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## REPORT

ON

1963 PROSPECTING AND
EXAMINATION ACTIVITIES
INCLUDING OWIKENO PROJECT
AND
RECOMMENDATIONS FOR
1964 COAST WORK

#### MINING DIVISION

J. J. McDougall Geologist

### SUMMARY OF

# 1963 PROSPECTING AND EXAMINATION ACTIVITIES

## INCLUDING OWIKENO PROJECT

and

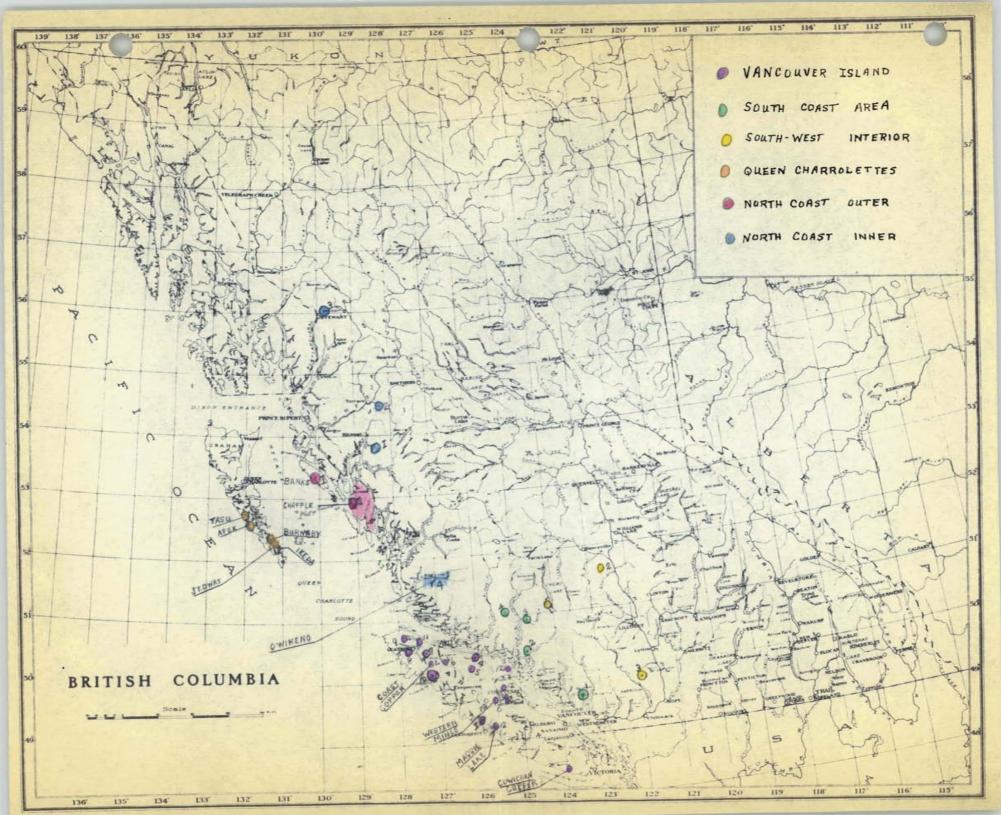
RECOMMENDATIONS FOR 1964 COAST WORK

Vancouver, B. C. February 21, 1964

J. J. McDougall Geologist.

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#### SUMMARY OF

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#### and

#### RECOMMENDATIONS FOR 1964 COAST WORK

#### INTRODUCTION

The 1963 Field Season started unofficially in February and lasted until early November. During this time the writer carried out a number of examinations and did prospecting as allowable. Our helicopter was made available in May and tied up in October. During this time, coastal work used up about 220 hours plus ferrying, or 40% of the season's total. Excluding ferry flights and cargo hauls, about 112 hours were spent on prospecting and 35 hours on claim staking plus air mag surveys.

Besides the pilot, Roy Hepworth, and mechanic, Bob Lackey, the crew at one time or another included Tom Cross, Mike Donahue, Alex Smith Jr., Dave Kimball, John Schussler and Gene Evans.

