

83-#204 - #1161

ESPERANZA EXPLORATIONS LTD.  
LA TEKO RESOURCES LTD.  
Geophysical Report

On An  
Airborne VLF-Electromagnetometer and  
Magnetometer Survey

Til. 1-4 ,Juanita,Wolf,Goat,Halifax,Hail  
Claims  
Slocan Mining Division.

Lat.  $49^{\circ}59'N$  Long.  $117^{\circ}42'W$  NTS. 82F/13;  
82K/4

Authors: E. Trent Pezzot, B.Sc., Geophysicist  
Glen E. White, B.Sc., P.Eng.  
Consulting Geophysicist

Date of Work: November, 1982; March, 1983  
Date of Report: June 10, 1983

**GEOLOGICAL BRANCH  
ASSESSMENT REPORT**

11,161

part 2

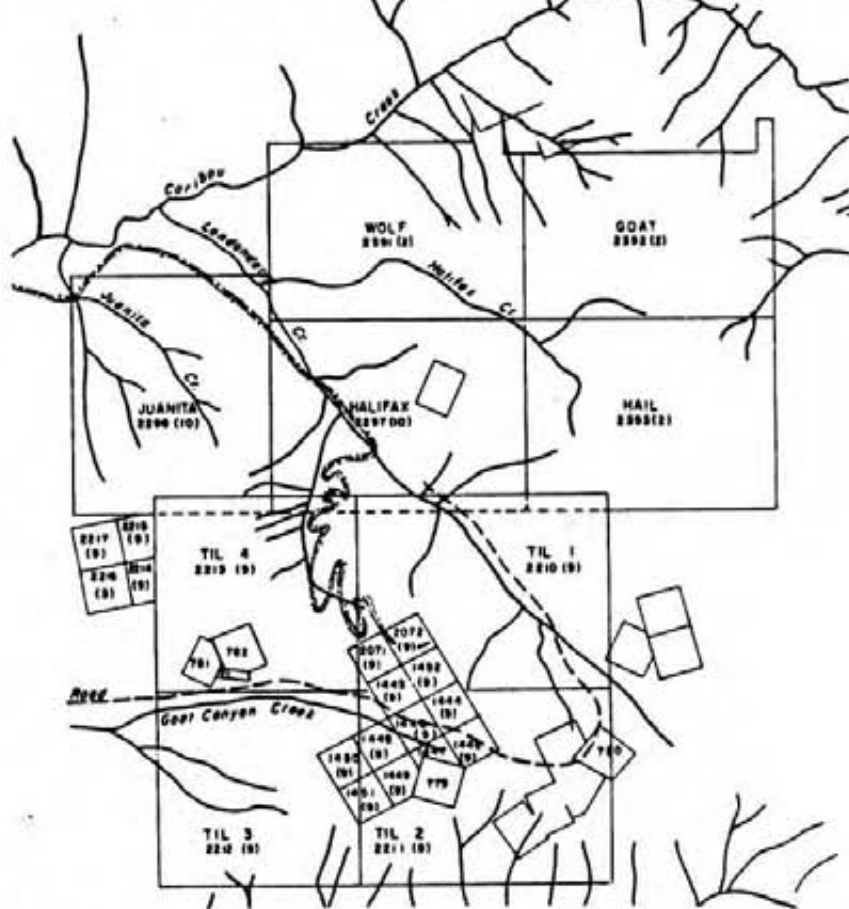
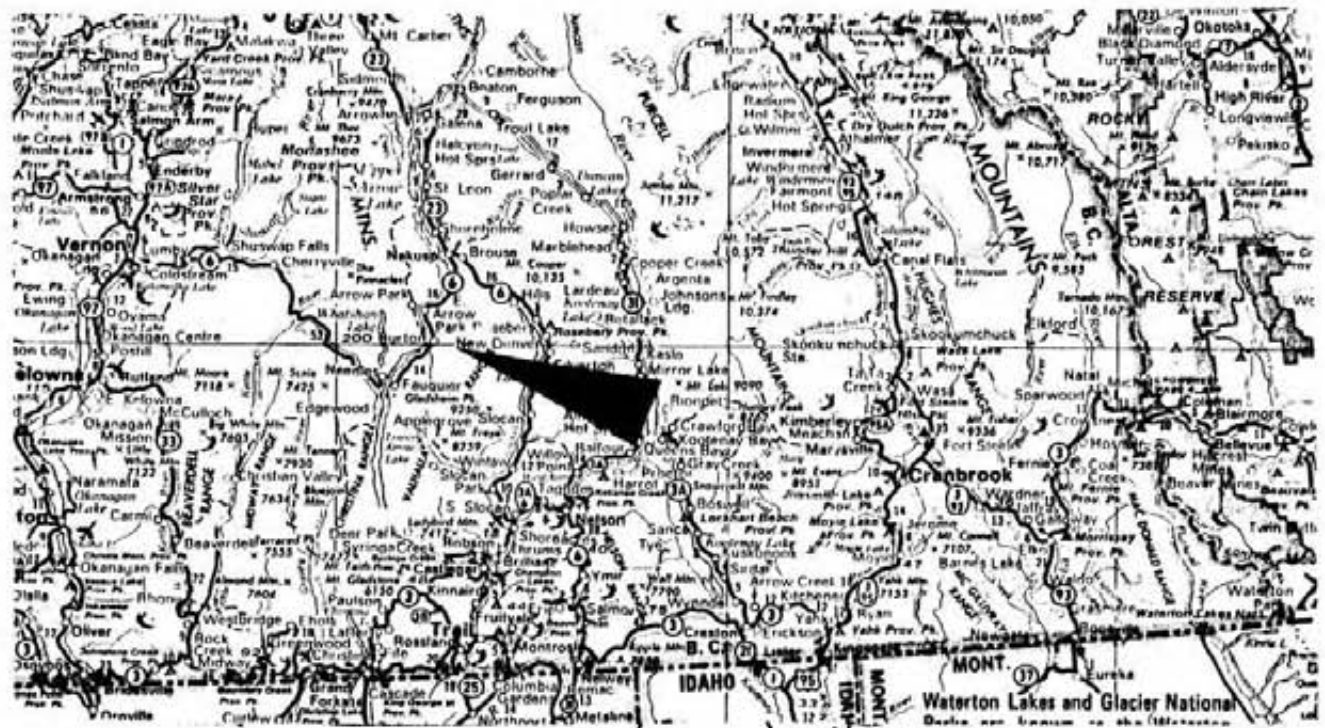
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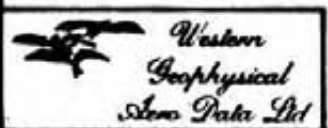
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**LA TEKO RESOURCES LTD ESPERANZA EXPLORATIONS LTD.**  
**TILlicUM MOUNTAIN PROJECT**  
**LOCATION AND CLAIMS MAP**



