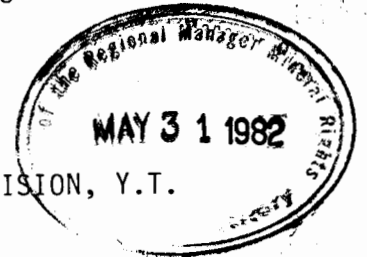




GEOPHYSICAL INVESTIGATION OF THE BUSH CLAIMS
(Electromagnetic and Magnetometer Surveys)



SELWYN PROJECT, EARN LAKE AREA, WHITEHORSE MINING DIVISION, Y.T.

Lat: 62° 55'N

Long: 134° 45'W

NTS: 105 L15

Field Work performed within the period March 1 - April 4, 1982

Claims: BUSH 1-32

May 12, 1982

Alan R. Scott

091039

This report has been examined by the Geological Evaluation Unit under Section 53 (4) Yukon Quartz Mining Act and is allowed as reimbursement work in the amount of \$ 13,600 -.

P. Walker

10 Regional Manager, Exploration and Geological Services for ~~Commissioners~~ of Yukon Territory.

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APPENDICES

Appendix I	Statement of Expenditures
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Drawing No. 1	General Location Map	body of report
" " 2	Claims and Grid Map	" " "
" " 3	Geophysical results - Line BUSH 1	(map pocket)
" " 4	" " - Line BUSH 2	(")
" " 5	" " - Line BUSH 3	(")
" " 6	" " - Line BUSH 4	(")

Introduction

During the period March 1 to April 4, 1982, a linecutting and geophysical survey program was completed over portions of Anaconda's Selwyn Project claims. This report is concerned with the portion of that work done on the BUSH claims.

The purpose of the Geophysical work was to define the location, and further investigate electromagnetic conductors detected on an airborne survey completed in the spring of 1981 (flown by Geoterrex and previously submitted by Carlson, 1981).

This report describes the methodology of the geophysical surveys conducted on the BUSH claims, presents the data, and discusses the results.

Location and Access

Anaconda's Selwyn Project is located about midway between the towns of Mayo and Faro, Yukon Territory (Drawing 1). This winter's work was conducted out of a central base camp located on the north shore of Earn Lake, utilizing helicopter support for local access. Access to the base camp was by fixed wing aircraft from Whitehorse.

Ground Control

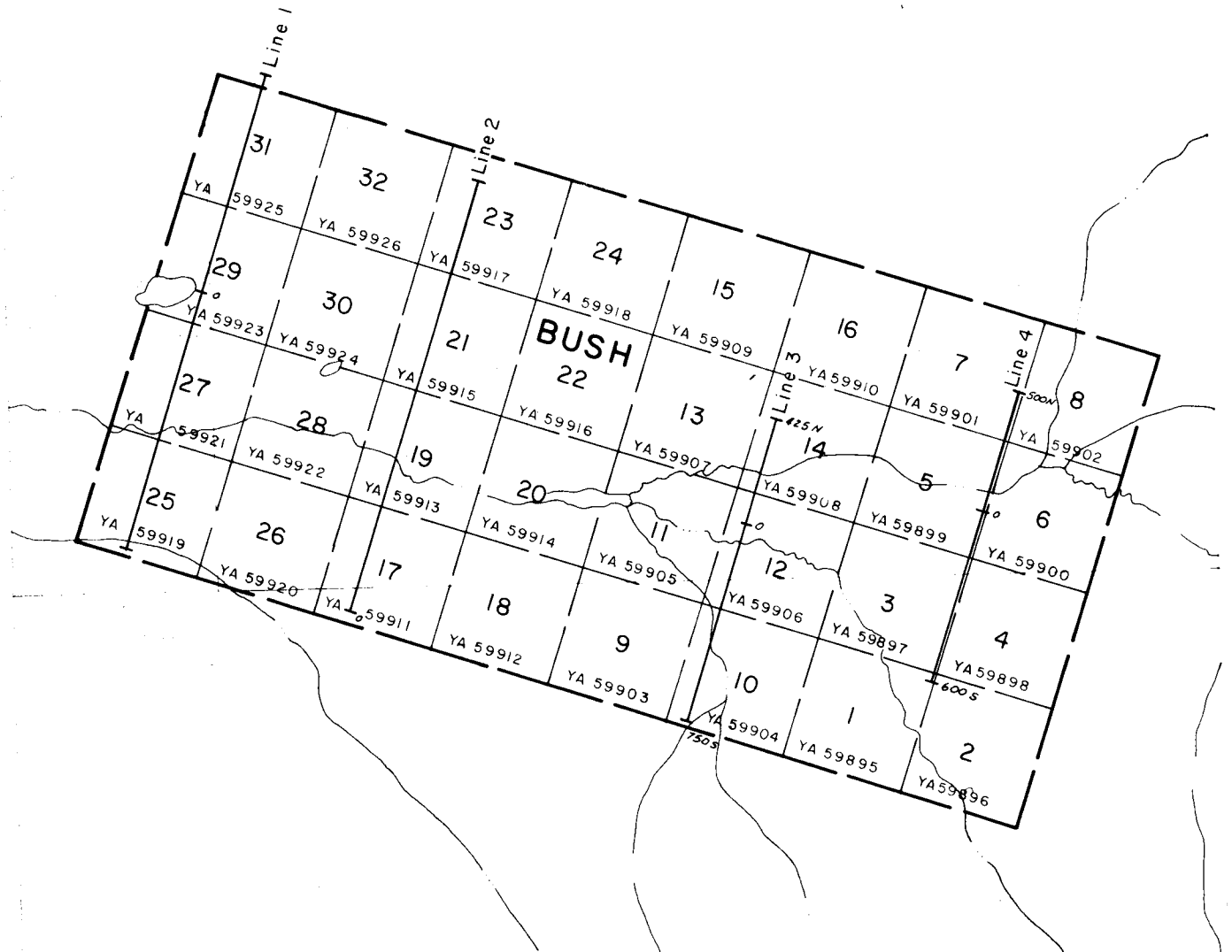
The location of the grids/traverses was chosen by reference to the helicopter EM survey flight path recovery and topographic maps. All base lines or traverses were turned off by compass, and cross lines by a nail board. Linecutting was accomplished by back sighting along pickets, and the quality of the lines is very good. Chaining of stations was by taut chain along the slope, with pickets placed at 25 meter intervals. The angle of slope was measured by inclinometer. The lines were tied in to topographic features wherever possible, for transfer to the location map (Drawing 2).




