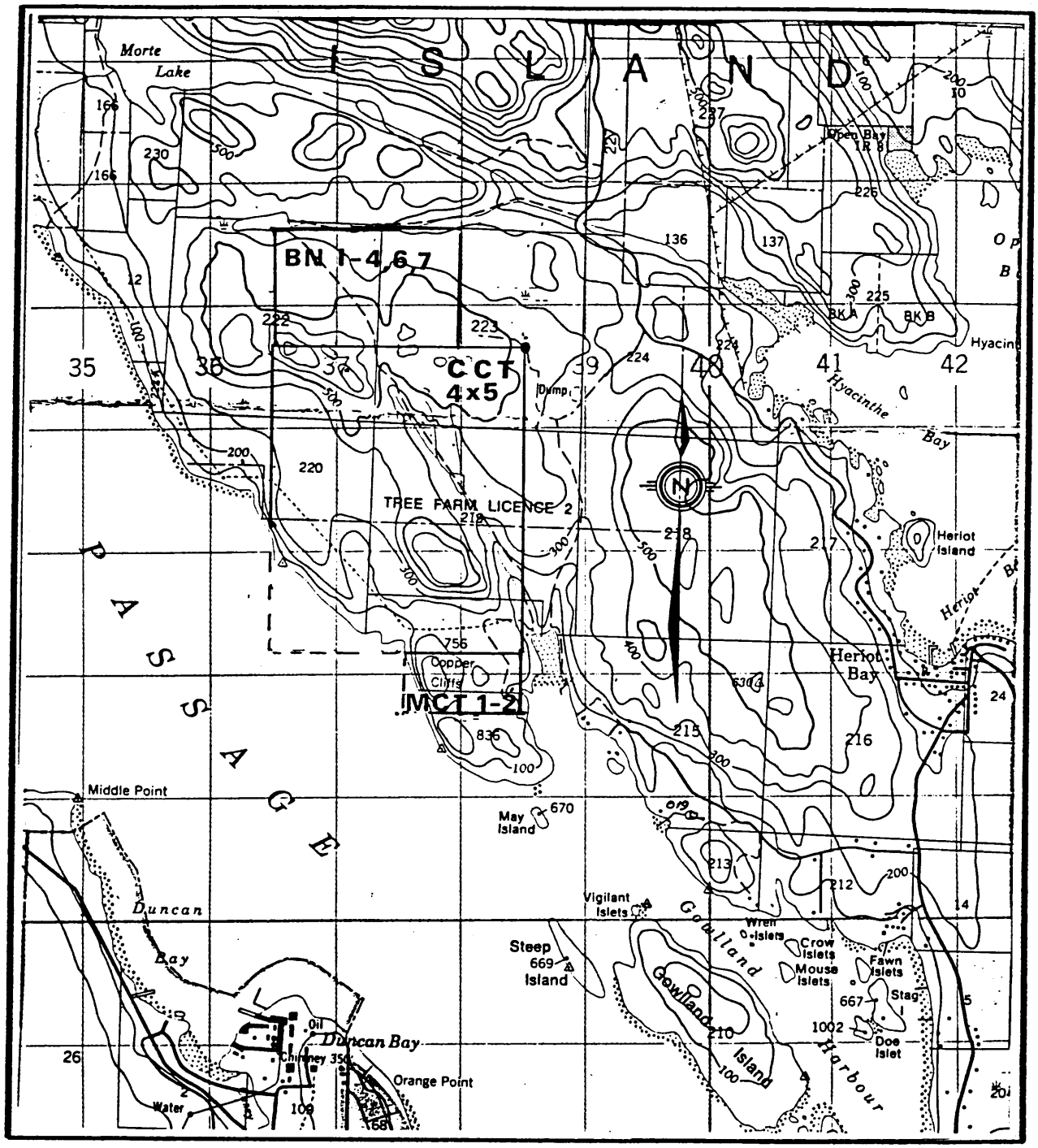
LOCATION AND ACCESS

The Quadra Copper Project is located on Quadra Island which is situated between the northern part of Vancouver Island and the British Columbia mainland.(fig.1) The property approximately 4 Km. northwest of the Village of Heriot Bay on NTS map sheet 92K/3W (fig.2). Access to the property is north via the Heriot Bay - Granite Bay main road for 3km and thence south west along a secondary gravel road leading to the Gowlland Harbor log sorting operation. With the exception of the first two roads branching to the west off the Gowlland Harbor road all other west branching roads access portions of the project area.

