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MAGNETOMETER SURVEY

by

Gary C. Lee, P.Eng.

April 1991

MARILYN MINERAL CLAIMS

Atlin Mining Division, B.C.
Grant No. 4509

Work done by Owners: Bradley T. White and Gary Lee

Map 104N/12W
Latitude 59°38', Longitude 133°49'

Date submitted: _____

Jan 16/92

**GEOLOGICAL BRANCH
ASSESSMENT REPORT**

22,076

TABLE OF CONTENTS

	Page
INTRODUCTION	1
General	1
Location and access	1
Claim map	2
History	3
Topography	3
Grid and Field Procedure	4
ECONOMIC GEOLOGY	4
GEOLOGY MAP	6
PURPOSE	7
RESULTS	7
INTERPRETATION AND CONCLUSIONS	7
RECOMMENDATIONS	9
STATEMENT OF QUALIFICATIONS	10
MAGNETIC PROFILES	11-15
MAGNETIC MODEL	16-17
PHOTOGRAPHS	18
MAGNETIC PLAN	Pocket
STATEMENT OF COSTS - - - - -	19

INTRODUCTION

GENERAL

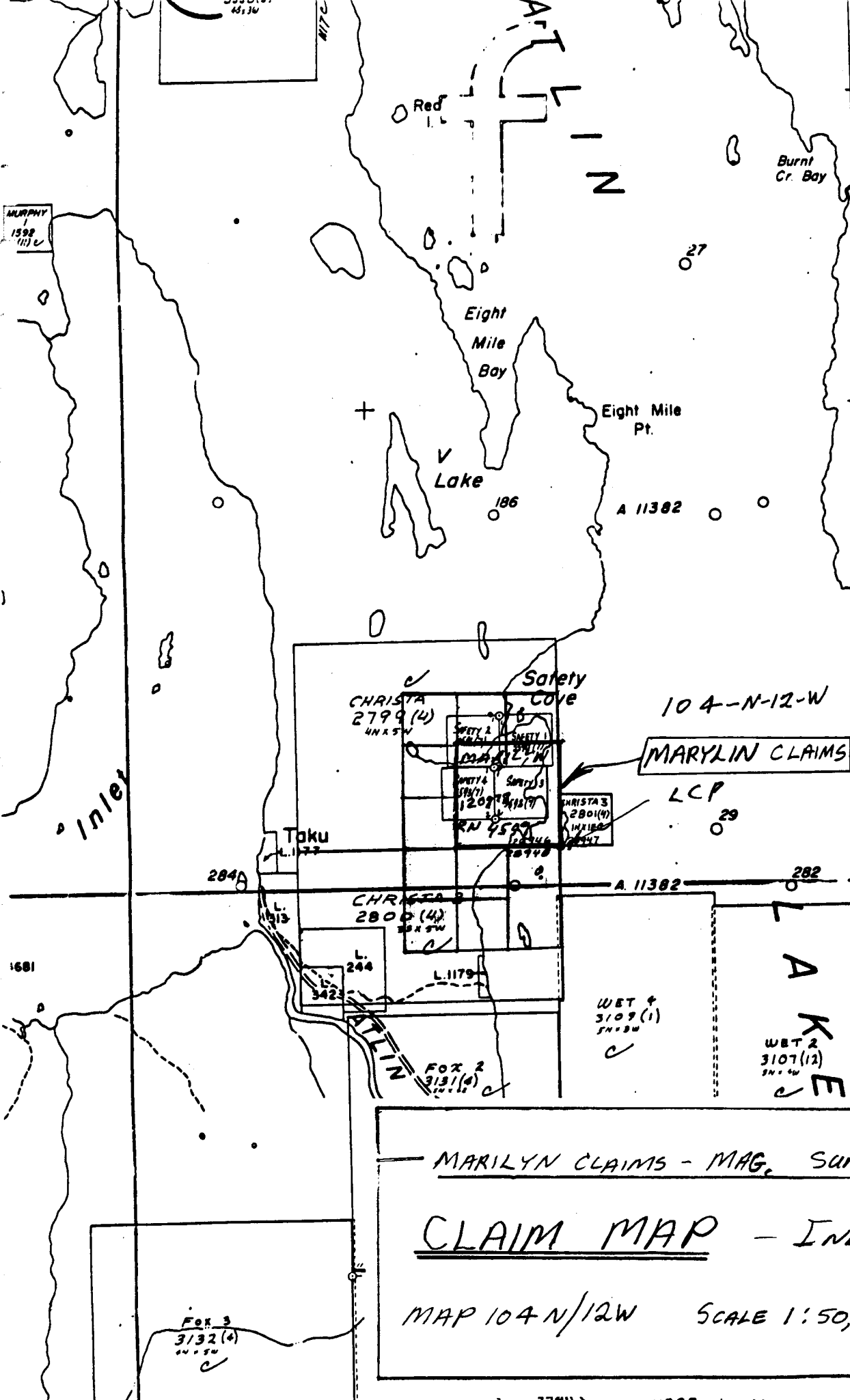
From April 4 to April 7, 1991 a two-man (myself and Bradley T. White) exploration crew snowmobiled across Atlin Lake into the MARILYN claims. During this time, both a chain and compass grid plus a magnetometer survey were completed. The claim and geology maps on pages 2 and 6 show the area surveyed on the MARILYN claims (Grant No. 4509). The survey was done on four units (each unit 500 metres square) comprising a total area of 1 km x 1 km. An additional 11 units (adjoining) were staked on April 10, 1991.

The claims are jointly owned by myself and Mr. White.

LOCATION AND ACCESS

The claims are located 9 km in a straight line northwest of Atlin, B.C. on the west shore of Atlin Lake. The location is clearly marked on the maps, pages 2 and 6.

