



Geological Survey Branch
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[ARIS11A]

ARIS Summary Report

Regional Geologist, Cranbrook

Date Approved: 1998.10.14

Off Confidential: 1999.06.05

ASSESSMENT REPORT: 25634

Mining Division(s): Fort Steele

Property Name: Zinger

Location:	NAD 27	Latitude: 49 28 00	Longitude: 116 11 00	UTM:	11	5475731	559215
	NAD 83	Latitude: 49 28 00	Longitude: 116 11 04	UTM:	11	5475949	559132
	NTS:	082F08E					

Camp: 001 Purcell Belt (Sullivan)

Claim(s): Zinger 11-14

Operator(s): Klewchuk, Peter
Author(s): Klewchuk, Peter

Report Year: 1998

No. of Pages: 17 Pages

Commodities Searched For: Gold

General Work Categories: GEOP

Work Done: ~~Geophysical~~
EMGR Electromagnetic, ground (6.8 km;VLF)

Keywords: Creston Formation, Helikian, Quartzites, Siltstones

Statement Nos.: 3119744

MINFILE Nos.:

Related Reports: 16656

ASSESSMENT REPORT

on

VLF-EM GEOPHYSICS

ZINGER CLAIMS

Upper Perry Creek Area

FORT STEELE MINING DIVISION

NTS 82 F/9 E

Latitude 49° 26' N
Longitude 116° 11' W

By

PETER KLEWCHUK, P. Geo.

August, 1998

GEOLOGICAL SURVEY BRANCH
ASSESSMENT REPORT

25,634

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1.00 INTRODUCTION

This report describes a VLF-EM survey completed on the Zinger property in the upper Perry Creek drainage during 1997 and early 1998.

1.10 Location and Access

The Zinger claims are located approximately 30 kilometers west-southwest of Cranbrook, B.C., in the Fort Steele Mining Division (Fig. 1). The claim block straddles a ridge between Perry Creek and Hellroaring Creek, near the headwaters of both drainages. The claims are centered near 49° 26' N Latitude and 116° 11' W Longitude.

Access to the property is via logging roads up either Perry Creek or Hellroaring Creek.

1.20 Property

The Zinger claims are a contiguous group of 14 two-post claims staked and owned by the author (Fig. 2).

1.30 Physiography

The Zinger claim group occurs within the Moyie Range of the Purcell Mountains, in moderately rugged terrain near the headwaters of Perry and Hellroaring Creeks. Elevation on the claim block ranges from 1520m to 2220m. Forest cover consists of a mixture of Pine, Fir and Larch. Lower elevation portions of the claim block in the Perry Creek drainage have been recently clear-cut logged.

1.40 History of Previous Exploration

The Zinger claims are situated near the headwaters of Perry Creek which was the site of a placer gold rush near the turn of the century. Intermittent placer gold production has occurred since that time. Numerous old workings on and in the vicinity of the Zinger claims date back to the early part of this century. Several adits and shafts on the old 'Yellow Metal' property north of the Zinger claims are described in B.C Ministry of Mines Annual Report for 1916.

More recent lode gold exploration activity started in the early 1980's following a dramatic increase in the price of gold. Numerous claims were staked to cover prospective lode gold sources of known placer streams near Cranbrook, including this part of Perry Creek.

In 1985 Partners Oil and Minerals Ltd. Took reconnaissance soil samples along the trail above Gold Run Lake and detected significant gold anomalies. In 1987 they conducted grid soil

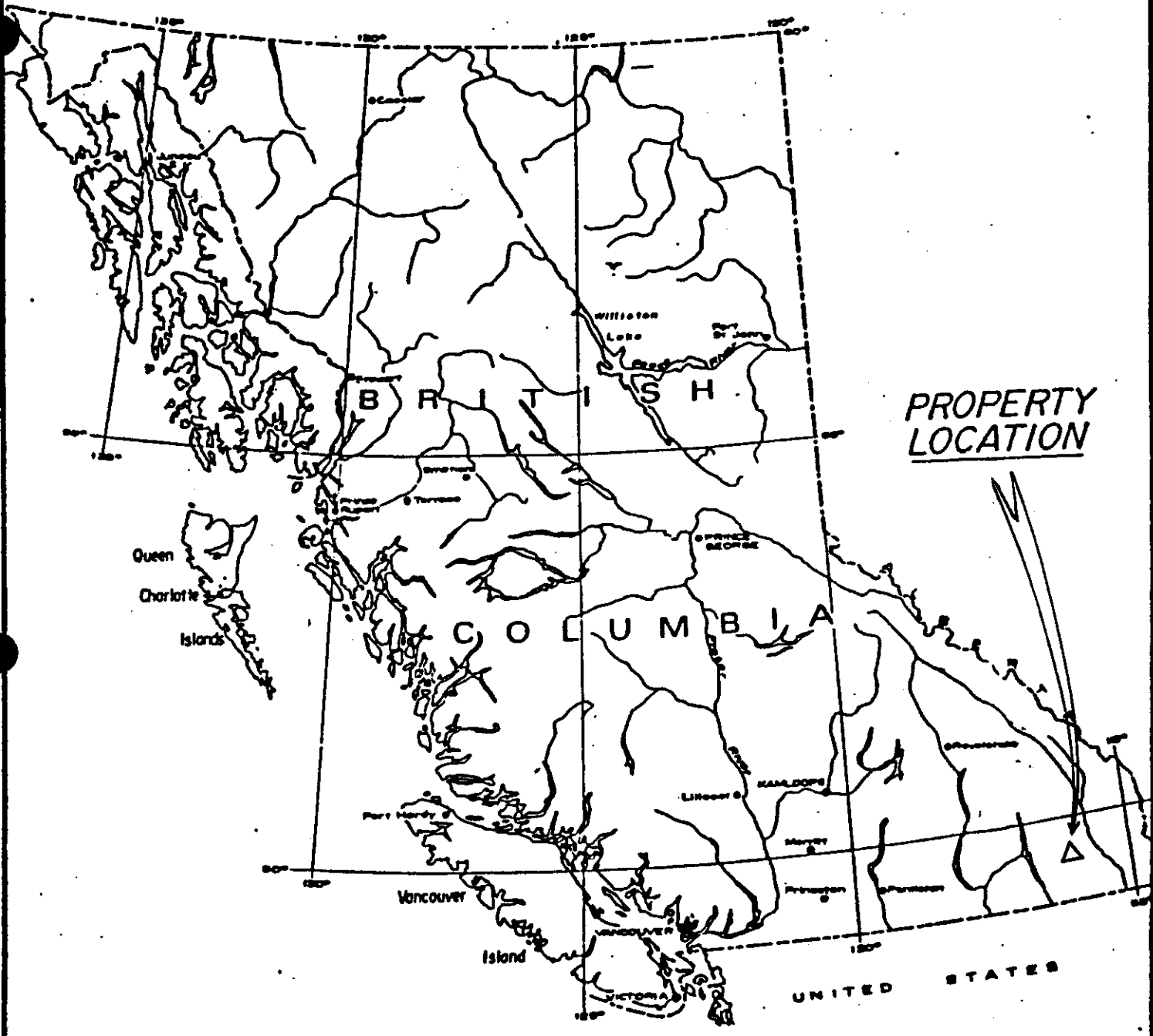
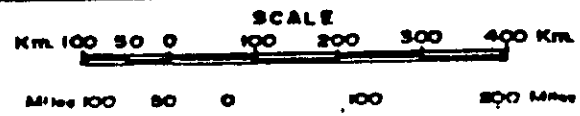