Access to Quadra Island is via the Campbell River - Quathiaski Cove Ferry which departs Campbell River at hourly intervals. Access to Campbell River is generally by the Island Highway from Naniamo or Victoria or by airline from Vancouver.



LOCATION PLAN (Fig.1)



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REGIONAL LOCATION

(FIG. 2)

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HISTORY

The first recorded mining in the project area was in 1906-1907, when high grade ores from the Copper Cliff deposit were mined from an adit in the cliff face and shipped to a smelter at Ladysmith B.C. This smelter has since closed. The next period of activity was between 1915 and 1919 when ores from the Pomeroy area were mined by the Valdez Copper Company and shipped to the smelter at Anyox B.C. (since closed). Samples from the Senator claim in the Pomeroy area were tested for Radium in 1922,however the test with an electroscope, the instrument used to detect radioactivity at that time, detected no radioactivity.

In 1929 the Pomeroy area was acquired as the Hercules 1-10 Claims by the Hercules Consolidated Mining Smelting and Power Company and in 1930 a Mr.Crowe-Swords submitted a sample of yellow powder, reportedly scraped from joint faces, to the laboratory at the University of B.C. for analysis and was identified as Carnotite. H.C.Gunning of the G.S.C.examined the area of the reported carnotite showings in 1932 and reported finding a few grains of carnotite like material in a soil filled crevice due to weathering at the western end of the area. In *Economic Geology Series* No.16 Gunning reports he visited the area but failed to find any Carnotite.. Samples collected by Gunning did,however contain up to several percent acid leachable Vanadium with the highest values in a black siliceous sediment overlying a copper mineralized flow.

In 1952-53 Dodge Copper Mines drilled 145 holes totaling 8800 feet on various deposits. The records of this work were incomplete when reviewed by E.P.Sheppard in 1973 and have not been sited by the author. Several hole collars can still be found in the field.

The next period of activity started in 1964 when 337 Tonnes were reported to have mined from a shallow pit on the Beaver deposit. This was followed by the reported mining and heap leaching of 5443 tonnes grading 0.8% Cu from the Pomeroy 1 deposit in 1968-69 by Lonrho Explorations. Due to coarse run-of-mine ore ,poor grade control and high solution losses the operation only produced 559 Kg. of copper. Between 1970 and 1979 portions of the CCT claim area was held and explored by Western Mines, Prince Stewart Mines, Quadra Mining, and Quadra Bell Mining. The only significant work appears to have been done in the north east corner of the CCT claim where E.P.Sheppard P.Eng. discovered the Copper Bell deposit. A small Pilot Plant utilizing low pressure ammonia leach technology was constructed nearby and 272 Tonnes of ore from the small Copper Bell pit was processed to produce a copper carbonate concentrate.

The Quadra Copper area was identified by the author in a detailed search of the B.C. Ministry of Energy Mines and Petroleum Resources MINFILE database as a significant copper property with reported "reserves" that may have not been adequately explored. The current property was subsequently staked by the author.

Except in the Copper Bell area the author did not observe any evidence of recent mineral exploration outside the known mineralized areas other than claim staking by others.

