

49°, 126°, S.E.

Geological and Geophysical Report
Paco Claims
Hesquett Lake Area
Lat. 49 28' N., Long. 126 22' W.

by
R.E. Chaplin
for
Paco Resources Ltd.,
April, 1962

92E/8W & 9W

Regarding Groups. Hesquett Lake North.
Hesquett Lake South.
Satchie.

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**A REPORT ON THE PRELIMINARY GEOLOGICAL
AND MAGNETOMETER SURVEYS
IN THE NESQUIAT LAKE AREA, ALBERNI MINING DIVISION
WEST COAST VANCOUVER ISLAND**

BY

R. E. CHAPLIN, P. ENG. (ONT.)

FOR

PAGO RESOURCES LTD.

VANCOUVER, B. C.

APRIL 1962

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**Department of
Mines and Petroleum Resources
ASSESSMENT REPORT**

NO. **464** MAP.....

SUMMARY

Preliminary geological and magnetometer surveys were conducted over approximately 20 miles of picket line within a 2-1/2 square mile area to investigate occurrences of iron ore, in the Hesquot Lake area, on the mineral claims held by Paco Resources Ltd. of Vancouver.

Several occurrences of magnetite were examined and appeared to be of small size and would contain a combined tonnage of no more than 100,000 tons of magnetite mineralization occurring as massive and disseminated pyrometasomatic deposits in "skarn." It is unlikely that other magnetite deposits will be found within the limits of this 2-1/2 square mile area. Some secondary manganese mineralization was noted in weathered "skarn" and a set of representative "skarn" samples are to be tested for possible tungsten content.

Brief ~~transverses~~ transverses of a reconnaissance nature made beyond the area of the preliminary survey did not show any heretofore unknown mineralized zones; however, no attempt was made to prospect the outlying areas.

The area of the survey could be extended to include systematic prospecting to the north of the present area into the valley of the Escalante River and also south-east of the southern part of the area of the present survey to include the area of Bus Hanson's magnetite deposit located on the east side of Hesquot Lake. In any case, the topography is quite rugged and the work would be physically difficult.

INTRODUCTION

The field work for the preparation of this report was performed between March 17th and April 12th by a crew consisting of thirteen men, ten of whom were Indians from nearby fishing villages. A total of 260 man-days' work was required to complete every phase of the survey including camp building, supply, cooking, line cutting and geological and magnetometer work.

Almost half the labour time was used to cut and chain 20 miles of picket line that forms a grid system about 2 miles long in a northwest direction with lines offset at 500-foot intervals extending over an average width of 3/4 of a mile.

The magnetometer work (using two Finnish AEM magnetometers) required 24-man-days in the field. Fourteen man-days were required to do geological reconnaissance traverses to determine the base line locations for the preliminary survey and to briefly visit nearby prospects lying beyond the area of the preliminary survey.

The coastal vegetation is average for the west coast and the topography is generally rugged with flat bushy areas in the Satchie Creek valley and steep (30° - 40° average) slopes in most other places within the survey area. Picket lines are generally cut parallel to the contour and cut across numerous precipitous bluffs and rocky ravines.

Generally the working crew performed their jobs

very well and five Indians are mentioned here for future reference. They are: Ben Andrews - bull cook and handy man; Edward Hunter - slasher; Andy Amos - slasher, all of Hot Springs Cove and Charlie Mickey of Tofino and Billy Rae-Arthur of Ahousat, both of whom are excellent slashers and capable of simple prospecting.

Mr. Lynn Woodside of West Vancouver performed the magnetometer work satisfactorily and remained in charge of the proposed magnetometer work at Stewardson Inlet which is to continue for approximately two weeks.

GEOLOGY

Volcanic and sedimentary rocks of the Vancouver Group (Upper Triassic to Lower Jurassic) are intruded by the granitic complex of the Coast Range Intrusives. The Vancouver Group rocks generally trend northwesterly and have moderate northeasterly dips and consist of intermediate type volcanic flows, tuffs, whitish to buff colored masses of cherty rocks with minor crystalline limestone, and intercalated grey-white banded crystalline limestone lenses of some size. The entire sequence of these layered rocks is tentatively placed within the Karmutsen Group subdivision of the Vancouver Group on a lithological basis.