Figure 1
ZINGER CLAIMS
PROPERTY LOCATION MAP



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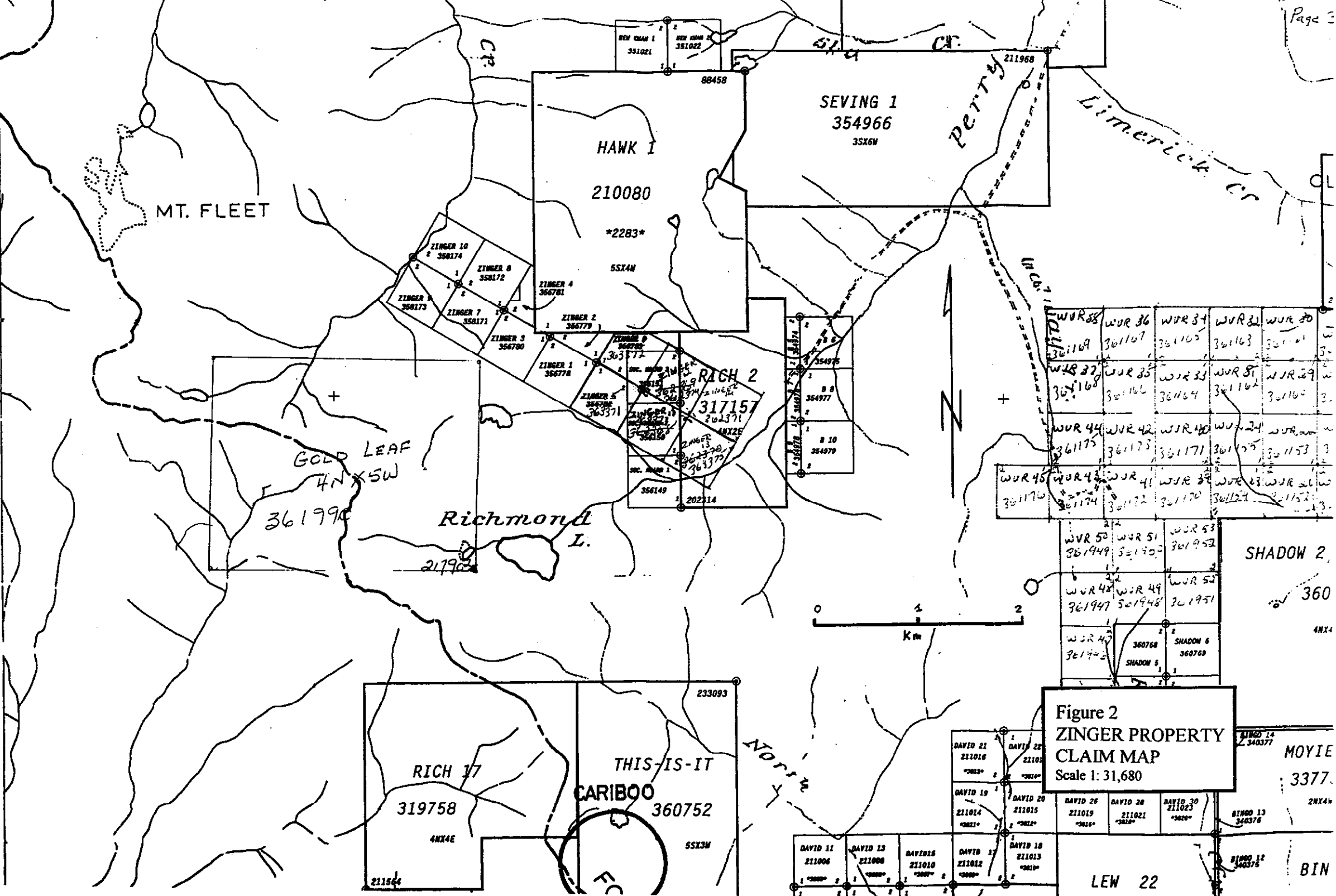


Figure 2
ZINGER PROPERTY
CLAIM MAP
 Scale 1: 31,680

RICH 14
 340377
 MOYIE
 3377
 2N X 4W
 RICH 13
 340376
 RICH 12
 340375
 BIN

LEW 22

sampling and established the presence of a large and rather strong gold anomaly (Bishop, 1987, A.R. 16,656).

In 1993 Consolidated Ramrod Gold Corporation staked a large claim block in the area. Their work included soil geochemistry, road building, trenching and diamond drilling in the area of the present Zinger claims.

1.50 Purpose of Survey

In 1997 and early 1998 a program of VLF-EM geophysical surveying was carried out on part of the Zinger claims over an area of a known gold-in-soil geochemical anomaly to try and identify underlying structures that influenced the deposition of gold.

