

83-#26

#11038

GEOPHYSICAL REPORT

ON A

VLF-EM SURVEY

OVER THE

BOSS 1 AND 2 CLAIMS

HEDLEY AREA

SIMILKAMEEN MINING DIVISION

BRITISH COLUMBIA

PROPERTY : 11.0 km S60W of Hedley
 : 49° 120° SE
 : N.T.S. 92H/8E

WRITTEN FOR : AURIC RESOURCES LTD.
 #880-789 West Pender Street
 Vancouver, B.C., V6C 1H2
 and
 NEWFIELDS MINERALS, INC.
 #926-470 Granville Street
 Vancouver, B.C., V6C 1V5

SURVEYED BY : David G. Mark, Geophysicist
 GEOTRONICS SURVEYS LTD.
 #403-750 West Pender Street
 Vancouver, B.C., V6C 2T7

SURVEYED BY : TRANS-ARCTIC EXPLORATION
 #1807-1450 West Georgia
 Vancouver, B.C., V6G 2T7

DATED : February 9, 1983



GEOTRONICS SURVEYS LTD.
 Engineering & Mining Geophysicists
 VANCOUVER, CANADA



TABLE OF CONTENTS

| | |
|--|----|
| SUMMARY | i |
| CONCLUSIONS | i |
| RECOMMENDATIONS | ii |
| | |
| INTRODUCTION AND GENERAL REMARKS | 1 |
| PROPERTY AND OWNERSHIP | 2 |
| LOCATION AND ACCESS | 2 |
| PHYSIOGRAPHY | 2 |
| HISTORY OF PREVIOUS WORK | 3 |
| GEOLOGY | 3 |
| INSTRUMENTATION AND THEORY | 4 |
| SURVEY PROCEDURE | 5 |
| COMPILATION OF DATA | 6 |
| DISCUSSION OF RESULTS | 6 |
| SELECTED BIBLIOGRAPHY | 9 |
| GEOPHYSICIST'S CERTIFICATE | 10 |
| AFFIDAVIT OF EXPENSES | 11 |

**GEOLOGICAL BRANCH
ASSESSMENT REPORT**

11,038

MAPS

Claim Location Map
(at back)

1:50,000

Sheet 1

VLF-EM Survey Results
(in pocket)

1:5,000

Sheet 2

SUMMARY

A VLF-EM survey was carried out over a portion of the Boss 1 and 2 Claims during the fall of 1982. These claims are located 11.0 km S60W of Hedley, British Columbia and about 0.7 km due west of Alleyne Lake. Access to much of the property is easily gained by a two-wheel drive vehicle. The terrain consists of mainly moderate slopes forested with moderately dense coniferous trees. The purpose of the survey was to locate probable zones of gold or sulphide mineralization either directly or through mapping the structure.

The property is mainly underlain by upper Triassic Nicola Group volcanics with an intrusion of Coast Intrusive granites in the southeast corner. Bands of metamorphosed limestone, calcareous argillites and argillites associated with basic intrusives are mineralized with gold-bearing arsenopyrite in the Hedley Mascot Gold Mines and Nickel Plate Mines. Also gold within quartz veins have been discovered in the nearby Banbury Gold property.

The VLF-EM readings were taken every 40 meters on 100-meter separated east-west lines. They were then Fraser filtered, plotted and contoured.

CONCLUSIONS

The VLF-EM anomalies have reflected conductors that are probably geological structure such as faults, shears and contacts but could also be sulphide zones.

Some of the most interesting parts of the VLF-EM anomalies are those that appear to indicate cross-structure since these would be prime areas to look for sulphide and gold mineralization. In general, the VLF-EM survey has revealed complex structure which is encouraging for future exploration.

RECOMMENDATIONS

1. The VLF-EM survey should be extended over the remainder of the property.
2. The property should be geologically mapped.
3. A soil geochemistry survey should be carried out over the whole property using the same grid. The samples should be tested for lead, zinc, silver, copper and gold.
4. A magnetometer survey over the property would aid in geological mapping.
5. Further exploration work that may be recommended is an induced polarization survey and a diamond drilling program but these are contingent upon the results of the soil geochemistry and geological surveys.