LOCATION MAP

SELWYN PROJECT

SCALE : 1 : 250,000



ANACONDA Canada Exploration Ltd 

SELWYN PROJECT
BUSH CLAIMS
 WHITEHORSE MINING DISTRICT

H.H. APR. 1982

1:25,000 105 L-15 2 6

Claims

The BUSH claims are located 4 kms north of Dromedary Mountain. The NTS sheet for the area is 105 L15. Grant numbers and claim names are listed below:

YA 59895-YA 59926

BUSH 1-32

Geology

The Selwyn project area lies within the Paleozoic aged Selwyn Basin of the Yukon Territory. Units consist of chert, shale and coarser grained clastic sedimentary rocks. Minor Tertiary high level intrusives and cretaceous biotite quartz monzonites occur. The property geology has been described in more detail by Carlson (1982).

Geophysical Surveys

Electromagnetic Surveys - HLEM

An Apex Parametrics Max Min II electromagnetometer was used for the horizontal loop (HLEM) survey. A back up unit was also available in the event of malfunction. All survey lines were previously slope chained and inclinometer surveyed to maintain close tolerances on the coil spacing and coplanarity of the HLEM survey. Corrections were applied to the HLEM data for the normally small changes from the selected coil spacing of 100 meters for the BUSH claims.

Magnetometer Survey

A Geometrics Unimag I was used for the magnetometer survey, and a Unimag II as a base station for correction of diurnal variation. Base station readings were obtained at least hourly at the Earn Lake camp, and maximum observed drift from base reading to reading during the time of the survey, was normally less than 20 gammas.

Discussion of Results

Four widely spaced traverses were cut, chained and surveyed with HLEM and magnetometer on the BUSH claims. The results are plotted on Drawings 3 to 6.

The location of HLEM conductors and their apparent widths have been picked from the 444 Hz in phase data, and are noted on the profile as well as the topographic profile. Any subsequent quantitative interpretation (dip, depth, or conductivity thickness product) should be approached with some caution owing to the obvious interference between adjacent conductors. It should also be noted that somewhat different picks would often be made if the out of phase response or higher frequencies were used, for example on line 1 at station 0 on 1777 Hz. These ambiguities are representative of a complex geological environment (multiple conductors of varying conductivity).

Magnetic anomalies have been picked on the basis of their half amplitude width, and do not imply a width estimate for the source.

Line Bush 1

A broad zone of high magnetic field strength with at least three separate anomalies lies between 150S to 525S. HLEM conductors at 410S and 525S closely flank individual magnetic highs within this zone.

The magnetic high at 900S closely flanks a broad HLEM conductor which is open to the south. The broad conductive zone from 640S to 720S and thin conductors at 90S, 0, and 275N do not have significant magnetic association.

Line Bush 2

A broad zone of high magnetic field strength extends from about 50N to 850N. Individual highs have been noted at 150N and 750N within this zone,

with the latter flanking a narrow HLEM conductor (at 740N).

Lower amplitude magnetic highs are centered at 1025N and 1275N. Neither of these have a direct correlation to HLEM conductors. HLEM conductors have been picked near 50S (open to the south), 190S, 275S, 490S, 650S, 750S, 885S, 1010S, and 1400S.

Line Bush 3

Broad magnetic highs were detected from 600S to 375S and from 225S to 100N. Individual highs within these zones have been noted at 475S and 50S. A broad HLEM conductor is coincident with the former magnetic high (near 475S), while the latter does not have a coincident HLEM conductor.

Other HLEM conductors occur at 675S, 290S, and 150N. The weak magnetic high near 275N may have a weak HLEM conductor coincident with it.

Line Bush 4

Magnetic anomalies are noted on the profiles centered at 490S, 275S, and 100N. Weak highs are also indicated as centered at 115S and 0. The magnetic high at 490S is coincident with an out of phase conductive response (which is not apparent on the in phase at 444 Hz). The weak magnetic high at station 0 is coincident with a broad HLEM conductor. Other HLEM conductors are noted at 390S, 260S, and 225S.

Conclusions

The geophysical work on the BUSH claims confirmed the presence and defined the location of several EM conductors and magnetic anomalies detected on the 1981 airborne survey. The four lines surveyed are too widely separated for correlation of these conductors from line to line.

Prospecting, geological and geochemical work are required as preliminary follow up to these geophysical anomalies. If positive results from that

work are obtained, fill in geophysical work - including gravity surveys
- should be initiated.

Respectfully submitted



Alan Scott
Geophysicist

Distribution:

- (2) Mining Recorder ✓
- (1) IME - Vancouver
- (1) J. Corbett, Chief Geophysicist
- (1) R. Hall, Project Geologist

Appendix I

STATEMENT OF EXPENDITURES - BUSH CLAIMS
(linecutting, magnetometer, and electromagnetic surveys)

1. Salaries

Eastern Assoc. contract linecutting, Mar. 17-20		
2 men 4 days @ 240/man =	1,920	
A. Scott, geophysicist, Mar. 20, 1 day @ 190 =	190	
T. Crebs, geophysicist, Mar. 20-22, 3 days @ 190 =	570	
D. Washburn, helper, Mar. 20-22, 3 days @ 80 =	240	
M. Archambault, geologist, Mar. 21, 22,		
2 days @ 125 =	250	
F. Thrane, tech., Mar. 21, 22, 2 days @ 100 =	<u>200</u>	
		3,370