2.00 GEOLOGY

2.10 Regional Geology

The area of the Zinger claims is underlain by the Mesoproterozoic Purcell Supergroup, a thick succession of fine grained clastic and carbonate sedimentary rocks exposed in the core of the Purcell Anticlinorium in southeast British Columbia. These rocks are believed by most workers (eg. Harrison, 1972) to have been deposited in an epicratonic re-entrant of a sea that extended along the western margin of the Precambrian North American Craton.

The oldest known member of the Purcell Supergroup is the Aldridge Formation, a thick sequence of fine-grained siliciclastic rocks deposited largely by turbidity currents. The Aldridge Formation is gradationally overlain by shallower-water deltaic clastics of the Creston Formation. The Creston Formation is in turn overlain by predominantly dolomitic siltstones of the Kitchener Formation.

The Purcell Anticlinorium is transected by a number of steep transverse and longitudinal faults. The transverse faults appear to have been syndepositional (Lis and Price, 1976) and Hoy (1982) suggests a possible genetic link between mineralization and syndepositional faulting. Longitudinal faults which more closely parallel the direction of basin growth faults may have played a similar role. Gold mineralization, most of which is believed Cretaceous in age, appears to be related to felsic intrusive activity and controlled by fault or shear structures.

2.20 Property Geology

The Zinger property is underlain by rocks of the Creston Formation, consisting mainly of shallow water thin bedded argillites, medium thick bedded siltstones and medium and thicker bedded quartzites. For the most part, beds strike northeasterly and dip moderately to steeply westerly. Near the Zinger claim block, gabbroic intrusions are known and some may exist on the claim block. The Grassy Mountain Intrusive, a Cretaceous granitic plug, outcrops east of Hellroaring Creek about 5 kilometers north of the Zinger claims.

Numerous small and larger quartz veins were recognized during the course of the geophysical survey but no detailed geological mapping has been conducted to date. The quartz veins are both bedding parallel and perpendicular to bedding.

3.00 GEOPHYSICS

3.10 Introduction

The VLF-EM survey on the Zinger claims was completed in the area of a soil geochemistry grid conducted by Consolidated Ramrod Gold Corporation in 1993. Some of the original grid lines were used for the survey. Unfortunately many of the station flags had disappeared and the lines had to be re-chained. The Ramrod grid consisted of an east-west base line and north-south sample lines, providing a grid that is oblique to the known structure of the claim area. Survey lines are mostly 50 meters apart with survey readings taken at 25 meter spacings. An initial VLF-EM survey was completed along a road constructed by Ramrod across the area of the soil grid. The soil grid base line was also surveyed and a series of parallel lines were run to further define the anomalous responses that were identified.

A total of 6.8 kilometers of line was surveyed; Figure 3 shows the area of the claims surveyed and Figures 4 and 5 show in detail the survey results. Figures 6, 7 and 8 also show profiles of the VLF-EM data for all lines surveyed. The VLF-EM data includes Field Strength (+ symbol), Dip Angle, (. symbol) and Fraser Filter (x symbol) values.

3.20 VLF-EM Survey

3.21 Instrumentation and Survey Procedure

A Crone Radem VLF-EM receiver, manufactured by Crone Geophysics Ltd. of Mississauga, Ontario was used for the VLF-EM survey. Seattle, Washington, transmitting at 24.8 Khz and at an approximate azimuth of 247° from the survey area, was used as the transmitting station.

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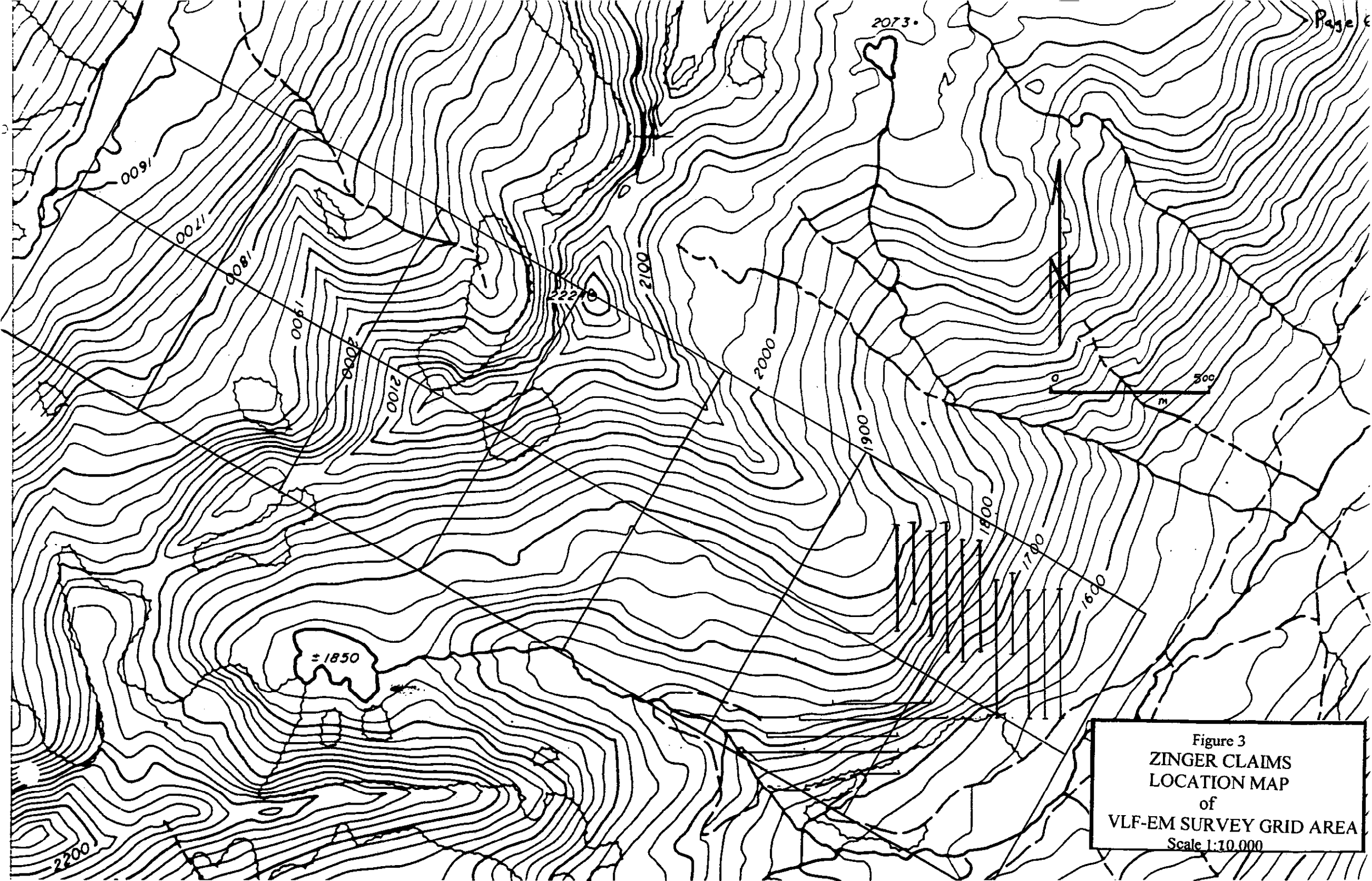


