

KENCO EXPLORATIONS, (WESTERN) LIMITED

GEOPHYSICAL REPORT ON THE AEROMAGNETIC SURVEY
OF THE

G.C., HAB AND BUY CLAIM GROUPS, GALORE CREEK, B.C.

54 miles south southwest of Telegraph Creek,

57° 131° S.E.

by

104G/3W

June 12, 1961

H.W.FLEMING, M.A., P.Eng.

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KEMNCO EXPLORATIONS, (WESTERN) LIMITED

GEOPHYSICAL REPORT ON THE AEROMAGNETIC SURVEY OF

THE G.C., BAB AND BUY CLAIM GROUPS

GALORE CREEK, LIARD MINING DIVISION

BRITISH COLUMBIA

BY

H.W. FLEMING M.A., P. ENG.

TORONTO, ONTARIO

AUGUST 24, 1961

TABLE OF CONTENTS

	<u>PAGE</u>
1. SUMMARY	1
2. PROPERTY AND OWNERSHIP	1
3. LOCATION AND ACCESS	1
4. HISTORY AND PREVIOUS WORK	2
5. GENERAL GEOLOGY	2
6. WORK PERFORMED	2
7. INTERPRETATION OF DATA	3
(1) Northwest Anomaly	4
(II) Southeast Anomaly	4
(III) Central Anomaly	4
8. CONCLUSIONS AND RECOMMENDATIONS	4

Enclosure - Anuk River, British Columbia,
Magnetometric Map. Scale = 1 inch to 1000 feet

367-1

Department of
Mines and Petroleum Resources
ASSESSMENT REPORT

NO. 367 MAP

GEOPHYSICAL REPORT ON THE AEROMAGNETIC SURVEY

OF THE

G.C., HAB AND BUY CLAIM GROUPS

GALORE CREEK B. C.

1. SUMMARY

The aeromagnetic survey has outlined two positive magnetically anomalous zones interpreted to be contact or skarn zones about the border of the "Galore Creek Stock". Pyrite and copper bearing sulphides are known to occur in association with the northwest anomaly, while at the southeast anomaly, a contact deposit containing 5 percent magnetite could be present.

The intervening magnetic trough is thought to represent the magnetite deficient core of the intrusive with the possible presence of primary-type mineralization.

It is recommended that ground magnetic and induced polarization surveys be performed over an area of about six square miles covering these anomalies, in order to determine the more heavily mineralized areas and to indicate the degree of continuity of the various occurrences.

2. PROPERTY AND OWNERSHIP

Most of the area covered by the aeromagnetic survey was staked at the time the work was performed. One hundred and ten (110) G.C. claims were owned by Kennco Explorations, (Western) Limited, sixteen (16) Hab and Buy claims were held by Hudson Bay Exploration and Development Company, Limited and four (4) Hab claims were held by Consolidated Mining and Smelting Limited.

3. LOCATION AND ACCESS

The area flown and the claim groups are located near the glacial headwaters of the Galore Creek, in the Liard Mining Division of British Columbia at approximately $57^{\circ} 7'$ north latitude and $131^{\circ} 27'$ west longitude. Galore Creek is a tributary of the Seud River which empties into the Stikine River about forty (40) miles north of its junction with the Iskut River.

The properties are accessible, for all practical purposes, only by helicopter from a base at the junction of the Anuk and Stikine Rivers, some twelve (12) miles to the west. This helicopter base may be reached by barge once a week from Wrangell, Alaska, or by charter aircraft from Terrace, British Columbia, a distance of about 220 miles to the southeast.

Wrangell, Alaska may be reached by scheduled airlines from Seattle, Washington, and Terrace, British Columbia, by C.P.A. from Vancouver.

4. HISTORY AND PREVIOUS WORK

Copper mineralization was discovered in the Galore Creek area by prospectors during 1955 and 1956 and claims were staked by Hudson Bay Exploration and Development Company, Limited who carried out a program of mapping, sampling and diamond drilling on these claims in 1956 and 1957.

Reconnaissance work by Keneco Explorations, (Western) Limited first attracted attention to this region in 1959, and during 1960, claims were acquired and a certain amount of regional and detailed mapping and sampling were carried out.

5. GENERAL GEOLOGY

Incomplete geological mapping indicates that the Galore Creek area is principally underlain by pre-Upper Jurassic volcanic and clastic sedimentary rocks lying near the eastern flank of the Coast Intrusions. To the north and east, the watershed area is rimmed by Permian and possibly older rocks consisting of mainly crystalline limestone with minor siltstone, chert and shale.