The contact between the Coast Range Intrusives and the older rocks is sharp and clearly intrusive but areas of dioritized and otherwise assimilated rocks occur in quantity in the southeastern part of the area. A gabbroic phase occurs in places within the granitized rocks but the writer is uncertain as to their origin since no definite intrusive contact was observed. Gabbroic rocks commonly contain disseminated grains and small patches of magnetite that form up to 10 per cent of the hand specimen.

All of the rocks of the Vancouver Group have been metamorphosed in varying degrees and by various metamorphic processes ranging from widespread moderate propylitization of the predominating andesitic rocks to relatively intense thermal metamorphism resulting in dense dark colored, fine grained xenoliths within the granitic mass and border phase rocks.

Lenses of grey and white even-grained crystalline limestone are intercalated with siliceous limestone and light grey to green colored tuff. Contact metamorphism has altered the calcareous rocks to produce a variety of lime silicate rocks that are collectively referred to as "skarn." Skarns vary from a contorted white and green banded wollastonite-grossularite rock with bedded quartz stringers, to a buff-colored granular garnetite. None of the above-mentioned skarns carry noticeable amounts of magnetite. Manganese oxide is commonly present in skarn as a surface coating that in some places persists for a few feet below bedrock surface.

Skarn containing magnetite is typically a crypto-crystalline buff colored rock with a slight greenish cast. Magnetite occurs as disseminated patches and as massive zones up to 30 feet in width. Granite rocks exposed near the magnetite bearing skarns are commonly moderately fractured and show a whitish alteration indicating that the emplacement of magnetite is partially due to fracturing in the granitic rocks below the mineralized skarn zone. Most of the magnetite lenses trend northerly and are steeply inclined indicating that a fracture system parallel to the granitic contact (which is northerly in this area) is a favorable structural feature.

A collection of representative skarn specimens was made to determine the possible presence of other valuable minerals.

Mineral Occurrences Within the Area of the Preliminary
Survey

Line 35+00'S, 1+50'E - (southeast side of Hesquiat Lake)

Magnetite in skarn is exposed on the right bank of the northernmost west fork of Satchie Creek at an elevation of 320' above sea level. The zone extends in a northerly direction for about 100 feet and has a maximum exposed width of 20 feet. Malachite is sparingly distributed throughout the zone, which appears to be steeply inclined. Sample No. 3 taken over a true width of 18 feet returned the following assay:

Fe (total)	Cu	S	P
23.35	0.08	0.02	0.03

REC

Line 35+00'S, 0+75'W (southeast side of Hesquiat Lake)

A very short adit crosscuts a magnetite zone exposed for a length of 50 feet on the left bank of Satchie Creek at an elevation of 390 feet. The zone is well exposed and appears to be of limited extent with a maximum width of 10 feet over a length of 50 feet trending in a northerly direction and dips almost vertical. Sample No. 2 taken over a true width of 6 feet in massive magnetite assayed:

Fe (total)	Cu	S	P
41.08	1.18	1.35	0.02

REC

Sample No. 1 taken along the 50 foot exposed length assayed:

Fe (total)	Cu	S	P
26.65	0.45	0.40	0.06

REC

Baseline, 37 00'S

A narrow zone of magnetite is exposed on the right bank

of Satchie Creek at an elevation of 360 feet. This occurrence is fracture controlled and, while related to nearby exposures is not of appreciable extent. None of nearby showings are directly continuous on surface and granitic rocks are exposed in the creek bottom (elevation 300 feet) suggesting that the skarn zones are shallow in this locality.

Line 5 + 00'N, 3 + 00'E (northwest side of Hesquiat Lake)

One hundred feet north of this point at an elevation of 320 feet a north trending zone of magnetite in skarn is exposed for a distance of 70 feet in the bed of a small creek. The magnetite swells from a few inches to a width of 30 feet of practically solid magnetite and pinches out to a few inches further upstream, over a total distance of 70 feet. The skarn zone extends uphill in a northwesterly direction for several hundred feet and at an elevation of 850 feet magnetite occurs as two small patches about 100 feet apart. The area between 850' and 320' exposures has been reasonably well prospected and it appears certain that the magnetite occurs as discontinuous lenses of small size. Sample No. 4 across a 30-foot width at the 320' showing assayed:

Fe (total)	Cu	S	P
56.11	0.03	0.05	0.01

Line 15 + 00'N, 18 + 00'E

At an elevation of 1,000 feet, an old trench exposes a 2-foot band of north trending magnetite in skarn. A magnetometer traverse of 50-foot radius around the trench failed to detect any extension of magnetite.