Figure 3
ZINGER CLAIMS
LOCATION MAP
of
VLF-EM SURVEY GRID AREA
Scale 1:10,000

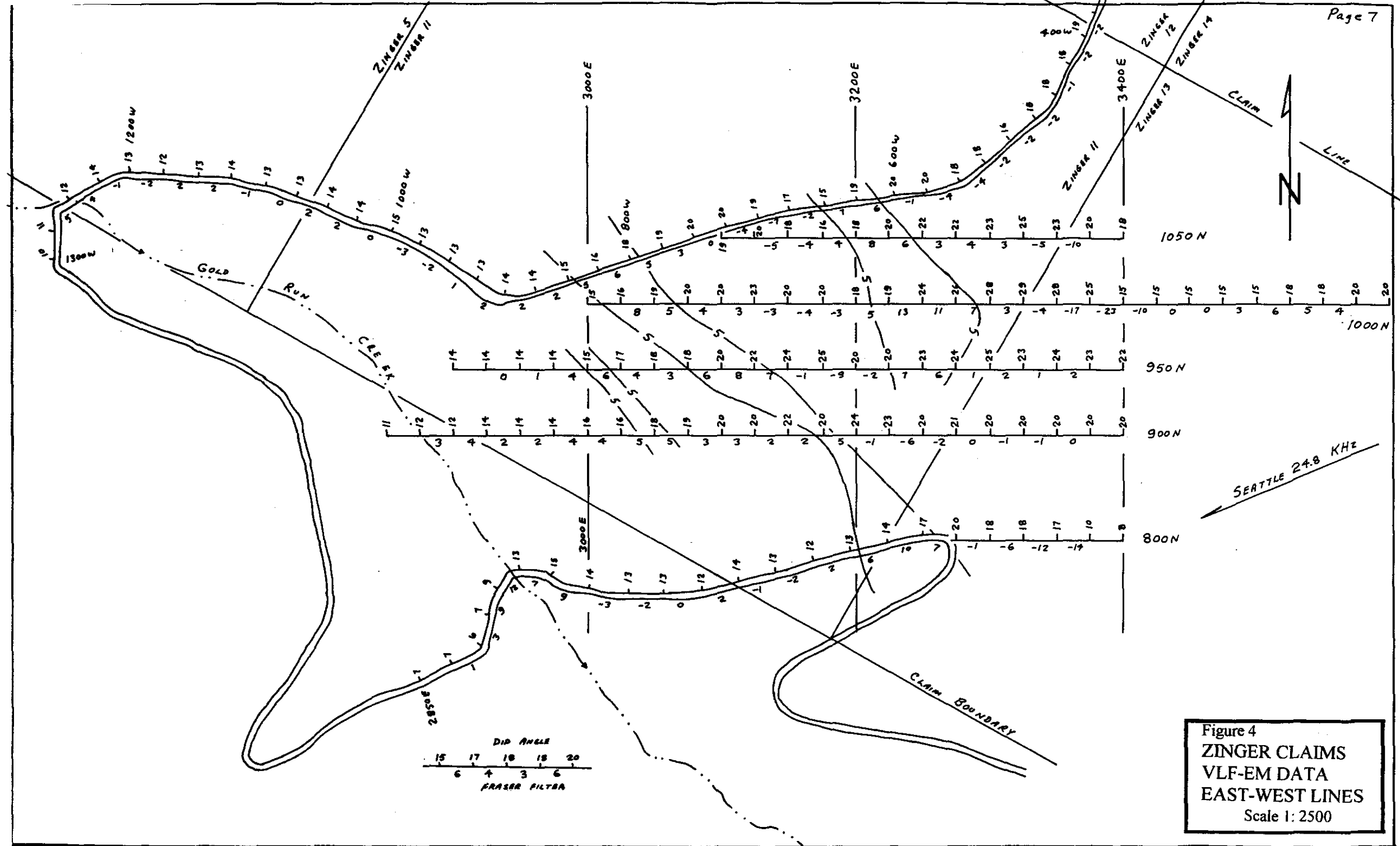
