

PHOENIX GEOPHYSICS LIMITED

REPORT ON THE

MULTI-FREQUENCY PHASE

INDUCED POLARIZATION AND RESISTIVITY SURVEY

ON THE

AFTON PROPERTY

KAMLOOPS MINING DIVISION

PROVINCE OF BRITISH COLUMBIA

FOR

GOLDEN GATE EXPLORATIONS LIMITED

N.T.S. 921/10E

Latitude: 50°40'N

Longitude: 120°30'W

BY

PAUL A. CARTWRIGHT, B.Sc., Geophysicist

June 3, 1982

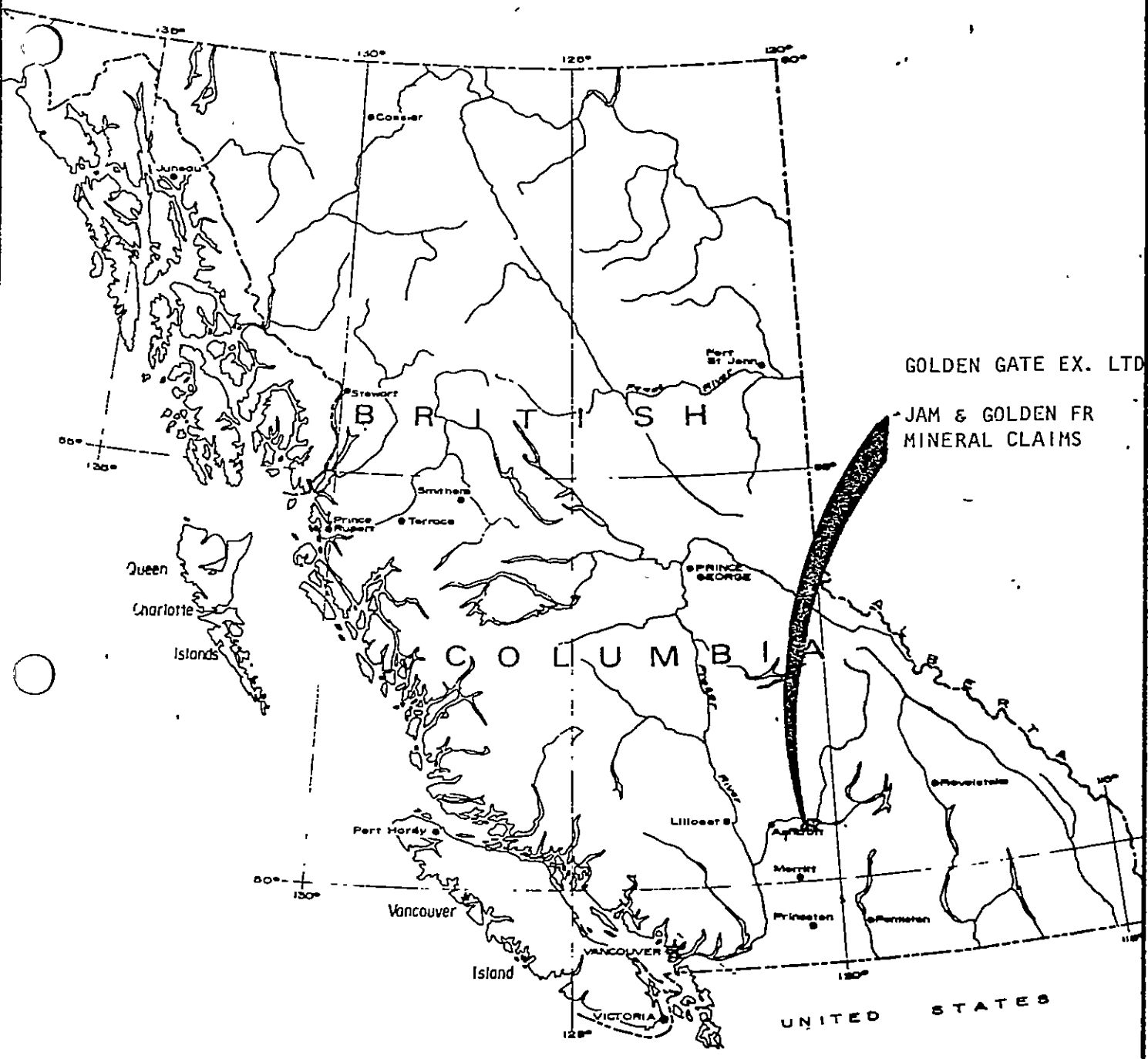
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PART B: ILLUSTRATIONS 9 pieces

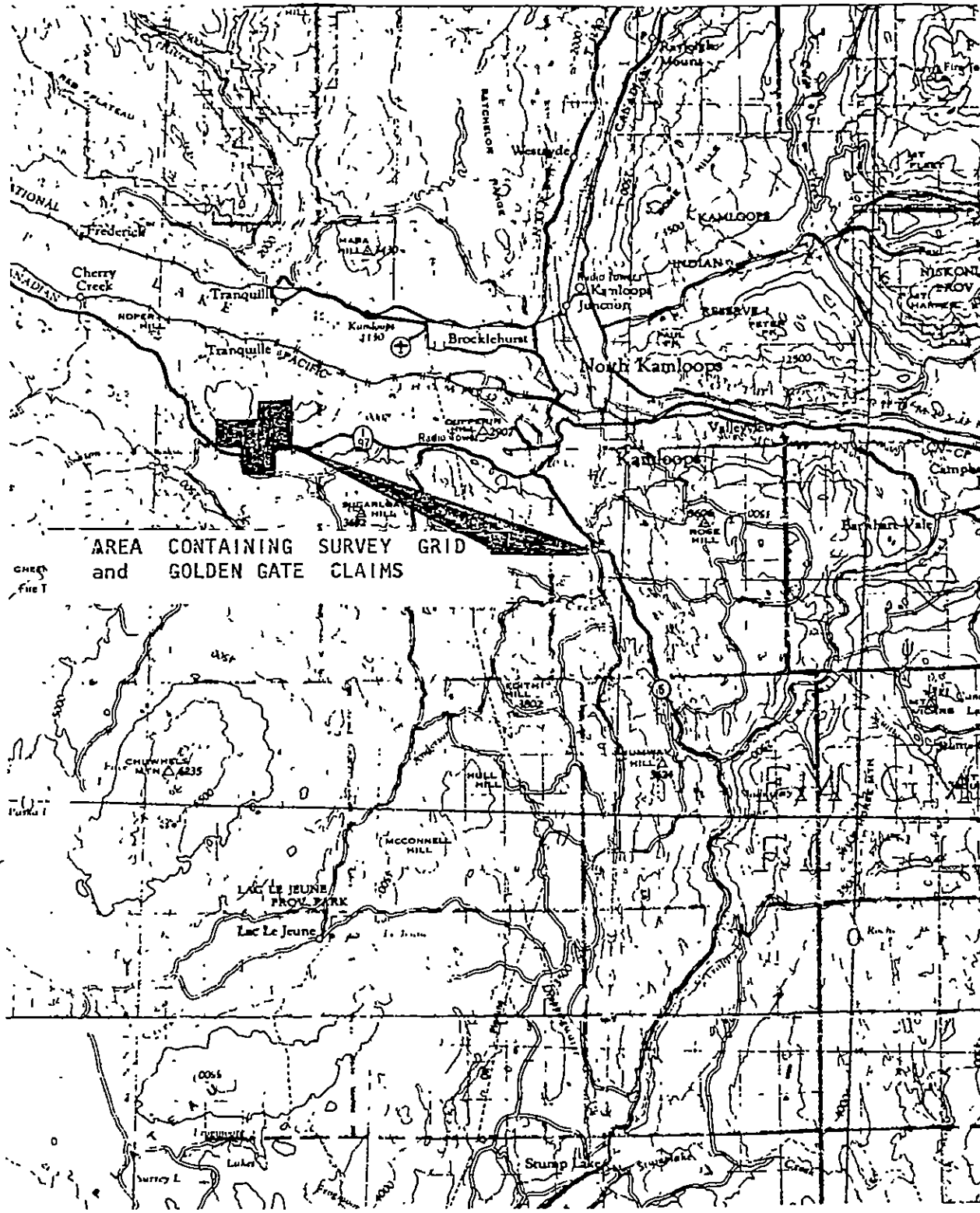
Plan Map (in pocket) Dwg. I.P.P. - B-2001A

IP Data Plots Dwgs. IP 5821-1 to -8



LOCATION MAP

SCALE:- 1" = 100 Mi.



GOLDEN GATE EXPLORATIONS LTD

PROPERTY LOCATION MAP
KAMLOOPS, B.C. Area

Scale:- 1: 250,000

N.T.S. 92 I/10E

1.) INTRODUCTION

A short Multi-Frequency Phase Induced Polarization and Resistivity Survey has been completed on the Afton property of Golden Gate Explorations Limited.

The property is situated approximately 15 kilometers west of the City of Kamloops, B.C., and is located immediately north of the Afton Mines property. The Trans-Canada Highway crosses the southern part of the area of interest and provides excellent access from Kamloops.

Geology in the grid area consists of Kamloops tertiary volcanic and sedimentary rocks unconformably overlying Nicola volcanics, which have been intruded by the Iron Mask Batholith. The northwestern limit of the batholith is close to the southern part of the property. Economic mineralization in the form of native copper, chalcocite, bornite, chalcopyrite, cuprite and small amounts of gold are known to occur at the contact of the batholith. (Afton Mines.)

Some diamond drill holes have been completed on the southern part of the Golden Gate property, which, together with geological evidence in the Afton pit, indicate the presence of a major fault down throwing the block underlying the southern part of the Golden Gate ground to a depth at least 1,000 feet.

The objective of the present survey was to further investigate a possibly anomalous indication recorded by a limited Phase Induced Polarization survey carried out during 1981. The source of this anomaly was indicated to be located approximately 2,000 feet to 2,500 feet north of the Golden Gate Explorations Ltd. - Afton Mines Ltd. property boundary. Depth

to the top of the possible target was interpreted to be greater than 500 feet subsurface, although the complicated anomaly pattern made a precise interpretation difficult.

It was anticipated that the survey would encounter difficult conditions, due to the presence of at least two pipelines, a major power line, and the highway, all of which cross the southern limit of the property.

To overcome the difficulties inherent with attempting IP measurements in an area of high noise and low resistivities, the 1981 survey employed the Phoenix Model IPV-2 Phase IP receiver, as this instrument has a very high degree of noise rejection due to signal stacking and active filters controlled by synchronous crystal oscillators. However, it was found that electro-magnetic coupling was distorting the apparent IP effects measured even when a frequency as low as 0.33 Hz was used.