Line 20 + 00'N, 24 + 00'E

A narrow zone of magnetite was found during the line-

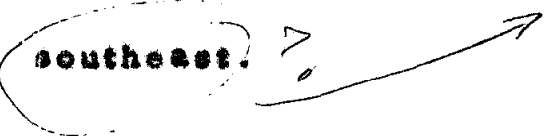
cutting on a well exposed slope at an elevation of 1,300 feet, and was traced along a northerly strike for 50 feet.

NOTE:

Mr. Lynn Woodside is preparing a report on the details of the magnetometer survey, the results of which correlate with the geological data and verify the limited extent of the small magnetite zones shown on the geological map.

Reconnaissance Traverses Beyond the Area of the Preliminary Survey of Hesquiat Lake

1. Bus Hanson's Magnetite Prospect, east side of 92E-31 Hesquiat Lake. Time spent on examination - 1/2 day.

Magnetite occurs in a skarn zone within a sequence of tuffs and minor intercalated limestone (probably Karmutsen Group.) The general attitude of the rocks in the area is north to northwest with moderate dips to the southeast. 

The skarn zone occurs between the elevations of 650 feet and 400 feet above sea level and persists over 1,000 feet in a south-westerly direction. Magnetite occurs in masses several feet thick and as small patches and disseminations that appear to dip southeast at a low angle into the mountain side. Magnetite is not uniformly distributed over the entire skarn outcrop, however areas of disseminated mineralization occur over a length of a few hundred feet and up to several tens of feet in thickness and possibly contain about 20 percent magnetite. Lenses of massive magnetite are erratically distributed and may form a small tonnage (no more than 1/2-million tons) of medium grade iron ore over a length of 500 feet as noted from the distribution of outcrops and the core of two drill holes located about 300 feet apart in the better mineralized skarn.

2. "Brown Jug" located on the east side of Hesquiat Lake about 1/2 mile south of Bus Hanson's magnetite prospect. Time spent on examination - 1/2 day.

Zinc, lead and copper mineralisation (gold and silver is also "reported") occurs at an elevation of 370 feet above sea level within the footwall of a shear striking N 75° E. and dipping 55° N. and was prospected many years ago by three short adits driven along strike over a vertical distance of about 100 feet and over a horizontal distance of about 100 feet. The shear pinches and swells slightly to form an average width of about five feet, and pinches to a few inches at the upper end of the exposure. The mineralized portion of the shear varies in width from two feet to eight feet between the three short adits, and appears to terminate at the highest exposure. Bedrock is observed a short distance below the lowest adit, but the mineralisation appears to narrow at the lowest point of outcrop. The mineralization consists of dark sphalerite with minor amounts of galena, chalcopyrite, pyrite, malachite and a trace of cuprite in a gangue of white quartz, carbonate, sericite and epidote.

The total sulphide content is low and irregularly distributed in the footwall. A representative sample collected from the back of the middle adit where the shear is 3-1/2 feet wide and highly oxidized assayed:

An assay of selected high grade material returned:

On the west side of Mesquiat Lake, almost directly across from the "Brown Jug" prospect and about 1,500 feet from the shore a creek exposes a skarn zone of limited surface extent. No magnetite or sulphide mineralization was noted except for a small amount of sphalerite over a length of a few feet and one foot wide. Further upstream at an elevation of 400 feet a tributary stream bed is coated with a half-inch thickness of red iron oxide mud. The oxide comes from a rubble-filled creek about 200 feet upstream from the sphalerite occurrence. Billy Rae-Arthur reports that skarn is exposed further upstream. A sample of the mud was collected for geo-chemical analysis but did not contain an anomalous amount of zinc or copper.

3. Reconnaissance Traverse from Camp to the South End of the Baseline - Time spent on traverse - one day.

A reconnaissance traverse was made to locate any possible south extension of the crystalline limestone that outcrops on the shore of Mesquiat Lake. Above the 1,800 foot elevation snow up to 2-feet deep obscured many rock exposures, however the writer did not see any thick section of calcareous rocks along the traverse route indicated by the crosses on the accompanying index map.

4. South Fork of Satchie Creek. Billy Rae-Arthur and Charlie Mickey spent one day on a traverse from the south end of the baseline and proceeded along the west side of the southwest fork of Satchie Creek and south-easterly as

far as the 1,800 foot level of a low saddle that separates the Hesquiat Lake drainage from that of Stewardson Inlet and Kanim Lake. They reported seeing only granitic rocks in this area.