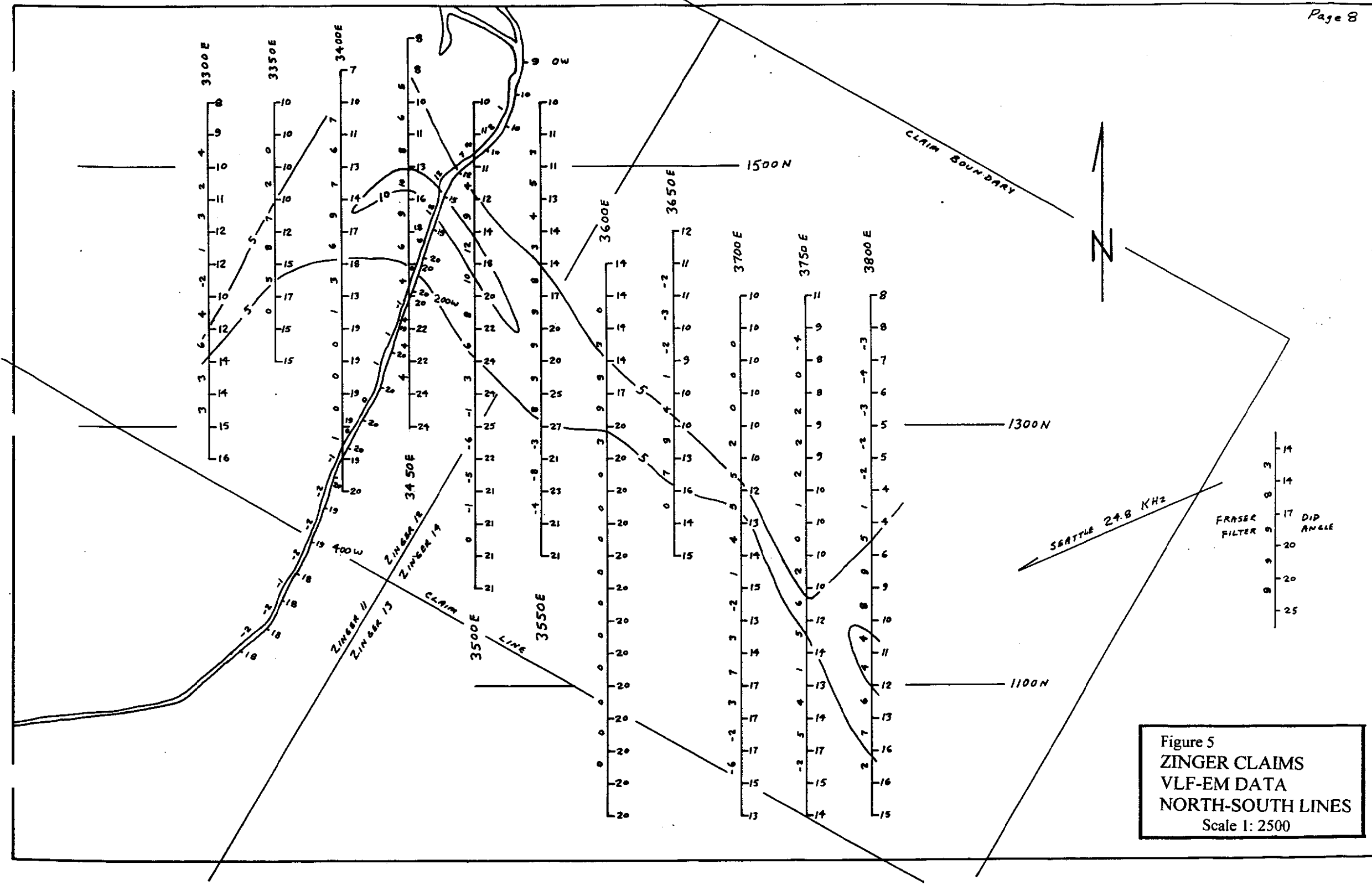
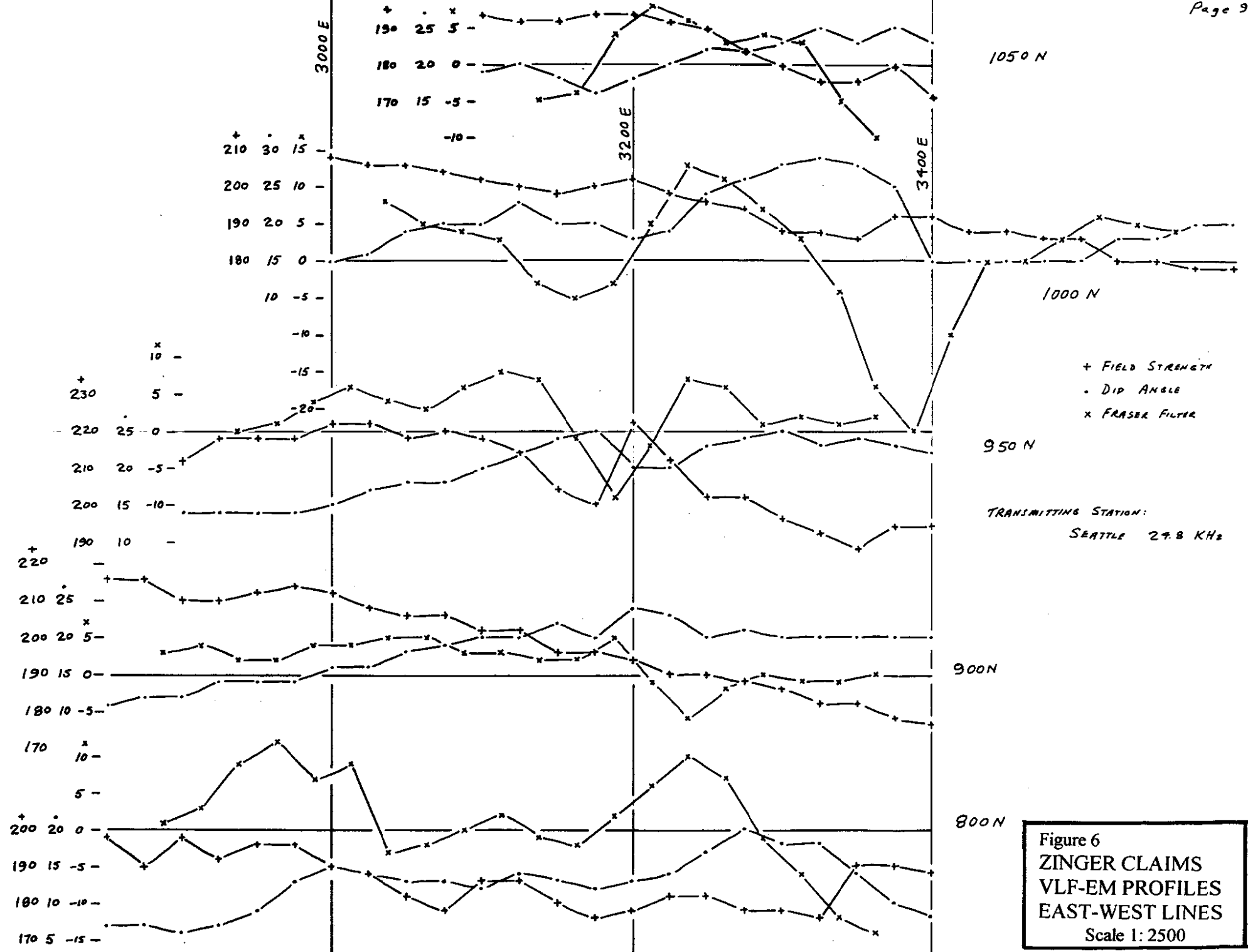