INFRASTRUCTURE

Developed infrastructure on the project area is currently limited to single lane gravel roads and the main power transmission line which services Quadra Island. The Island has a population of several thousand people clustered in the vicinity of Heriot Bay and Quathiaski Cove. Due to the proximity to Campbell River , the regions main supply center services on the island are somewhat limited. Campbell River has a population of 17,500 and is the supply center for northern Vancouver Island. Local industries include Pulp and Paper, Sawmills, Fishing, Coal Mining (Quinsam Coal) ,Base Metal Mining (Western Mines) and Tourism. Several industrial supply warehouses currently service the local forest ,fishing and mining industries The city is serviced by two regional airlines with several flights per day from Vancouver.

CLIMATE

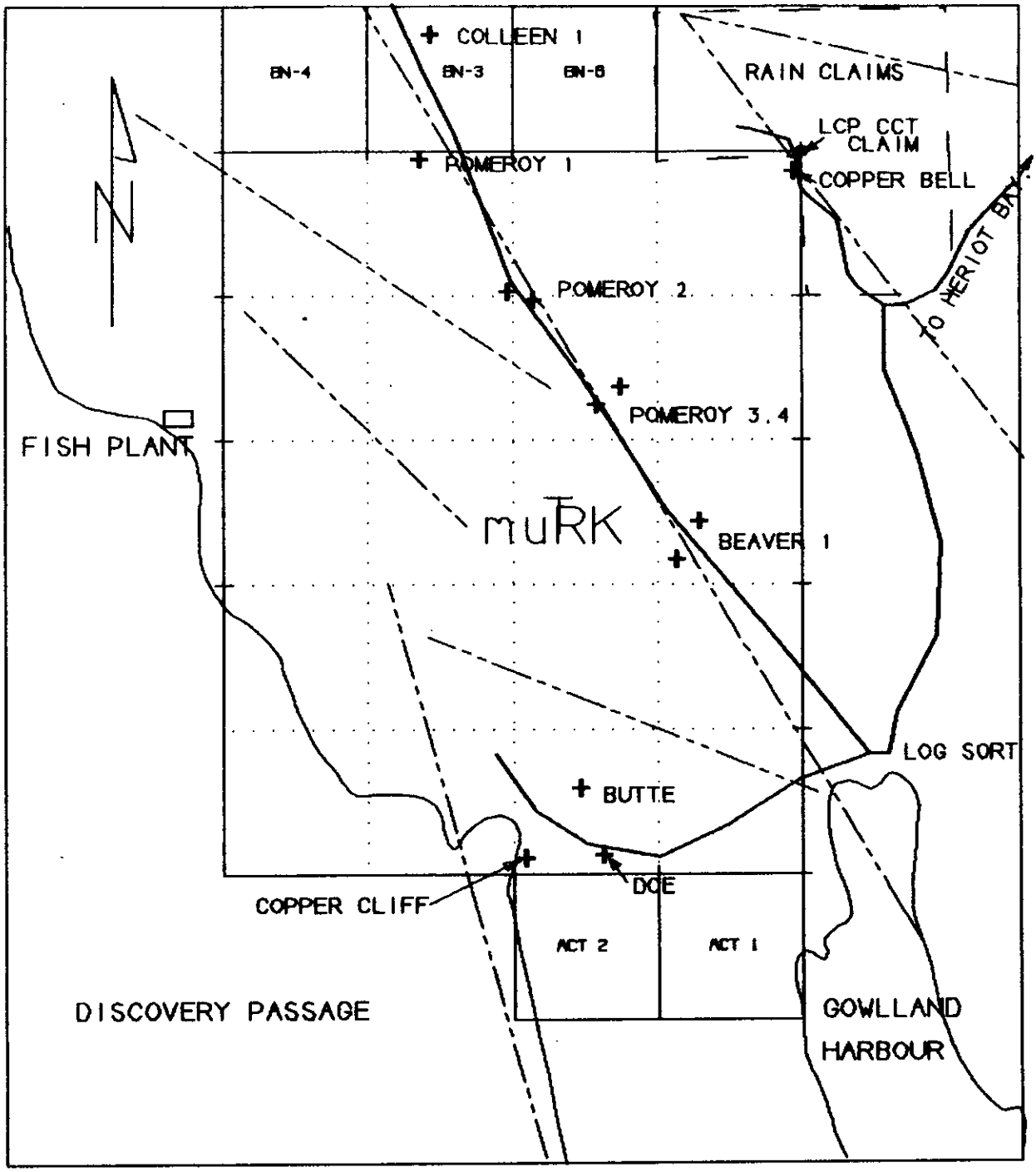
The climate of the project area is characterized by wet cool winters with occasional heavy snow falls and warm dry summers. Forest cover consists of mature second growth Douglas Fir , Hemlock, Cedar, Alder and Arbutus except for a strip along the southern edge of the property which was recently logged.