The head of the west fork of Galore Creek drains a large basin which is underlain by a complex assemblage of multiple intrusive rocks of syenitic composition which has been termed the "Galore Creek Stock".

Sulphide mineralization occurs in many places within the stock as disseminations and segregations. Pyrite is the most common sulphide but chalcopyrite, bornite and other copper minerals have been noted. Magnetite is a common accessory mineral and occasionally forms the matrix of breccia deposits in which large fragments of syenite are cemented principally by magnetite.

In general the outline of the "Galore Creek Stock" parallels the outline of the basin drained by Galore Creek and is somewhat oval-shaped with the long axis in the north-south direction.

6. WORK PERFORMED

While the general outlines of the "Galore Creek Stock" had been delineated, information concerning the interior was quite meagre and it was therefore decided to conduct a considerable amount of geophysical work in 1961, to attempt to locate new occurrences of mineralization and to demonstrate, if possible, continuity between known deposits. The aeromagnetic survey was the first step in this work and it was hoped that the general geological features of the stock might be determined by the detection of skarn type zones or deposits, and/or the detection of magnetic

contracts between the intruded and intrusive rocks, or among the intrusive rocks themselves.

The aeromagnetic survey was contracted to Aero Surveys Limited, 540 Beatty Street, Vancouver, a subsidiary of Hunting Survey Corporation Limited of Toronto, who provided a technician operator, Harold Sandow, a Mark III Gulf total field intensity magnetometer, APN-1 equipment for recording ground clearance data and 35 mm. camera equipment for flight path recovery. Data reduction was carried out by the parent company on a scale of 1 inch equals 1,000 feet.

The survey equipment was mounted in a Hiller 12E helicopter on contract to Keneco Explorations, (Western) Limited from Okanagan Helicopters Limited, and flown by W. McLeod.

In the course of the survey, an approximate area of 24 square miles was covered by about 138 line miles of flying plus an additional 31 line miles of tie lines. This rather disproportionate amount of tie line flying was deemed necessary because of the extreme relief in the area.

The flight lines are spaced on the average at intervals of one sixth of a mile (880 feet), but in all cases this could not be maintained. Mean flight elevation was 400 feet above terrain but the actual clearance varies from about 200 feet to 900 feet. These data were recorded on an Esterline-Angus curvilinear tape at a speed of three inches per minute. The centre line of the tape is equivalent to 500 feet and full scale gives an 800 foot variation in elevation.

The magnetic data were recorded by a Leeds & Northrup recorder on rectilinear tape at a speed of six inches per minute. Full scale on the tape was set at 600 gamma.

The field work was performed by several flights on June 12, 1961. The total cost of the survey was \$10,209.68.

7. INTERPRETATION OF DATA

On the basis of the meagre geological data available, it is apparent from the accompanying magnetic plan that the volcanics immediately surrounding the Galore Creek Stock have no unique magnetic properties. All three of the most prominent magnetic anomalies, namely, the magnetic high of some 500 to 700 gamma which occurs near the west end of lines 4 to 24; the magnetic high with a peak anomaly of some 2100 gamma which occurs in the southeastern portion of the area on lines 18 to 32 and the intervening low centred on line 18 bis within the known or projected confines of the stock.

A cursory consideration suggests that topography might be a contributing factor to the distribution and intensity of these anomalies. Admittedly, the northwest anomaly occurs on a steep slope and a high shoulder, the southeast anomaly over a high ridge and the negative anomaly in a valley between ridges. However, inspection of the flight records indicates that only to the south of line 25 is the variation in flight elevation

near the extreme limits mentioned above. The anomalies can therefore be considered as diagnostic.

(1) Northwest Anomaly This is a broad positive anomaly up to 700 gamma in intensity and strongest on lines 10 to 17 inclusive. Ridges of high magnetic intensity extend out from this main zone in northeasterly and southeasterly directions. Several zones of copper mineralization occur within this anomaly and much pyrite. Both geological and aeromagnetic data suggest that this is a magnetite bearing contact or skarn zone worthy of more detailed investigations.

(2) Southeast Anomaly This is a sharper positive anomaly building up from line 18 to a peak of about 2100 gamma on line 26. As far as is known, it corresponds for the most part with a body of syenite known to contain a small percentage of magnetite. It seems likely, however, that the anomaly recorded on lines 25, 26 and 27 is caused by a more local and higher concentration of magnetite of the order of 5% in some sort of contact occurrence. This immediate locality and the anomaly as a whole should be investigated more thoroughly for copper mineralization in association with the magnetite.