GEOPHYSICAL REPORT
ON A
VLF-EM SURVEY
OVER THE
BOSS 1 & 2 CLAIMS
HEDLEY AREA
SIMILKAMEEN MINING DIVISION
BRITISH COLUMBIA

INTRODUCTION AND GENERAL REMARKS

This report discusses the survey procedure, compilation of data and the interpretation of a very low frequency electromagnetic (VLF-EM) survey carried out over a portion of the Boss 1 & 2 Claims during the period of November 26th to December 3rd, 1982.

The survey was done by Trans-Arctic Explorations Ltd. under the field supervision of Richard Simpson with Pat Crook as the instrument operator. A total of 25.0 line km of VLF-EM survey were done.

The primary purpose of the VLF-EM was to delineate faults and/or shear zones associated with gold mineralization. The results would aid in the subsequent geological mapping and soil geochemistry survey.

PROPERTY AND OWNERSHIP

Each of the Boss 1 and Boss 2 Claims consists of 20 units as shown on Sheet 1 and as described below:

| <u>Claim Name</u> | <u>No. Units</u> | <u>Record No.</u> | <u>Expiry Date</u> |
|-------------------|------------------|-------------------|--------------------|
| Boss 1 | 20 | 1617 | Jan. 8, 1984 |
| Boss 2 | 20 | 1618 | Jan. 8, 1984 |

The Boss 1 Claim is owned by Auric Resources Ltd and the Boss 2 Claim is owned by Newfields Minerals Inc., both companies of Vancouver, British Columbia.

LOCATION AND ACCESS

The legal post, common to the two claims is found 11 km S60°W of the town of Hedley, B.C. The Boss Claims are located within the upper reaches of Whistle Creek which is a north-northeast flowing tributary of the Similkameen River.

The geographical coordinates are 49° 19' N latitude and 120° 14' W longitude.

Access is gained by a good all-weather gravel road leading south from Highway #3 approximately 7 km west of Hedley and leading up Whistle Creek. The road crosses the property from the 10 to the 14 km points,

PHYSIOGRAPHY

The property lies at the southern end of the physiographic division known as the Thompson Plateau which is part of the Interior Plateau System. The terrain is generally that of rolling hills over most of the property. The general

trend of the topography runs north-south. Elevations vary from 1,250 meters a.s.l. along Whistle Creek to 1,550 meters a.s.l. at the northwest corner of the Boss 1 Claim and the southwest corner of the Boss 2 Claim.

The main water source would be Whistle Creek. Otherwise the properties are fairly dry and water supply would depend on seasonal run-off.

The forest cover consists of fir, pine and spruce and varies from closely growing, immature stands to more widely spaced mature stands.

HISTORY OF PREVIOUS WORK

Since the claims have been staked, no previous work has been done.

GEOLOGY

The Boss Claims are mainly underlain by the Nicola volcanics and sediments of Upper Triassic age. Intruding into this group on the southwestern corner of the Boss 2 Claim are Coast Intrusive granites of Jurassic age.

The following is quoted from Phendler's 1981 report on a soil geochemistry survey on the nearby Jan Claims.

"In the Nickel Plate area east of Hedley the gold-bearing deposits occur in metamorphosed limestone associated with basic stocks, dykes and sills. In the LORA-JAN area the sedimentary bands within the volcanics are mainly argillites and calcareous material is somewhat restricted. Similar basic intrusions are present as occur on Nickel Plate Mountain

and similar type mineralization has been found. Further exploration may lead to the discovery of more favourable conditions for the development of commercial deposits (after H. Rice, geological Survey of Canada Memoir 243, 1960).

"South of the Similkameen River, the mineralization is mainly vein-like in form with quartz the principal gangue mineral and gold also being present. Geological conditions are somewhat similar to the north but calcareous strata are even less common.

"One such gold bearing quartz vein deposit is the Banbury Gold Mine property where recent exploration has shown the presence of interesting gold values in two northerly-striking quartz veins. These veins appear to continue north into the ground held by Kirby Energy Ventures, Inc."

INSTRUMENTATION AND THEORY

A VLF-EM receiver, Model 27, manufactured by Sabre Electronic Instruments Ltd. of Burnaby, B.C. was used for the VLF-EM survey. This instrument is designed to measure the electromagnetic component of the very low frequency field (VLF-EM), which for these surveys is transmitted at 24.8 KHz from Seattle, Washington.