A Phoenix Model IPV-3 Multi-Frequency Spectral IP unit became available in early 1982 for use in British Columbia, and was used to carry out the 1982 survey, the results of which are the subject of this report. The broad frequency range of this instrument allows one to use even lower frequencies than the 0.11 Hz used the previous year, in order to eliminate all electromagnetic coupling between the grounded dipoles. At the same time frequencies as high as 4096 Hz were employed in an effort to inductively energize narrow, near-surface conductors. Dipole-dipole array was used with a basic interelectrode distance of 300 feet, and reading to six separations. Phase and amplitude measurements were made at 17 frequencies, separated by factors of 2, between 4096 Hz and 0.0625 Hz.

An IPT-1 transmitter and an MG-2 motor generator were used as the current source.

Field work was carried out during early May 1982 under the supervision of Paul A. Cartwright, crew leader and geophysicist.

2.) DESCRIPTION OF CLAIMS

The afton property consists of the following claims:

<u>CLAIM NAME</u>	<u>RECORD NUMBER</u>	<u>ANNIVERSARY DATE</u>
Golden 15 FR-Golden 21 FR (Incl.)	120189-120195 (Incl.)	May 19
Jam 1 - Jam 10 (Incl.)	96795- 96804 (Incl.)	May 13
Jam 15- Jam 20 (Incl.)	96805- 96810 (Incl.)	May 13
Gate 2	120272	July
Gate 4	120274	July

The Gate 2 and Gate 4 claims are optioned from Mr. J. McPhee, while the others are owned by Golden Gate Explorations Ltd.

3.) PRESENTATION OF DATA

The Induced Polarization and Resistivity results are shown on the following data plots:

<u>LINE</u>	<u>ELECTRODE INTERVAL</u>	<u>DWG. NO.</u>
6000W	300 feet	IP-5821-1
6000W	300 feet	-2
6000W	300 feet	-3
6000W	300 feet	-4
1600N	300 feet	-5
1600N	300 feet	-6
1600N	300 feet	-7
1600N	300 feet	-8

Also enclosed with this report is Dwg. I.P.P.-B-2001A, a plan map of the Afton property grid at a scale of 1 inch = 400 feet. The Induced Polarization anomalies are indicated by bars, in the manner shown on the legend, on this plan map. These bars represent the surface projection of the anomalous zones as interpreted from the location of the transmitter and receiver electrodes when the anomalous values were measured.

In addition, a number of conductors may be indicated by narrow zones of negative high frequency phase values, which decrease quickly in magnitude as the frequency is decreased. Triangle symbols are used to show the interpreted position of the conductor center, in the manner shown on the legend of Plan Map I.P.P.-B-2000A.

The claim, and topographic information shown on Dwg. I.P.P.-B-2001A has been taken from maps made available by the staff of Golden Gate Explorations Limited.

4.) DISCUSSION OF RESULTS

Two lines have been surveyed using the Multi-Frequency Phase Induced Polarization and Resistivity method of the Afton property of Golden Gate Explorations Ltd. The locations of both lines is shown on the plan map Dwg. No.-I.P.P.-B-2001A.

Detail measurements were made using 300 foot dipole lengths and the IPV-3 receiver during the present survey, in an attempt to confirm the weakly anomalous response recorded by the 1981 IPV-2 Survey under the vicinity of Station 750N to Station 1750N.

Although the IPV-3 and IPV-2 receiver are similar in operation, and should have equal signal enhancement qualities, the data acquired by the present survey is generally more affected by the electrical noise present in the survey area. It is not known if the ambient noise level is higher this year than last, or if some other aspect of the Multi-Frequency survey is the cause. The use of multi-conductor receiver wires to record six readings simultaneously may have introduced higher power line 60 Hz signal levels to the receiver than the more conventional single receiving wires used by the IPV-2 survey.

However, a possibly anomalous IP response can be interpreted in the Line 6000W multi-frequency data, centered at approximately Station 1750N.

Crossline 1600W was then surveyed using 300 foot dipoles in order to further check the authenticity of this anomaly. The data is again quite noisy, but no reliable anomaly can be seen which would confirm the results displayed by the data from Line 6000.

The most obvious feature outlined in the data is a probable EM conductor crossing Line 1600W between Station 6000W and Station 5700W. This feature appears to extend from close to the surface to depth, and may represent a fault structure, possibly striking almost parallel to Line 6000W.

Another possibly anomalous EM conductor is interpreted to lie at some depth beneath approximately Station 6450W, while a similar feature may be present at depth under approximately Station 1150N, Line 6000W.

5.) SUMMARY AND RECOMMENDATIONS

A Multi-Frequency Phase Induced Polarization and Resistivity survey has been completed over two lines on the Afton Property on behalf of Golden Gate Explorations Ltd.

One possibly anomalous IP response is evident in the vicinity of Line 6000W, Station 1750N, and correlates somewhat with a weakly anomalous indication detected during the 1981 survey. Unfortunately, data recorded on a crossline near this location does not confirm the presence of anomalous IP effects, although data from both lines is affected by the high ambient noise level.

The higher frequency phase results suggest a conductive structure, such as a fault, is present striking roughly parallel and just to the east of Line 6000W.

At least two other, deeper conductive regions have been interpreted to be located west of the possible fault structure discussed above.

Further work could be in the form of additional Phase IP work on lines situated to close the intervals between existing lines. If a

ASSESSMENT DETAILS

PROPERTY: Afton Property PROVINCE: British Columbia

SPONSOR: Golden Gate Explorations Limited

LOCATION: Afton Mines Area, Kamloops M.D.

TYPE OF SURVEY: Multi-Frequency Phase Induced Polarization
and Resistivity

OPERATING MAN DAY: 12.0 DATE STARTED: 5 May 1982

EQUIVALENT 8 HR .
MAN DAYS: 18.0 DATE FINISHED: 9 May 1982

CONSULTING MAN DAYS: 2.0 NUMBER OF STATIONS: 24

DRAFTING MAN DAYS: 2.0 MILES OF LINE SURVEYED: 1.25
TOTAL MAN DAYS: 22.0 NUMBER OF READINGS: 1760

CONSULTANT:

Paul A. Cartwright, 4238 West 11th Avenue, Vancouver, B.C.

FIELD TECHNICIANS:

Paul A. Cartwright, 4238 W. 11th Avenue, Vancouver, B.C.

F. DiSpirito, 2748 Oxford Street, Vancouver, B.C.

G. Elliott, 90 Aurora Crescent, Willowdale, Ontario

CARTOGRAPHER:

P. Cartwright, 4238 W. 11th Avenue, Vancouver, B.C.

PHOENIX GEOPHYSICS LIMITED



Paul A. Cartwright, B.Sc.,
Geophysicist.

Dated: 3 June 1982

STATEMENT OF COSTS

Golden Gate Explorations Limited
IP Survey - Afton Property, B.C.

CREW: P. Cartwright, F. DiSpirito, G. Elliott

PERIOD: May 5, 1982 to May 9, 1982

4 operating days	@ \$925.00/day	\$ 3,700.00
½ organization days	@ N.C.	-
Mobilization-Demobilization		<u>1,300.00</u>
		<u>\$ 5,000.00</u>

PHOENIX GEOPHYSICS LIMITED

Paul A. Cartwright A.

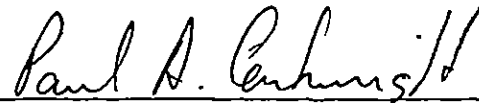
Paul A. Cartwright, B.Sc.,
Geophysicist.

