

1698

PART 4

SUPPLEMENTARY GEOPHYSICAL REPORT NO. 2

on the

Data Processing of a Portion of the

Airborne Magnetometer Survey

of the

Bea, Giant, P., and Mill Claim Group

Situated in the Hope Area

New Westminster M. D.

Latitude 49°27'N.; Longitude 121°28'W.

On behalf of

KELSO EXPLORATIONS LTD.

By

D.R. Cochrane, P.Eng.

April 11, 1968.

Vancouver, B. C.



**GEO-X SURVEYS**

VANCOUVER, CANADA

Ltd.

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FIGURES

1. General Location Map
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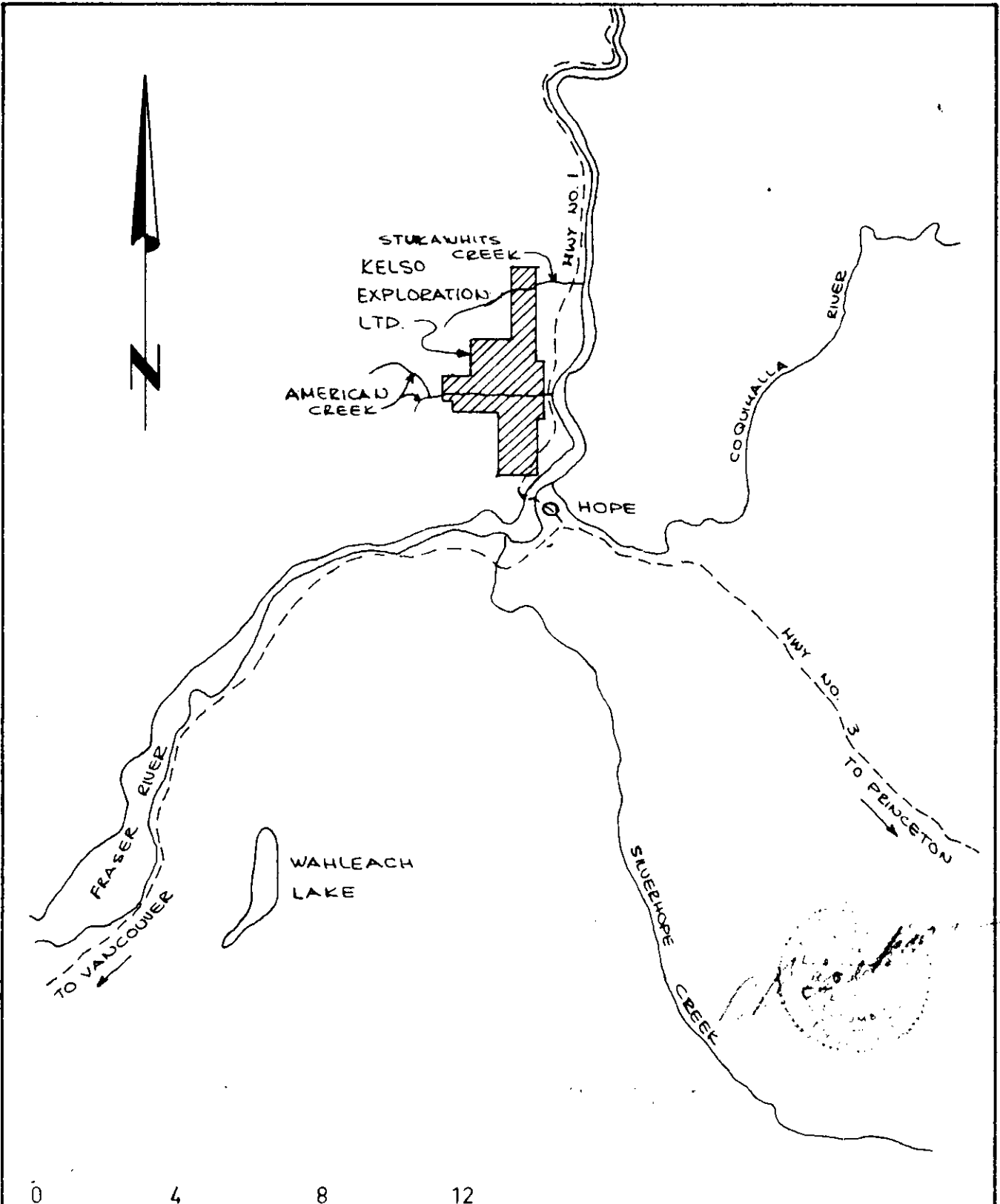
## INTRODUCTION