In all electromagnetic prospecting, a transmitter produces an alternating magnetic field (primary) by a strong alternating current usually through a coil of wire. If a conductive mass such as a sulphide body is within this magnetic field, a secondary alternating current is induced within it which in turn induces a secondary magnetic field that distorts the primary magnetic field. It is this distortion that the

EM receiver measures. The VLF-EM uses a frequency range from 16 to 24 KHz, whereas most EM instruments use frequencies ranging from a few hundred to a few thousand Hz. Because of its relatively high frequency, the VLF-EM can pick up bodies of a much lower conductivity and therefore is more susceptible to clay beds, electrolyte-filling fault or shear zones and porous horizons, graphite, carbonaceous sediments, lithological contacts as well as sulphide bodies of too low a conductivity for other EM methods to pick up. Consequently the VLF-EM has additional uses in mapping structure and in picking up sulphide bodies of too low a conductivity for conventional EM methods and too small for induced polarization. (In places it can be used instead of I.P.). However, its susceptibility to lower conductive bodies results in a number of anomalies, many of them difficult to explain and, thus, VLF-EM preferably should not be interpreted without a good geological knowledge of the property and/or other geophysical and geochemical surveys.

SURVEY PROCEDURE

The area covered of 25 line km of VLF-EM survey over the center of the properties.

The base line was placed in such a manner as to bisect the two claims on a bearing of 360° true. It was extended for 1,000 m being well flagged with florescent orange survey flagging and having the crossline stations marked with blue flagging at 100 m intervals. The cross lines were run perpendicular to the base line at a 100 m spacing with the instrument readings taken at a 40 m interval facing towards the transmitter at Seattle.

COMPILATION OF DATA

The VLF-EM field results were reduced by applying the Fraser filter and subsequently plotted on Sheet 2 at a scale of 1:5,000. The filtered data was plotted between actual reading stations. The positive dip-angle readings were then contoured at an interval of 4° .

The Fraser filter is essentially a 4 point difference operator, which transforms zero crossings into peaks, and a low pass smoothing operator which induces the inherent high frequency noise in the data. Therefore, the noisy, non-contourable data are transformed into less noisy, contourable data. Another advantage of this filter is that a conductor that does not show up as a crossover on the unfiltered data quite often shows up on the filtered data.

DISCUSSION OF RESULTS

The major cause of VLF-EM anomalies, as a rule, are geologic structures such as fault, shear and breccia zones. It is therefore logical to interpret VLF-EM anomalies to likely be caused by these structural zones. Of course, sulphides may also be a causitive source. But in the writer's experience, when VLF-EM anomalies correlate with sulphide mineralization, the anomalies are usually reflecting the structure associated with the mineralization rather than the mineralization itself.

The major trend of the VLF-EM anomalies, as seen on Sheet 1, is primarily north and secondarily northeast. Considering the VLF-EM anomalies are likely reflecting structure, the major strike of structure on this property is concluded to be in both these directions.

It should also be pointed out that another reason the anomalies strike primarily north-south is due to the grid bias. That is, the readings, having been taken every 40 m east-west on 100 m separated lines north-south cause the contouring to elongate the anomalies in a north-south direction. The writer therefore has drawn in lineations that are probably reflecting conductors but are not evident from the contouring.

There is considerable variation in intensity from one VLF-EM anomaly to the next. This is not only due to the conductivity of a causative source, but also the direction it strikes relative to the direction to the transmitter. In other words, those conductors lying closer to the same direction as the direction to the transmitter (S55W in this case), can be picked up easier than those that are lying at a greater angle. Depending upon its conductivity, a conductor may not be picked up at all if it's at too great an angle. For example, the VLF-EM survey has shown few conductors striking northwesterly, a low optimum direction for the VLF-EM using the Seattle transmitter.

For the limited amount of property covered, the survey has produced a high number of anomalies. In the writer's experience the anomalies are relatively short with numerous highs being picked up on only one line, producing a "thumbprint" effect. These highs are of greater economic interest since they may be reflecting sulphides, fracturing and/or alteration associated with gold mineralization. Also, the highs often are at points of intersection of two conductors striking in two different directions. If the conductors are in fact geological structure, then the points of intersection become particularly interesting since where structures intersect become amenable to mineralizing fluids.

Because of their intensity and/or their complexity, the following anomalies are of particular interest for future exploration.