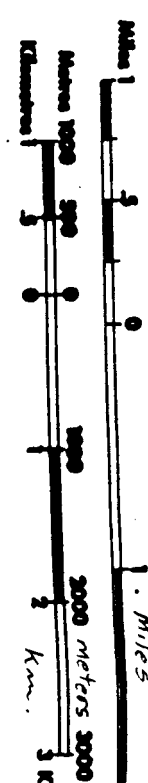
Access to Atlin is by an all-weather road connected to the Alaska Highway. Access to the claims from Atlin is by a gravel road (Fourth of July Road) 5.5 km north of the town and thence 4.5 km west across Atlin Lake on the ice by snowmobile or on water by boat. If one wishes to travel the complete distance by either boat or snowmobile, this can be accomplished by departing from the shoreline in downtown Atlin and travelling a distance of 9 km.



LEGEND

- ORIGIN-GUARANTEED GENERAL CLAIM
- REVERTED G.E. GENERAL CLAIM
- FORFEITED GENERAL CLAIM
- UNRESERVED LEGAL CORNER POST
- LEGAL SURVEY
- LEGAL CORNER POST & TAG NUMBER

TO EAST SEE MAP 04-N-12-E



MARILYN CLAIMS - MAG. SURVEY
CLAIM MAP - INDEX
 MAP 104 N/12W SCALE 1:50,000

HISTORY

There is no evidence of any physical work on the MARILYN claims. The only activity noted is past staking, probably going back at least 30-40 years, as indicated by some old posts.

Since the discovery of gold in 1898-99, Atlin has been a producer of placer gold until the present. During this time, a few shafts (e.g. Yellow Jacket on Pine Creek, and Beavis near Atlin) have been sunk in bedrock with the purpose of evaluating occurrences of lode gold. Over the past 10 years there have been numerous junior companies plus a couple of majors (e.g. Homestake on the Yellow Jacket property at Pine Creek) exploring for lode gold. The closest significant activity to the MARILYN claims is the Beavis Mine property approximately 6 km to the southeast across Atlin Lake (see geology map, page 6).

The first work reported was underground development performed in 1904. As reported in Archer-Cathro's Beavis Mine Property Study, July 15, 1987, by Mr. M. P. Phillips, the "workings consist of a steeply-inclined shaft, lateral development on two levels (55 feet and 110 feet below surface), and a short winze from 55 Level to surface. The shaft is believed to have been sunk to about 150 feet below surface." Gold occurrences here will be mentioned in the economic geology section as outlined during recent (1987) shaft rehabilitation by B.Y.G. Resources Ltd.

TOPOGRAPHY

The elevation on the area surveyed ranges from 2200 to 2400 feet above sea level. With the exception of a few steep cliffs on Atlin Lake, the area is easily traversed. To the west of the survey area, the slopes begin to steepen, peaking at an elevation of 3000 feet (see copies of photographs, page 18).

GRID AND FIELD PROCEDURE

A baseline (7300W) was established running true north with grid lines running east-west (see magnetic plan in pocket). The lines were run in at 100 metre intervals with stations flagged and marked with felt pen at 25 metre spacing. Lines are flagged only (no blazing or cutting). The L.C.P. is located on the south end of an island at 7000N, 7000W. Approximately 12 line km were surveyed.

Magnetometer readings were taken at 12.5 metre spacing with a Scintrex MF-2 fluxgate magnetometer. The instrument reads the vertical component of the earth's magnetic field. Readings were taken to the nearest 10 gammas in short loops and corrected for diurnal. Each loop was subsequently corrected to adjacent loops throughout the survey.

ECONOMIC GEOLOGY

As shown on Aitken's geology map on page 6, there are three geology formations contacting here, as described by him: (1) carbonitized serpentinite [9b], peridotite?; (2) greenstone and volcanic greywacke; derived amphibolite; minor chert, argillite, chert-pebble conglomerate and chert breccia; derived quartzite and schist, limestone and limestone breccia [7]; and (3) undifferentiated, mainly volcanic rocks of uncertain, possibly several, ages. Andesite, basalt, agglomerate, tuff, breccia; diorite and quartz diorite porphyries; rhyolite. In part probably Triassic (A). The contact [9b and 7] seems to continue across the lake to the southeast where it is shown near the Beavis Mmine property. It is offset and probably faulted under Atlin Lake.

Of more general interest to the east on Pine Creek, C. H. Ash and R. L. Arksey have noted in their paper entitled The Listwanite-Lode

Gold Association in British Columbia - "Linears defined by aeromagnetic lows in serpentinite may delineate zones of carbonatization. Magnetite formed during the serpentinization of ultramafic rocks produces a strong magnetic signature. Carbonatization results in the destruction of magnetite, creating zones of reduced magnetic susceptibility. The application of aeromagnetic lows as an exploration tool in delineating zones of carbonatization in ultramafics has been discussed by Gresens et al (1982). This approach has been applied by Homestake Mineral Development Co. in the Atlin camp and has proven successful (D. Marud, personal communication, 1989)."

Seven miles to the west of Homestake's Pine Creek (Yellow Jacket) property is the Beavis property (see geology map). According to the report by M. P. Phillips in Archer-Cathro's Beavis Mine Property Study, July 15, 1989, the "geological setting and mineralization at the Yellow Jacket closely resemble those at the Beavis." "Two gold bearing veins are exposed in the underground workings and both are confined to the porphyry dyke." "Silicification is most intense at the junction of faults or where there is a change in their strike." Also, samples "taken from the mine dumps containing the greatest amount of grey quartz (25%) as opposed to white quartz returned the highest assays (0.870 oz/ton gold and 1.87 oz/ton silver)." "The highest assay returned from samples taken from underground workings was 0.745 oz/ton gold with 0.47 oz/ton silver across 3.2 feet from No. 2 vein on the 55 Level crosscut." A more detailed geological description can be obtained from the Archer-Cathro report.