2. Expenses

Meals, accommodation, travel expenses =	1,025	
Camp charges 19 man days @ 45/man day =	<u>855</u>	
		1,880

3. Charter aircraft

Fixed Wing (ALCAN) supply and personnel flights =	2,316	
Helicopter (TNTA) 10.8 hours @ 450 =	<u>4,860</u>	
		7,176

4. Equipment Rentals

MaxMin II + back up: 2 x 3 days @ 50 =	300	
Unimag I + Unimag II: 2 x 2 days @ 15 =	<u>60</u>	
		360

5. Charges per survey day
(towards drafting, report, supervision)

3 days geophysical survey @ 200/day =	<u>600</u>	
		<u>600</u>

TOTAL EXPENDITURES

13,386

Appendix II

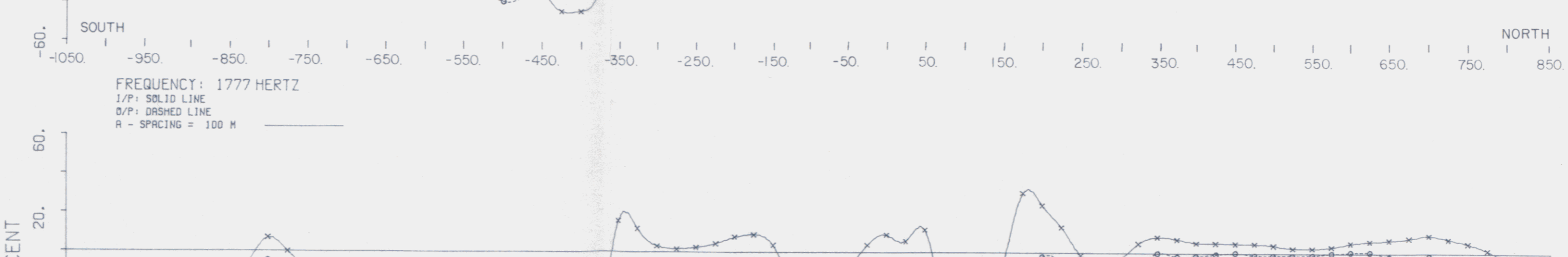
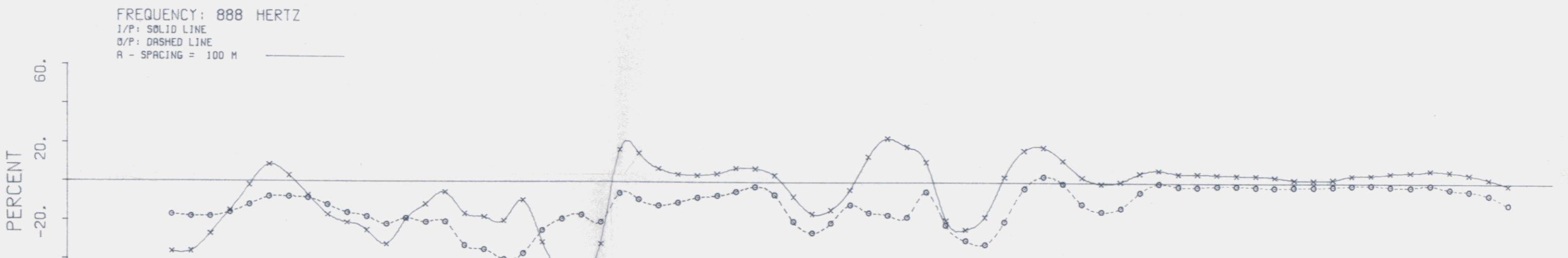
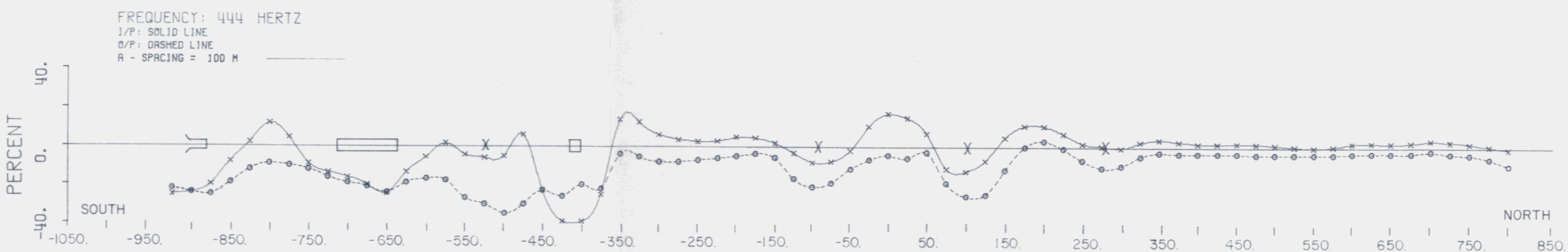
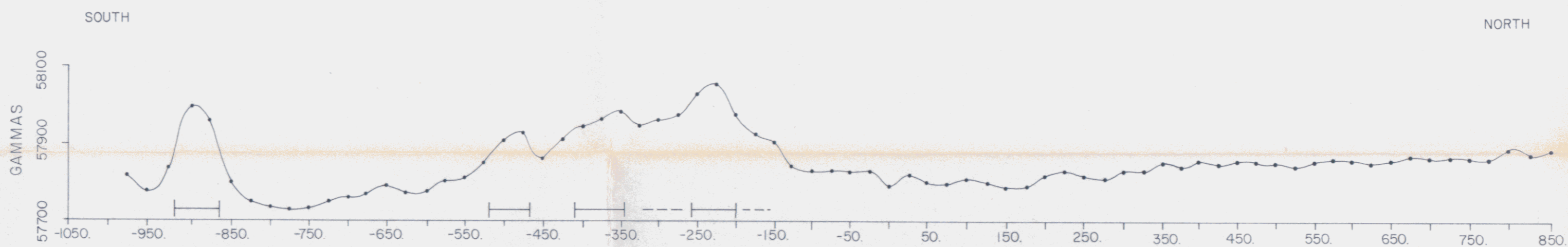
Certification