CONCLUSIONS

This report is the fulfillment of a preliminary program planned by Mr. H. W. Agnew for the Hesquiat Lake area. The writer thinks that the area has been adequately covered and that no commercial tonnages of iron ore are likely to be found within the area of the preliminary survey.

It should be noted that Bus Hanson's prospect is over a mile from the main granitic contact and that no significant body of intrusive rocks is known in the immediate vicinity of the magnetite bearing skarn. The area west and north of the preliminary survey area has not been systematically prospected and the writer concludes that further work in the Hesquiat Lake area should cover the Escalante Creek Valley to the north and an area west of the present grid system to include Bus Hanson's Prospect. The work should consist of a series of air photo reconnaissance geological and magnetometer traverses (using a Finnish AEM type magnetometer) run parallel to the topographic contours and spaced at intervals of 500 feet (horizontally) and should occupy two experienced two-man crews for two weeks. The working conditions will be difficult.

Respectfully submitted,

Robert E. Chaplin

R. E. Chaplin

List of Qualifications Submitted to B. C. Department of Mines, Victoria, B. C.

by E. E. Chaplin

1. Graduate Geological Engineering, B.A.Sc. 1959, and currently registered as an engineer-in-training with the B. C. Assoc'n. of Prof. Eng.
2. Registered Professional Engineer, Province of Ontario.
3. Experience (Summer) -
 - 1951 - Assisted geophysicist in Noranda, P.Q. - Mining Corp. of Canada
 - 1952 - Assisted geophysicist in Bathurst, N.B. - Mining Corp. of Canada
 - 1953 - Assisted geophysicist in N.W.T. - International Nickel Co.
 - 1954 - Assisted geologist in Yukon Territory - Prospectors' Airways Ltd.
 - 1955 - Worked underground (one year) - Falconbridge Nickel Mines Ltd.
 - 1956, 1957, 1958 - Student assistant in Y.T., and Highland Valley, B. C. - B.A.Sc. thesis - Honours - A Geological Reconnaissance Survey of Guichon Creek, Batholith, B. C. - for Kennco (Western) Ltd.
 - 1959 - Prospected (geochemically) under B. C. Dept. of Mines Grabstake Act, in Highland Valley area, B. C., and worked for J. A. C. Ross - mapping and logging diamond drill core in Williams Lake area.
 - 1960 - Worked for Canadian Underwriters Association in Ontario and B. C. - Special Risks Division (Industrial Property Insurance).
 - 1961 - Worked on scheelite placer churn drill program in Flat Lake area, N.W.T. - Canada Tungsten Limited.
 - 1962 - Performed independent geochemical reconnaissance survey of western part of the Slocan area and staked 14 claims based on the results of the reconnaissance work.

Presently employed by Huestis Mining Corporation Ltd.