GEOLOGY AND GEOMORPHOLOGY

The Quadra Copper Project area is underlain by Andesitic to Basaltic lava flows of the Karmutsen Formation (fig. 3). The flows typically dip shallowly to the east or southeast and are incised by northwest and east-west trending topographic depressions evident on government topographic maps of the area. Pleistocene glacial scouring in conjunction with the shallow dip of the lava flows and bedrock fractures (faults, shears and joints) in the area has produced butte like landforms, hills with flat to gently rounded tops and steep cliff or scarp faces on the south and west sides.

Both bedrock outcrop and vegetation correlate with the topography. On the hill tops and cliff faces soil cover is minimal and vegetation typically consists of mosses and lichen growing on the outcrop and lodgepole pine growing along bedrock fractures where the root system can anchor the tree to the bedrock and also obtain moisture during the drier summer months. In the larger linear topographic lows outcrop is sparse and overburden consists variously of scree, glacial till, compact pre-glacial or inrta-glacial sands and recent organic muck in swampy areas. Vegetation consists of Douglas Fir, Hemlock, Cedar and occasional deciduous trees with locally dense underbrush. Devils club is restricted to shaded swampy areas. These vegetation contrasts create linears on the aerial photographs.

Glacial scouring along bedrock fractures is at a maximum when the fracture is aligned with the local direction of ice movement (Northwest - Southeast) and at a minimum when the fracture is at right angles. The intensity of scouring is thus not necessarily directly related to the intensity of the bedrock fracturing.



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FRACTURE SYSTEM ----------

DEPOSIT IN TEXT +

muRK Karmutsen Formation

1000 METERS

PROPERTY GEOLOGY

(FIG. 3)

Q.DVG

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PHOTO LINEARS

For the purposes of this evaluation visible photo-linears were grouped into three classes, Major Linears, Intermediate Linears and "Minor" Linears. The Major Linears are typically broad through going topographic depressions supporting abundant vegetation. Intermediate Linears , as plotted on the accompanying plan, are narrower than the Major Linears and of shorter length. The "Minor" Linears include the alignments of lodgepole pines on soil deficient hill tops ,minor linear topographic depressions, scarp faces etc.,or combinations of these features. Due to local variations in forest cover and overburden there may be no relation between a linerar's classification and the intensity of the causative structure. These Linears together with other topographic features and roads were traced on transparent drafting film overlain on the individual photographs and subsequently transferred to the Photo-Linear Analysis Plan (In pocket).

As shown on the plan the Major linears form a crude arc about a point to the south west of the project area, somewhere in Discovery Passage. The arcuate arrangement may be due to volcanic doming, caldera collapse or other unsuspected cause. The majority of known copper deposits in the project area are grouped along these Major Linears, however with the exception of the copper occurrence west of the Pomeroy 2 deposits, the occurrence south of the Pomeroy 3 deposit and possibly the northwestern portion of the Copper Bell deposit there appears to be no direct relationship.

The Intermediate Linears display two distinct trends, a northwesterly trend parallel to the Major Linears and

distinct northerly trend. The northwesterly trending Intermediate Linears are most probably related to the Major Linears. Copper deposits proximal to these linears include the Pomeroy 1, Pomeroy 2N and Pomeroy 2S deposits. The observed Copper mineralization in these deposits does not reflect these trends.