I, Alan R. Scott, of 4013 W. 14th Avenue, Vancouver, B.C., am employed as a professional geophysicist by Anaconda Canada Exploration Ltd. and have knowledge of the work performed and costs incurred per this report. I further attest that:

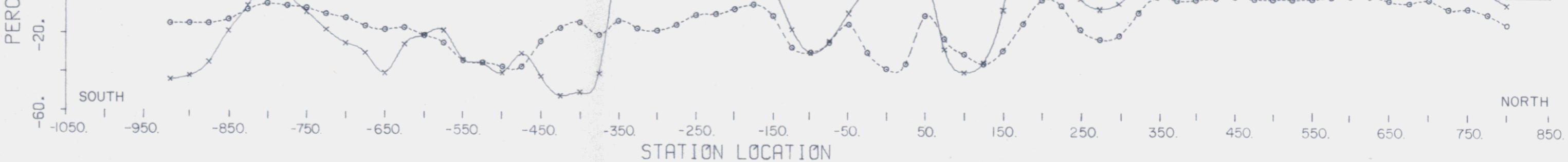
1. I graduated with a B.Sc. (geophysics) from the University of B.C. in 1970.
2. That I am a member of the Society of Exploration Geophysicists, and of the Association of Professional Engineers, Geologists, and Geophysicists of the Province of Saskatchewan.
3. That I have been practicing my profession for the past twelve years.