Dated: 3 June 1981

CERTIFICATE

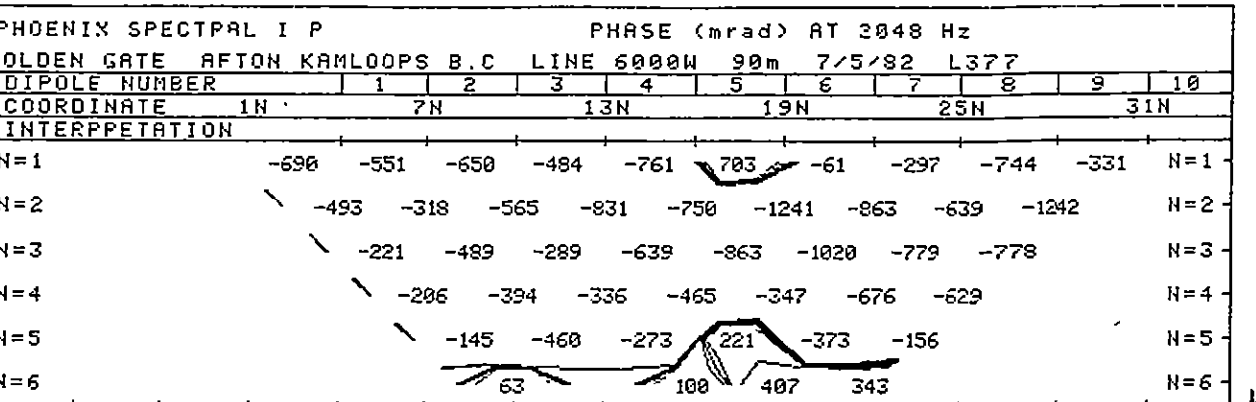
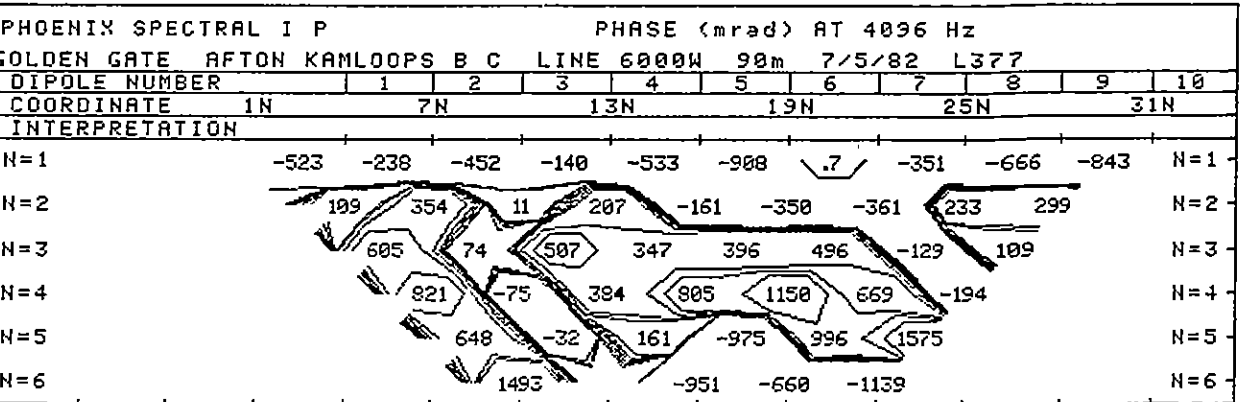
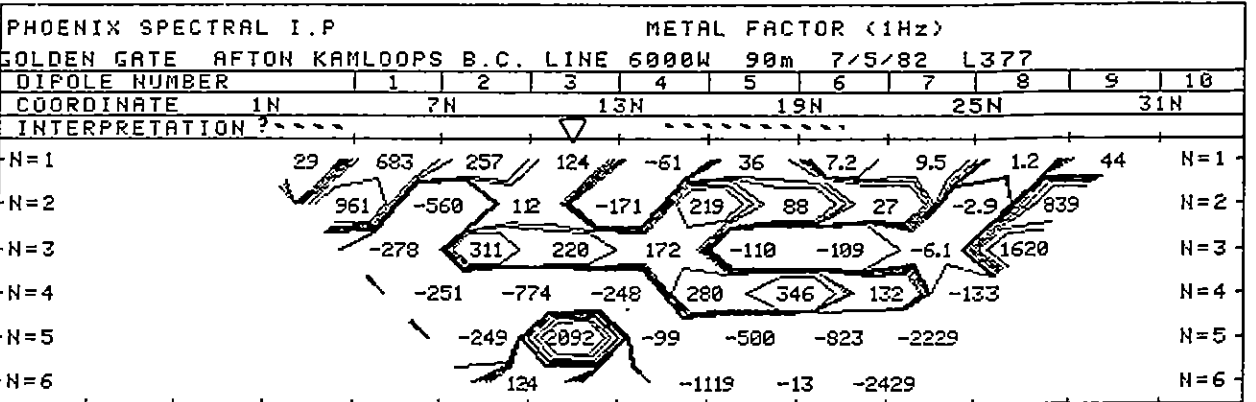
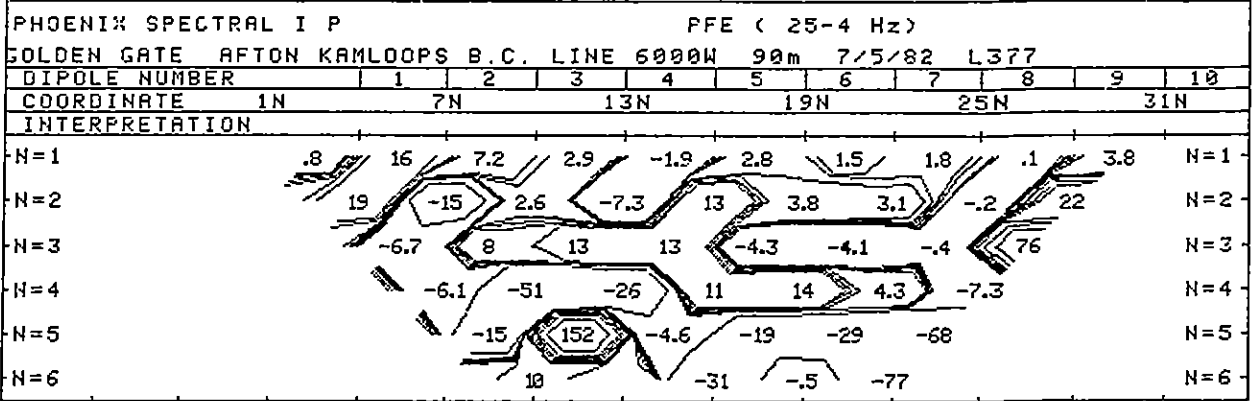
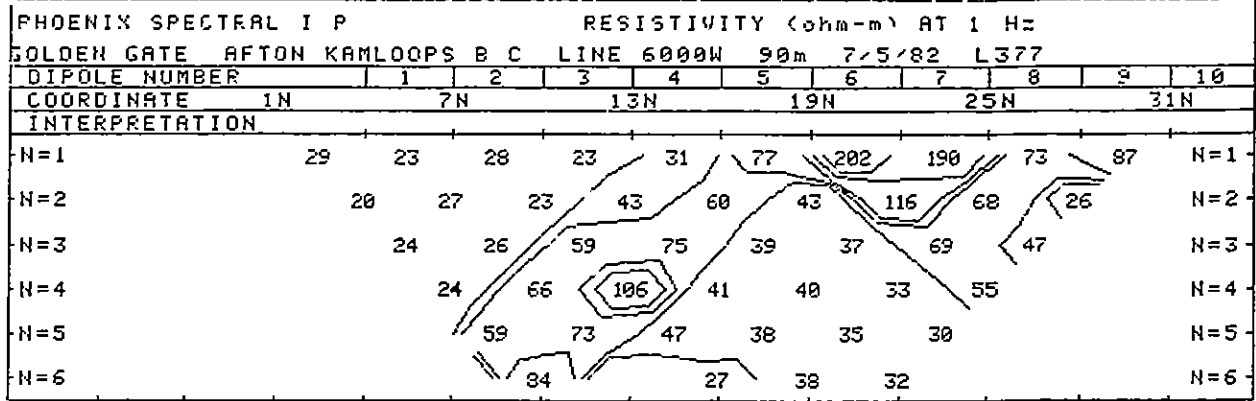
I, Paul A. Cartwright, of the City of Vancouver, Province of British Columbia, do hereby certify that:

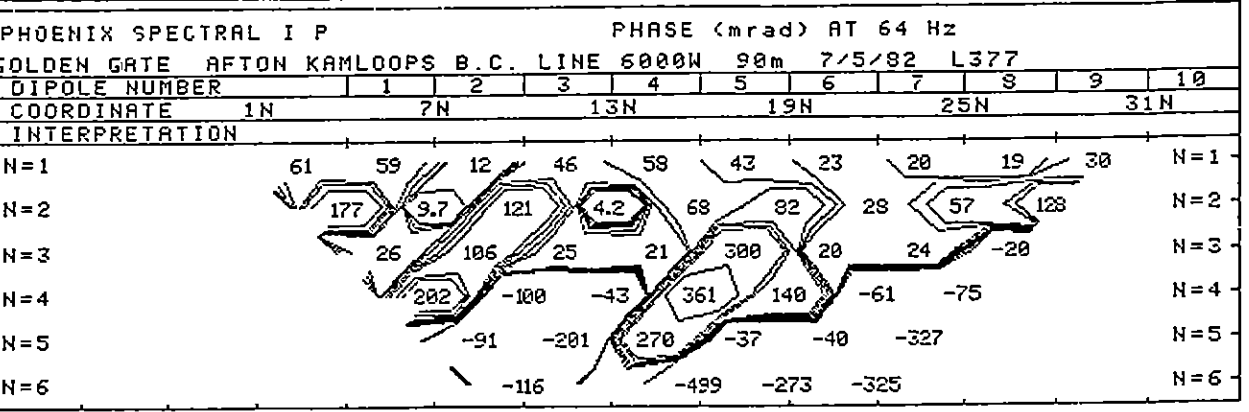
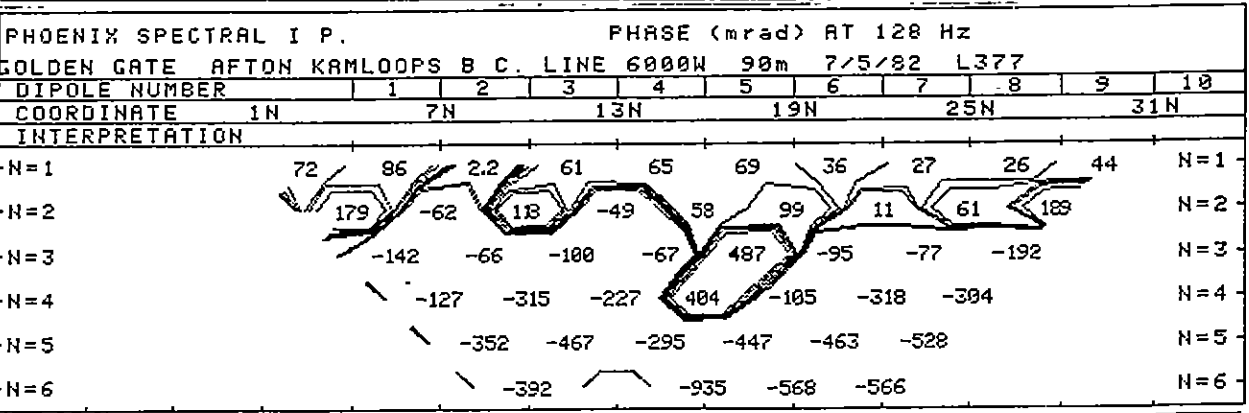
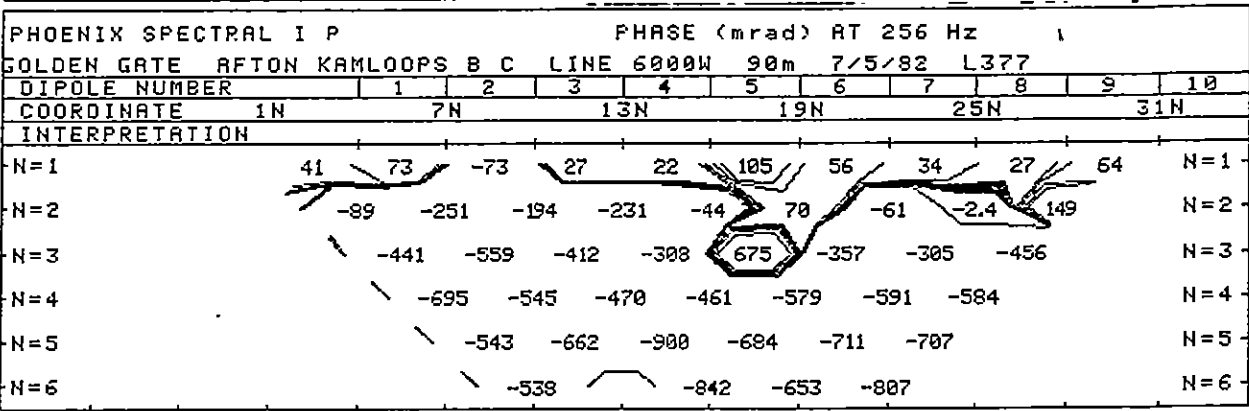
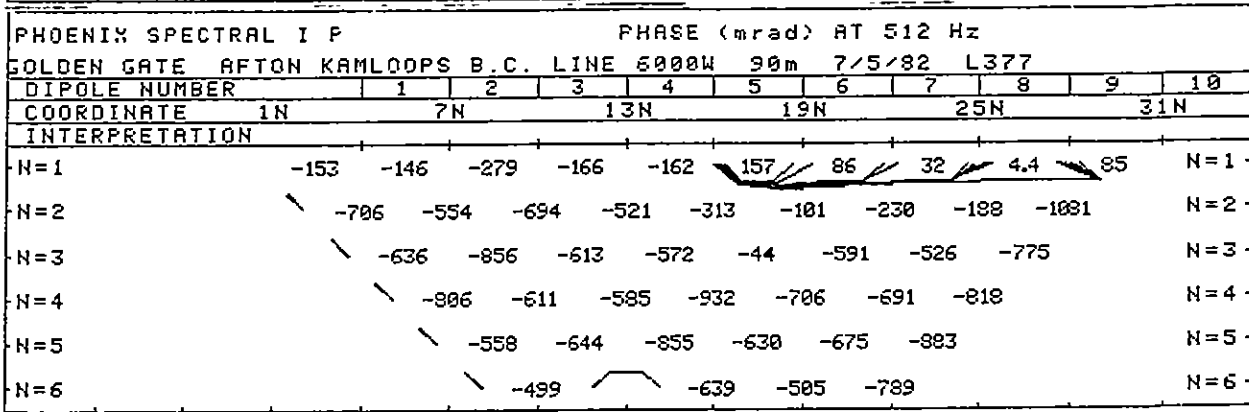
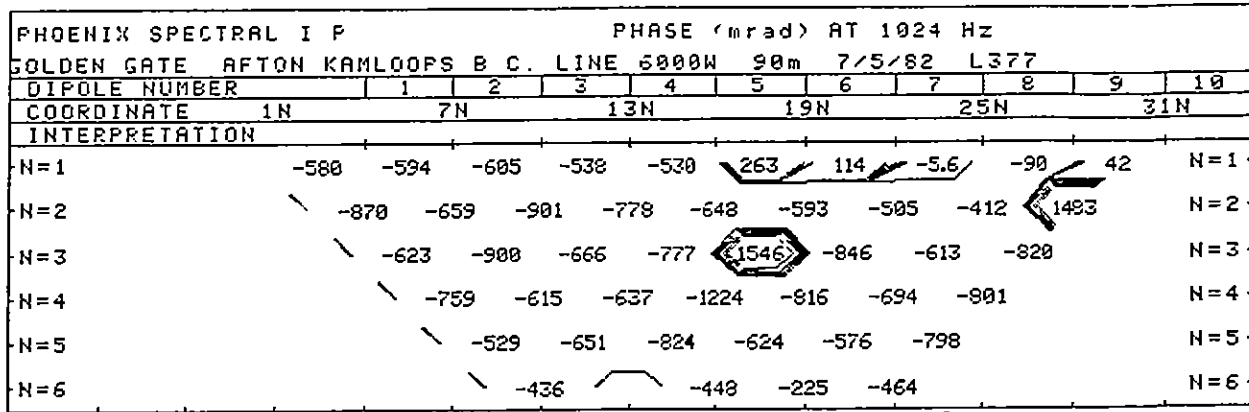
1. I am a geophysicist residing at 4238 W. 11th Avenue, Vancouver, B.C.
2. I am a graduate of the University of British Columbia, B.C. with a B.Sc. Degree.
3. I am a member of the Society of Exploration Geophysicists.
4. I have been practising my profession about 12 years.
5. I have no direct or indirect interest, nor do I expect to receive any interest directly or indirectly, in the property or securities of Golden Gate Explorations Limited or any affiliate.
6. The statements made in this report are based on a study of published geophysical literature and unpublished private reports.
7. Permission is granted to use in whole or in part for assessment and qualification requirements but not for advertising purposes.