Figure 4
 ZINGER CLAIMS
 VLF-EM DATA
 EAST-WEST LINES
 Scale 1: 2500





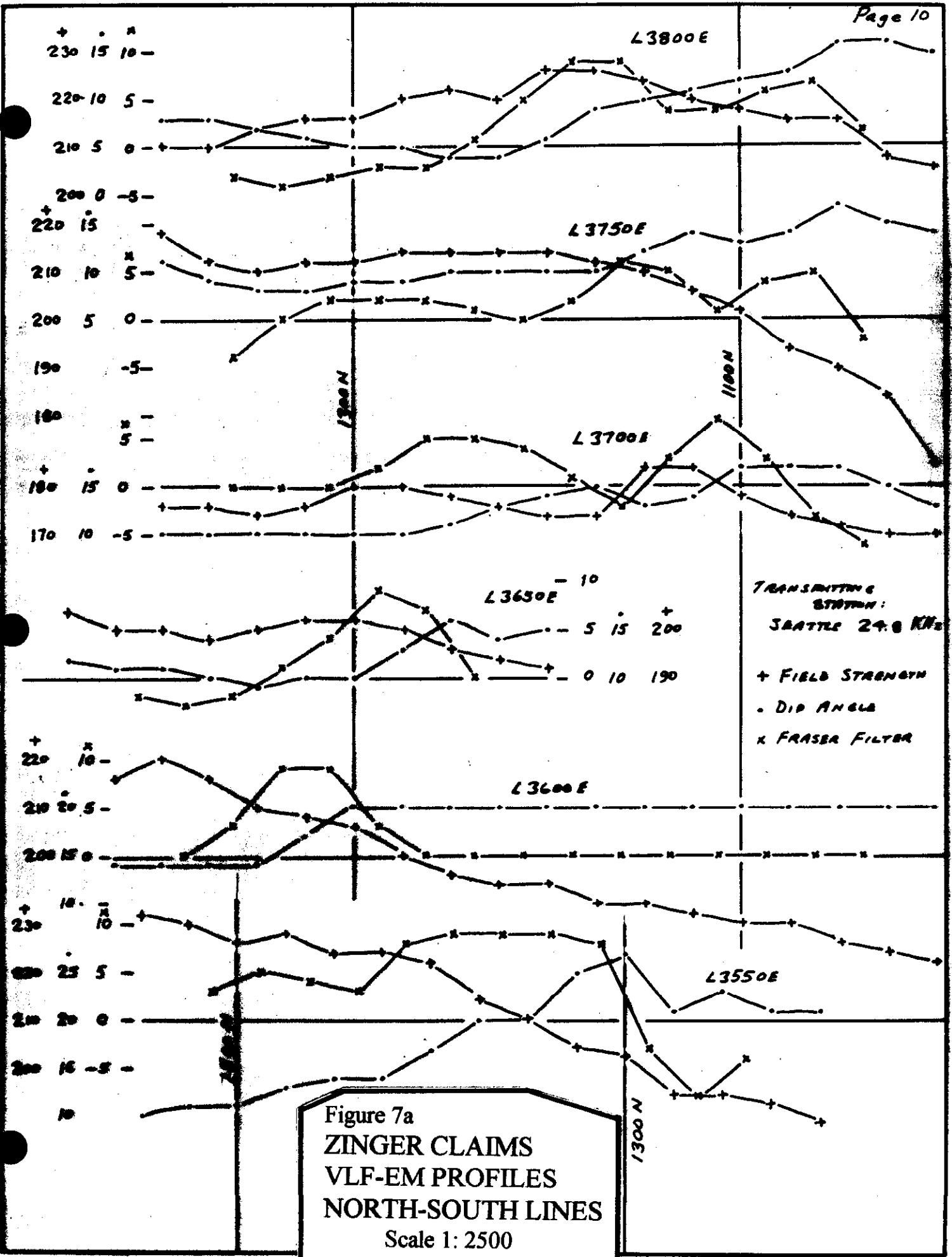
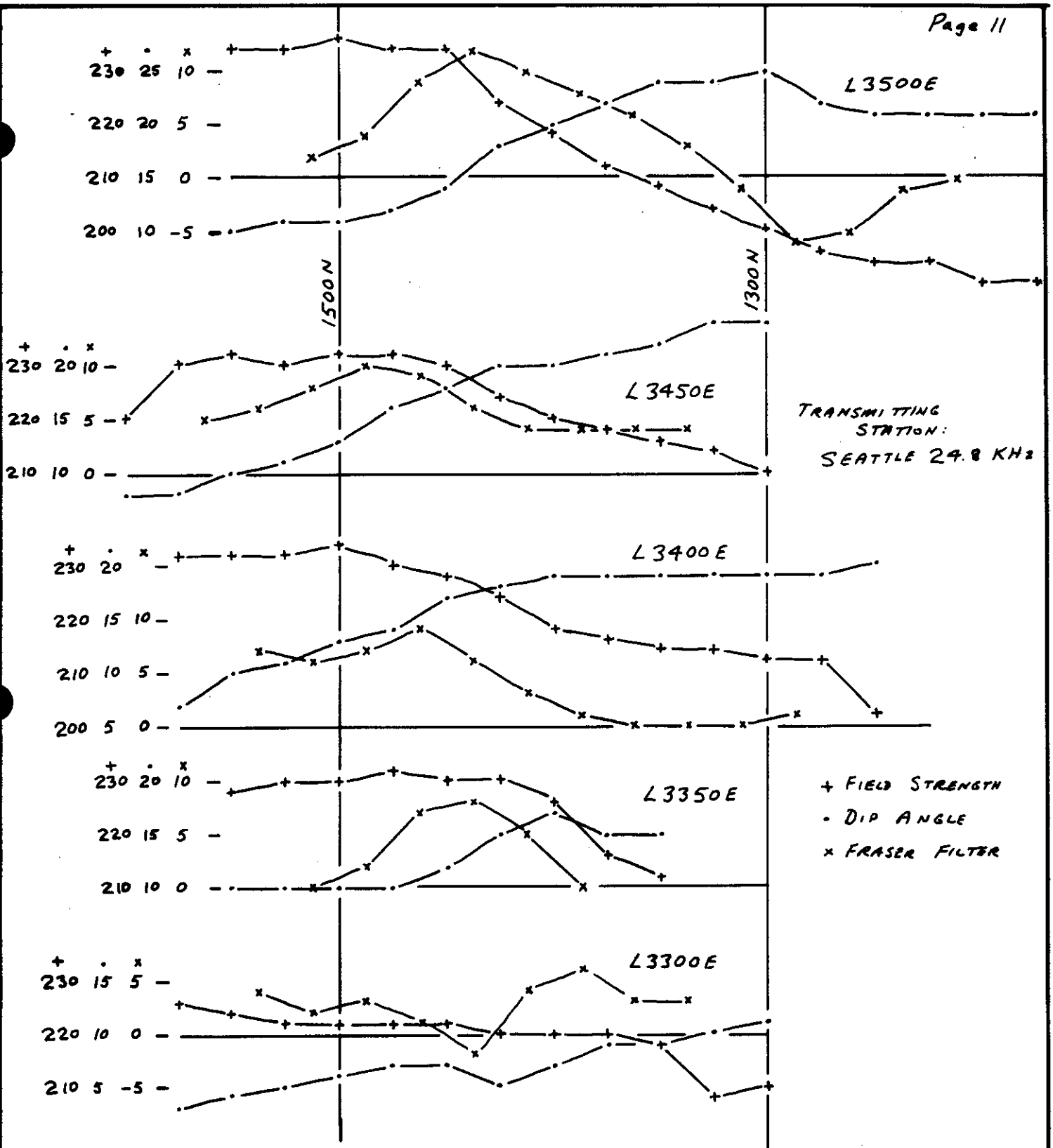