Alan R. Scott
P. Geophysicist

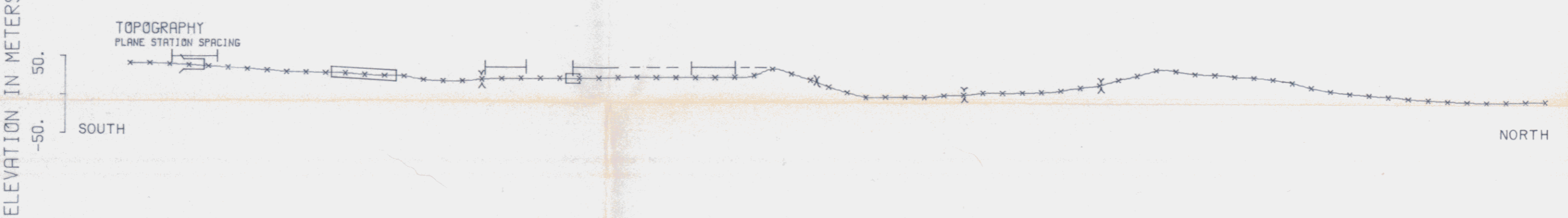
MAGNETOMETER



HORIZONTAL LOOP - EM



SELWYN PROJECT --LINE BUSH 1

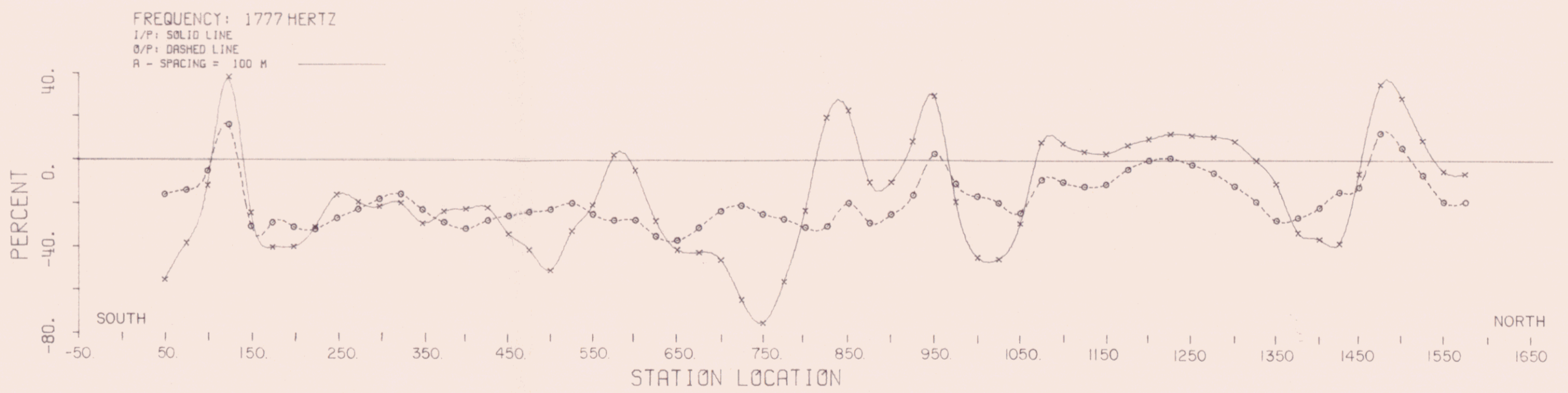
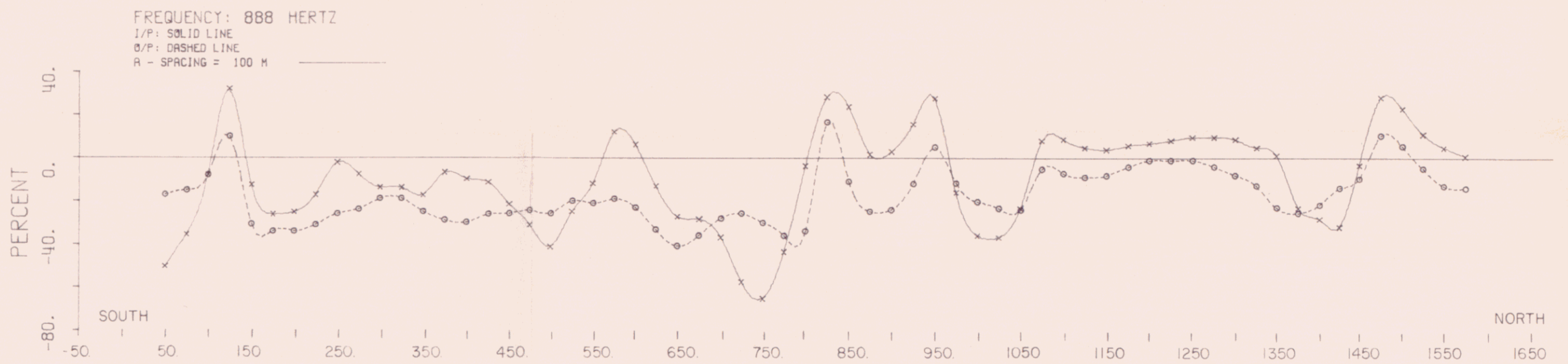
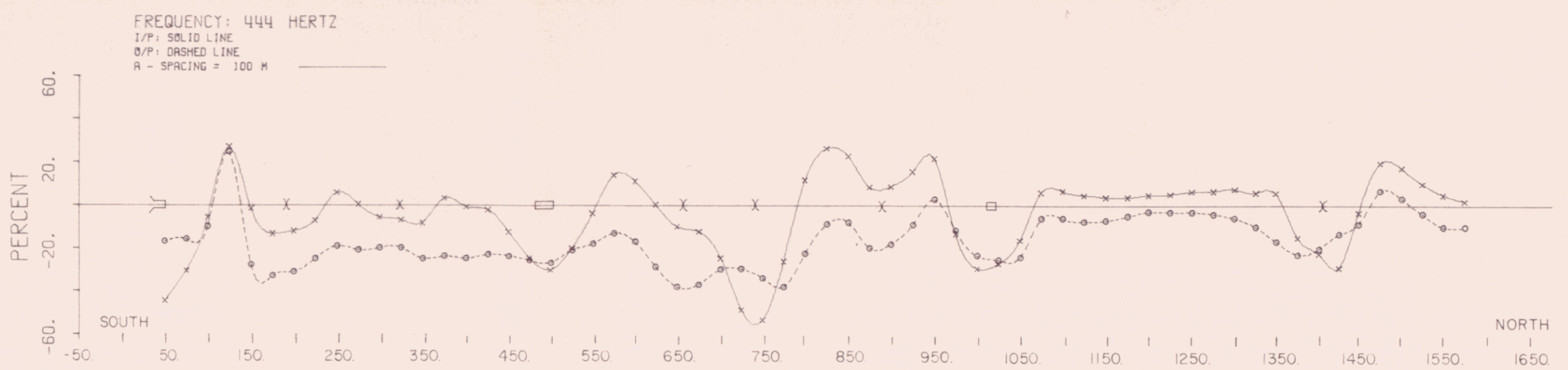
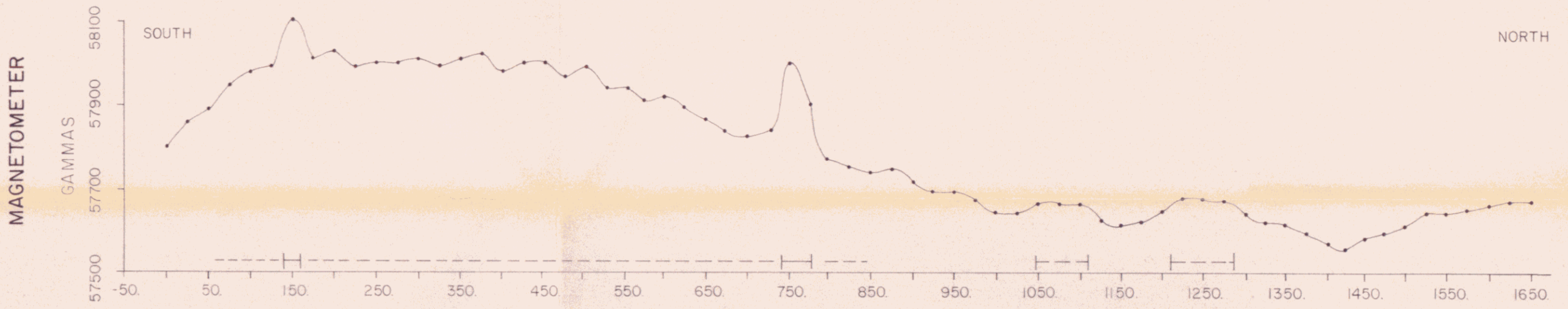


LEGEND

- |—|— Magnetic Anomaly
- x—x— HLEM Conductor (I/P-444 Hz)
- HLEM Conductor (O/P-444 Hz)

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SELWYN PROJECT GEOPHYSICAL SURVEY PROFILES BUSH CLAIMS LINE BUSH 1		
geology by:	drawn by: H. H.	date: APR. 1982
scale: 1: 5000	n.t.s. 105 L-15	drawing no. 3 of 6



SELWYN PROJECT --LINE BUSH 2



LEGEND

- Magnetic Anomaly
- x— HLEM Conductor (I/P - 444 Hz)
- o— HLEM Conductor (O/P - 444 Hz)