- 1) The easternmost anomaly on the Boss 2 Claim.
- 2) The westernmost anomaly on the Boss 2 Claim.
- 3) The westernmost anomaly on the Boss 1 Claim.
- 4) The anomaly centered at L-3N, 7E on the Boss 1 Claim.

This is the first work done on the property and therefore little else can be said. Other anomalies may become important once further work is undertaken.

Respectfully submitted,
GEOTRONICS SURVEYS LTD.



David G. Mark,
Geophysicist

February 9, 1983

SELECTED BIBLIOGRAPHY

Fraser, D.C., Contouring of VLF-EM Data, Geophysics, Vol. 34, No. 6 (December), 1969.

Phendler, R.W., Report on the Lora and Jan Claim Groups, Similkameen M.D., B.C. for Kirby Energy Ventures, Inc., November, 1980.

Phendler, R.W., Geochemical Report on the Lora and Jan Claim Groups, Similkameen M.D., B.C. for Kirby Energy Ventures, Inc., May, 1980.

Preto, V.A., Kalvins, T.E., Thomson, N.A., and Nebocat, J. Preliminary Geological Map of Aspen Grove Area (parts of 92H/15 and 92I/2E), B.C. Department of Mines and Petroleum Resources, Map 15, 1974.

Rice, H.M.A., Geology & Mineral Deposits of the Princeton Map Area, British Columbia, Geol. Survey of Canada, Mem. 243, 1960.


GEOPHYSICIST'S CERTIFICATE

I, DAVID G. MARK, of the City of Vancouver, in the Province of British Columbia, do hereby certify:

That I am a Consulting Geophysicist of Geotronics Surveys Ltd. with offices at #403-750 West Pender Street, Vancouver, British Columbia.

I further certify:

1. I am a graduate of the University of British Columbia (1968) and hold a B.Sc. degree in Geophysics.
2. I have been practising my profession for the past 15 years and have been active in the mining industry for the past 18 years.
3. I am an active member of the Society of Exploration Geophysicists and a member of the European Association of Exploration Geophysicists.
4. This report is compiled from data obtained from a VLF-EM survey carried out by Trans-Arctic Explorations Ltd. under the supervision of Richard Simpson from November 26th to December 3rd, 1982.
5. I have no direct or indirect interest in the Boss 1 and 2 Claims nor in Auric Resources Ltd., nor in Newfields Minerals Inc., both companies of Vancouver, B.C., nor do I expect to receive any interest as a result of writing this report.


David G. Mark,
Geophysicist

February 9, 1983

AFFIDAVIT OF EXPENSES

The VLF-EM survey was carried out from November 26th to December 3rd, 1982 on the Boss 1 and 2 Claims, Whistle Creek, Similkameen M.D., B.C. to the value of the following:

FIELD:

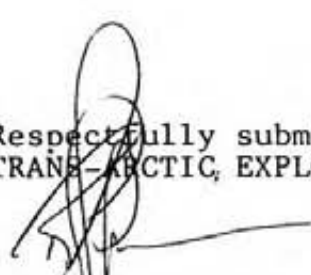
| | |
|--|-----------------|
| Supervisor, 2 days at \$160/day | \$ 380 |
| Geophysical technician, 60 hours at \$25/hour | 1,500 |
| Vehicle rental, 7 days at \$90/day | 630 |
| Room and board | 540 |
| Survey supplies | 90 |
| VLF-EM instrument rental, 1 week at \$125/week | 125 |
| | <u>\$ 3,265</u> |