Island Airlines of Campbell River was used for a number of combination transportation-recce trips, there being no suitable alternatives. A number of Super Cub recce trips were planned for late in the summer but cancelled with the fatal crash on July 30th of the Omineca Airways Cub used on Banks Island during June and July. A 1-week fill-in was made using a Prince George based Cub belonging to Thunderbird Airlines. B. C. Air Lines and P.W.A. were used on occasion as was Okanagan Helicopters of Campbell River. The G.M.C. panel plus the writer's station wagon were used for ground transportation. The new lightweight M.F.l airmag was carried and used over selected areas

during most ferry flights.

In general, 1963 was not a bumper year for coast exploration. Reasons included late and early snowfall, use of the helicopter in the interior during favourable coast weather, an unexpectedly high write-off cost of the helicopter (\$110/hour rather than the more realistic \$70 planned and budgeted for) and the unexpectedly large amount of cargo hauling and claim staking work on Banks Island, the cost of which was lumped with "exploration".

A brief summary of the 1963 work, subdivided into geographic regions, is presented in this report. Most were described in Interim Reports devoid of maps and illustrations. The latter are included here along with a few of the original descriptions.

#### A. VANCOUVER ISLAND

(1) Catface - EX DDH #2 was completed to a depth of 870 feet in
February and 3 short NX holes, designed to obtain better core recovery,
were put in paralleling drill holes #6, 8 and 18. The latter showed
100% recovery and resulted in an averaging out of the grads - one hole
being slightly higher and two slightly lower than the previous ones.
Metallurgical tests on this material were reportedly "horrible" as far
as recovery was concerned. This was undoubtedly caused by the near
surface secondary copper oxides encountered in the limited NX drilling
in which our 50% of the total core was taken within 50 feet of the surface.
Results would have been far different at depths of 100 feet or more where
oxidation diminishes.

An attempted S.P. survey had to be abandoned because of snow at higher levels. Bud Lazenby was shown around the property and the cliff camp closed after hauling out some of the equipment required at the Lower Hecate Bay Camp from which Lazenby directed further survey work.

- 3 -

Preliminary evaluation of the S.P. work carried out this summer shows a number of "highs" along the north-south zone as previously outlined. These probably mark areas in which any mineralization is concentrated (not necessarily ore grade) and should be test drilled with equipment capable of better recovery than we are used to.

We had planned to do a little surveying and packsack drilling at <u>Jackson's Herbert Inlet</u> gold property but neither we nor the Catface crew found time to do this,

(2) <u>Faith and Gem Lakes</u> - separate reports havebeen prepared on these properties.

In general, <u>Faith</u> has been left with a number of intriguing "teasers" plus an important-looking S.P. anomaly which we can easily test drill next year. Only sub-oregrade mineralization was encountered by AX drilling at <u>Gem Lake</u> where an unexpected depth of talus prevented thorough elimination.

A gold property optioned about 1947 by <u>Pioneer Mines</u> (3)

occurring near the Moat Lake - Plateau Lodge horse trail a couple of miles
from Faith Lake was rapidly examined. Intermittent outcrops along a

1000-foot swampy depression show a 1- to 2-foot northerly dipping vein
probably similar to the "intraformational" type described at Faith Lake.

Although arsenopyrite is not present, the other minerals are those
occurring at Faith - i.e. pyrite, pyrrhotite, sphalerite, chalcopyrite,
and galena. Although surface outcrops are impressive (two assays of 0.66
and 0.24 oz. gold were obtained 800 feet apart), drilling by Pioneer less
than 100 feet down dip failed to intersect (judging by the core remaining)
much better than the 0.12 material we selected from the splits. The
showing, now held by the original (?) owner, would be of interest only if
something developed at Faith Lake.

While in the Campbell River area, an attempt was made to contact a Mr. Smith, who through correspondence with Toronto and Vancouver, claimed to have a Bonanza-type prospect near <u>Kelsey Bay</u> (h). Gordon Walker, in Campbell River following a rapid look at Faith and Gem Lakes, was unable to find a trace of the prospector and we have not since heard from him.

Several years ago Gerry Davis, now with Wesfrob at Tasu, located two claims on Gerald Creek (5), a tributary to the White River between and west of Campbell River and Kelsey Bay. At the time of an examination by Alex Smith concurrent with the staking, a small creek-cut deposit containing some massive chalcopyrite appeared worthy of further testing. The two claims (Davis #1 and #2) have been held since 1956 without having been re-examined.