A direct correlation between a northerly trending Intermediate Linear, the bedrock structure and Copper mineralization is exposed in a stream bed between the Pomeroy 3 and Pomeroy 4 deposits. In this bedrock exposure a > 1 meter wide fault zone strikes 350° Az. and dips 45° to the east. The fault zone is filled with a milled fault breccia that is impregnated with Chalcosite and Malachite. Hydrothermal alteration of the fault breccia is not evident. Sampling of this fault by others has returned values of 8% Copper over 1 meter.

Four trends are evident in the "Minor" Linears, northwesterly ,northerly, east-west and northeasterly. The northwesterly and northerly trends are most probably parallel structures to the structures creating the Major and Intermediate Linears. The east-west linears (080°-260° Az.) correlate with Quartz-Calcite-Bornite-Chalcosite veins and veinlets that occur in the Copper Bell and the Pomeroy deposits (1, 2N, 2S, 3 and 4). An east - west fracture zone also occurs below the Copper Cliff deposit but is not evident in the overlying volcanic rocks.

The northeasterly trending linears are generally confined to the eastern portion of the area studied. They have no known correlation with known Copper mineralization.

A style of Copper mineralization not evident in the photo linears is the flat lying Copper - Vanadium mineralization in siliceous dark green interflow sediments exposed in the historic open cast workings in the eastern portion of the Pomeroy 4 deposit.

EVALUATION

Showings of disseminated or amygdule filling Chalcosite are common in flow tops in the Karmutsen Fm. volcanics. Most were found by previous exploration to be small and not of economic significance. In the Quadra Copper Project area a significant portion of the historic copper production has come from this style of mineralization and the area has generally been considered to have minimal economic potential for larger deposits. However, as noted by P. Sheppard P.Eng. in 1973, the bulk of the Copper mineralization in what is now the Quadra Copper Project is structurally controlled and from historic exploration, which was generally confined to the historic deposits, form modest sized bodies of intermediate grade copper mineralization. Higher grade flow top and strataform mineralization from the Copper Cliff and Pomeroy 3 deposits apparently produced the bulk of the ore produced in the 1906 - 1919 period.

The majority of the copper deposits in the project area are clustered along the major northwesterly trending linears yet in the individual deposits examined by the author this structural trend is not significantly mineralized. Possible explanations for this regional, but not local control are:

1. The fractures that control these linears were under compression during the mineralizing event and thus were not preferred channels for the mineralizing solutions.
2. Copper mineralization is confined to a limited number of flow horizons that are exposed by the greater depth of erosion along the Major Linears.
3. The greater depth of overburden and limited bedrock exposure along the base of these linears has prevented the discovery of mineralization by conventional prospecting.

Significant Copper mineralization in northerly trending fractures has only been observed by the author at one location, the copper mineralized fault zone partially exposed in a seasonal creek bed between the Pomeroy 3 and 4 deposits. At this location the fault dips 45° to the east and is filled with milled fault breccia. These observed features indicate that it is a normal or gravity fault formed under tension. As the northerly trending linears are overburden filled, additional copper mineralization along these features is possible.

The bulk of the Copper mineralization having definite structural control occurs in east-west trending fractures as either thin seams of Chalcosite or Quartz-Carbonate-Bornite veins and veinlets, with or without Chalcosite. This style of mineralization is best observed at Copper Bell, Pomeroy 2S and Pomeroy 3 deposits. At the Pomeroy 3 deposit a system of closely spaced Quartz-Calcite-Bornite-Chalcosite veinlets is exposed in the base of a recent bulldozer cut. This structurally controlled mineralization is overlain by a blanket of disseminated Chalcosite along an amygdaloydal flow top. The flow is capped by a thin fine grained tuffaceous sediment also copper mineralized. The sequence is capped by a thick, massive, unmineralized flow which is broken by east-west fractures at 10 to 30 meter intervals. Stunted Lodgpole Pine growing along these widespread fractures show up on the air-photos as "Minor" Linears.
The strataform Copper mineralization at the Copper Cliff deposit may also be controlled by an east-west fracture in the footwall of the deposit,which is not repeated in the overlying lava flow.