Between July 29 and August 1, 1967 a total of 92.58 line miles of an airborne magnetometer survey was completed by Geo-X Surveys Ltd., on claim groups near Hope, B.C., owned by Kelso Explorations Ltd. The field procedure and results of this survey were discussed in a report by the author dated August 18, 1967. On August 26, an additional 15.06 line miles were flown in an area not previously covered. The report describing the second survey is entitled "Supplement to the Geophysical Report" and is dated September 5, 1967.

In the original contract for the airborne service, Kelso Explorations requested only minimal data processing and interpretation by Geo-X Surveys. However, on January 8, 1968 Kelso authorized Geo-X to proceed with computer data processing of a portion of the survey. This report discusses the results and procedure of the computer data processing of some 44.34 line miles of aeromagnetic information collected in July and August of last year.

## LOCATION AND ACCESS

The property consists of a contiguous block of claims lying north of the town of Hope, west of the Fraser River, and south and east of the Giant Mascot Mine. The Trans Canada Highway (No. 1) crosses the southeast corner of the property



KELSO EXPLORATION LTD.  
NEW WESTMINSTER M.D.

GENERAL LOCATION MAP



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DRAWN BY APP'D	CKD / DATE	FIG. 1 JOB 1032
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and access to much of the area is provided by logging and secondary roads proceeding westerly (see Location Map, Figure 1).

#### CLAIMS AND OWNERSHIP

The entire property consists of 127 located mineral claims and fractions in the New Westminster M.D. They are owned outright by Kelso Explorations Ltd. (N.P.L.), 414 - 470 Granville Street, Vancouver 2, B.C. The computer data processing included flight information over the following mineral claims.

<u>Claim Name</u>	<u>Record Number</u>
Bea 1 to 4, incl.	13160 to 13163, incl.
Bea 5 to 17, incl.	14243 to 14255, incl.
Bea 18 to 23, incl.	14420 to 14425, incl.
Bea 38	14569
Bea 50A	14570
Bea 51	14571
Bea 53	14572
Bea 54	14598
Bea 56	14573
Giant 1 to 17, incl.	16087 to 16103, incl.
Fractions 1, 2 and 3	
Giant 30 to 36, incl.	19731 to 19737, incl.
Bea 65 to 67	19759 - 61