**FIGURE 1**

## INTRODUCTION

During the month of November, 1982 Western Geophysical Aero Data Ltd. conducted a regional, low level airborne magnetometer and VLF-electromagnetometer survey across the Tillicum Mountain Gold prospect area. The data was digitally recorded on magnetic tape and has been processed to examine in detail the area of the Til 1-4, Juanita, Wolf, Goat, Halifax and Hail claims on behalf of Esperanza Explorations Ltd. and La Teko Resources Ltd.

The purpose of the survey was to delineate any variations in magnetic intensity and near surface conductivity that would assist in the search for gold or massive sulphide mineralization.

Subsequently, on March 16, 1983, the area of known mineralization on Tillicum Mountain was surveyed in detail to determine if any direct correlation between magnetic or VLF-EM data and gold mineralization could be established.

## PROPERTY

The property consists of the claims listed below and illustrated on Figure 1.

<u>Claim Name</u>	<u>Record No.</u>	<u>Units</u>
Til 1	2210	20
Til 2	2211	20
Til 3	2212	16
Til 4	2213	16
Wolf	2391	20
Goat	2392	20
Hail	2393	20
Halifax	2297	20
Juanita	2298	<u>20</u>
		172 units

As illustrated on Figure 1, some amount of over staking has occurred which reduces slightly the total number of units held.

#### LOCATION AND ACCESS

The property is located approximately 30 km southeast of Nakusp, B.C. and 10 km east of Burton, B.C. within the Slocan Mining Division and NTS. map sheets 82F/13 & 82K/4. Approximate geographical co-ordinates are latitude  $49^{\circ}59'N$  and longitude  $117^{\circ}42'W$ .

