Regional Geologist, Cranbrook | **Date Approved:** 1999.03.15 | **Off Confidential:** 1999.09.24

ASSESSMENT REPORT: 25771 | **Mining Division(s):** Fort Steele

Property Name: Zau

Location:

NAD 27	**Latitude:** 49 27 00	**Longitude:** 116 00 00	**UTM:**	11	5477744	572483
NAD 83	**Latitude:** 49 27 00	**Longitude:** 116 00 04	**UTM:**	11	5477962	572400
NTS:	082F08E 082G05W					

Camp: 001 Purcell Belt (Sullivan)

Claim(s): Zau 1-16

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

Report Year: 1998

No. of Pages: 15 Pages

Commodities Searched For: Gold, Lead, Zinc, Silver

General Work Categories: GEOP

Work Done: [illegible]
EMGR Electromagnetic, ground (11.3 km;VLF)

Keywords: Aldridge Formation, Argillic alteration, Helikian, Quartzites

Statement Nos.: 3124847

MINFILE Nos.:

Related Reports:

ASSESSMENT REPORT

on

VLF-EM GEOPHYSICS

ZAU CLAIMS

Moyie River Area

FORT STEELE MINING DIVISION

NTS 82 F/8E & 82 G/5W

Latitude 49° 27' N
Longitude 116° 00' W

By

PETER KLEWCHUK, P.Geo.

December, 1998

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1.00 INTRODUCTION

This report describes a VLF-EM survey completed on the Zau property in the Moyie River drainage WSW of Cranbrook, B.C. during 1998.

1.10 Location and Access

The Zau claims are located approximately 17 kilometers west-southwest of Cranbrook, B.C. in the Fort Steele Mining Division (Fig. 1). The claim block covers part of the ridge between Noke and Negro Creeks, southeast flowing tributary drainages of the Moyie River. The claims are centered near 49° 27' N Latitude and 116° 00' W Longitude, along the boundary of NTS 82 F/8E and 82 G/5 W (Fig. 2).

Access to the property is via good logging roads up the Moyie River and Noke and Negro Creeks.

1.20 Property

The Zau claims are a contiguous group of 16 two-post claims owned by Tom Kennedy of Kimberley, B.C. (Fig. 2).

1.30 Physiography

The Zau claims occur west of the Rocky Mountain Trench, within the Moyie Range of the Purcell Mountains. They straddle a glacially rounded ridge between Noke and Negro Creeks, southeast flowing tributaries of the Moyie River. Elevations on the property range from 1475 to 1940 meters.

Forest cover consists of a mixture of mainly pine, fir and larch in various stages of maturity. Parts of the claim block have been clear-cut logged.

1.40 History of Previous Exploration

Southeast flowing tributaries of the Moyie River have historically been worked for placer gold. Negro and Noke Creeks which drain the Zau claims both carry placer gold. The search for lode gold sources to the placers has occurred intermittently over many years. Within the past 10 years junior companies such as Chapleau Resources Ltd. and Abitibi Mining Ltd. have conducted small exploration projects near the Zau claims.