Of general interest, Rick ^{Diment}~~Diamond~~, Geologist (Noranda Exploration Co. Ltd.) who worked on the Pine Lode property (Pine Creek) stated that andesites near or contacting ultramafic complexes and with intensive shearing or faulting are excellent places to explore for gold.



page 6 LEGEND



- 9b - carbonized serpentinite peridotite

- 7 greenstone, volcanic, amphibolite, agillite, iron-pelite conglomerate, sheet breccia, limestone, mesone breccia

- A Volcanics, Andesite, basalt, agglomerate, breccia; diorite, gtz diorite, phosphries; chryolite

MARYLIN CLAIMS - MAG. SURVEY
GEOLOGY MAP
 G.S.C. - Aitken
 MAP 104N/12 SCALE 1:250000

PURPOSE

With regard to prospecting for gold, the purpose of this survey is to locate magnetic highs (ultramafics) and adjacent magnetic lows (carbonatized serpentinites?, listwanites?) in order to facilitate 'zeroing-in' with future detailed geochemistry and geological mapping. This is especially significant in the magnetic lows within the ultramafic complexes as well as the magnetic high contacts (ultramafics) with the volcanics (andesites?) to the west (see J. D. Aitken's geology map, page 6).

Also, it is important to locate any faulting.

RESULTS

The results can be seen on the magnetic plan located in the pocket and the magnetic profiles located from pages 11 to 15. One can see that there are many abrupt contrasts between magnetic highs and lows. These will be discussed in the next section.

INTERPRETATION AND CONCLUSIONS

With many of the magnetic highs running 2000 gammas above background, it is concluded that these represent ultramafic (peridotite) complexes. The magnetic lows are running up to 700 gammas below background and could represent zones of carbonatization. These contacts, especially those into the lows, should be intensively sampled (geochemical) and mapped. The stabilizing of the magnetic readings on the northwest part of the grid is suspected as being the volcanics (andesites?) as shown on Aitken's geology map. This area should be intensively sampled and mapped as well, especially near the ultramafic contacts. On line 7000N east of Station 7625W there is a clear absence of high magnetic readings, which is not the pattern on adjacent lines to

the north for up to 250 m to the east. This probably indicates a major break striking east-west.

The magnetic model for line 7200N is shown on pages 16-17. This was provided by Mike Power of Amerok Geophysics, Whitehorse, Yukon, and shows the actual magnetic modelled against that of a computer-generated system of narrow vertical dikes. The configuration of these dikes is sketched in at the bottom of the page. One can see that the computer-generated anomaly closely resembles that of the actual anomaly. Pages 16-17 show the variables (width, magnetic susceptibility) assigned to the various dykes. One can see that the anomalies represent many dikes (mostly magnetic highs) ranging from 10 to 100 metres in width. Of special interest is the second dike from the right, which has been assigned a negative magnetic susceptibility of -3000. This is a good approximation of one of the magnetic lows with a width of 30 metres. All dikes were assigned an arbitrary depth of five metres below surface. Although the survey was done with 2-3 feet of snow on the ground, some of the more resistant ultramafics (magnetic highs) are suspected as outcropping.

RECOMMENDATIONS

- 1) That an intensive geochemical sampling and mapping program be undertaken. Close sample spacing should be maintained in the interesting areas previously mentioned. Specific station intervals can be obtained with close study of the magnetic plan.

- 2) If interesting results are obtained from the above, then anything from more geophysics and/or sampling to trenching and/or drilling should be considered.

Respectfully submitted,

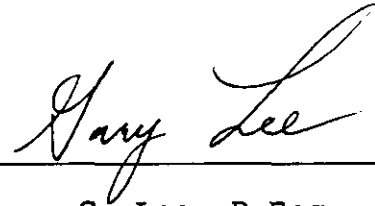
A handwritten signature in cursive script that reads "Gary Lee". The signature is written in dark ink and is positioned above the typed name.

Gary C. Lee, P.Eng.

STATEMENT OF QUALIFICATION

I, GARY C. LEE, of the City of Whitehorse, Yukon Territory, DO HEREBY CERTIFY that:

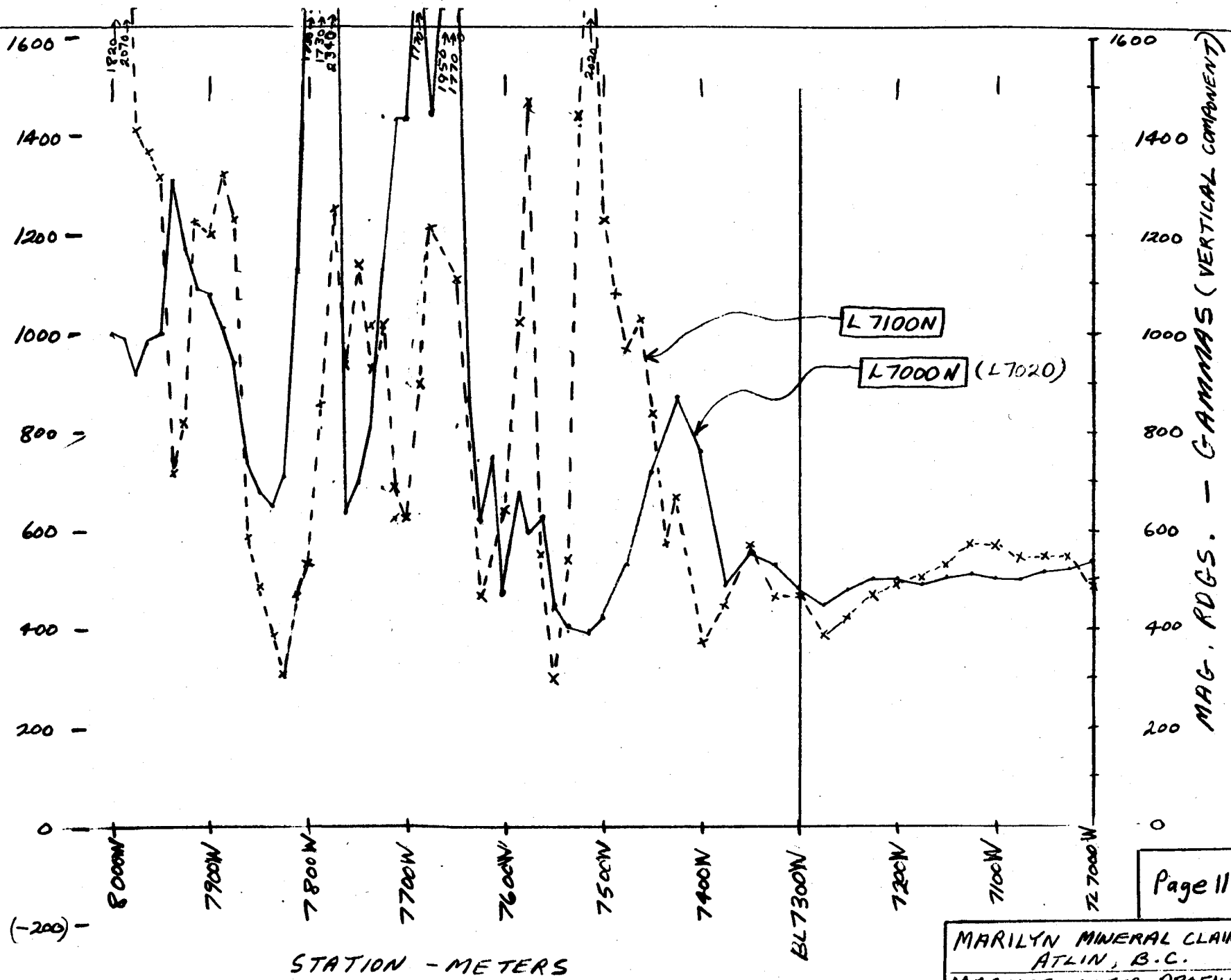
- 1) I am a self-employed Geological Engineer.
- 2) I am a graduate of the University of Toronto, Toronto, Ontario, with a degree in Applied Science - Geological Engineering (Mineral Exploration option).
- 3) I am a member of the Professional Engineering Associations of both the Yukon and Ontario.
- 4) I supervised and carried out the work described in this report.



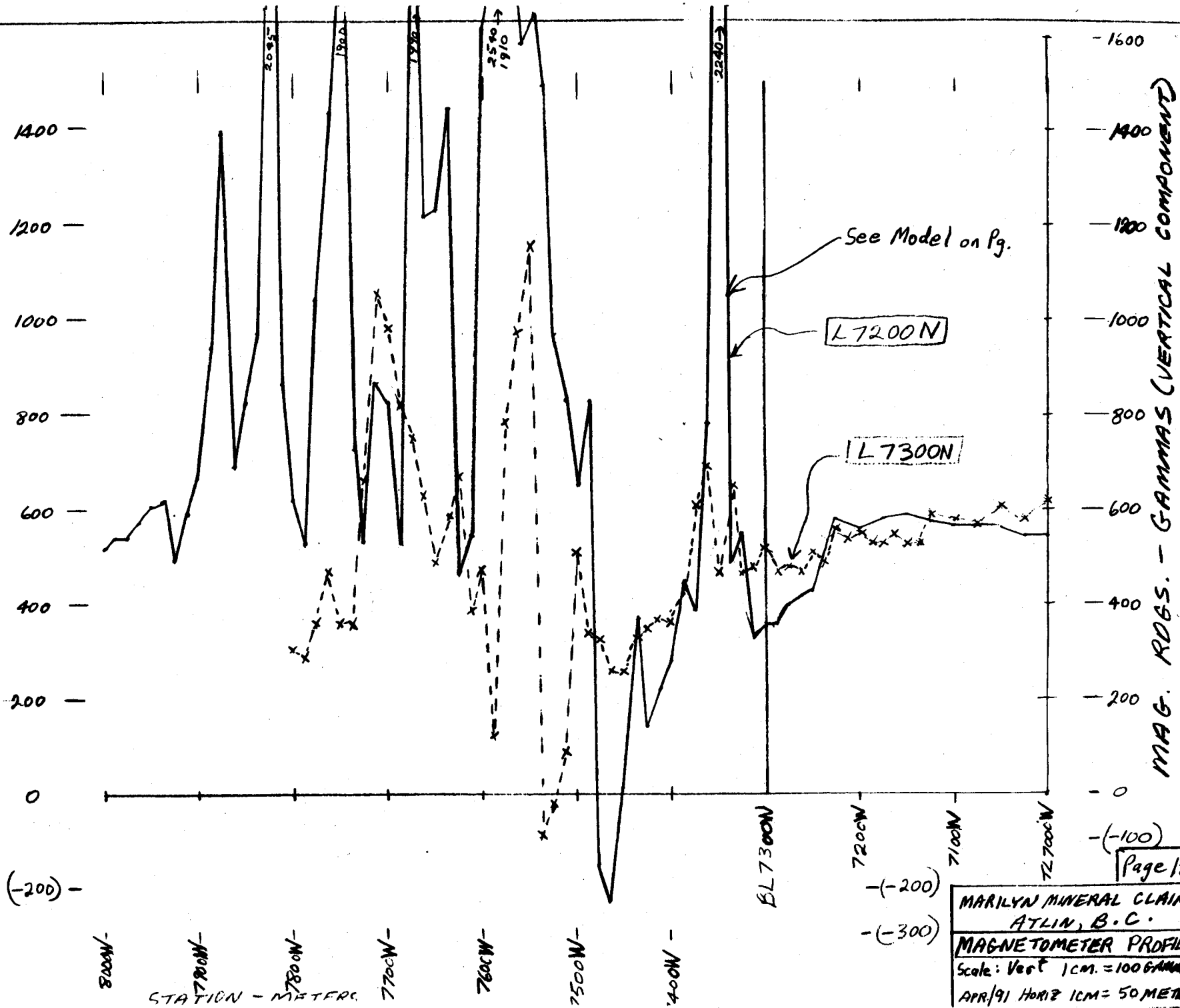
Gary C. Lee, P.Eng.