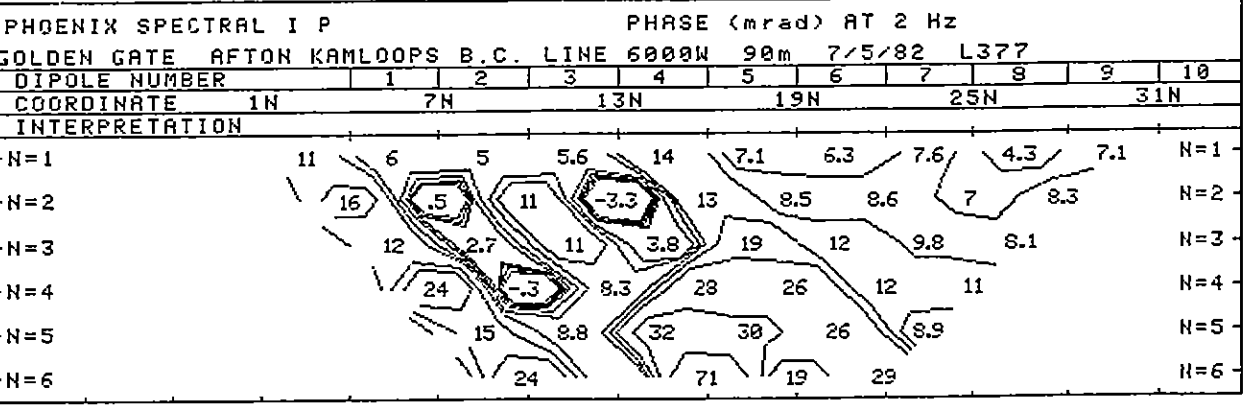
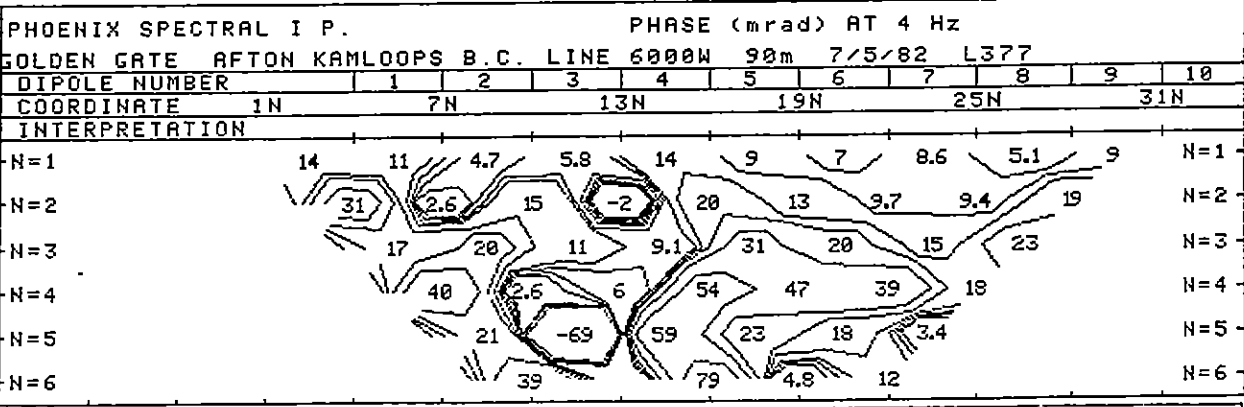
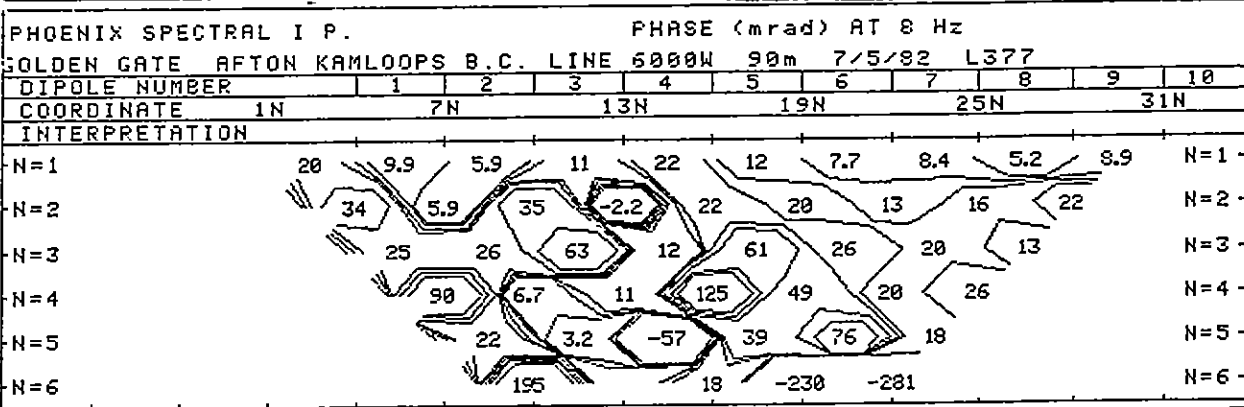
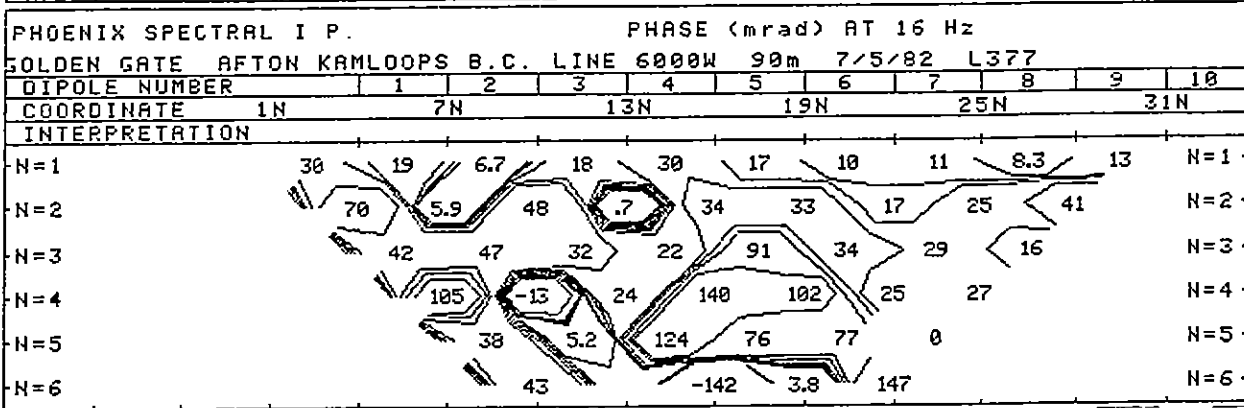
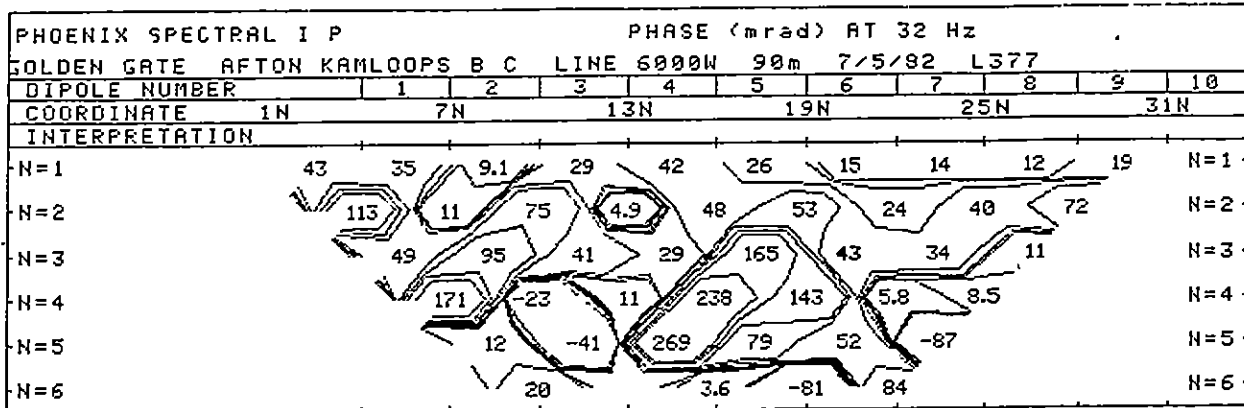