Plans were made this year to re-locate the showing accompanied by either Smith or Davis but such failed to materialize. A trip by the writer resulted in the location of a pyritic area at the approximate place described but any copper that may have been present is now covered by the caved banks of the creek.

We plan on having another look at the showing which is readily accessible to a helicopter but should be guided by either Davis or Smith. The country rock appears to be nothing but Karmutsen volcanics with minor included metasediments. However there is evidence of a small dioritic intrusion nearby.

Flying the MFl mag northerly while on a ferry flight we rechecked an erratic and weak magnetic anomaly previously located on upper Kinman

Creek (6) between Nimpkish and Bonanza Lakes. Spectacular copper values

(i.e. 20% across 20 feet) were known to occur nearby thus our interest.

Our anomaly, associated with a fault (?) depression, is in an unstaked area and although not strong (1500 - 2000 gammas at 200 feet) the association of copper with magnetite demands a ground check at a later date. Landing can be made about 1 mile away.

The best defined and strongest anomaly detected by us on Vancouver Island since Maggie Lake appears about 3 miles east of Alice Lake - the Ecila (7). Although unfortunately in an older volcanic area just off strike with the favourable Quatsino Limestone Belt near which all important magnetite deposits occur, the buildups and high values (up to 12,000 gammas in the air, 25,000 on the ground) suggest some sort of magnetic accumulation which we are committed to test.

Ten claims cover the anomaly which occurs on a heavily wooded sidehill about 1500 feet above a McMillan-Bloedel road which runs along the base of the hill. If it proves impossible to get permission from M.B. & P.R. Co. to cut some of the heavy timber in order to erect a heliport, we can probably drive our truck in on their road and pull the EX drill to the proposed location up the hillside. This should be done early in the spring as the timing of such work is dictated by availability of water and fire season.

The government magnetic map which helped locate the Ecila anomaly also showed a number of others most of which were staked on release of the survey. A small, as yet unstaked, one on the north shore of Quatsino Inlet (8) about 4 miles west of Quatsino was tested and found to be legitimate. Although weak, it appears related to a north-south fault depression which may have copper associated with it. (We intend to investigate this easily accessible anomaly at the first opportunity.)

Additional magnetic areas of interest on Northern Vancouver Island included those at Nahwitti on Kains Lake (9). Both have been staked by prospectors or syndicates - the first for its known low grade (?) magnetite which we had previously tested and the second for its unexplained but large anomaly. The latter, although reaching a high of about 5000 gammas (airborne), appears related to nearby (unstaked) visible magnetic country rock volcanics which alone have a background of 3000 gammas. Concentrations probably occur but nowhere is there a zone that comes within 25% of the magnetic field produced on the Ecila ground.

Additional Vancouver anomalies (10) checked this year, besides known deposits such as Power Lake which showed up surprisingly well, included several in the Amai - Artlish area north of Zeballos. Although we proved them legitimate, rock outcrop suggested the fourth order zones to be composed of magnetic volcanics generally occupying topographic highs. These have since been staked by others.

Port Hardy Copper (11) is a small, private company formed to test a copper zinc deposit in a logged-off area a few miles west of Port Hardy. The manager, a Mr. Cottawick, was not keen to have us examine the showing at close range although we did have a visit with the owner, "Little Joe", a prospector who we knew in the past.

The prospect consists of erratic copper-zinc mineralization occurring along a skarnified limestone-volcanic contact. Stripping has exposed the deposit for almost 1000 feet and diamond drilling has tested it at depth. The unofficial consensus is that the erratic nature makes the material sub-ore but the present management will likely bring about conversion to a public stock company in the near future.