Figure 7a
 ZINGER CLAIMS
 VLF-EM PROFILES
 NORTH-SOUTH LINES
 Scale 1: 2500



TRANSMITTING
STATION:
SEATTLE 24.8 KHz

+ FIELD STRENGTH
• DIP ANGLE
x FRASER FILTER

Figure 7b
ZINGER CLAIMS
VLF-EM PROFILES
NORTH-SOUTH LINES
Scale 1: 2500

200 w

400 w

600 w

800 w

1000 w

1200 w

TRANSMITTING
STATION:
SEATTLE 24.8 KHz

+ FIELD STRENGTH
• DIP ANGLE
x FRASER FILTER

+ 220 20

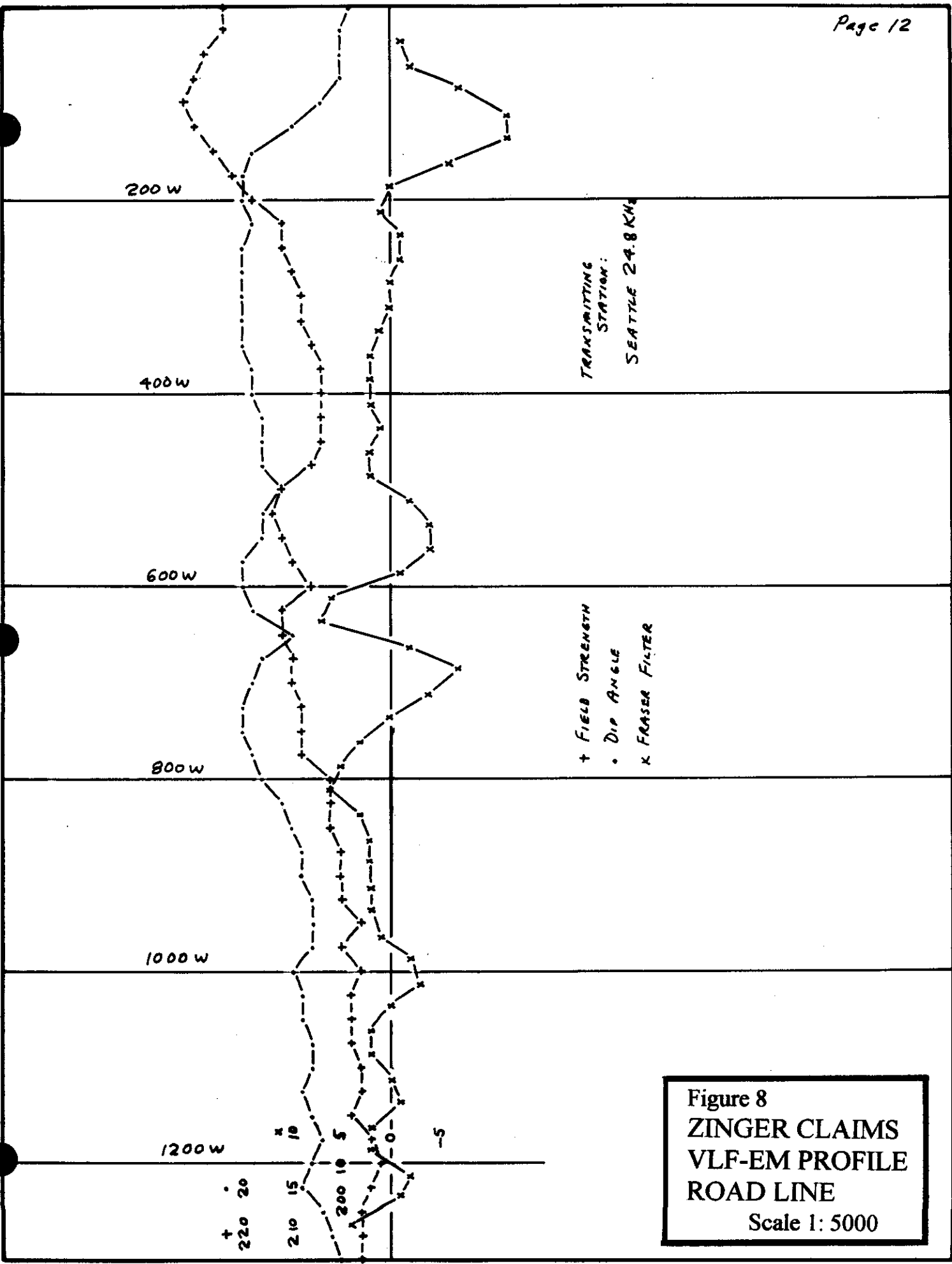
2 10 15 10

200 10 5

-5

Figure 8
ZINGER CLAIMS
VLF-EM PROFILE
ROAD LINE

Scale 1: 5000



In all electromagnetic prospecting, a transmitter produces an alternating magnetic (primary) field by a strong alternating current usually through a coil of wire. If a conductive mass such as a sulfide 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. The VLF-EM receiver measures the resultant field of the primary and secondary fields, and measures this as the tilt or 'dip angle'. The Crone Radem VLF-EM receiver measures both the total field strength and the dip angle.

The VLF-EM uses a frequency range from about 15 to 28 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 detect zones of relatively lower conductivity. This results in it being a useful tool for geologic mapping in areas of overburden but it also often results in detection of weak anomalies that are difficult to explain. However the VLF-EM can also detect sulfide bodies that have too low a conductivity for other EM methods to pick up.

For the survey on the Zinger claims, readings were taken every 25 meters along survey lines spaced 50 meters apart as shown on Figures 4 and 5. Grid lines are oriented north-south in the northeast part of the survey area and east-west in the southwest part. Bedrock geology observed during the survey suggests that favorable anomalies would be oriented either northeast or northwest, parallel to and crossing the regional structural pattern. The two survey line orientations would each cross both inferred favorable structures in a diagonal manner.

Results were reduced by applying the Fraser Filter; dip angle readings and the Fraser Filter values are shown in plan on Figures 4 and 5. Fraser Filter values are plotted between the dip angle readings which are at survey points. The higher Fraser Filter values (5+) are also contoured on these figures. Profiles of the survey lines are plotted on Figures 6, 7 and 8, with Field Strength, Dip Angle and Fraser Filter values shown.

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

3.22 Discussion of Results

Numerous relatively weak anomalous responses were detected by the VLF-EM survey.

The east-west survey lines (Figure 5) show a series of apparent northwest-trending anomalies. Further work could include intermediate lines to confirm the anomaly orientation and additional lines beyond the present survey area to delineate the anomalies.

Field strength (Figure 7) is fairly flat, generally decreasing easterly and downslope. This probably reflects the topography more than an anomalous response. The flat field strength suggests the anomalies detected are fairly weak.