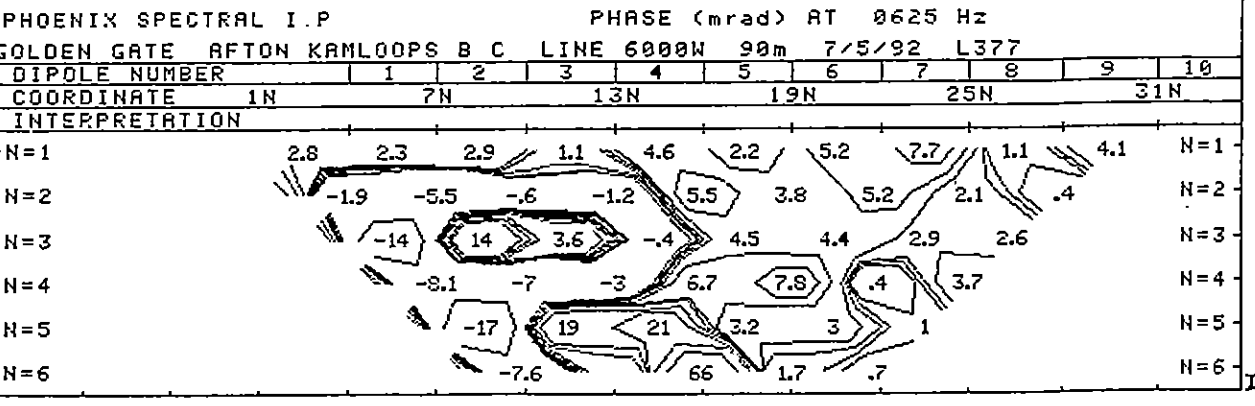
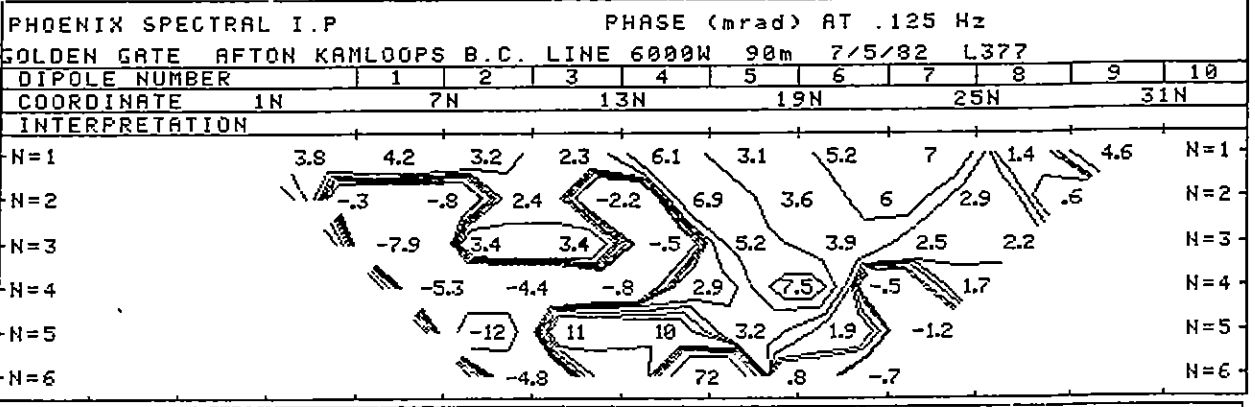
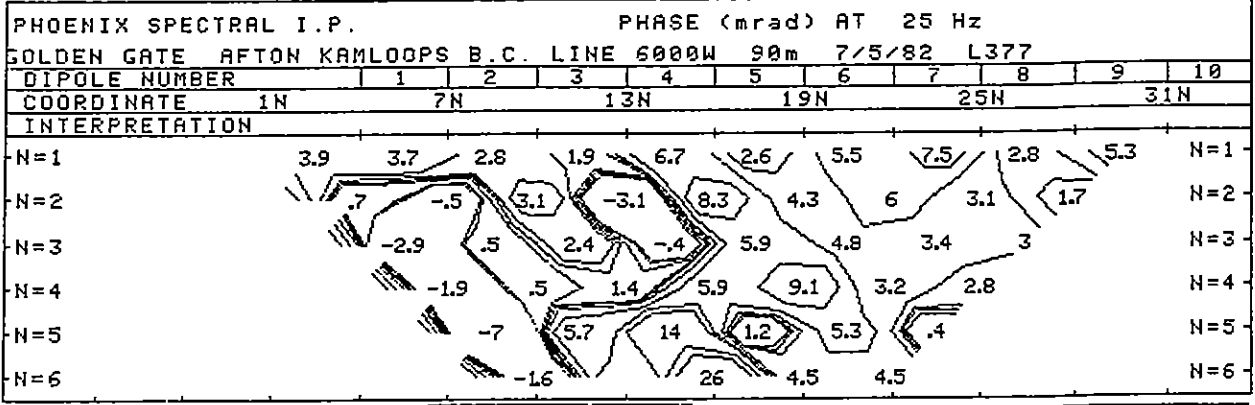
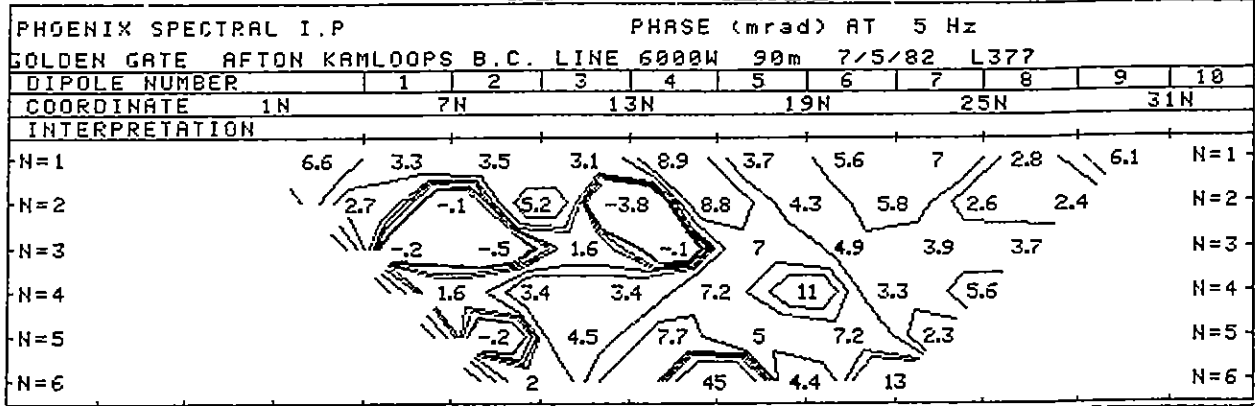
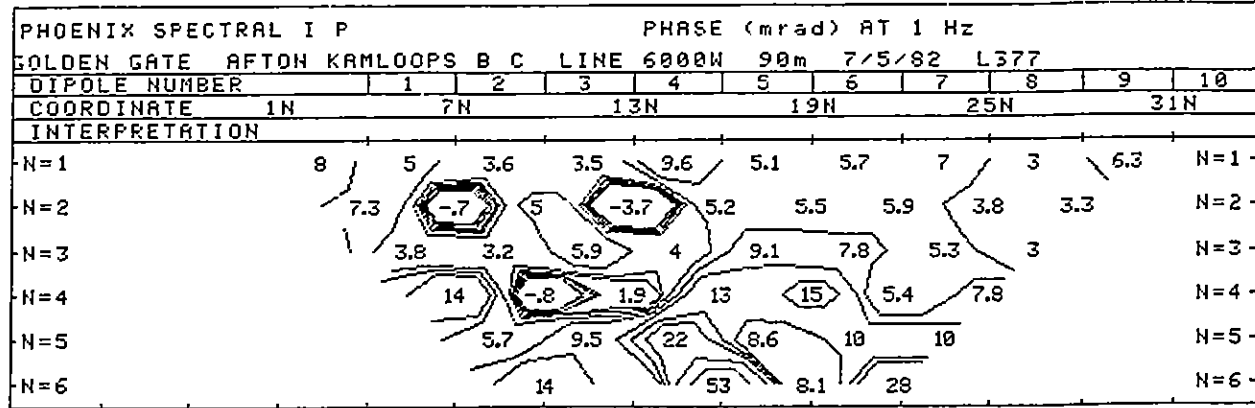
Paul A. Cartwright, B.Sc.