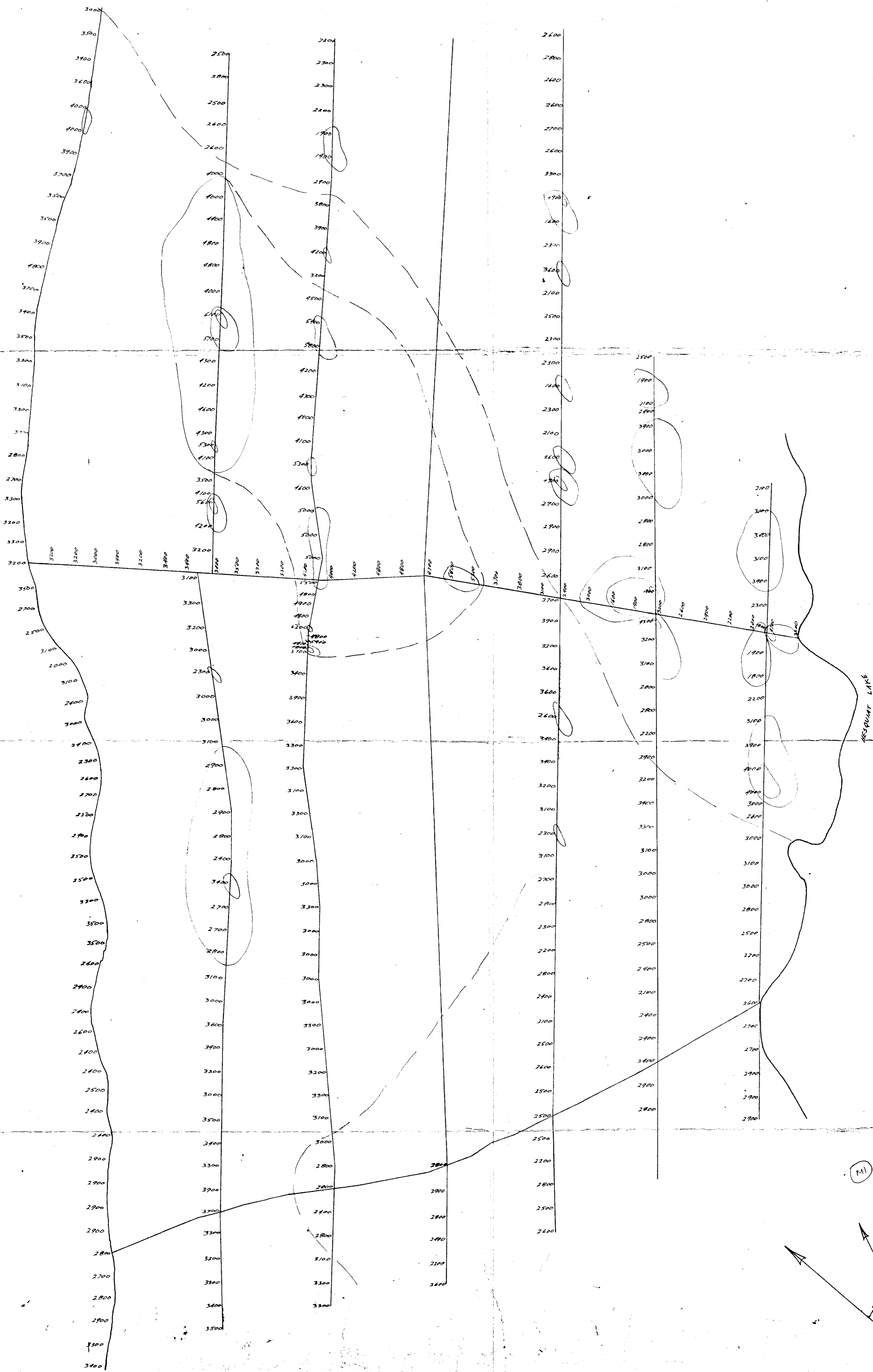
4. References:

1. Dr. M. Carr, B. C. Dept. of Mines, Victoria, B. C.
2. Mr. J. M. Anderson, Kennco (Western) Ltd., Burrard Bldg., Vancouver, B. C.
3. Mr. J. A. C. Ross, Wright Engineering, Vancouver, B. C.
4. Dr. H. V. Warren, Dept. of Geology, University of British Columbia.
5. Dr. K. C. MacTaggart, University of British Columbia.
6. Mr. D. H. Rae, B. C. Dept. of Mines, Vancouver, B. C.