(3) Central Anomaly This broad magnetic low is coincident with the central portion of the "Galore Creek Stock" and is probably representative of the magnetite deficient core of the stock between more highly magnetic contact or skarn zones about the rim. A moderately large body of low grade mineralization occurs on the flank of this magnetic trough.

There are no other anomalies that warrant further consideration at this time.

8. CONCLUSIONS AND RECOMMENDATIONS

The two magnetic highs represent contact zones within the "Galore Creek Stock" within which pyrite and copper sulphide occurrences are known. Magnetite has probably developed as a product of the development of this "skarn" zone.

The intervening magnetic low is representative of the magnetite deficient core of the stock. That this area is not iron deficient is indicated by the fact that a sizeable body of low grade mineralization exists near its centre. Possibly this could be considered an area of primary mineralization as compared to contact type mineralization in the neighbouring magnetic highs.

It is recommended that where physically possible, these magnetic zones be investigated in detail by ground magnetic surveys in the hope that individual anomalies may be resolved and trends more definitely established.

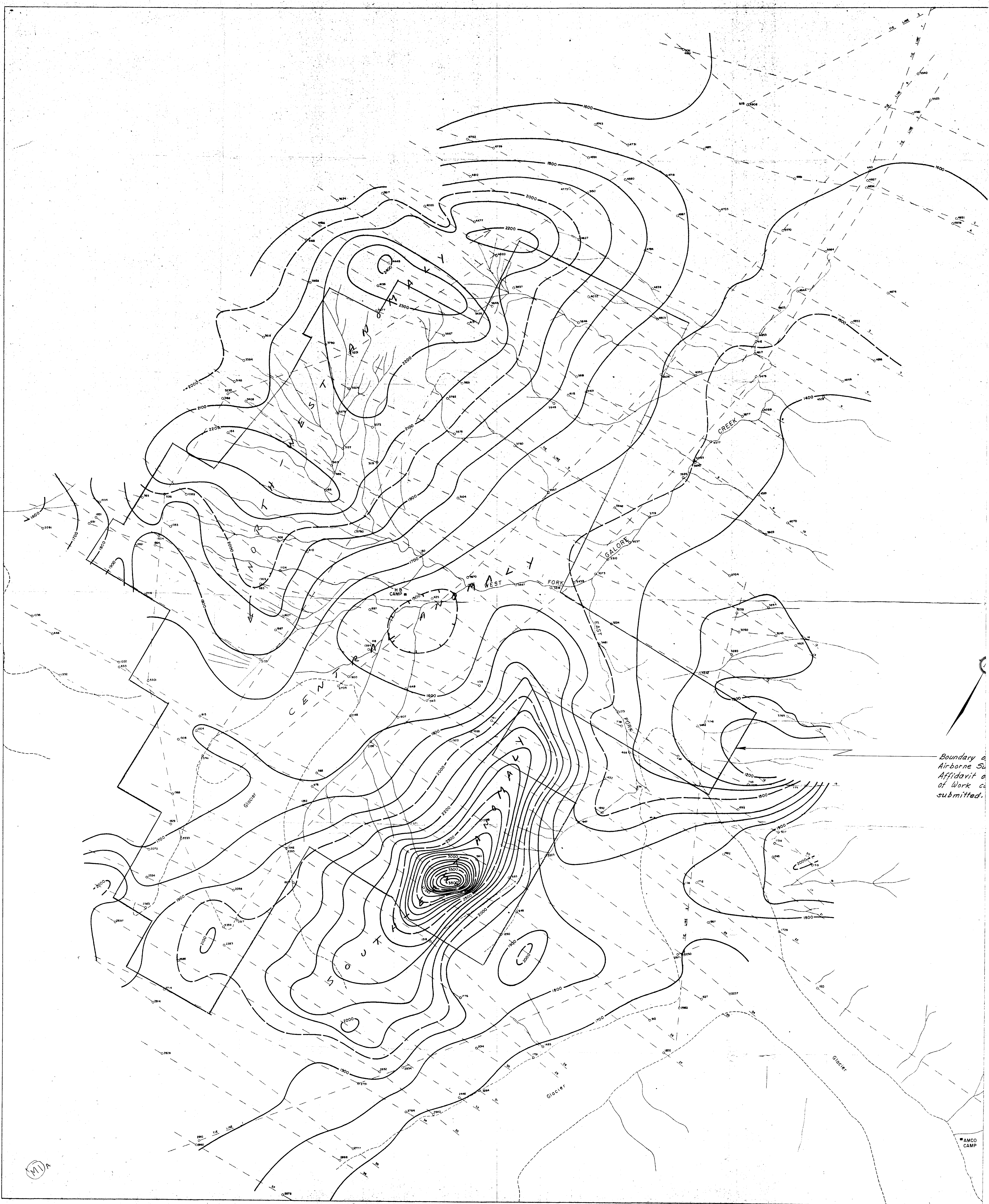
As the known mineralization is largely disseminated, it is further recommended that a large portion of the northwest anomaly and the central anomaly be covered by induced polarization work to outline mineralized zones and indicate drilling targets. This should enable an assessment of the relative merits of the various zones to be made.