No Copper mineralization is known to be associated with the northeasterly trending linears.

CONCLUSIONS

Copper mineralization in the Quadra Copper Project area is, in part, controlled by bedrock structure that is recognizable on low level air photos linears created by vegetation growing along bedrock fractures in outcrop areas or along glacially scoured fracture or fault zones between the outcrop areas.

The east-west trending fractures, in proximity to the North-west fractures, host the majority of known fracture controlled Copper mineralization and may also control the strataform and disseminated deposits. Northerly trending fractures may also host significant copper mineralization on a regional basis although the supporting data is limited to one occurrence. The major north northwesterly structures presently appear to be regional controls, but this could change with further exploration beneath the overburden cover.

RECOMMENDATIONS

Based on observed linear pattern and density the most favorable area of future exploration is an approximate one kilometer square area including and to the east and northeast of the Pomeroy 2,3,4 deposits. This area contains a systematic sequence of east-west fractures as well as a number northerly and north northwesterly linears. Grid lines at 100 meter intervals with stations at 25 meter intervals should be oriented 060^{o}-240^{o} to preclude paralleling any of the favorable structures and should extend across the exposed mineralization in the Pomeroy 2, 3 and 4 deposits The grid area should be mapped in detail Magnetic, VLF-EM and soil geochemical surveys carried out with readings and soil samples taken at 25 meter intervals. The soil samples should be analyzed by a multi-element technique with the analysis including Copper, Silver, Vanadium and Uranium. If the Uranium in soil results indicate only low or background values a copy of the geochemical survey report should be submitted to the Chief Inspector of Mines for the Province of B.C. along with a request that the properties Uranium - Thorium Designation be removed.

Following the evaluation of the geological geophysical and geochemical results diamond drilling is recommended to test the targets identified as well as the Copper mineralized fault between the Pomeroy 3 and 4 deposits and the notherly extension of the strataform mineralization exposed in the Pomeroy 3 open pit.

STATEMENT OF EXPENDITURES

PHOTO-LINEAR ANALYSIS, QUADRA COPPER PROPERTY

June 18,19 Preliminary analysis of photo-linears	
2 Days @ $400.00 per day	$800.00
June 20,21 Site visit, Ground truthing of photo-linears	
2 Days @ $400.00 per day	$800.00
June 24,25 Final analysis of photo-linears	
2 Days @ $400.00 per day	$800.00
June 26,27 Report and drafting	
2 Days @ $400.00 per day	$800.00
Disbursements	
Air Photographs	$56.50
Ferries June 20,21	$56.00
Hotel Quadra Island	$51.75
Meals	$40.00
Vehicle	$60.00
TOTAL EXPENDITURE	**$3464.25**

Gordon M. Ford P.Eng.
Brentwood Bay, B.C.
March, 1992

CERTIFICATION

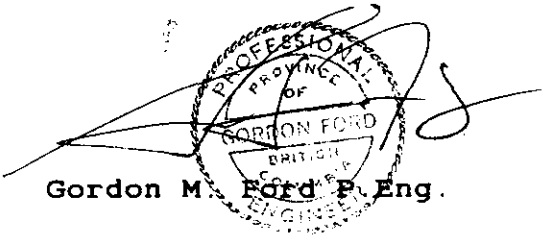
This is to certify that:

I graduated form the University of British Columbia in 1964 with a Bachelor of Science in Geology and Geophysics.