Robert E. Chaplin

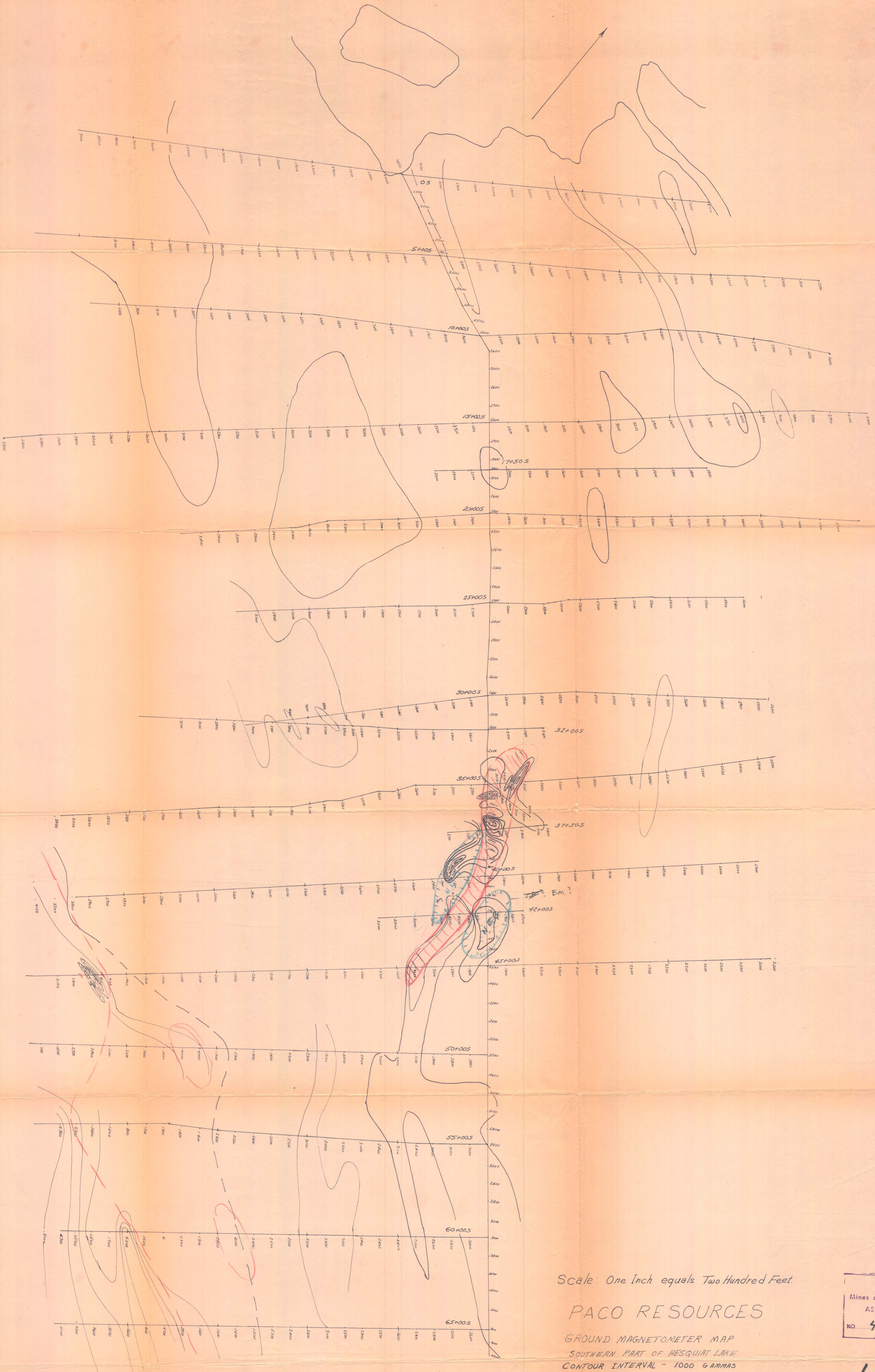
R. E. Elledge
1962

PACO RESOURCES
MANHATTAN SURVEY
RESQUIT LAKE, WEST COAST, VI
Scale: 1 inch = 200 feet
North Base Line



(M)
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Scale: One Inch equals Two Hundred Feet.