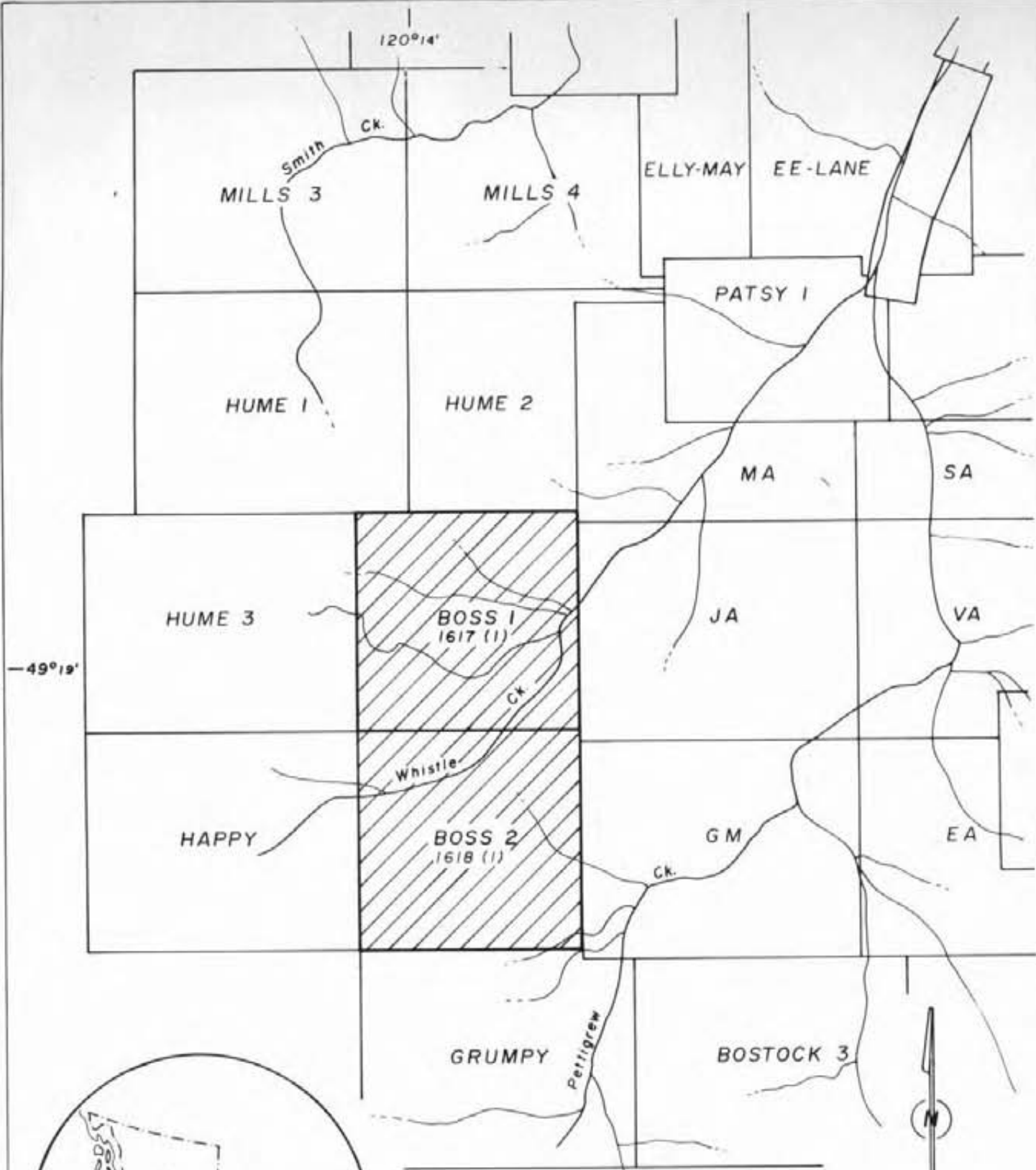
REPORT:

| | |
|---|-----------------|
| Geophysicist, 10 hours at \$40/hour | \$ 400 |
| Geophysical technician, 15 hours at \$25/hour | 375 |
| Drafting and printing | 350 |
| Typing, photocopying and compilation | 120 |
| | <u>\$ 1,245</u> |

| | |
|-------------|-----------------|
| Grand Total | <u>\$ 4,510</u> |
|-------------|-----------------|

Respectfully submitted,
TRANS-ARCTIC EXPLORATIONS LTD.


Richard Simpson
Manager



NEWFIELDS MINERALS INC.
AURIC RESOURCES LTD.
 CLAIM LOCATION MAP
BOSS 1 & 2 CLAIMS
 HEDLEY AREA
 SIMILKAMEEN M.D.



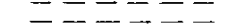


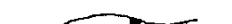
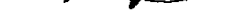



1:50,000 Sht. 1 Jan. 83. B.D.S.

N.T.S. 92 H/8 E

11,038

LEGEND

Claim post located assumed 
 Claim boundaries 
 Road 
 Creek direction 
 Base line 
 Sample location 
 Magnetic depression 

Lineations not evident from contouring 



NEWFIELDS MINERALS INC.
&
AURIC RESOURCES LTD.