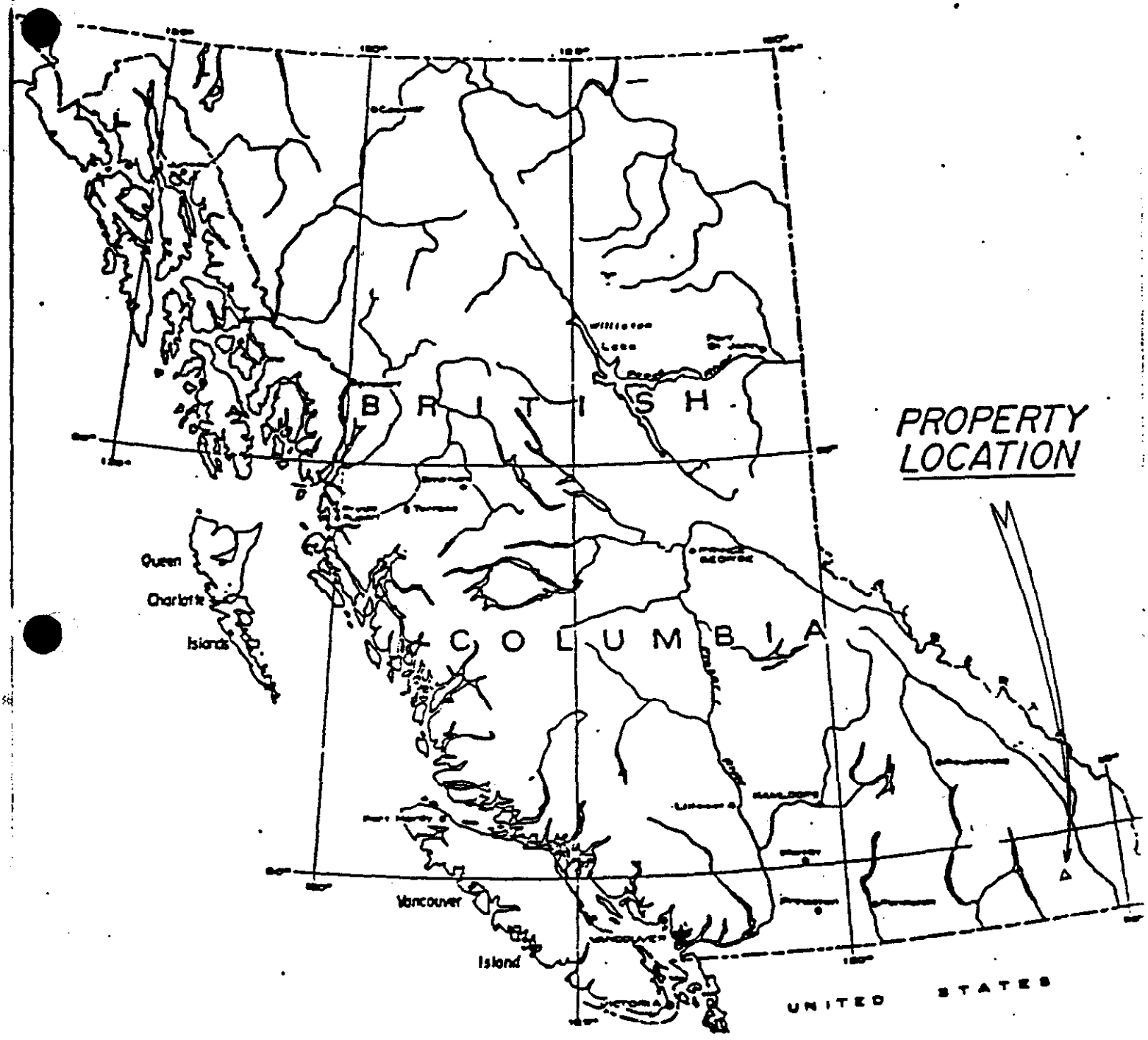
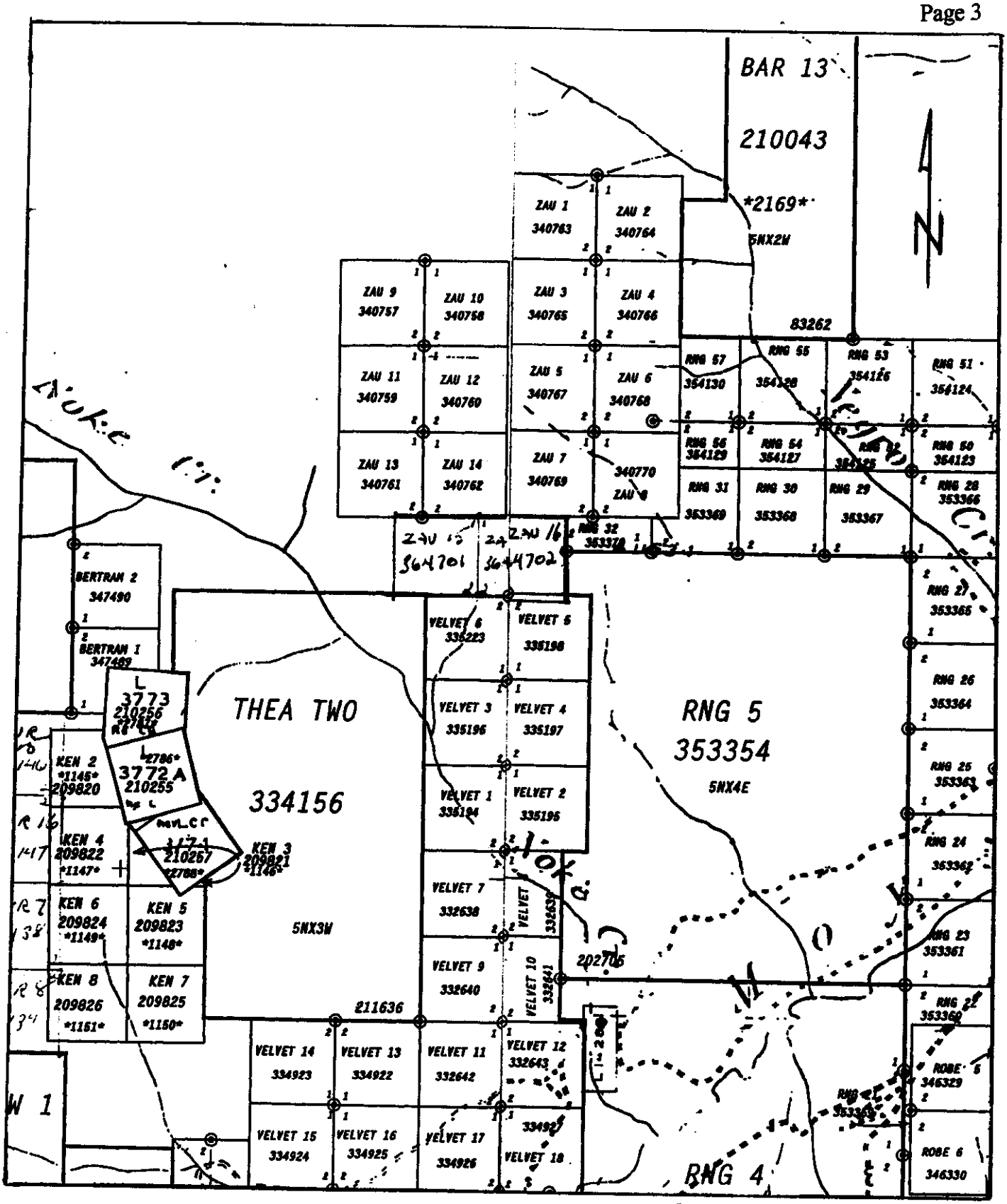