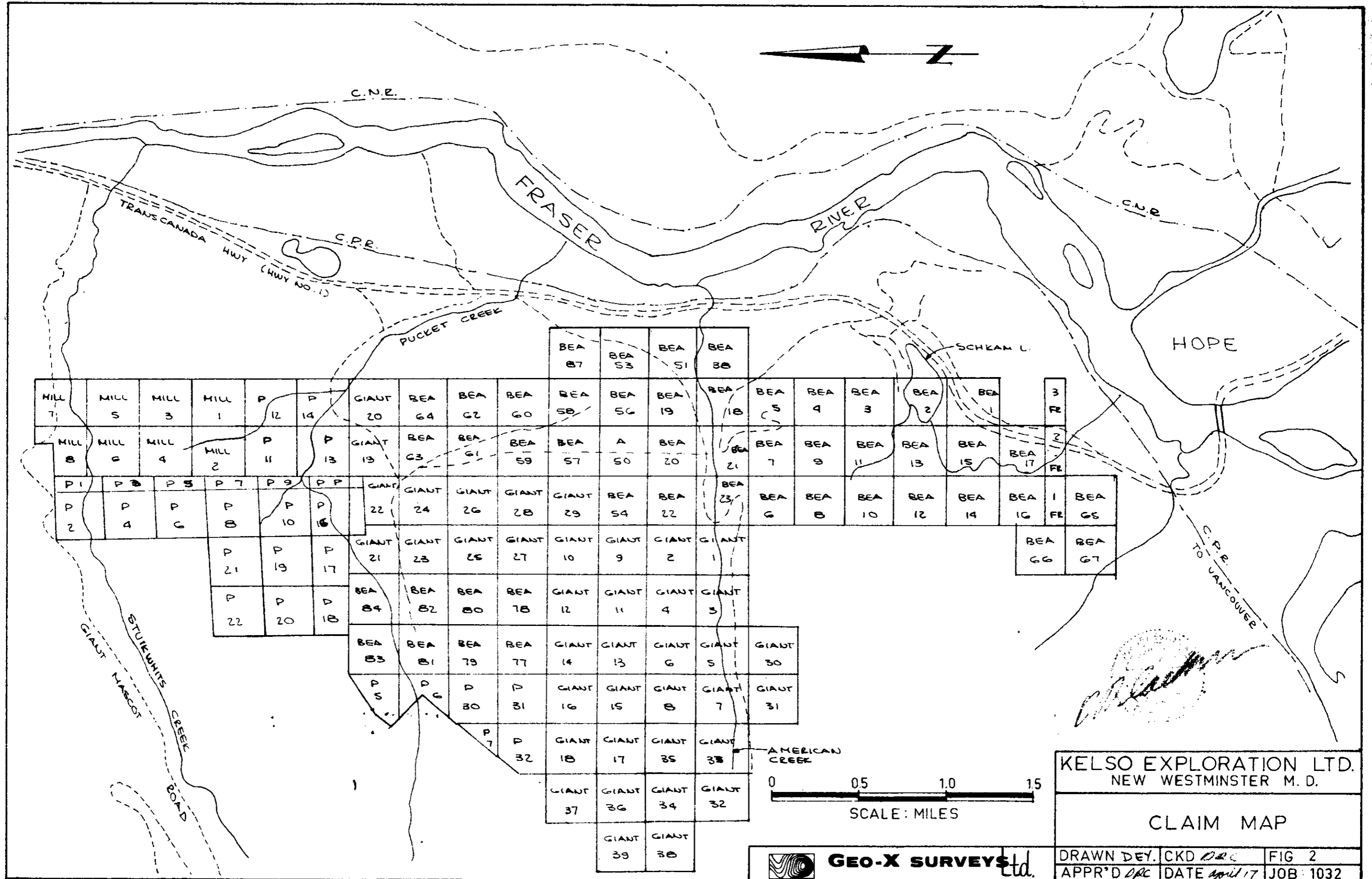
FIELD PROCEDURE AND INSTRUMENT SPECIFICATIONS

Detailed descriptions of the flight procedure and instrument specifications are contained in the August 18 "Geophysical Report on the Bea, Giant, P., and Mill Claim Groups". The reader is referred to that report for exact details. A summary follows:

The aircraft utilized in July and early August was a chartered Bell G.B.-5, and on August 26, a Heliocourier. The Geo-X Surveys airborne magnetometer unit is a fluxgate type with output into Bausch and Lomb chart recorders. The fluxgate element was manufactured by Sabre Electronics, Burnaby, B.C. A Bonzar pulse type radio altimeter is used for elevation control. Aircraft elevation varied between 500 and 700 feet above surface. Ground control is maintained by a timed sequence of strip air photos which, with the aid of an airphoto mosaic, define the flight line position.

DATA PROCESSING

The following flight lines were selected for analog to digital conversion and computer data processing.



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CLAIM MAP

DRAWN DEY. CKD DRC FIG 2  
 APPR'D DRC DATE April 17 JOB 1032

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<u>Flight Line Number</u>	<u>Length (Miles)</u>	<u>Direction Flown</u>
1	1.89	Northeast
2	1.05	"
3	1.20	"
5	1.33	"
6	1.41	"
7	2.44	"
8	1.65	"
9	1.50	"
10	1.57	"
21	2.70	West
22	3.01	"
23	3.10	"
24	3.48	"
26	2.91	"
27	2.97	"
A or (1")	1.52	Northeast
B or (2")	1.41	"
C or (3")	1.44	"
F or (6")	1.45	"
G or (7")	1.82	"
H or (8")	1.74	"
I or (9")	2.75	"
22 Lines	44.34 Line Miles	