The north-south survey lines (Figure 5) cover a locally persistent northwest-striking anomaly that trends approximately 90° to bedding. This may be a structure that crosscuts bedding and it may have played a role in the deposition of gold mineralization. At the southeast edge of the VLF-EM grid the anomaly widens, possibly reflecting the influence of another structure. Additional work is required to the southeast to resolve the picture. In the northwest part of the grid, it appears that a northeast-trending anomaly intersects the northwest one. This possible structural intersection warrants further definition with additional VLF-EM surveying. Along the north-south survey lines, field strength generally decreases southerly and downhill. Again, this probably reflects the topography rather than a bedrock response. There is generally no obvious increase in field strength with the detected dip angle anomalies, further suggesting that the anomalies are weak.

4.00 CONCLUSIONS

A 6.8 kilometer VLF-EM survey on the Zinger claims in the upper Perry Creek drainage west southwest of Cranbrook, B.C. has identified a series of anomalous responses which may be reflecting bedrock structures. As these anomalies occur in the vicinity of anomalous gold in soil geochemical anomalies, they may be related to the gold mineralizing process. Further work should be conducted, with additional VLF-EM surveying to better define the edges of the known anomalies and detailed geologic mapping to identify a geologic relationship to the anomalies.

5.00 REFERENCES

- Bishop, Stephen, 1987 Geological/Geochemical/Geophysical report on the CND mineral claims, Fort Steele Mining Division, B.C., B.C. Ministry of Mines Assessment Report 16,656.
- Harrison, J.E., 1972 Precambrian Belt Basin of northwestern United States: Its geometry, sedimentation and copper occurrences: Geol. Soc. of America Bull., V. 83, p.1215-1240.
- Hoy, T., 1982 The Purcell Supergroup in southeastern British Columbia: sedimentation, tectonics and stratiform lead-zinc deposits. In : Precambrian sulphide deposits; H.S. Robinson Memorial Volume (R.W Hutchison, C.D. Spence, and J.M. Franklin, Eds.) Geol. Assoc. Can. Special Paper 25.
- Lis, M.G. and Price, R.A., 1976 Large scale block faulting during deposition of the Windermere Supergroup (Hadrynian) in southeastern British Columbia: Geol. Surv. Can. Paper 76-1A, p135-136.

6.00 STATEMENT OF EXPENDITURES

7 man-days, field work, drafting and report @ \$300/day	\$2100.00
4X4 truck 5 days @ \$75/day	375.00
VLF-EM rental 5 days @ \$30/day	150.00
Field, drafting and report supplies	40.00
TOTAL EXPENDITURE	<u>\$2665.00</u>

7.00 AUTHOR'S QUALIFICATIONS

As author of this report I, Peter Klewchuk, certify that:

1. I am an independent consulting geologist with offices at 246 Moyie Street, Kimberley, B.C.
2. I am a graduate geologist with a B.Sc. degree (1969) from the University of British Columbia and an M.Sc. degree (1972) from the University of Calgary.
3. I am a Fellow of the Geological Association of Canada and a member of the Association of Professional Engineers and Geoscientists of British Columbia.
4. I have been actively involved in mining and exploration geology, primarily in the province of British Columbia, for the past 23 years.
5. I have been employed by major mining companies and provincial government geological departments.

Dated at Kimberley, British Columbia, this 15th day of August, 1998.

Peter Klewchuk
P. Geo.