Figure 1
ZAU CLAIMS
PROPERTY LOCATION MAP



1 KM

Figure 2
ZAU PROPERTY
CLAIM MAP
Scale 1: 31,680
NTS 82 F/8 E & G/5 W

1.50 Purpose of Survey

During 1998 a program of VLF-EM geophysical surveying was carried out on parts of the Zau claims to try and identify underlying structures that influenced the deposition of gold.

2.00 GEOLOGY

2.10 Regional Geology

The area of the Zau claims has been recently mapped by Hoy and Diakow (1982): the property 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. Reesor (1958) has divided the Aldridge Formation in the Purcell Mountains into three informal units: rusty weathering siltstone, quartzitic wacke and argillite of the lower Aldridge Formation; grey weathering quartz wacke and siltstone of the middle Aldridge Formation; and laminated argillite of the upper Aldridge Formation.

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 Aldridge Formation has been intruded by a series of gabbroic sills and dikes which are interpreted to be penecontemporaneous with deposition of their host sediments (Hoy, 1989).

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

Mapping by Hoy and Diakow (1982) shows the area of the Zau claims to be underlain mostly by middle Aldridge Formation rocks. The northwest corner of the claims is underlain by upper Aldridge Formation rocks. A major north-striking structure, the McNeil Creek Fault, cuts across

the claim block, sub-parallel to 116° W longitude. In McNeil Creek to the south, this fault offsets middle Aldridge rocks by about 700 m with west side down.

Sedimentary beds on the property generally strike northeasterly and dip moderately to steeply southwest. Gabbro intrusions, probably sills, were noted on Zau 10 and Zau 12 mineral claims. A large argillic and limonitic alteration zone with quartz veining is exposed near the northeast corner of the claim block, along the Negro Creek road.

3.00 GEOPHYSICS

3.10 Introduction

The VLF-EM survey on the Zau claims was conducted largely in a reconnaissance manner. A few of the anomalous responses were partially detailed with adjacent, usually shorter lines. Survey lines were run by compass and are oriented north-south and east-west (Figs. 3a and 3b). A road along the northeast corner of the claim block was also surveyed. Survey lines were measured with a hip-chain with VLF-EM readings taken at 25 meter spacings.

A total of 11.3 kilometers of line was surveyed; Figure 3 shows the location of the survey lines and detailed profiles of the data are provided in Figures 4 and 5. 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.