BOSS 1 & 2 CLAIMS

HEDLEY AREA

SIMILKAMEEN MD.

VLF-EM

40 m FRASER FILTER

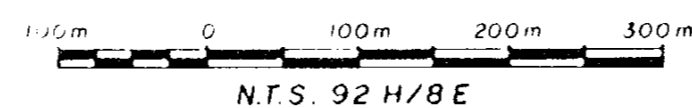
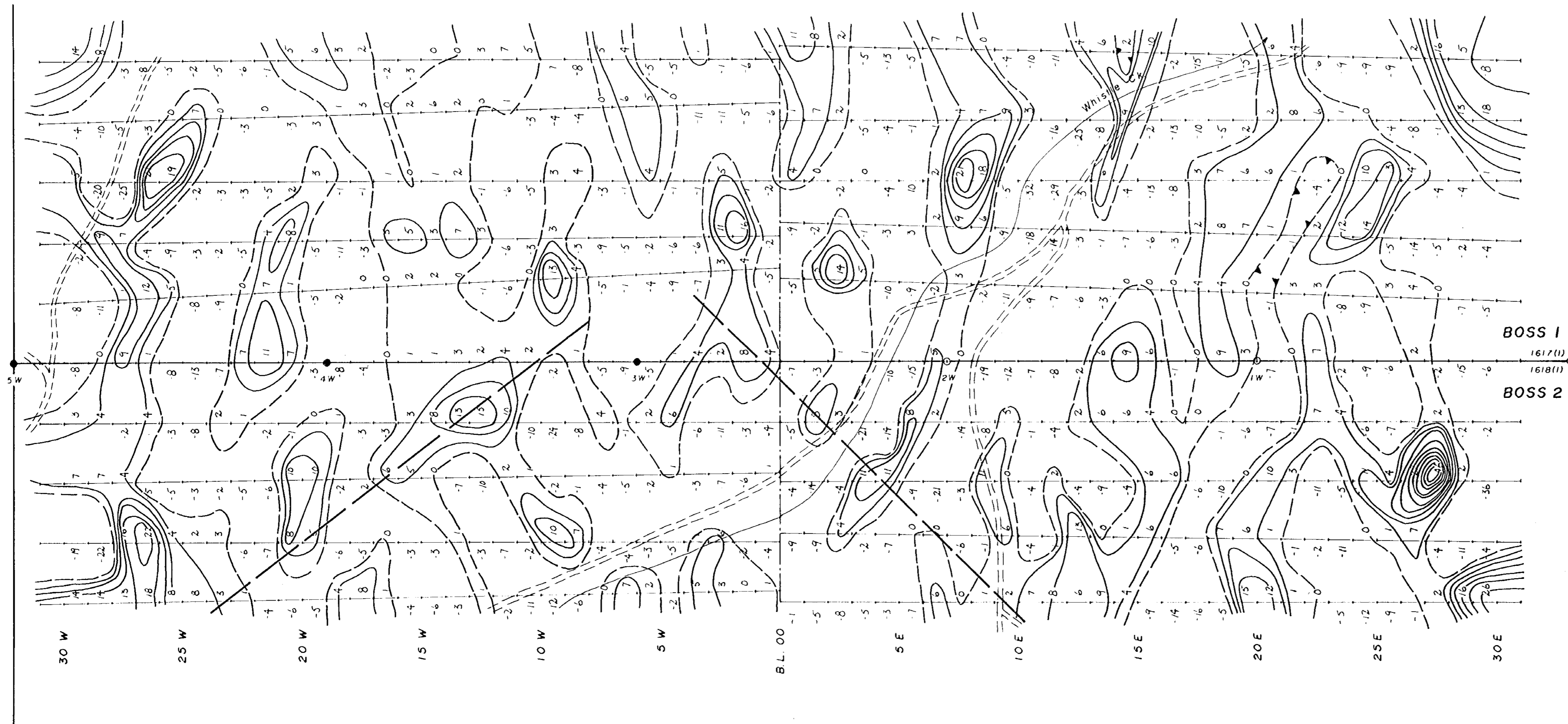
Contour interval 4°

1:5000

SHT. No 2

JAN. 83

B. D. S.



Seattle Transmitter
24.8 KHz.

49°19'

120°14'