Following the above recommendations would involve the surveying of about five to six (5 - 6) square miles of terrain.


H. W. Fleming, M.A. P.Eng.

Toronto, Ontario.
August 24, 1961.





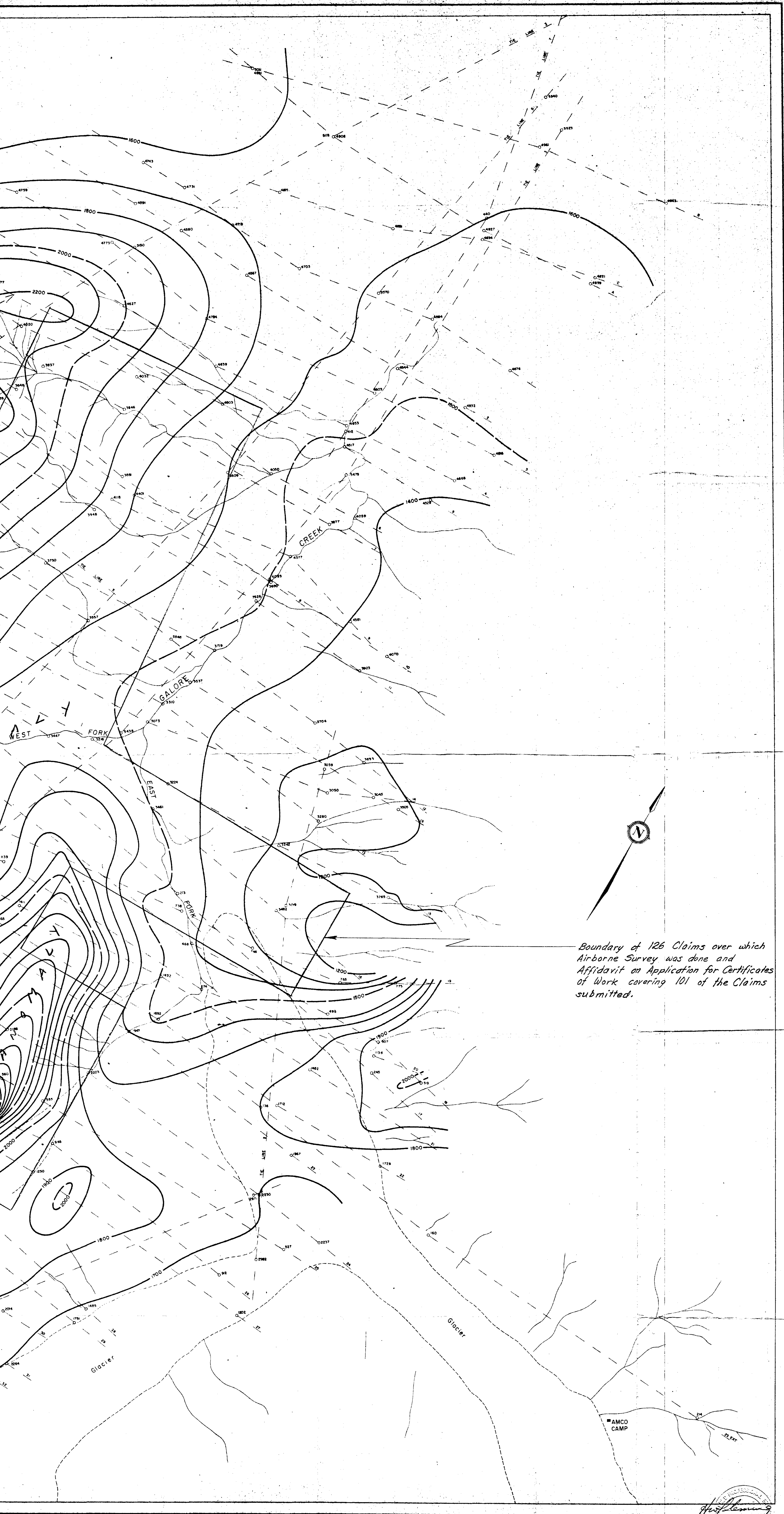
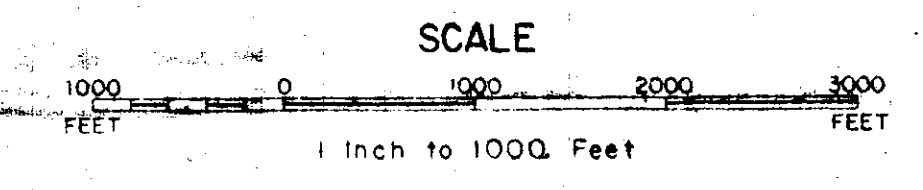
Boundary of Airborne Survey
Affidavit of Work as submitted.