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

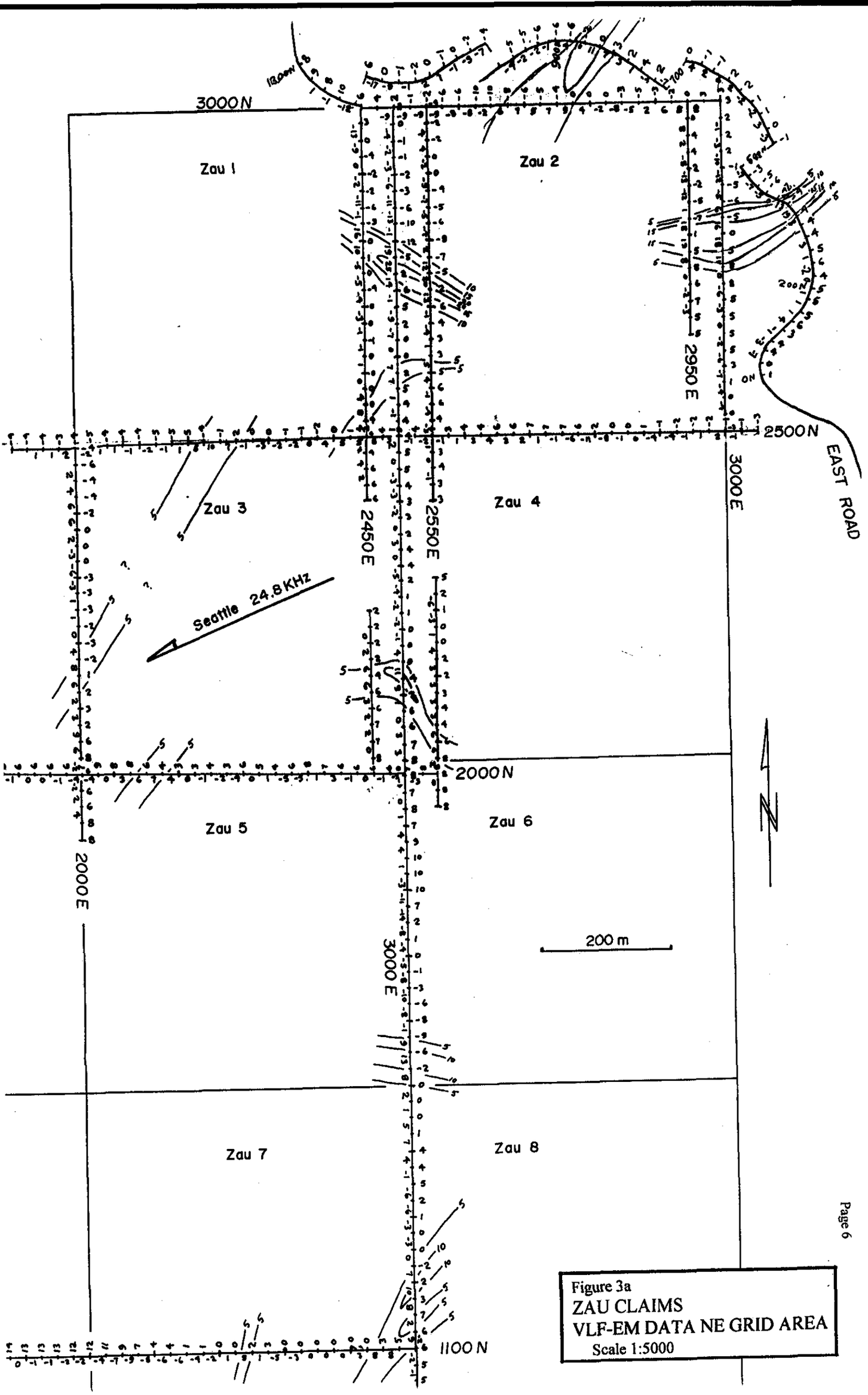


Figure 3a
ZAU CLAIMS
VLF-EM DATA NE GRID AREA
Scale 1:5000

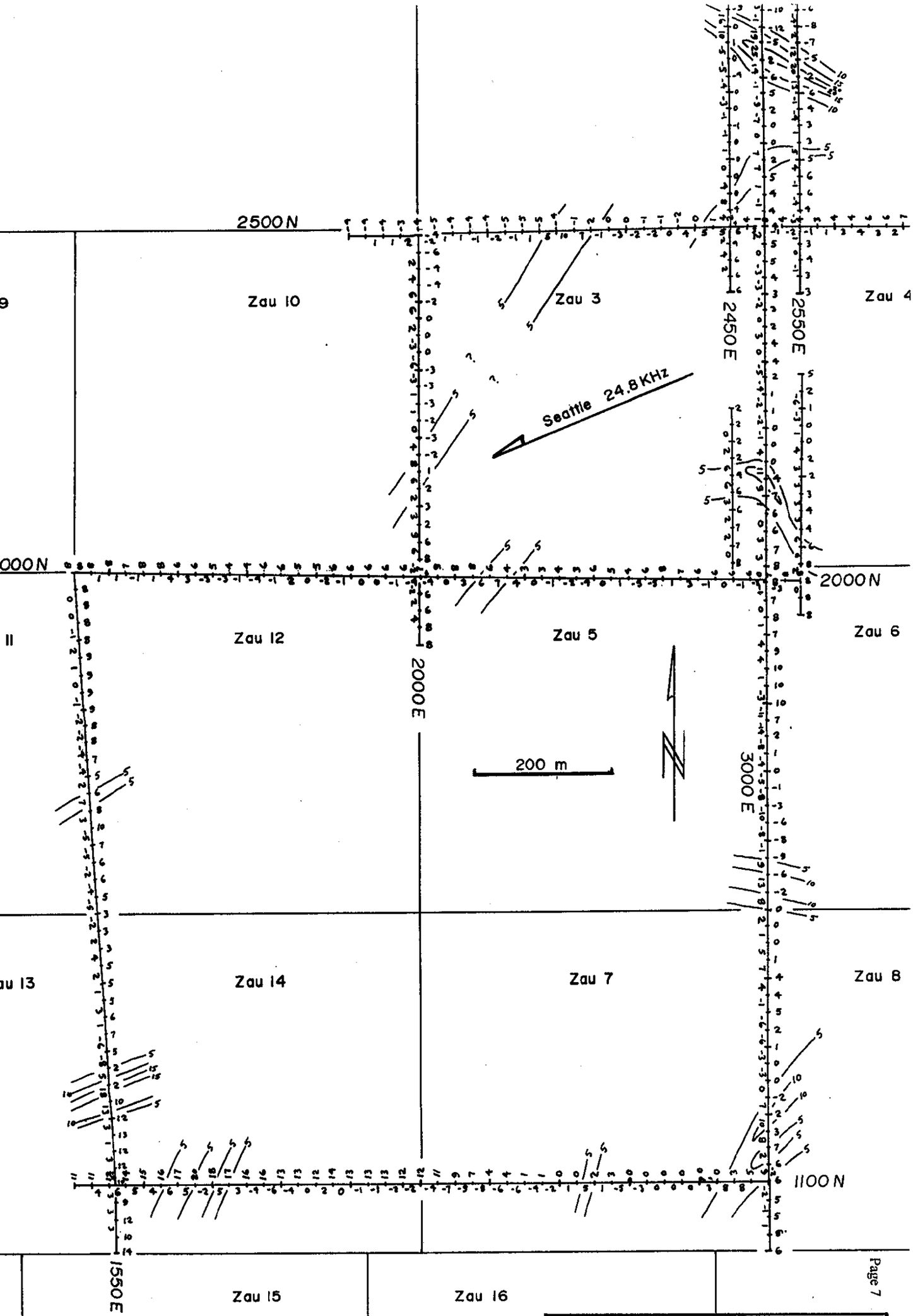


Figure 3b
ZAU CLAIMS
VLF-EM DATA SW GRID AREA
Scale 1:5000

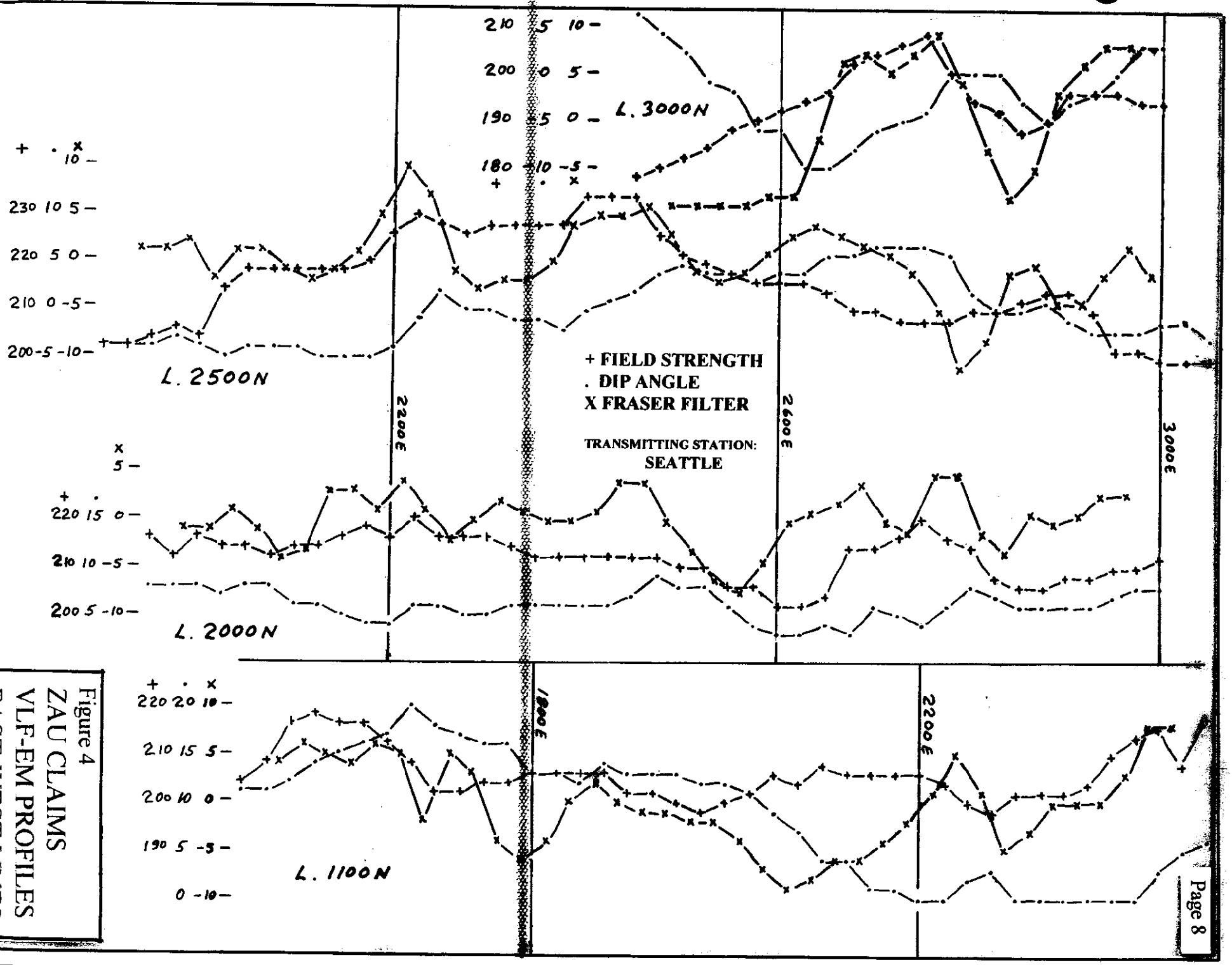


Figure 4
ZAU CLAIMS
VLF-EM PROFILES
EAST-WEST LINES
Scale 1: 5000

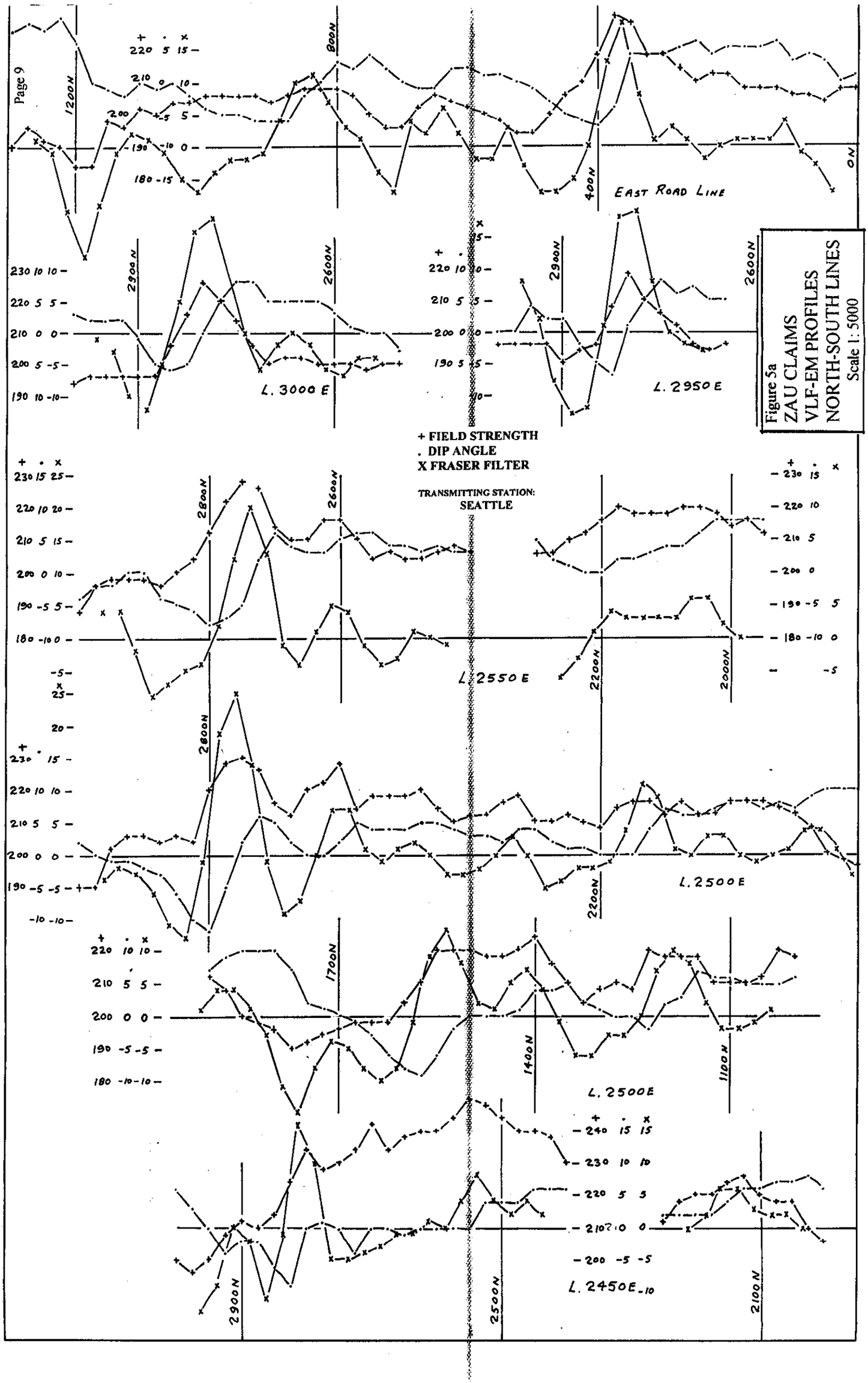


Figure 5a
ZAU CLAIMS
VLF-EM PROFILES
NORTH-SOUTH LINES
Scale 1: 5000

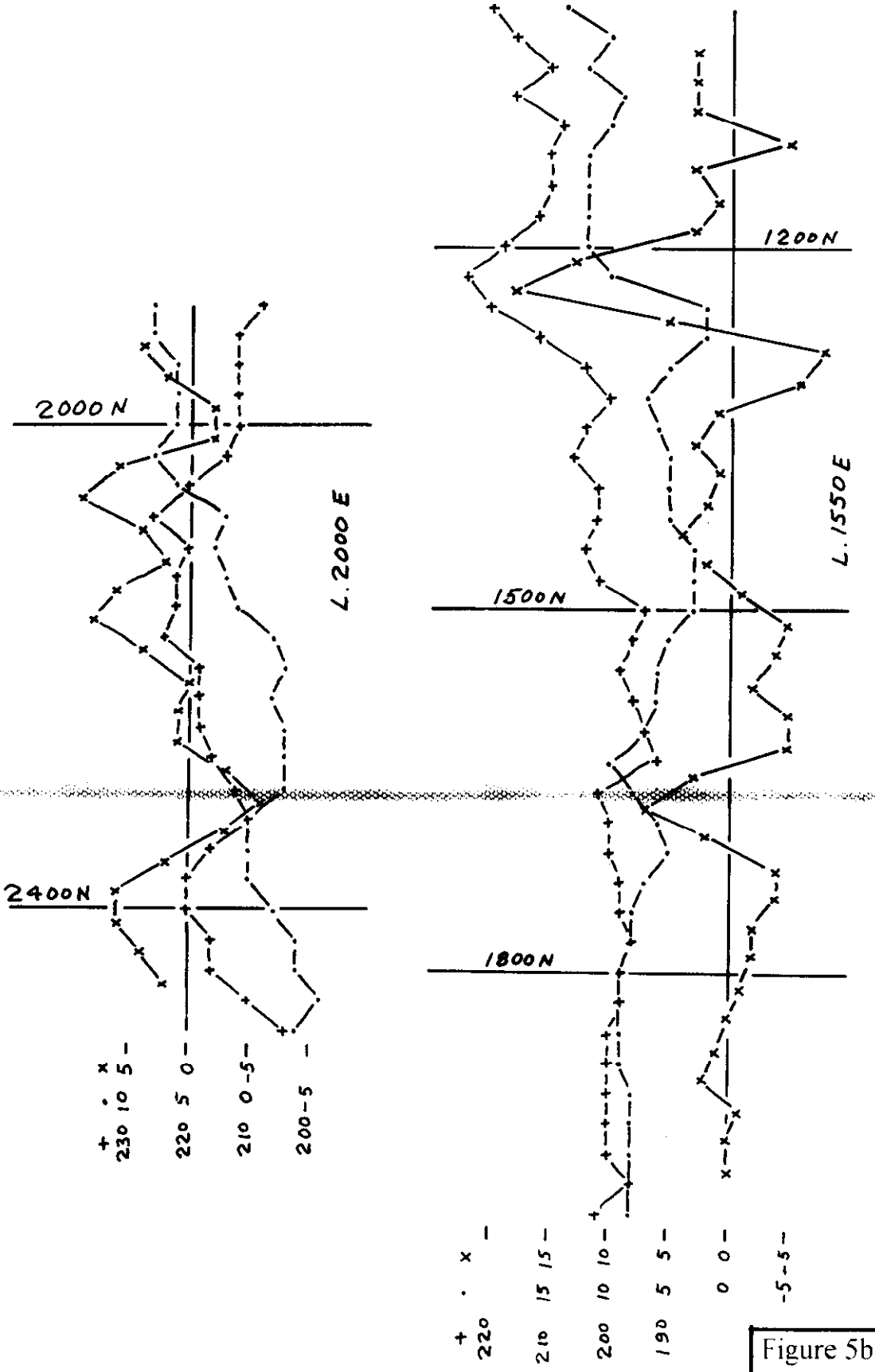


Figure 5b
ZAU CLAIMS
VLF-EM PROFILES
NORTH-SOUTH LINES
Scale 1: 5000