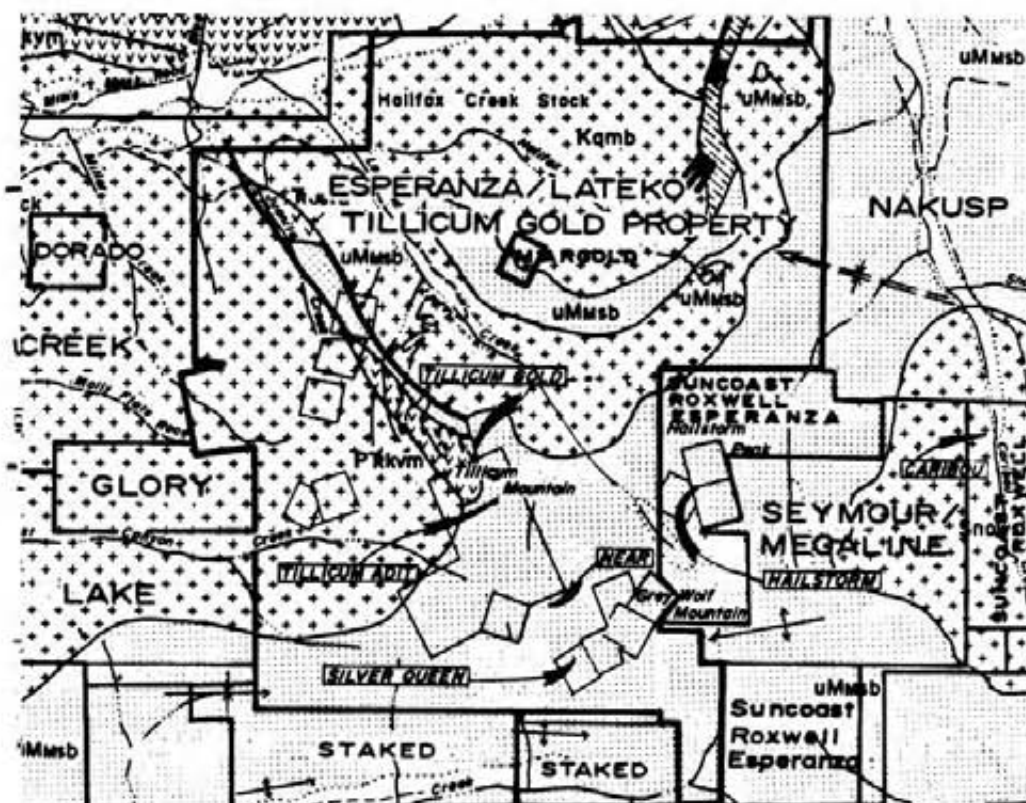
Access to the property is available via a series of logging roads which branch off the Caribou Creek road out of Burton. Bulldozer work in 1981 and 1982 has extended vehicle access across the north slope of Tillicum Mountain to the various mineralized zones.

#### LOCAL GEOLOGY

Tillicum Mountain is underlain by a section of pelitic schists and calc-silicate clastic and volcanoclastic rocks which have been assigned to the Milford Group (Hyndman, G.S.C. Bull. 161, 1968), Upper Palaeozoic to Triassic in age. This belt trends northwesterly and lies between the Slocan syncline to the north and the Valhalla dome to the south.

Adjoining Tillicum Mountain to the north and west are intrusive rocks assigned to the Goat Canyon and Halifax Creek Stocks of Cretaceous age. Plate 1, included in this report, illustrates the local geology as reported by the Geological Survey of Canada.

A comprehensive review of the geology of Tillicum Mountain is available in a report titled "The Tillicum Mountain Gold Prospect", An Exploration Case History, by John S. Brock and John S. Vincent dated March, 1983. The reader is referred to this publication.



**QUATERNARY**

**PLEISTOCENE AND RECENT**

Qa1 Alluvial deposits, terraces

**TERTIARY (EOCENE)**

**NEWS LAKE STOCKS**

T3 News Lake stocks

**CRETACEOUS AND/OR JURASSIC**

**LOWER CARIBOU CREEK PLUTON**

K1 Lower Caribou Creek pluton, quartz diorite and granite, locally gabbro

**BOATCANYON-HILFIA CREEK AND WRASSE CREEK STOCK**

K2 Boatcanyon-Hilfia Creek and Wrasse Creek stocks, quartz diorite and granite

**SNOWLISE-WRASSE CREEK STOCKS**

K3 Snowlise-Wrasse Creek stocks, quartz diorite and granite

**SOUTH WRASSE CREEK STOCK**

K4 South Wrasse Creek stock, quartz diorite and granite

**JURASSIC AND/OR CRETACEOUS**

**RUBY RANGE STOCK**

J1 Ruby Range stock, quartz diorite and granite, locally gabbro

**MEADOW MOUNTAIN AND EAST CARIBOU STOCKS**

J2 Meadow Mountain and East Caribou stocks, quartz diorite and granite

**JURASSIC**

**KUSKANAW BATHOLITH AND STOCKS (J1)**

**ALLENHOUSE PEAK STOCK**

J3 Allenhouse Peak stock, quartz diorite and granite, locally gabbro

**BOY MOUNTAIN STOCK**

J4 Boy Mountain stock, quartz diorite and granite

**LOWER JURASSIC**

**ROSELAND GROUP**

J5 Roseland group, quartz diorite and granite, locally gabbro

J6 Roseland group, quartz diorite and granite

**TRIASSIC TO LOWER JURASSIC**

**ELOCAN GROUP**

J7 Elocan group, quartz diorite and granite, locally gabbro

J8 Elocan group, quartz diorite and granite

**PERMIAN AND/OR TRIASSIC**

**KARLO GROUP**

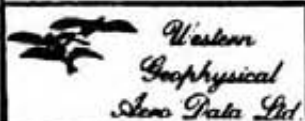
J9 Karlo group, quartz diorite and granite, locally gabbro

**UPPER MISSISSIPPIAN TO PENNSYLVANIAN OR PERMIAN**

**WILFORD GROUP**

J10 Wilford group, quartz diorite and granite, locally gabbro

SOURCE: BRITISH COLUMBIA MINISTRY OF ENERGY



**GENERAL GEOLOGY**

### PREVIOUS WORK

The following excerpt is from the above mentioned report and details all the work known by the authors to date.