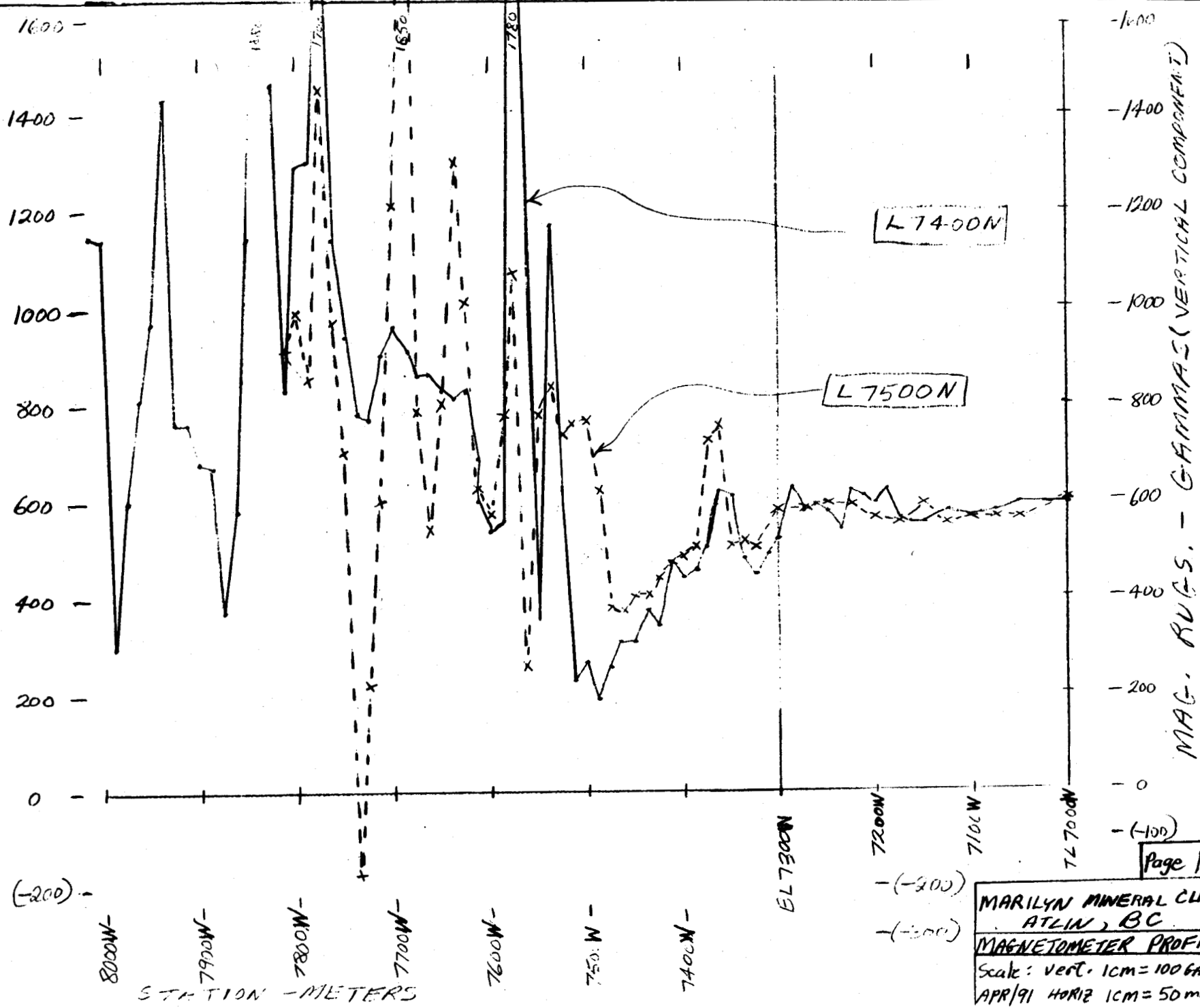
Date: _____

May 24/91

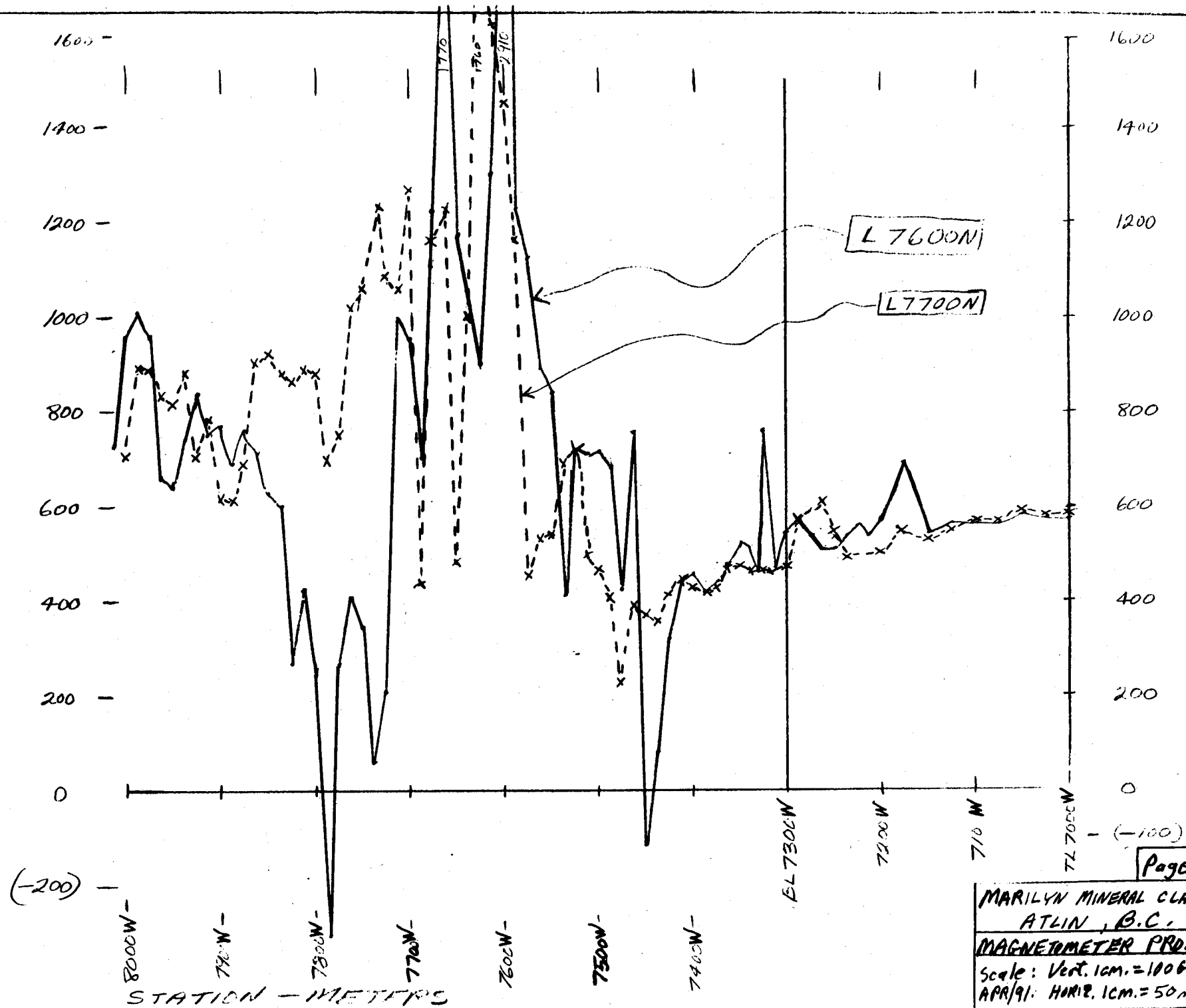


MARILYN MINERAL CLAIMS
 ATLIN, B.C.
 MAGNETOMETER PROFILES
 SCALE: VERT. 1CM. = 100 GAMMAS
 APR. / 91 HORIZ 1CM. = 50 METERS





MARILYN MINERAL CLAIMS
ATLIN, BC
MAGNETOMETER PROFILES
Scale: vert. 1cm = 100 GAMMAS
APR/91 HORIZ 1cm = 50 meters