Additional Developments of Interest on Vancouver Island (12) Copper deposits on Quadra Island near Campbell River were the cause of minor renewed activity with Noranda being satisfied with preliminary results on several of the properties. C.M. & S. drilled a couple long holes on the Mt. Washington copper property but results were mt made available. The mine laid dormant all year except for this drilling. New Hamil is preparing the high grade but small gold property at Tofino for production. In the same area, Sunwest (?) Mines (Bus Hanson) was active stripping and drilling a poorly exposed molybdenite-copper prospect just east of the head of Tofino Inlet. Some impressive specimens have been brought out (both skarn and granitic rock) but the nature of the occurrences suggests a rather local contact area beyond which mineralization does not exist in important amounts. Phelps-Dodge, among others, examined the showing. The magnetite deposit (Dendoff Claims) behind the old Indian Chief copper mine at Sydney Inlet was thoroughly ground tested (and drilled?) by a small company this year. As suggested several times in the past by the writer following airmag checks, no important amounts of magnetite exist. An ill-timed attempt late in the fall to re-commence drilling of the Big Interior copper property was abandoned. The uneconomic Bedwell River gold property (Coppertown Mines) was forced to close early in the year as a result of insufficient reserves. Western Mines at Buttle Lake continues toward production with the firm development through drifting of at least ly million tons of complex \$40 lead-zinc-coppergold-silver ore contained in erratic oreshoots occurring in a well defined shear zone.

In iron mining, <u>Maggie Lake</u> (Brynor) is in good shape. <u>Nimpkish</u>

<u>Mines</u> has only a few months ore left with <u>Falconbridge's Extension</u> proving

unimportant. <u>Coast Copper</u> (C.M. & S.) is producing on schedule but nearby

Empire Development is on a salvage basis. Until recent caving which allowed the entry of the Jordan River, Cowichan Copper's mine near Sooke was doing well. Zeballos Iron Mines remained closed and as a result interest was lessened in some of the local iron prospects.

Prospecting on Vancouver Island was not intense but companies such as Kennecott, Rio Tinto and Noranda continued as in the past.

C. M. & S. reportedly followed up a little on their E. & N. Land Belt testing and Anaconda did some work in the Plateau area early in the year.

The Geological Survey has finally started work on the Island with J. Muller commencing in the Horne Lake - Port Alberni area and planning to move into the Forbidden Plateau next year. The B.C. Department of Mines continued local but important investigations with Eastman mapping iron deposits and Jeffries mapping the Buttle Lake area.

Mike Carr spent a few days at Catface.

#### B. SOUTH COAST AREA

(1) Mt. Donaldson Copper - An examination was finally made of the Mt. Donaldson copper prospect north of Sechelt. In the midst of a mountainous granitic area (elevation 4500 feet) a small promontory of muscovite quartz diorite or quartz monzonite is cut by a large muscovite-quartz vein exposed erratically for about 1000 feet. A few hundred feet above this vein several smaller, steep southerly dipping quartz veins aggregating some 3 or 4 feet run up the side of the 300 or 400-foot hill of interest. These veins, or pegmatites as they could well be termed, contain bunches of bornite and chalcopyrite but in no economic amounts. The granitic rock below this contains raisin-sized, evenly distributed gobs of chalcopyrite and muscovite. The spacings of the individual gobs, plus their alteration halo, varies from about 1 inch near the small quartz

veins to about 1 foot nearer the large quartz vein. Large talus blocks (about & million tons broken off) allowed sufficiently accurate sampling of the only possible zone of economic interest. A 25 sample composite of at least "high average" material assayed 0.01 gold, tr. silver and 0.29% copper.

Photo #1 shows, with unusual clarity, the disseminated copper mineralization while Photo #2 covers the main occurrence.

(2) Toba Inlet Area - one day was spent examining a reported gold placer area in the Toba Inlet Area. Two possible sources in cirques in precipituous country at the head of the creek in question were examined. The southernmost branch is barren but extensive fine-grained pyritic mineralization is present in the northernmost one where yellow weathering cherty to siliceous schistose rock is the host. Nothing resembling gold quartz is visible. At the junction of the two creeks a large sedimentary remnant in the country rock quartz-diorite is present. We could see no veins in it but the lower section (in the trees and inaccessible to the helicopter) could stand checking preferably by boat. Several samples were assayed, the best of which ran 0.01 Au, Tr. Ag, and 0.10% copper.

While on the Toba excursion the sedimentary remnant referred to was traced northerly for several miles but nothing more than scattered pyrrhotite was found to be responsible for the interesting red weathering zones visible along it.