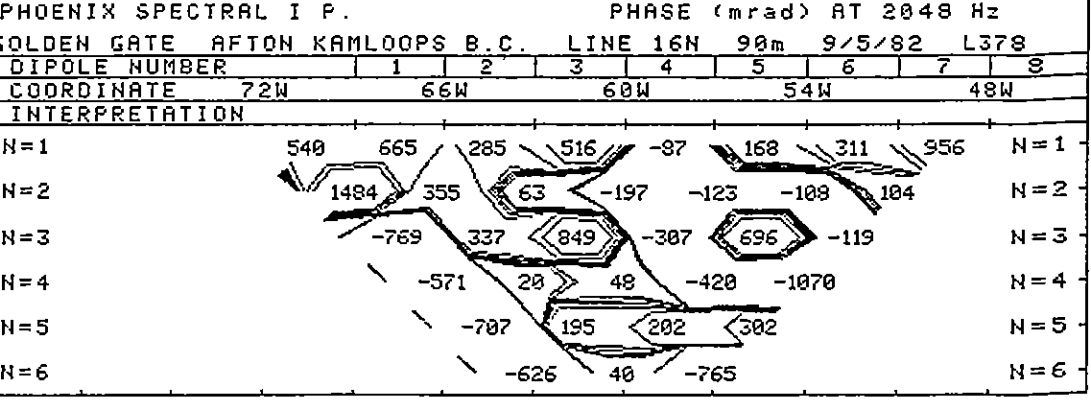
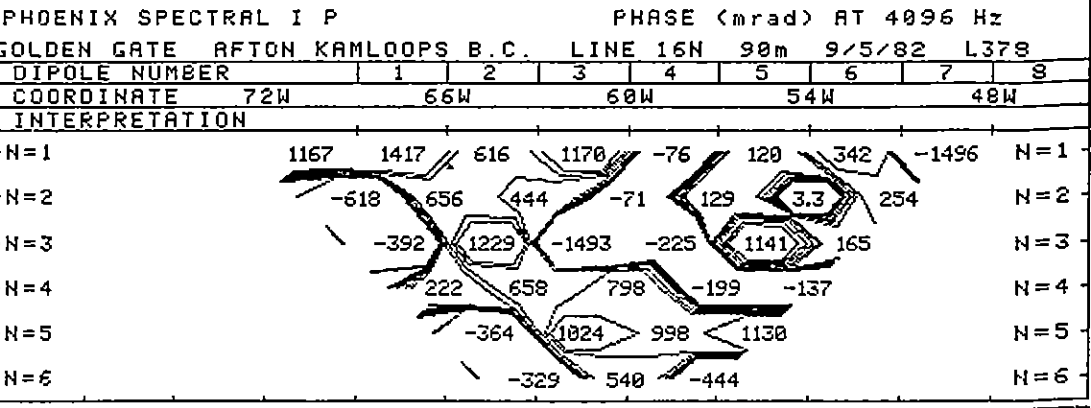
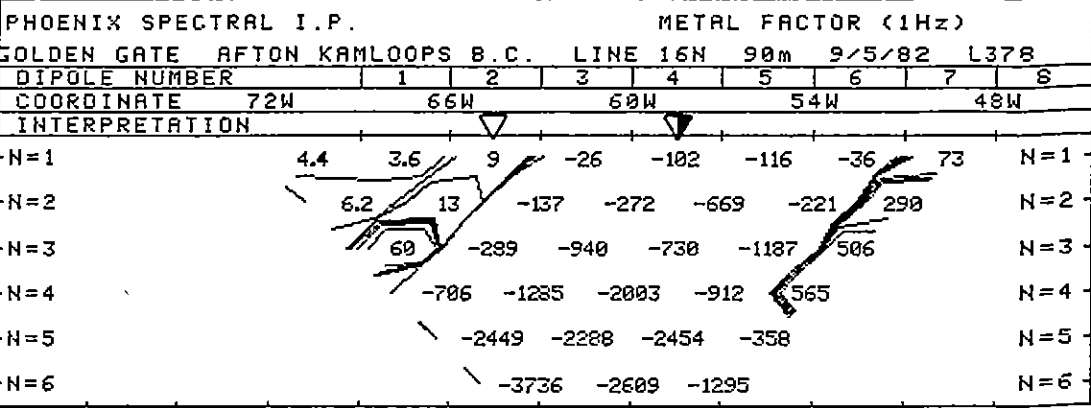
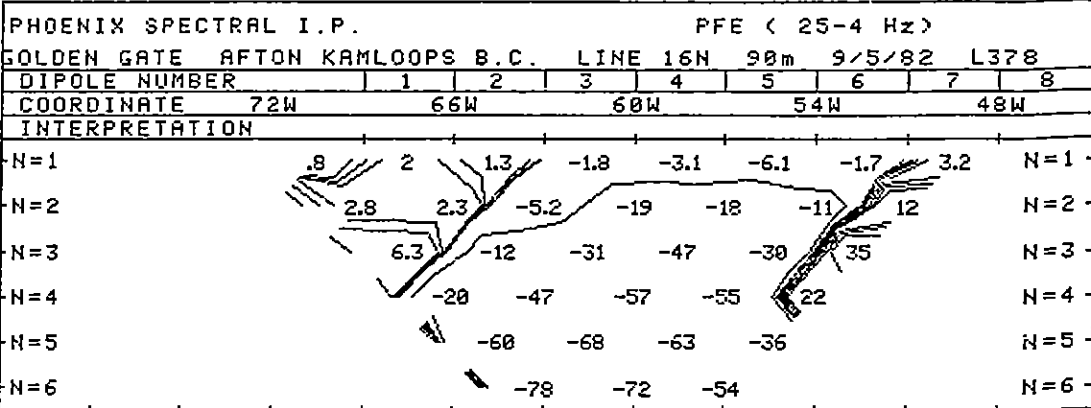
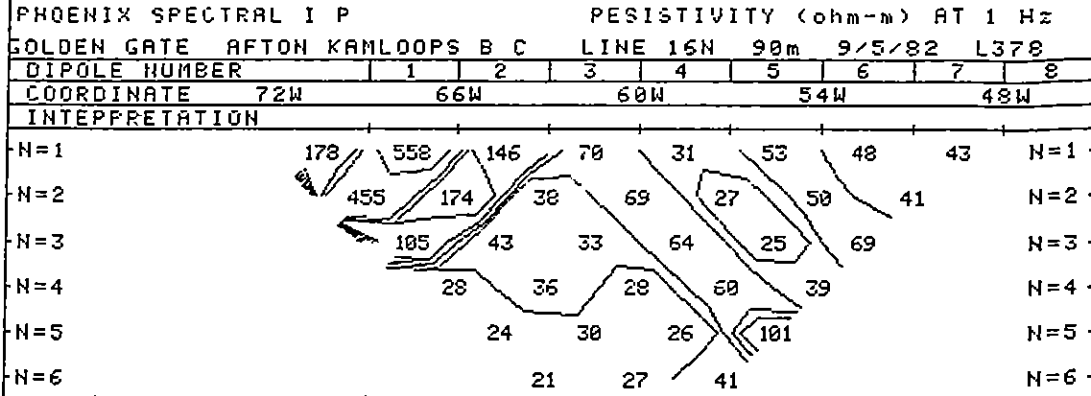
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of June 1982.

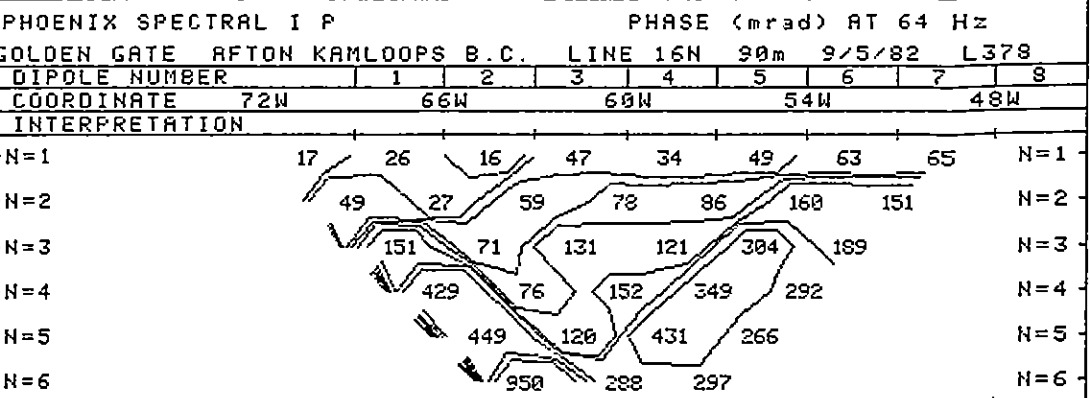
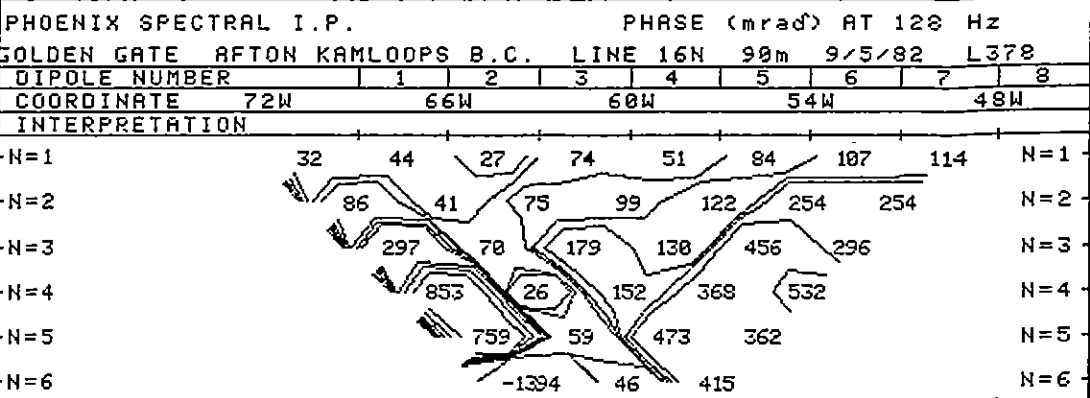
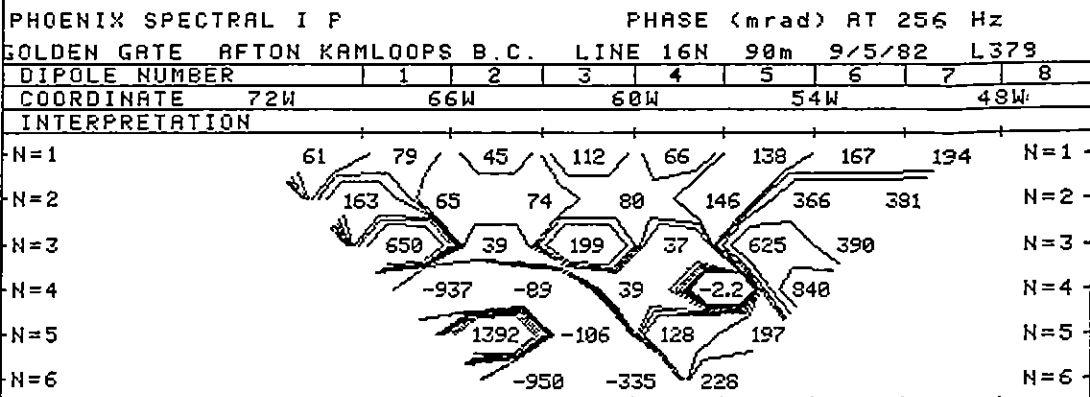
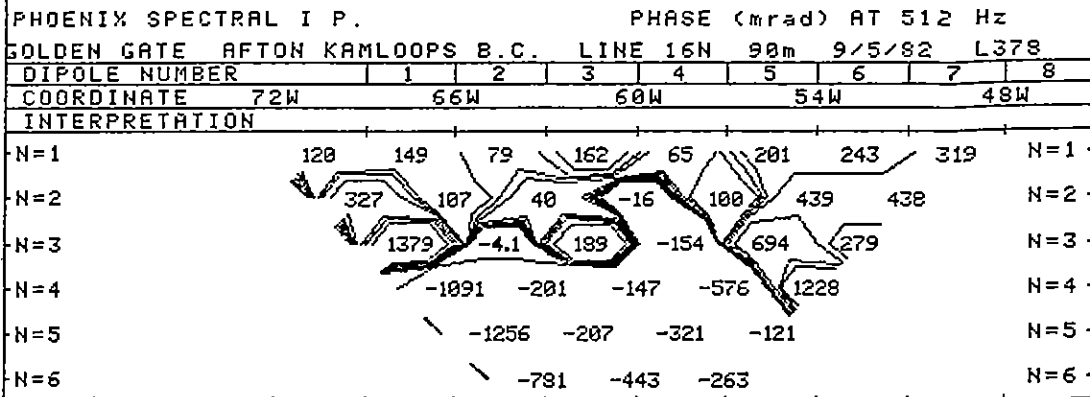
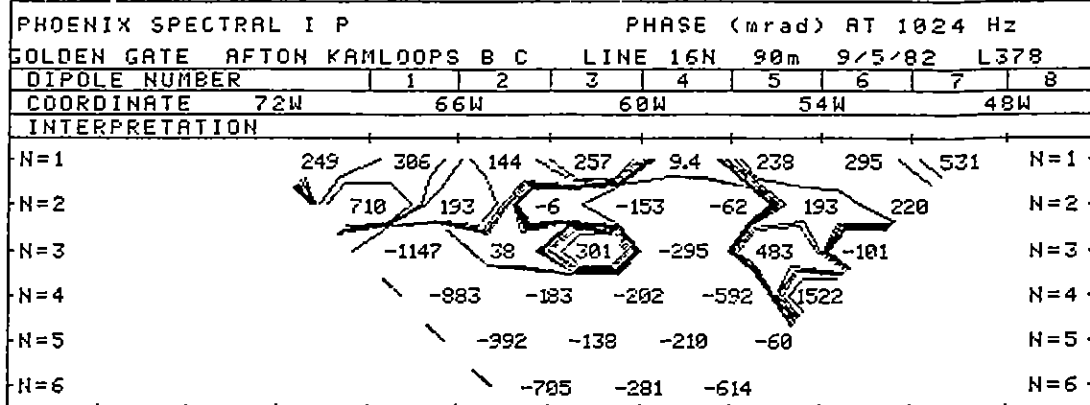