M/A

AMCO CAMP

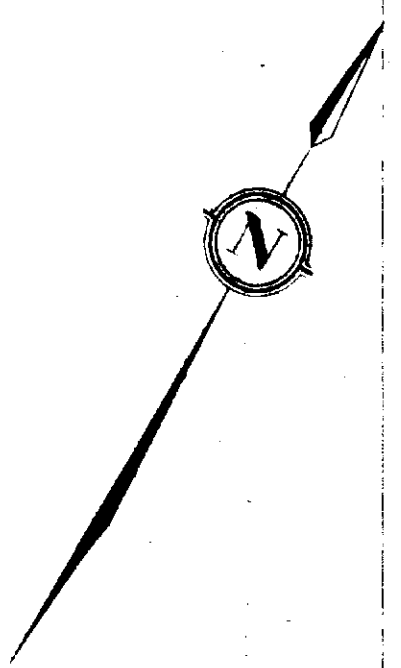
KENNCO EXPLORATION (WESTERN) LIMITED
AIRBORNE GEOPHYSICAL SURVEY

ANUK RIVER, BRITISH COLUMBIA
MAGNETOMETRIC MAP



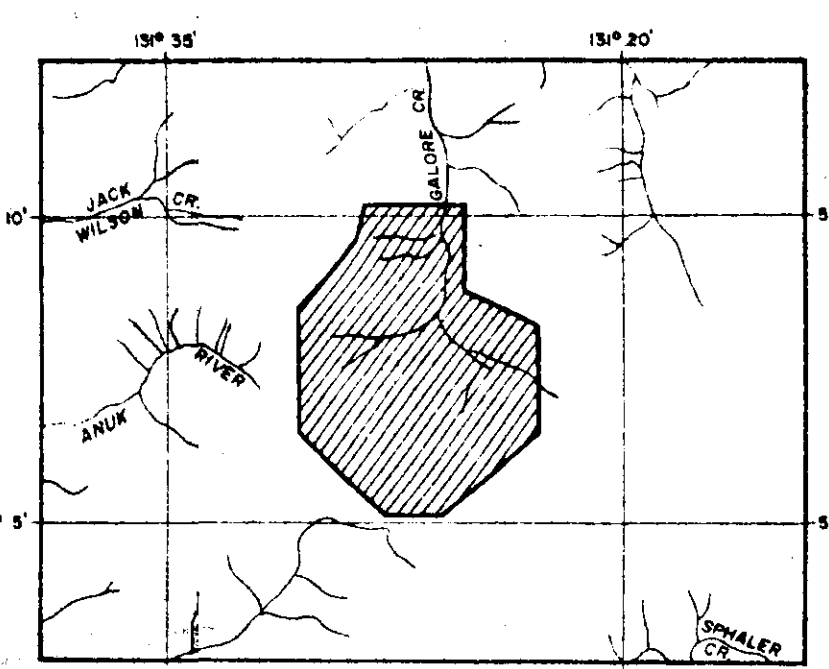
*Boundary of 126 Claims over which
Airborne Survey was done and
Affidavit on Application for Certificates
of Work covering 101 of the Claims
submitted.*

- CONTOUR INTERVAL 100 GAMMA
- MEAN FLIGHT LINE SPACING 880 FEET
- 500 GAMMA CONTOUR
- 100 GAMMA CONTOUR
- MAGNETIC LOW
- FIDUCIAL POINTS 3490.0
- FLIGHT LINES A TO C, 1 TO 32



Sheet 367
Airborne Geophysics flown and
compiled in June-July 1961 by
HUNTING SURVEY CORPORATION LIMITED
TORONTO, CANADA.

Department of
Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 367 MAP 1



367

(M) B

H. J. Fleming