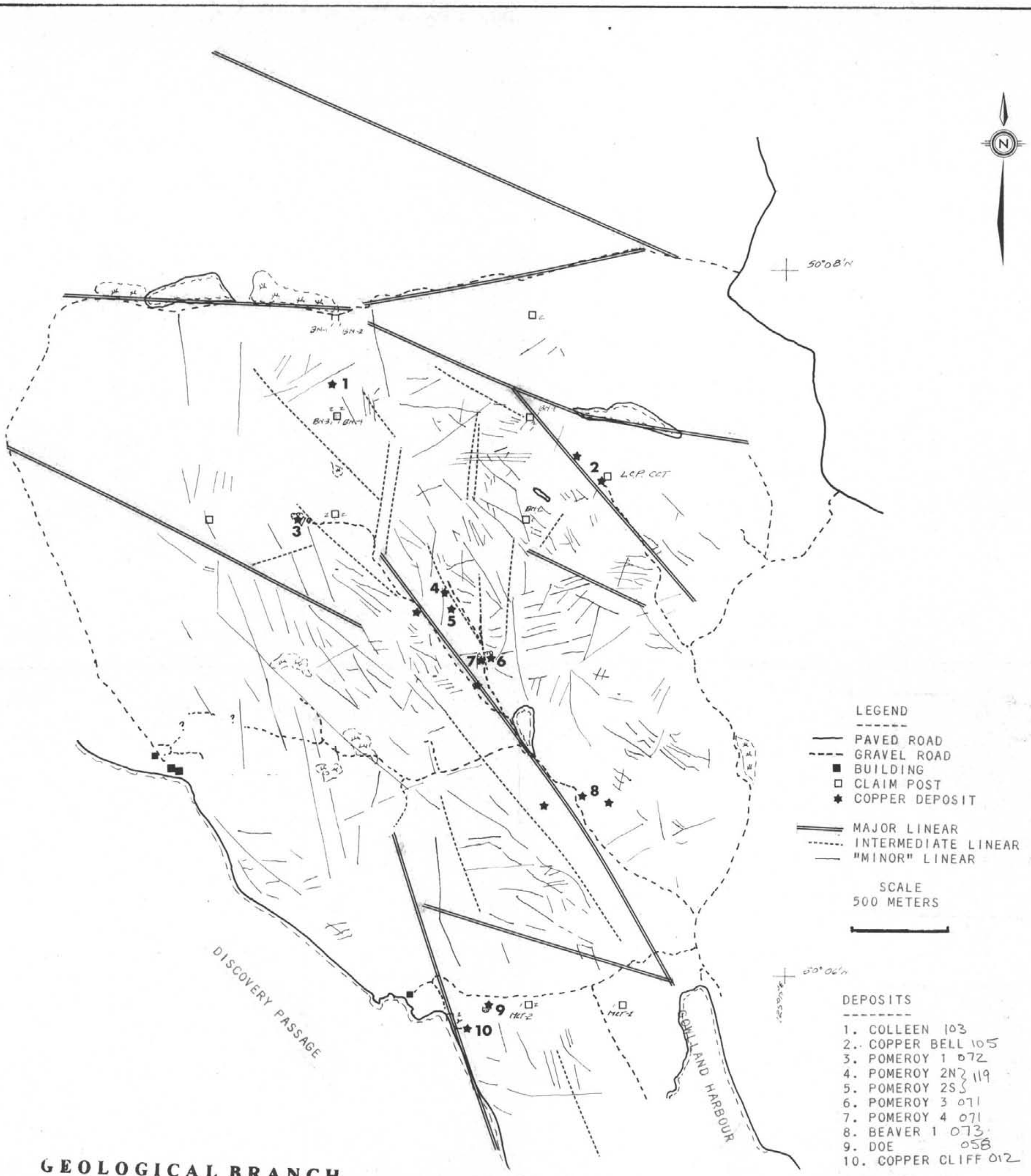
I have been registered as a Professional Engineer in the Province of British Columbia since 1973.

I have practiced my profession continuously since graduation from university in 1964.

I have personally examined the Quadra Copper Project property and carried out the evaluation of the Photo-linears visible on air photographs of the project area.



Gordon M. Ford P. Eng.



GEOLOGICAL BRANCH
ASSESSMENT REPORT

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PHOTO-LINEAR ANALYSIS