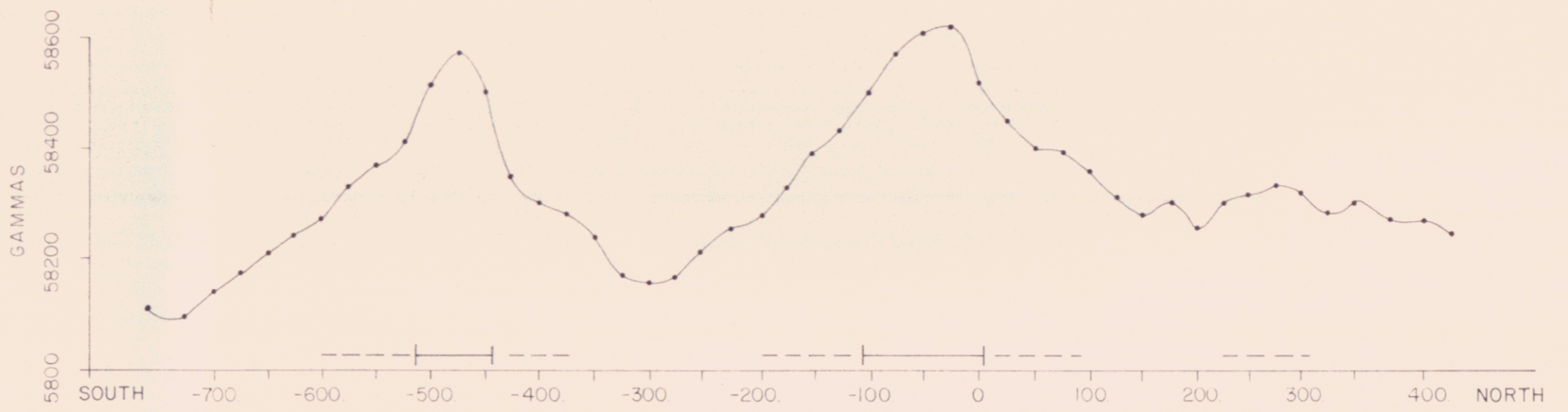
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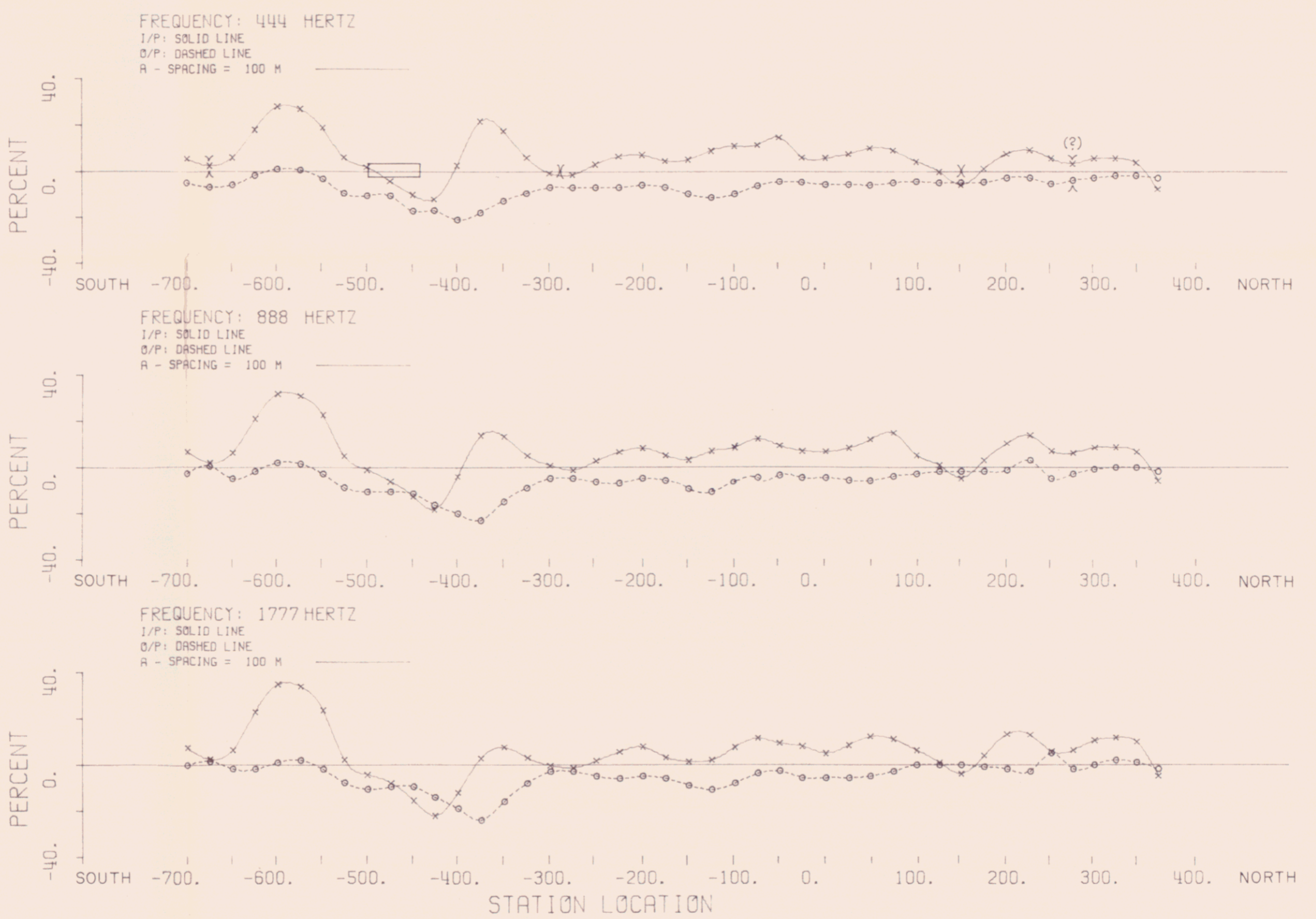
SELWYN PROJECT
 GEOPHYSICAL SURVEY PROFILES
 BUSH CLAIMS
 LINE BUSH-2

geology by:	drawn by: H.H.	date: APR. 1982
scale: 1:5000	n.t.s. 105 L-15	drawing no. 4 of 8