Line: 7200.0N

vertical
— Actual total field
- - Modelled total field
vertical

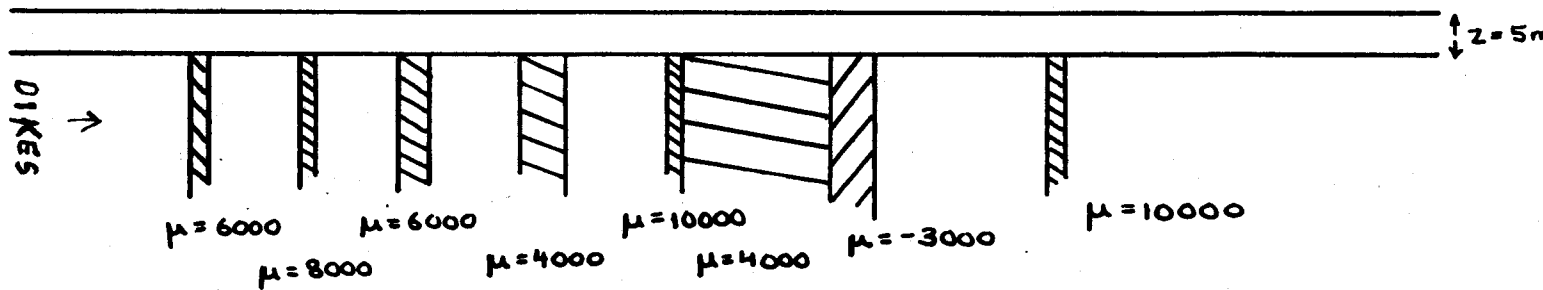
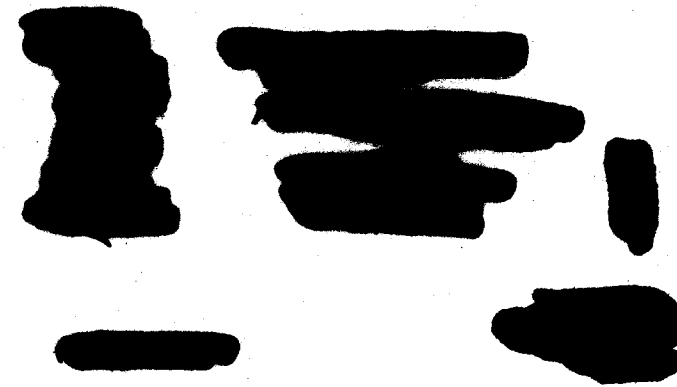
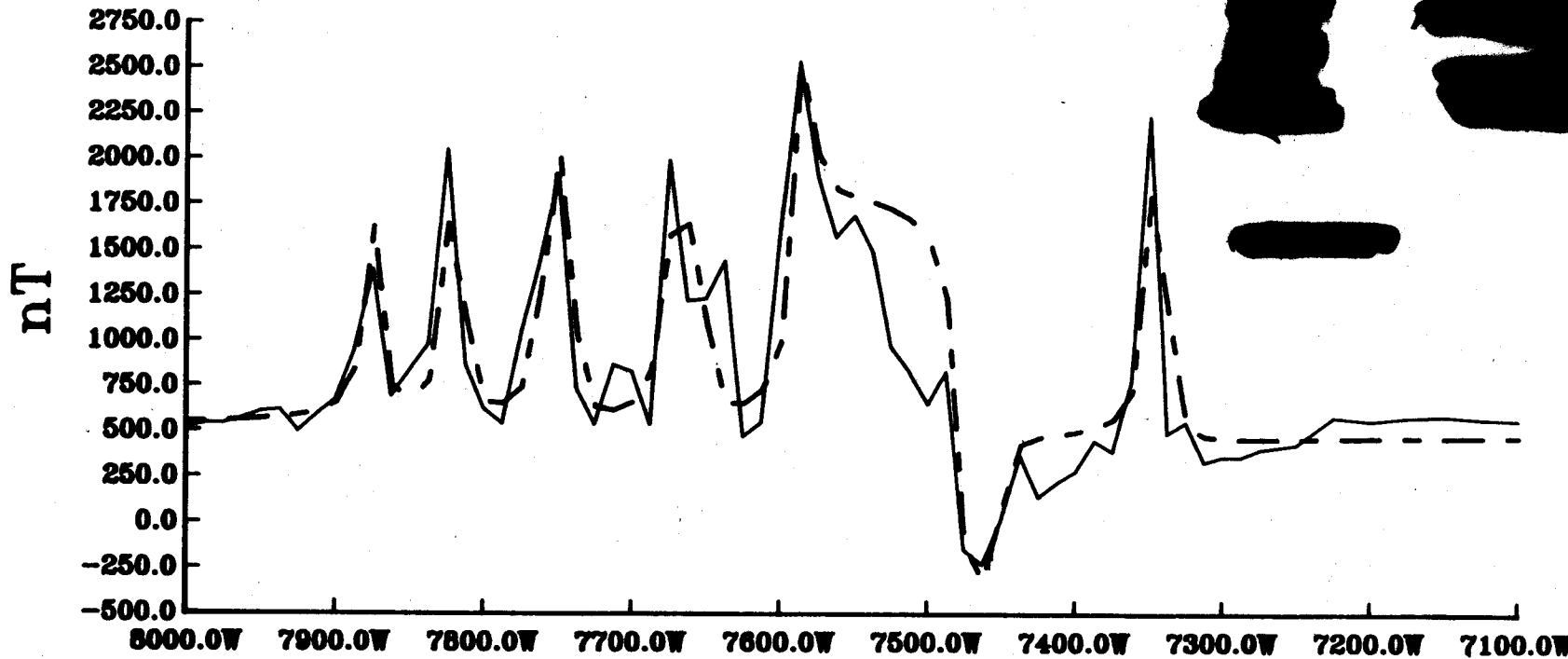


Figure . Magnetic model for line 7200N.

Earth's field strength: 57000.0 nT
 Baselevel shift: 500.0 nT
 Inclination: 75.0 degrees
 Magnetic strike of target: -30.0 degrees
 Profile from -8000.0 to -7100.0 with stations at 12.5 m.

For prism #1: ($\mu_k = 1$)
 k= 6000.0x10e6 emu depth= 5.0 m
 w= 10.0 m left corner at -7880.0 m ✓
 Depth to bottom of dike: 20000.0 m
 Dip of dike with acute angles to left: 90.0 degrees

For prism #2:
 k= 8000.0x10e6 emu depth= 5.0 m
 w= 10.0 m left corner at -7825.0 m ✓
 Depth to bottom of dike: 20000.0 m
 Dip of dike with acute angles to left: 90.0 degrees

For prism #3:
 k= 4000.0x10e6 emu depth= 5.0 m
 w= 10.0 m left corner at -7760.0 m ✓
 Depth to bottom of dike: 20000.0 m
 Dip of dike with acute angles to left: 90.0 degrees

For prism #4:
 k= 4000.0x10e6 emu depth= 5.0 m
 w= 30.0 m left corner at -7680.0 m ✓