(3) In the <u>Buts Inlet Area</u> en route to Revelstoke several patches of copper stain were noted in granitic rock along the Southgate River. Several interesting remnants were rapidly checked and a few, including those near Mt. Pembroke, marked for future checks.

In the vicinity of <u>Knight Inlet</u> (h) several recce trips were carried out and an attempt made to locate the source of rich copper float reportedly occurring on Confederation Glacier. Although a few small mineralized "knots" were noted and checked, no important copper content appeared present. Snow over 6000 feet prevented more detailed checks. To be effective at high altitudes, such work should be done in August or September.

#### C. SOUTHWEST INTERIOR

During a ferry trip to Revelstoke, an opportunity was taken to look into an interesting area immediately west of the south central end Chilco Lake (1). Copper float had been reported. Gobs and large cubes of pyrite are common along a several mile strip of impressive red weathering brecciated argillaceous material occurring along a contact sone. The best picked material assayed only 0.27% copper and 0.02 gold. Mineralized inclusions in granitic rock at the head of Boulanger Greek assayed even lower.

On the same trip, a large bluff containing some iron oxides was noted a couple miles east of <u>Dog Creek Airport</u> (2). This can be looked into at a later date when not pressed for time (as is usual on most ferry trips).

Search for a reported molybdenite prospect west of Boston Bar - Hornby molybdenite (3)was unsuccessful as described in the June monthly report.

#### D. QUEEN CHARLOTTE ISLANDS

Separate reports have been prepared following 1963 work at Tasu (1), Apex (2), and Ikeda (3).

Earlier in the year the Burnaby Island Nickel Deposit (4) was examined and a short preliminary report prepared. Late in the year the writer accompanied Lionel Kilburn of the Nickel Division and a more thorough examination was made as about twenty additional short drill holes had then been completed. <u>Jedway-Silver Standard</u> interests have dropped their option and the property is open to deal. The relatively narrow nickeliferous basic sill has been traced for at least 200 feet but the required massive sulphides have been picked up nowhere beyond the discovery outcrop. Kilburn probably has prepared a detailed report.

Mastodon-Highland Bell's Burnaby Island magnetite deposit (5) was thoroughly tested with the MF1 airmag and the writer given any information desired. As the iron occurs under water we took advantage of such unusual conditions to conduct easily controlled constant altitude runs and gained valuable information on technique. The deposit, which occurs under a couple hundred feet of limestone which is in turn overlain by a couple hundred feet of salt water, consists of a boomerang-like gob of unusually pure (Zeballos type) magnetite. Although drilling was done by "spraying" holes from 3 or 4 setups, the owners believe they have outlined 7 or 8 million tons of high grade ore. Feasibility studies are now under way, paying special attention to underground mining costs and dry magnetic separation - the latter important as the availability of fresh water is a problem. Serious consideration is also being given towards sinking a shaft to test the zone more thoroughly with Mastodon remaining on their own rather than tieing-in with Jedway only a couple miles away across the bay.

While on the Charlottes we sampled a few of <u>Albert Jones</u> "new showings" as well as a number of deposits noted by <u>R. Hepworth</u> during

previous work with the B. C. Government; however nothing worth staking was encountered. A couple quartz veins discovered south of Tasu failed to yield hoped-for gold values.

#### E. NORTH COAST - OUTER

A report including work on Banks Island (1) has also been prepared. Our prospecting activities did not take in much additional ground this year although one trip was made to re-examine the old Surf Inlet Gold Mine on Princess Royal Island because of its similarity to some of the deposits on Banks Island. A lineament (2) (visible on airphotos) occurring a few miles west of the old mine was examined and found to be a long, narrow limey remnant or septum in granitic rock. Pyrrhotite is common but values in base and precious metals lacking. A few poorly defined quartz veins in the pass north of Bear Lake were found to be barren. Rainbow Mines of Vancouver completed a few drill holes on a long-held copper-molybdenite prospect on Pooley Island northwest of Ocean Falls. This was not examined by the writer but results were apparently encouraging enough to plan more work next year.