An arbitrary X-Y coordinate system was imposed on the flight line plan in order that each position on the flight line could be defined in X = feet north; Y = feet east. The chart records containing the magnetic information (Z value) were digitized at specific X-Y intervals. The X, Y and Z data at each point were placed on punched cards by Computrex Computer Centres Ltd. of Calgary, Alberta. The along flight line digitizing interval employed was approximately 200 feet (i.e. 26 points per mile). The punched cards containing the positioning and magnetic information were forwarded to the Geophysics and Research Department of Varian, in Palo Alto, California. Varian produced a computer drawn residual magnetic map of the total field (contour interval 50 gammas) from the punched cards (see Figure 3).

Varian's residual magnetic map is essentially a filtered third degree trend. The trend surface was fitted with a third order set of Chebyshev polynomials. The coefficients of each orthogonalized polynomial were then tested by means of the Fisher-Snedecor F test, and those coefficients below a significant level of 0.1% were rejected. This acceptable level had been determined by previous experience. The entry MS, from the analysis of the variance table, represents the unbiased estimator of the squared standard deviation of the residual data. Thus  $\sigma^2 = 2.9790 \times 10^4$ . With an assumed normal distribution, this indicates that the residual data have a 95% probability of lying between the extremal values of  $\pm 676.58$  gammas (true).

Since the trend surface removed was relatively small in contrast to the total field data, the unfiltered (raw) data plot was unnecessary.

## RESULTS

The Kelso Explorations Residual Total Field Isomagnetic Plan is presented as Figure 3. Values plotted (i.e. 100) represent  $\frac{1}{2}$  the true gamma value (100 = 200 gamma contour). A total of eleven areas containing magnetic response greater than 200 gammas were outlined and these are designated as magnetically positive anomalies numbers one to eleven, inclusive.

A summary follows:

<u>Anomaly No.</u>	<u>Approximate Location</u>	<u>Peak Value (in gammas)</u>	<u>Approximate Extent</u>
1	Giant 6 and 13 claims	600	1500' dia.
2	Near Schkam Lake	450	800'wd.; 1 $\frac{1}{4}$ mi. long
3	Bea 4, 8, 9.	400	900'wd.; 2500' long
4	Bea 38 and 51	450	500'wd.; 3000' long
5	Bea 20	400	1000' dia.
6	North Schkam Lake		
7	Giant 1 & 2, Bea 22 & 23	300	1500' dia.
8	Giant 5	300	500' dia.
9	Bea 18 and 19	200	300' dia.
10	Bea 17, Fraction 2	300	900' dia.
11	Bea 65 and 67	250	500'wd.; 1300' long