 Depth to bottom of dike: 20000.0 m
 Dip of dike with acute angles to left: 90.0 degrees

For prism #5:
 k=10000.0x10e6 emu depth= 5.0 m
 w= 10.0 m left corner at -7590.0 m
 Depth to bottom of dike: 20000.0 m
 Dip of dike with acute angles to left: 90.0 degrees

For prism #6:
 k= 4000.0x10e6 emu depth= 5.0 m
 w= 100.0 m left corner at -7580.0 m
 Depth to bottom of dike: 20000.0 m
 Dip of dike with acute angles to left: 90.0 degrees

For prism #7:
 k=-3000.0x10e6 emu depth= 5.0 m
 w= 30.0 m left corner at -7480.0 m
 Depth to bottom of dike: 20000.0 m
 Dip of dike with acute angles to left: 90.0 degrees

For prism #8:
 k=10000.0x10e6 emu depth= 5.0 m
 w= 10.0 m left corner at -7350.0 m
 Depth to bottom of dike: 10000.0 m
 Dip of dike with acute angles to left: 90.0 degrees

Root mean square error was: (294.8)
 Maximum error was: 907.7 at -7500.0 m.

k μ = magnetic susceptibility contrast
 in cgs units ($\text{emu} \times 10^{-6}$)

Negative susceptibility corresponds with a rock unit whose μ is less than the background susceptibility.