#### F. NORTH COAST - INNER

The Kildala Bay copper magnetite showing (1) presented to us by R. H. Bates of Terrace was described in the monthly report for June (see Page 7) and need not be repeated here. The deposit showed little if any evidence of work having been done on it beyond an existing road cut. The magnetic survey carried out (map on file) showed quite conclusively that it is in no way an iron deposit although copper could exist in this environment. Assays from the best few feet of mineralization available showed 0.01 Au, Tr. Ag, 0.39% Cu, and 7.62% sol.Fe.

Mr. Bates was advised of our lack of further interest.

The August monthly report (see Page 7) contains an account of a copper prospect near Terrace submitted by Steve Piskulski (2). As described the showing is much too small to be of interest to us. An unsuccessful attempt was made early in November to contact Piskulski regarding a copper-molybdenum showing he was in the process of staking during our first visit. Others (Southwest Potash?) were apparently examining the prospect at the time.

Schussler and Evans were sent up to do ten days' assessment work on the RHS gold prospect (3) at Stewart. With the completion of this work nearby prospecting turned up a second interesting gold discovery which was immediately staked.

With the exception of Banks Island, the only serious prospecting we did during 1963 was in the Owikeno Area (4). This was set up as a separate prospecting project designed to investigate a number of previously noted gossans in what appeared to be a structurally anomalous zone extending through and westward beyond the Coast Range. The work was described in a report titled "Coast Activities to May 31, 1963" on file and will not be repeated here.

During April and May, Cross and Donahue did considerable creek and shoreline prospecting on all drainages of Owikeno approachable by boat. Towards the latter part of this period the helicopter, plus additional personnel including Alex Smith Jr. and Dave Kimball and myself, did about 10 days of "follow-up" work. A Geological Recce Map OW #1/63 (enclosed) entailing about 3000 square miles was prepared as a result of this work and the more important mineral discoveries are plotted on it.

In general the area proved very disappointing despite what appeared to be favourable geological conditions. With the exception of

a low grade copper zone west of the north arm of the lake and a small gold-copper vein across from it, not even "teaser amounts" of valuable minerals were found in over fifty pyrrhotite or pyrite-rich areas. Some molybdenite float was found but the source, if of important size, was not detected. It was hoped that the "tight structure" might open up a little, particularly around flexures such as those around the western portion of the lake which caused the limestones to be oriented east-west rather than northwesterly.

Silver Standard had a helicopter and prospecting crew in the same area during most of August and probably covered the higher ground more efficiently than we did, the snow being much more receded. However they have recorded no claims.

Given time at some future date, a few days preferably late in the year could be spent further investigating the copper locality referred to.

#### RECOMMENDATIONS FOR FUTURE COAST WORK

We still have a number of prospecting bets "left hanging", because of concentration on Banks work, between Ocean Falls and Pitt Island. The most interesting of those is a structurally anomalous section of favourable rock near Chapple Inlet. We had previously picked up barren quartz veins in granitic rock around larger lakes in the area but have not followed through with the helicopter.

Further airphoto study will be continued as a means of outlining structurally favourable sedimentary zones bounded by intrusions, particularly around known mineral showings.

The writer is aware of at least two boat expeditions with these same ideas in mind. It is hoped that the extra mobility provided by our

helicopter along with a better appreciation of the country will work to our advantage.

The G.S.C. has completed coastal work in this area and the maps, although not to be immediately published, are available and will be used.