CONCLUSIONS

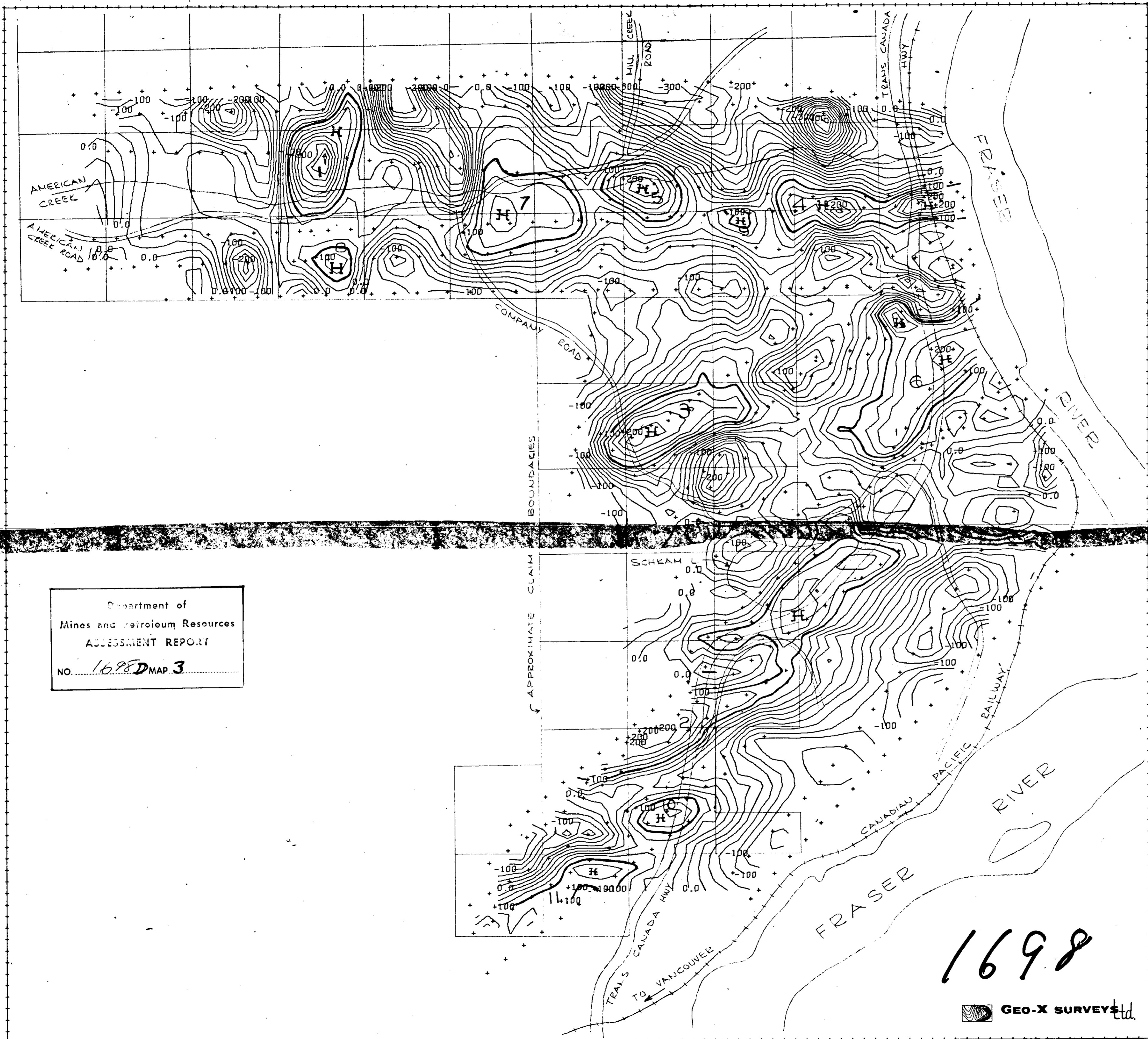
A total of eleven areas containing relative total field values in excess of 200 gammas were outlined after computer data processing 44.34 line miles of aeromagnetic information. The mineral property, which was surveyed in late summer 1967 by Geo-X Surveys Ltd., is owned by Kelso Explorations and this data processing was completed on the owners behalf.

The eleven zones of relatively high positive magnetic values may be response to basic to ultra-basic bedrock intrusive bodies. The basic intrusive - copper nickel sulphide association is well known, and exists immediately north and west of the area flown, at the operating mine of Giant Mascot. A ground follow-up programme to determine the cause of the eleven anomalies is recommended. Ground magnetometer, geochemical soil sampling and/or geochemical stream sediment sampling would be appropriate for the initial follow-up phase.

Respectfully submitted,

  
D.R. Cochran, Eng.





Department of  
Mines and Petroleum Resources  
ASSESSMENT REPORT  
NO. 1698 MAP 3



NOTE:  
GAMMA VALUES PLOTTED ARE ACTUALLY  
1/2 REAL VALUE  
I.E. 100 & 200.

TO ACCOMPANY SUPPLEMENTARY GEOPHYSICAL  
REPORT NO. 2, FOR  
KELSO EXPLORATION LTD. SITUATED  
NEAR HOPE, B.C., NEW WESTMINSTER M.D.  
BY D. C. PENG.  
DATED APR. 11, 1968.  
FIG 3 JOB 1032

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GEO-X SURVEYS Ltd.

KELSO EXPL LTD.  
RESIDUAL  
TOTAL FIELD

0 ————— 1/2  
MILES

CONTOUR INTERVAL  
25.0 GAMMAS  
VARIAN