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 Zau claims, readings were taken every 25 meters along survey lines spaced as shown in Figure 3. Grid lines are oriented north-south and east-west.

Results were reduced by applying the Fraser Filter; dip angle readings and the Fraser Filter values are shown in plan in Figure 3. 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 4 and 5, 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 in the unfiltered data quite often shows up in the filtered data.

3.22 Discussion of Results

Numerous anomalous responses were detected by the VLF-EM survey on the Zau claims.

The strongest anomaly was detected near 2500 E and 2800 N. The anomaly occurs across lines 2450 E, 2500 E and 2550 E and is oriented northwesterly (Fig. 3a). This is roughly perpendicular to bedding and may represent a cross-cutting fault structure.

Another fairly distinct anomaly occurs near 3000 E and 2800 N. Its location on lines 3000 E, 2950 E and the East Road indicates an east-west, cross-cutting structure. This anomaly on the East Road is coincident with a strong zone of siliceous, argillic and limonitic alteration and may be related to gold mineralization.

An anomaly at 2500 E, 2650 N does not seem to be present on adjacent lines which were surveyed in an attempt to better define this response.

Other anomalies anomalies that were detected by the reconnaissance VLF-EM survey require additional work to define their orientation and extent.

4.00 CONCLUSIONS & RECOMMENDATIONS

A reconnaissance VLF-EM geophysical survey completed on the Zau claims in 1998 successfully detected a number of anomalous responses. Two of the anomalies appear to represent cross-cutting structures, oriented northwest and east-west. The east-west anomaly, located in the northeast corner of the Zau claims, is coincident with a strong alteration zone and may be related to gold mineralization.

Further VLF-EM surveying should be carried out on the claims to further delineate all the known anomalies. Geologic mapping should be conducted to relate the VLF-EM results to bedrock geology, if possible.

5.00 REFERENCES

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Hoy, T., 1989 — The age, chemistry and tectonic setting of the Middle Proterozoic Moyie Sills, Purcell Supergroup, Southeast British Columbia; Canadian Journal of Earth Sciences, V.26, p. 2305-2317.

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6.00 STATEMENT OF EXPENDITURES

9 man-days, field work, drafting and report @ $300/day	$2700.00
4X4 truck 6 days @ $75/day	450.00
VLF-EM rental 6 days @ $30/day	180.00
Field, drafting and report supplies	114.00
TOTAL EXPENDITURE	$3444.00

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 7th day of December, 1998.

Peter Klewchuk
P. Geo.