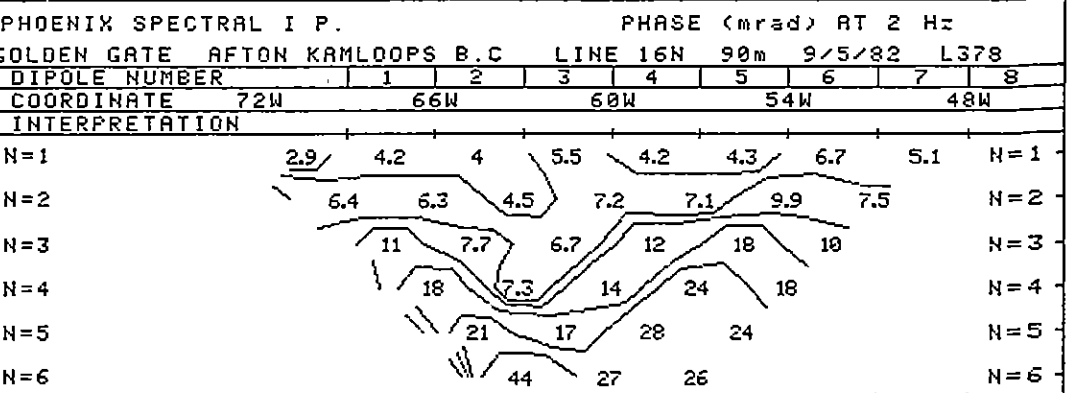
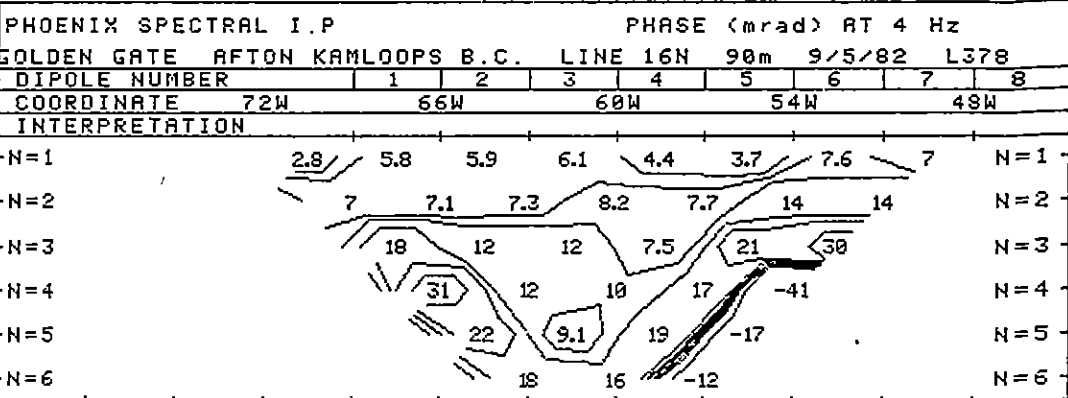
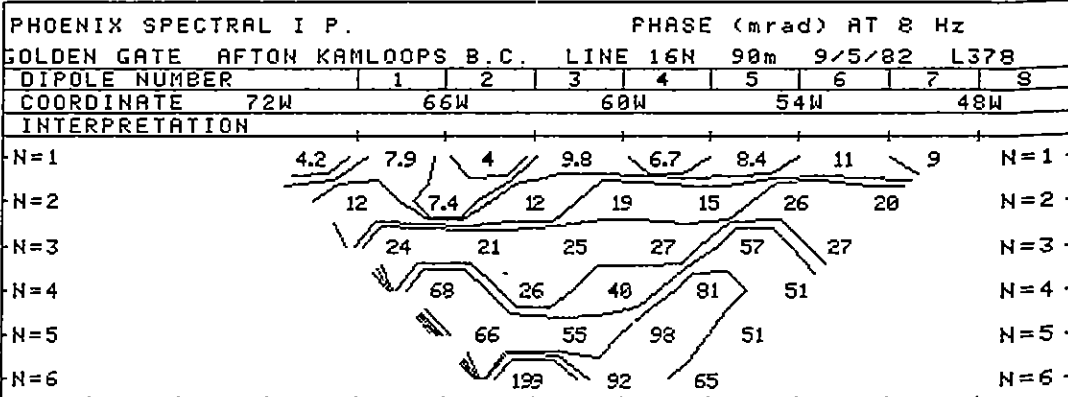
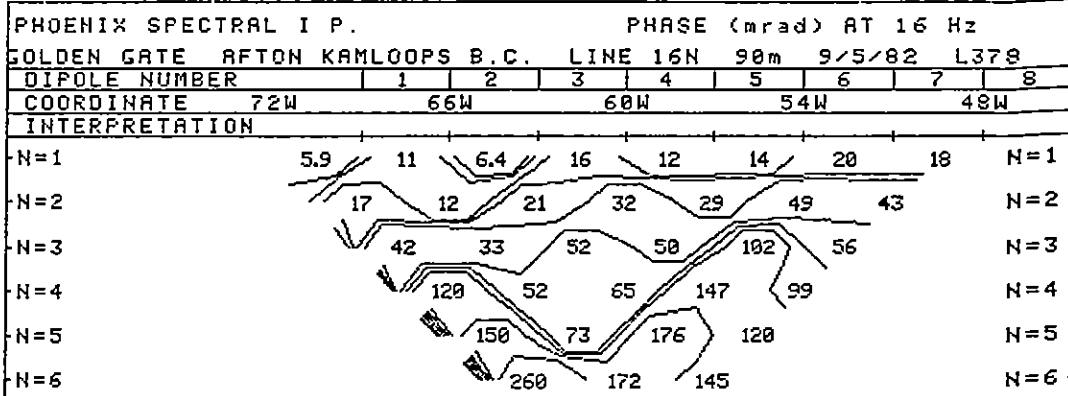
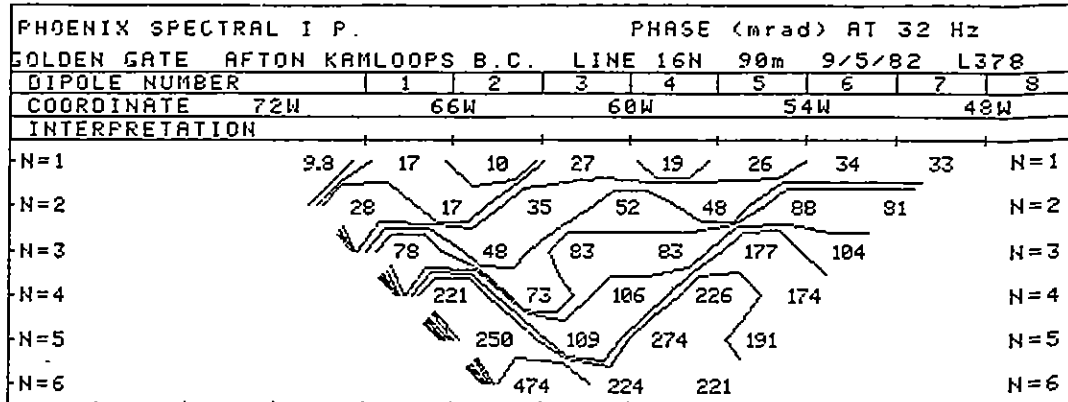