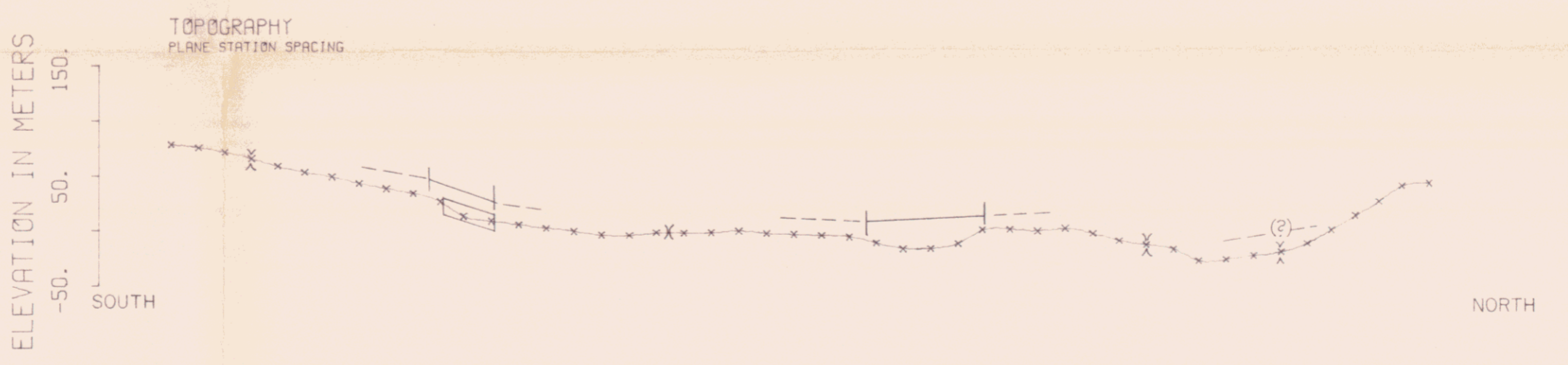
MAGNETOMETER



HORIZONTAL LOOP - EM



SELWYN PROJECT --LINE BUSH 3



LEGEND

- |— Magnetic Anomaly
- X } HLEM Conductor (1/P-444 Hz)
- } HLEM Conductor (1/P-444 Hz)

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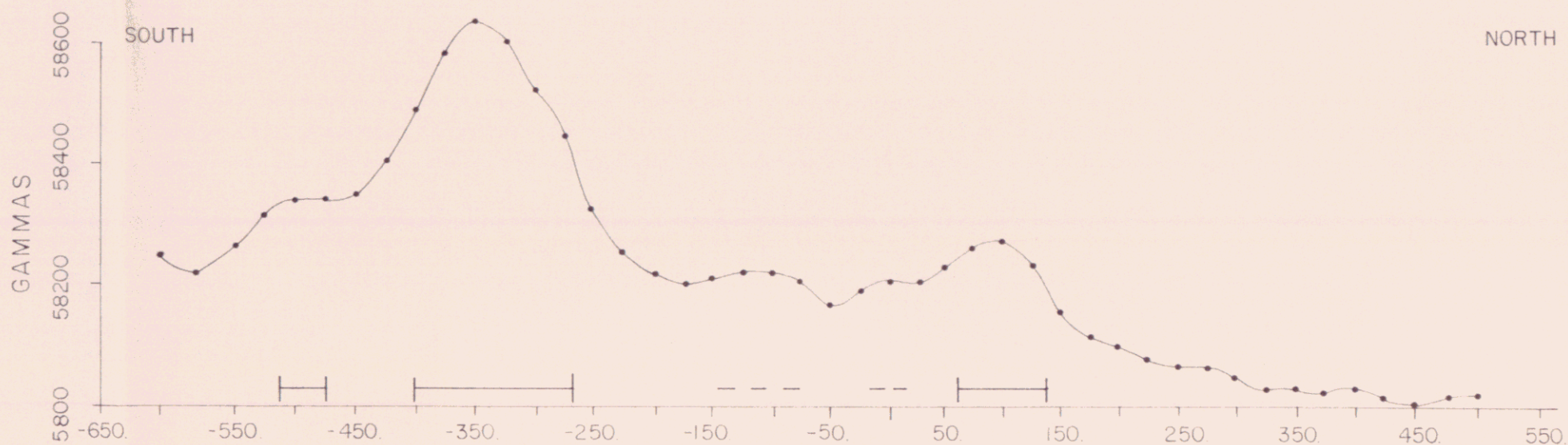
Handwritten Signature

ANACONDA Canada Exploration Ltd. ▲

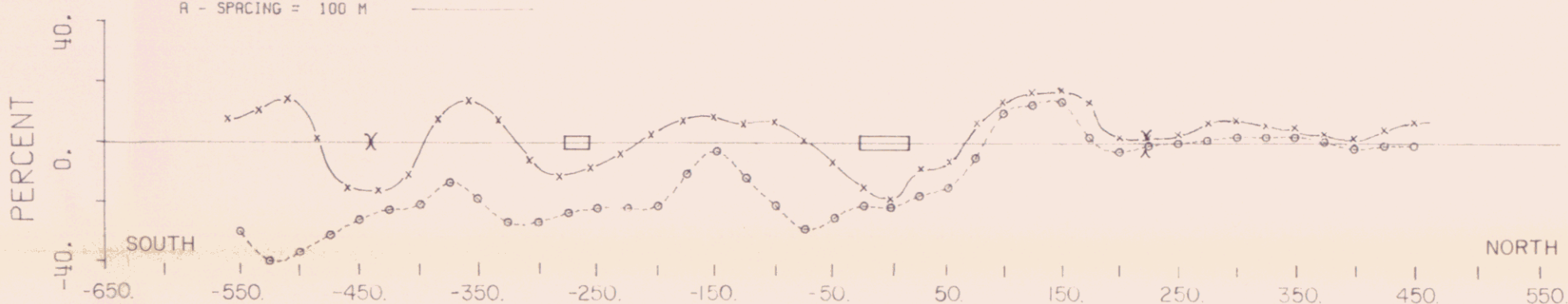
SELWYN PROJECT
GEOPHYSICAL SURVEY PROFILES
BUSH CLAIMS
LINE BUSH 3

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scale: 1:5000	n.t.s. 105 L-15	drawing no. 5 of 6