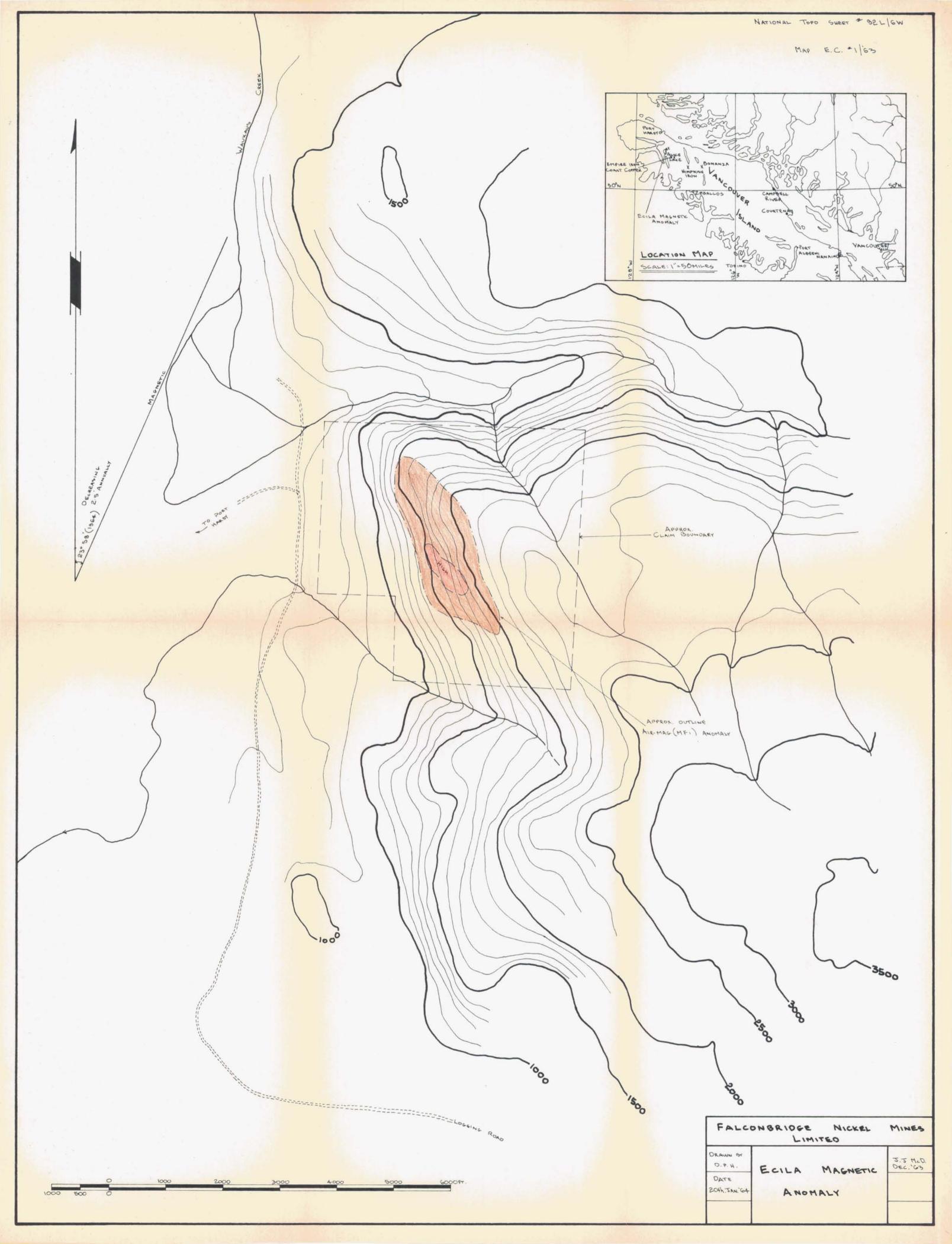
Vancouver, B. C. February 21, 1964 J. J. McDougall Geologist.



Photo #1 - Typical disseminated (porphyry-type) mineralization - Mt. Donaldson Copper. Blebs in "greisenated" (?) granitic rock are composed of mixtures of chalcopyrite and biotite.



Photo #2 - View of Mt. Donaldson Copper - looking northerly.
Note old adit bottom centre and quartz veins on hill above. Talus is as shown on Photo #1.



SKETCH MAP OF MAIN ZONE

PACIFIC IRON-COPPER GROUP

KILDALA BAY, B. C.