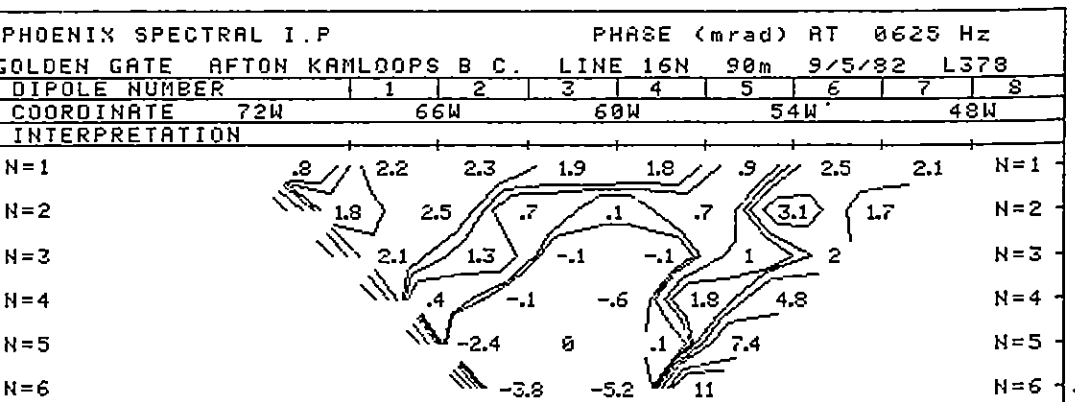
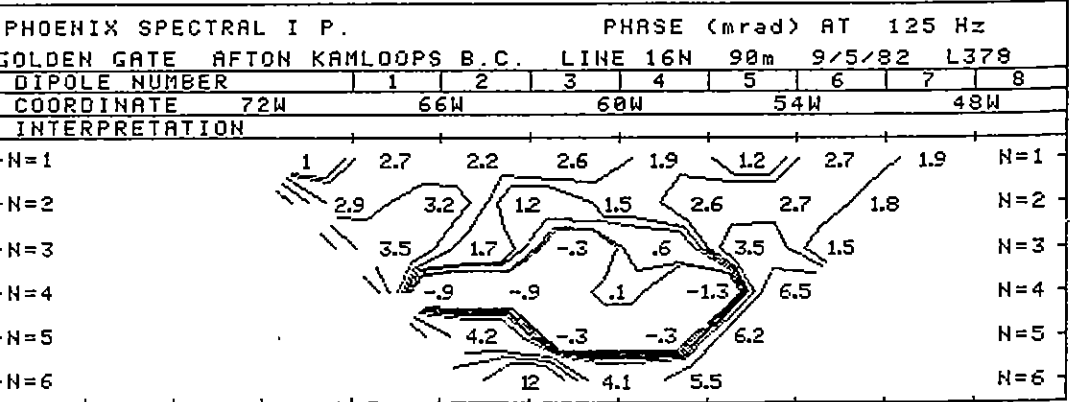
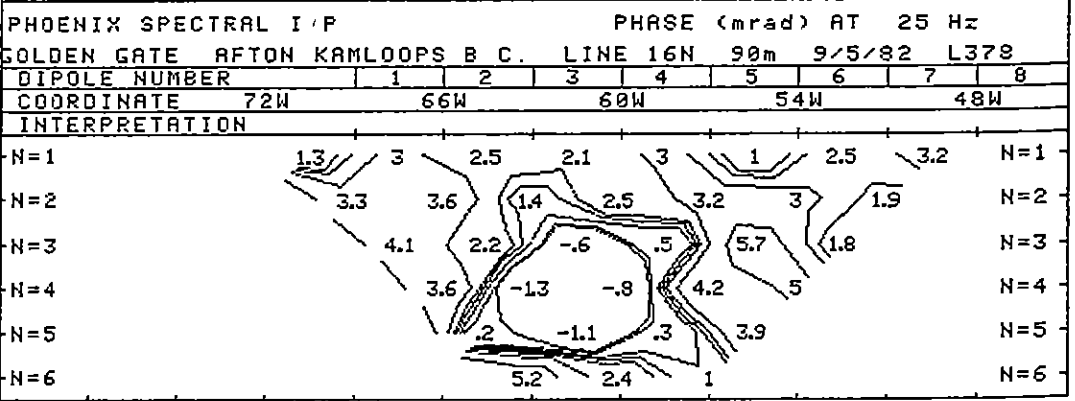
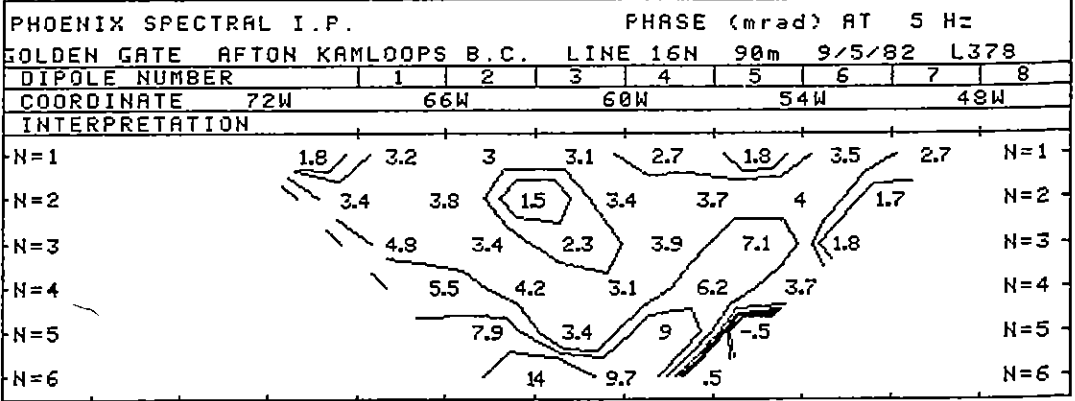
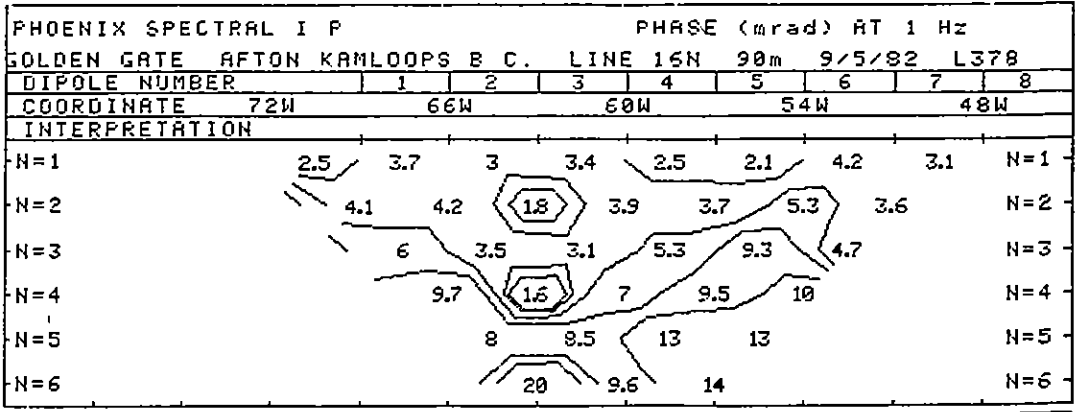




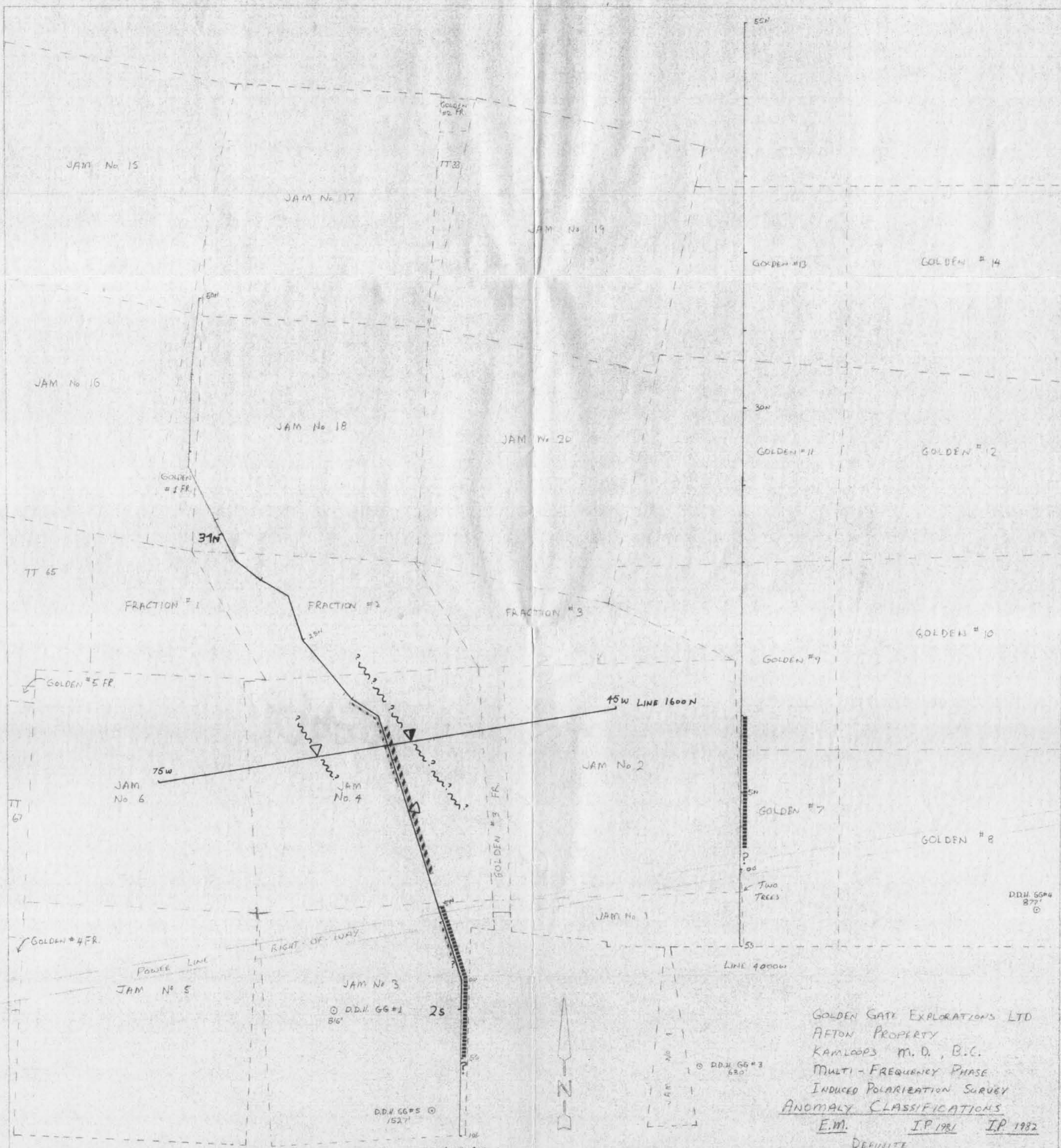








PHOENIX GEOPHYSICS LIMITED
 INDUCED POLARIZATION AND RESISTIVITY PLAN MAP



GOLDEN GATE EXPLORATIONS LTD
 AFTON PROPERTY
 KAMLOOPS M.D., B.C.
 MULTI-FREQUENCY PHASE
 INDUCED POLARIZATION SURVEY
ANOMALY CLASSIFICATIONS
 E.M. I.P. 1981 I.P. 1982
 DEFINITE
 ▽ PROBABLE
 ▽ POSSIBLE
 POSSIBLE FAULT ?m?m?
 DATE: MAY 5-9, 1982
 SCALE: 1"=400'
 N.T.S. 92 I/10E

MINERAL RESOURCES BRANCH
 ASSESSMENT REPORT
10,438
 NO.

1981 LINES
 1982 LINES
 APPROVED: PAC
 DATE: JUNE 01/82

NOTE TO ACCOMPANY GEOPHYSICAL REPORT
 FOR GOLDEN GATE EXPLORATIONS LTD.
 ON THE AFTON PROPERTY, KAMLOOPS
 AREA IN THE KAMLOOPS M.D., B.C. BY
 PHOENIX GEOPHYSICS LTD., GEOPHYSICIST DATED JUNE, 1982