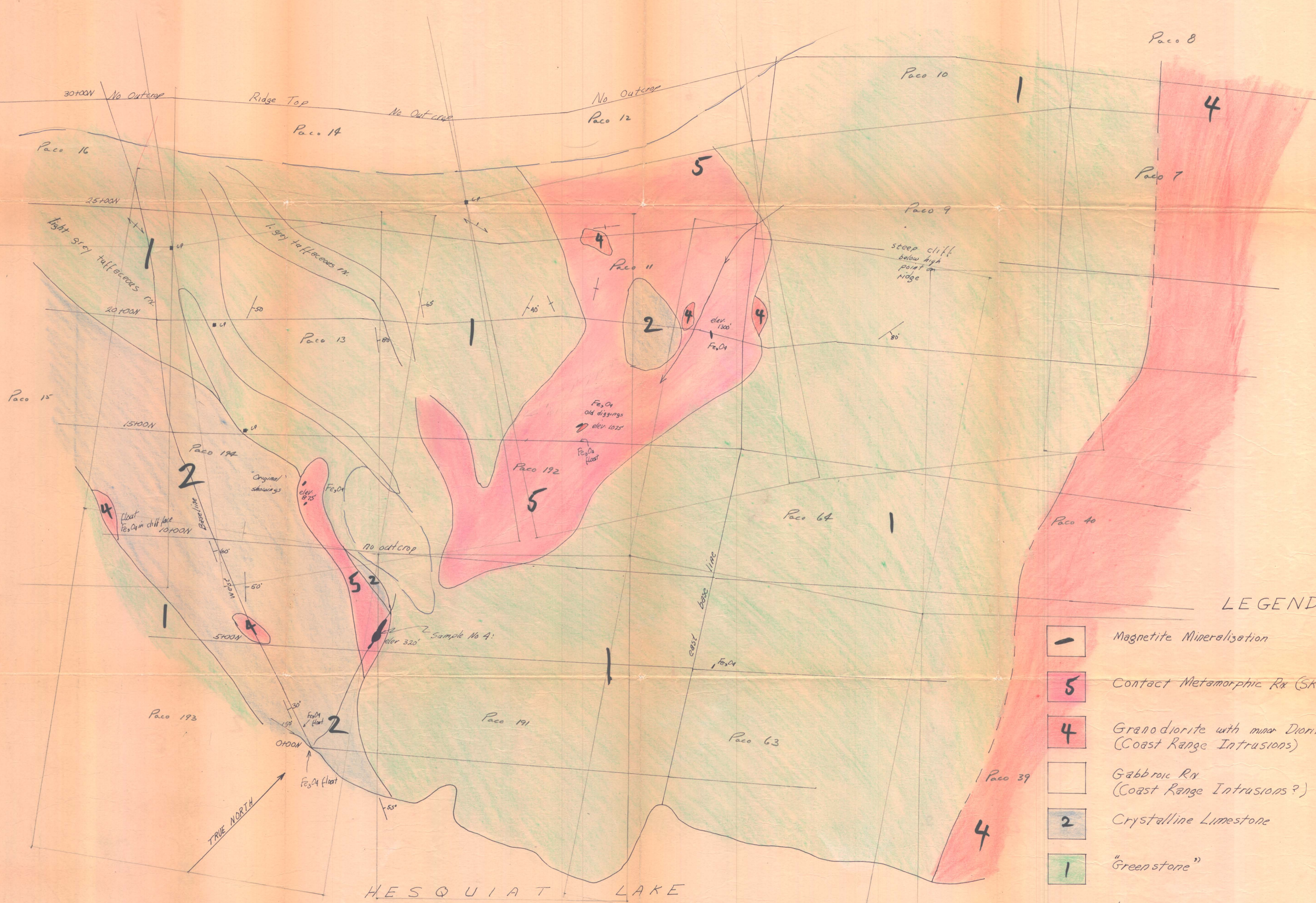
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GROUND MAGNETOMETER MAP
SOUTHERN PART OF HESQUIAT LAKE
CONTOUR INTERVAL - 1000 GAMMAS

APRIL, 1962 Bob Chaplin
Lyon Woodside
Instrument Used: Finnish AEM Magnetometers Nos 620 +
Robert D. Chaplin

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LEGEND

- 1 Magnetite Mineralization
- 5 Contact Metamorphic Rx (Skarn + white to Buff Cherty Masses with Skarn)
- 4 Granodiorite with minor Dioritic Rx (border phase) (Coast Range Intrusions)
- Gabbroic Rx (Coast Range Intrusions?)
- 2 Crystalline Limestone
- 1 "Greenstone"

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Scale: One Inch equals Two Hundred Feet

PACO RESOURCES

GEOLOGICAL MAP of the NORTHERN
PART of HESQUIATIC LAKE
SURVEY
APRIL, 1962. Bob Chaplin

Robert S. Chaplin

Note: The area is extensively underlain by outcrop. Accordingly areas of no outcrop are noted. This means that practically the whole area is outcrop.

Jan/63
R.S. Chaplin
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LEGEND

- Magnetite Mineralization
- Contact Metamorphic Rn (Skarn, etc)
- Granodiorite with minor Dioritic Rn (Coast Range Intrusions)
- Gabbroic Rn (Coast Range Intrusions?)
- Crystalline Limestone
- "Greenstone"

Note: Outcrop comprises a large portion of the map area. Accordingly "no outcrop areas" are the exception and are indicated on the map. *Bob Chaplin* Jan 63

Scale: One Inch equals Two Hundred Feet

PACO RESOURCES
 GEOLOGICAL MAP of the SOUTHERN PART of HESQUIATIC LAKE SURVEY
 APRIL, 1962. *Bob Chaplin.*
Robert E. Chaplin

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