SHOWING MFI AIRMAG RESULTS

# J. J. McDougall - FALCONBRIDGE NICKEL MINES LTD.

# SCALE: 1" = 100 FEET (APPROX.)

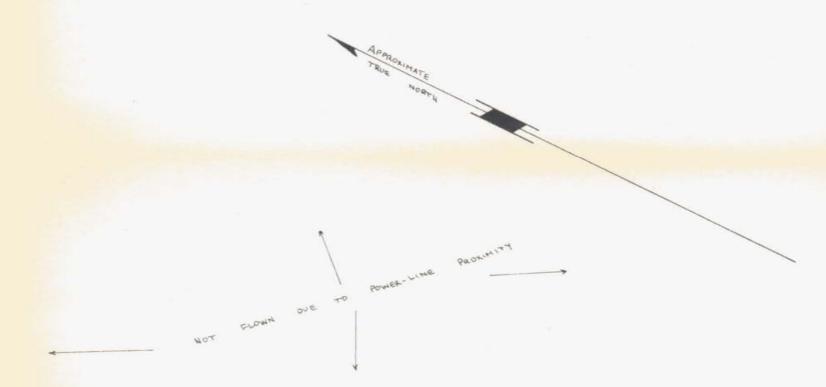
# LEGENO

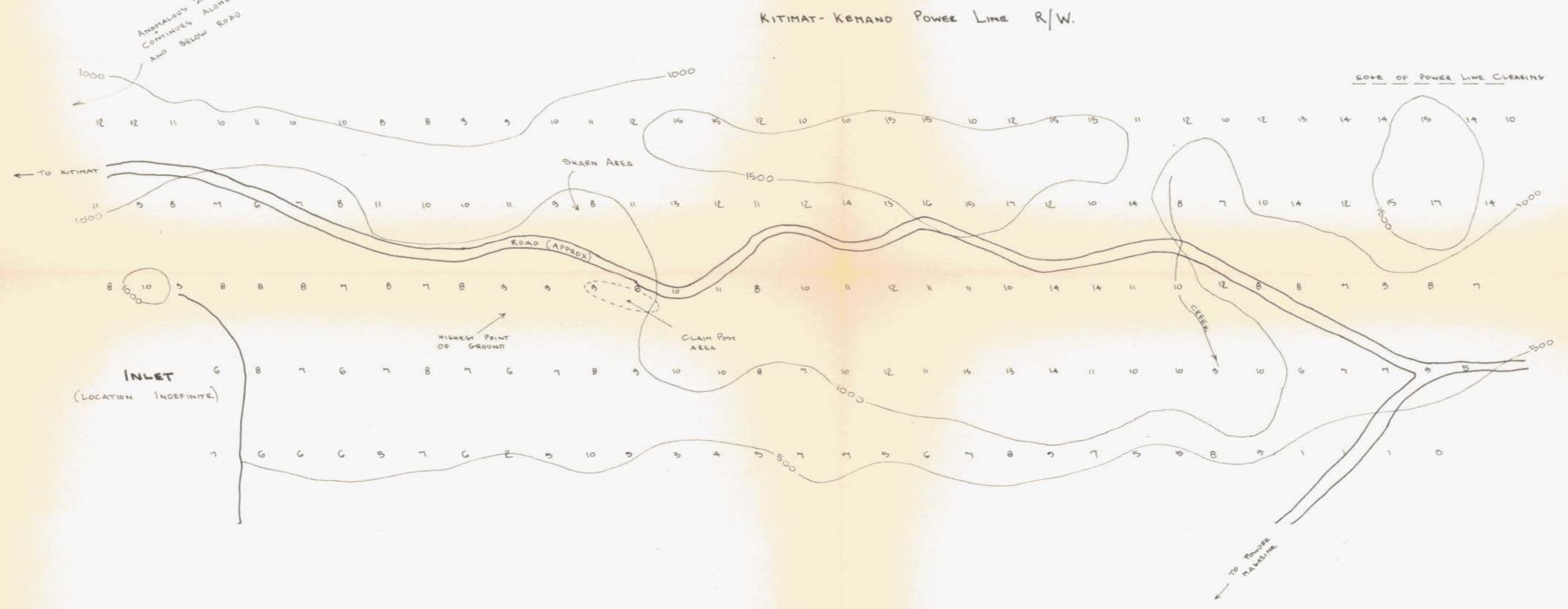
VISUAL READINGS IN GAMMAS WITH
VALUES AS PLOTTED X 100 (RELATINE ONLY)

HELICOPTER FLOWN AT 200'S CLEARENCE

EFFECT OF POWER-LINE UNKNOWN GUT

NOT BELIEVED GREAT.





Devent Day Sign

W.R. YOUNG, CHIEF GEOGRAPHER