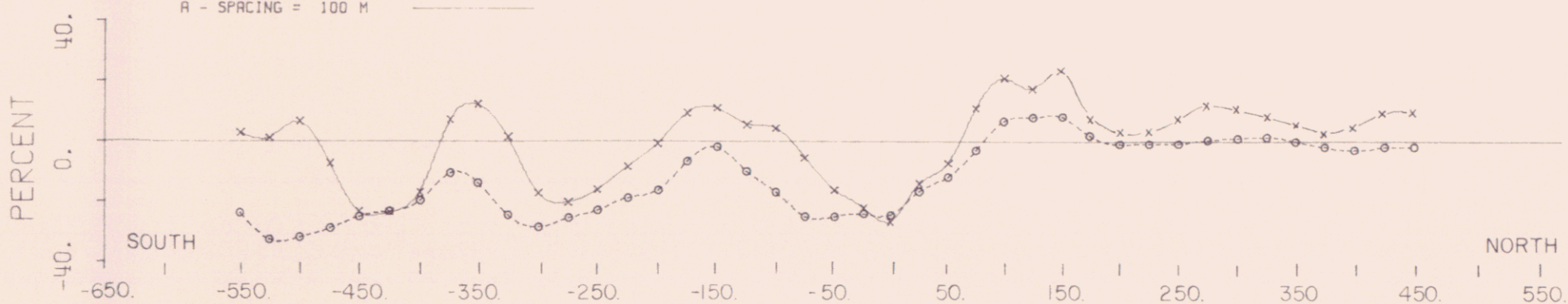
MAGNETOMETER



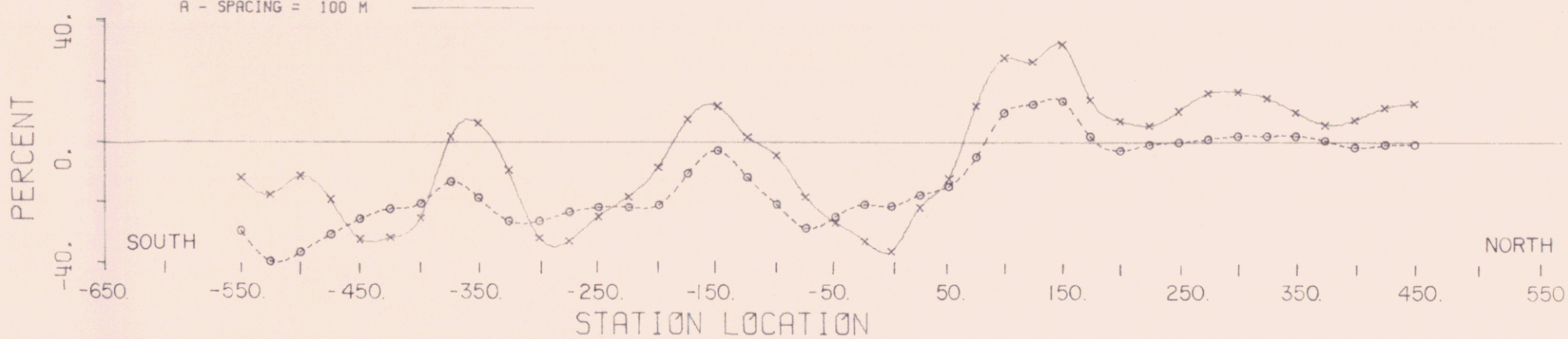
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 O/P: DASHED LINE
 A - SPACING = 100 M



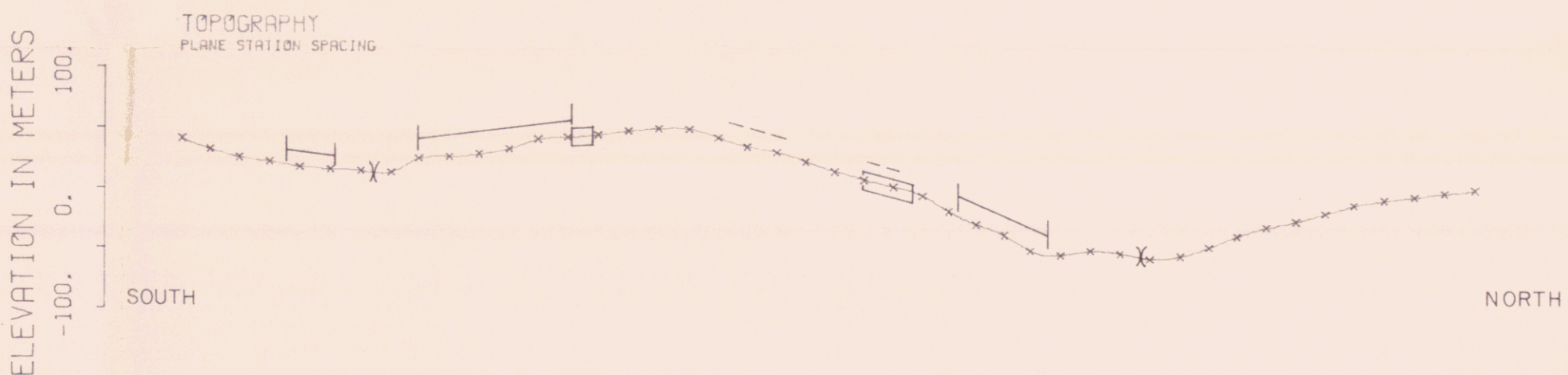
FREQUENCY: 888 HERTZ
 I/P: SOLID LINE
 O/P: DASHED LINE
 A - SPACING = 100 M



FREQUENCY: 1777 HERTZ
 I/P: SOLID LINE
 O/P: DASHED LINE
 A - SPACING = 100 M



SELWYN PROJECT --LINE BUSH 4



LEGEND

- |—|— Magnetic Anomaly
- x—x— HLEM Conductor (I/P-444 Hz)
- HLEM Conductor (O/P-444 Hz)

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ANACONDA Canada Exploration Ltd. ▲		
SELWYN PROJECT GEOPHYSICAL SURVEY PROFILES BUSH CLAIMS LINE BUSH-4		
geology by:	drawn by: H.H.	date: APR. 1982
scale: 1:5000	n.t.s. 105 L-15	drawing no. 6 of 6