Looking West - Mountain Range

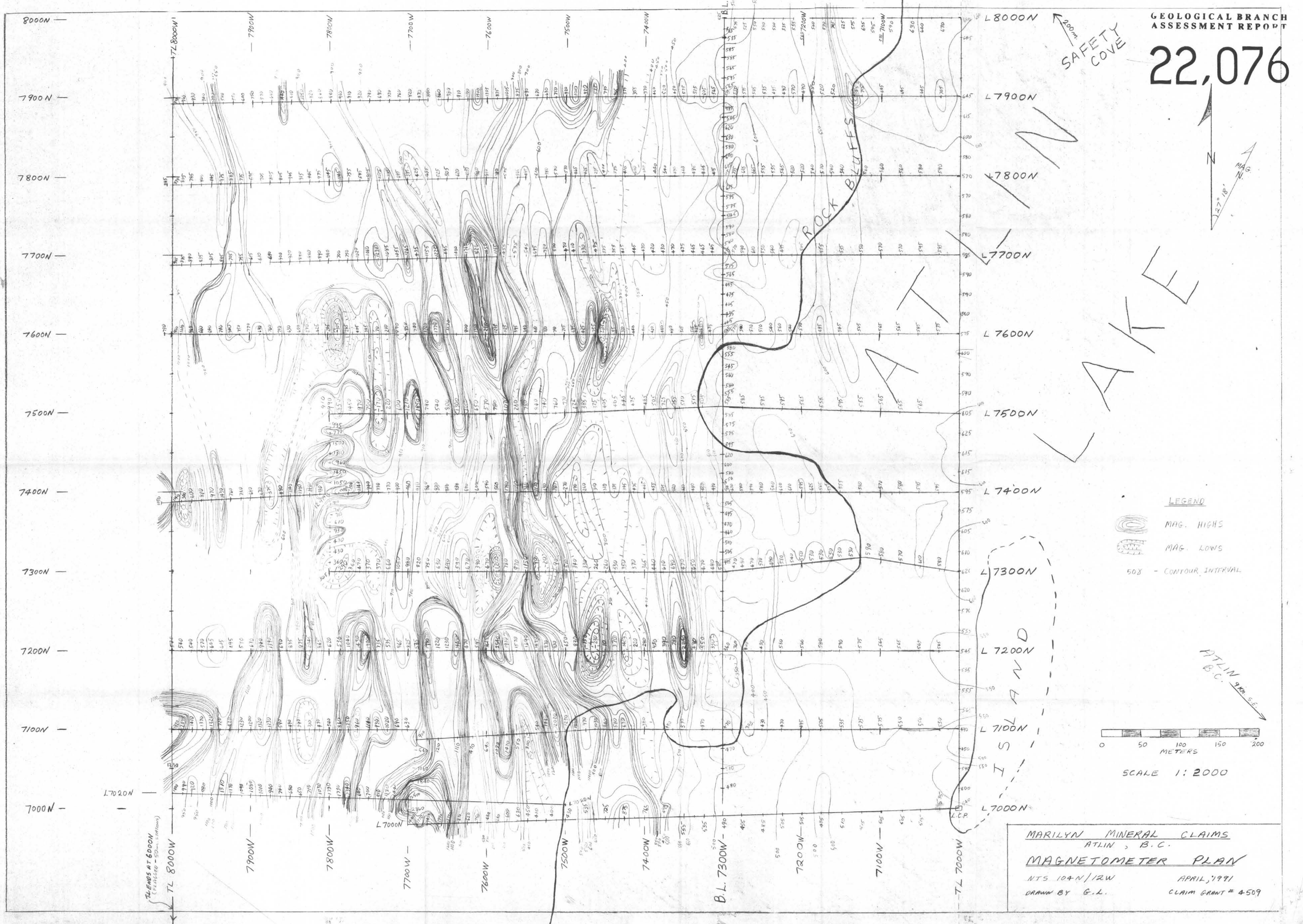
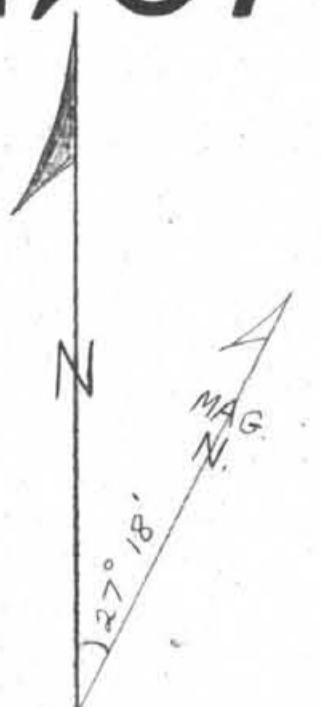


MARILYN MINERAL CLAIMS
ATLIN MINING DIVISION B.C.

STATEMENT OF COSTS - MAGNETOMETER SURVEY

<u>FIELD</u>	<u>\$</u>
ENGINEER: 4 days @ \$275.00/day	1,100.00
ASSISTANT: 4 days @ \$200.00/day	800.00
MAG. RENTAL:	250.00
SNOWMOBILE:	150.00
SUPPLIES:	75.00
TRUCK(4x4): Daily use to Job Site	200.00
MOB. & DEMOB.:	275.00
ROOM & BOARD: Cabin Rental & Groceries	400.00
 <u>REPORT</u>	
DATA REDUCTION, PRELIMINARY MAP PREPARATION AND PLOTTING:	700.00
CONTOURING MAG. MAP, REPORT WRITING AND MODELLING:	900.00
REPORT REPRODUCTION:	75.00
<u>TOTAL:</u>	<u>\$4,925.00</u>

200m
SAFETY COVER



LEGEND
MAG. HIGHS
MAG. LOWS
508 - CONTOUR INTERVAL

0 50 100 150 200
METERS
SCALE 1:2000

MARILYN MINERAL CLAIMS
ATLIN, B.C.
MAGNETOMETER PLAN
NTS 104N/12W APRIL, 1991
DRAWN BY G.L. CLAIM GRANT # 4509

TRLENDS AT 6000
(PLACED - 50m intervals)

ROCK BLUFFS

ATLIN B.C.
ISLAND