"Prospecting activity on Tillicum Mountain in the early part of the century was directed towards locating the source of high-grade silver-bearing float. Tungsten occurrences were found at the south end of the property, and a gold-bearing quartz vein was discovered 150 metres east of the new discovery in the Heino-Money Pit Zone. A short adit was driven on the quartz vein but results were disappointing.

The claims which became the core of the present Tillicum property were staked in the fall of 1979 by Arnie and Elaine Gustafson of Burton. They began prospecting as a result of taking the Prospector's course which is given by the Provincial Ministry of Energy, Mines, and Petroleum Resources. Mr. George Addie, P.Eng., the District Geologist in Nelson taught the course and provided the necessary advice and encouragement as the Gustafsons began prospecting.

Welcome North Mines Ltd., in joint venture with Esperanza Explorations Ltd., examined the prospect in the fall of 1980 and immediately optioned the property. Several major companies had shown interest, but Welcome North and Esperanza were able to act decisively. Its' acquisition by junior resource companies demonstrates the continuing effectiveness of that sector of the mining community. Welcome North's interest has been sold to Esperanza Explorations who entered into a financing agreement with La Teko Resources Ltd. in 1982.

Comprehensive surface exploration has been carried out by Esperanza personnel in a well organized manner with a total of \$741,000 being spent over the 1980, 1981 and 1982 field seasons. Continued prospecting, geological mapping, soil sampling, magnetometer surveying and trenching has resulted in the discovery of widespread gold-silver mineralization, as well as the delineation of a significant zone of high-grade gold. An airborne magnetometer and VLF-EM survey was carried out over the property as part of a regional survey. Prospecting during the 1982 season located massive sulphide mineralization carrying gold values in two widely separated areas on the property which will require follow-up in 1983.

A total of 1139 metres (3736 feet) of NQ diamond drilling was completed in 25 holes during the period September 21- October 23, 1982."





AIRBORNE VLF-ELECTROMAGNETIC AND MAGNETIC SURVEY

This survey system simultaneously monitors and records the output signal from a proton precession magnetometer and two VLF-EM receivers installed in a bird designed to be towed 100 feet below a helicopter. A gimbal and shock mounted TV camera, fixed to the helicopter skid, provides input signal to a video cassette recorder allowing for accurate flight path recovery by correlation between the flight path cassette and air photographs of the survey area. A KING KRA-10A radar altimeter allows the pilot to continually monitor and control terrain clearance along any flight path.

Continuous measurements of the earth's total magnetic field intensity and of the total horizontal VLF-EM field strength of two transmission frequencies are stored in three independent modes: an analogue strip chart recorder, digital magnetic tapes and a digital video recovery system. A three-pen analogue power recorder provides direct, unfiltered recordings of the three geophysical instrument output signals. A Hewlett-Packard 9875 tape drive system digitally records all information as it is processed through an on-board micro-computer. The magnetic and electromagnetic data is also processed through the onboard micro-computer, incorporating an analogue to digital converter and a character generator, then superimposed along with the date, real time and terrain clearance upon the actual flight path video recording to allow exact correlation between geophysical data and ground location. The continuous input magnetic signal is processed at the maximum A/D converter rate, averaged and updated on the video display every second. Correlation between the strip chart, digital tape and the video flight path recovery tape is controlled via fiducial marks common to all systems. Line identification, flight direction and pertinent survey information are recorded on the audio track of the video recording tape.



## DATA PROCESSING

Field data is digitally recorded on magnetic cassettes in a format compatible with the Hewlett-Packard 9845 computer. The flight path locations are digitized, thus the information can be processed as either time series or space point data.

Total field intensity magnetic information is routinely edited for noise spikes and corrected for any diurnal variations recorded on a base magnetometer located in the survey area.

Total field intensity VLF-EM signals are sensitive to topographic changes and receiver oscillation. Oscillation effects can be removed by filters tuned to the dominant period. Long period terrain effects can be removed by subtracting a polynomial fitted base level from the data. The degree of the polynomial can be selected to best represent terrain variations observed in the survey area.

Short period terrain effects often have similar response parameters to target conductive features. An interpretational technique often useful in distinguishing between terrain anomalies and conductor anomalies is to observe the difference between the responses from two transmitter stations. Terrain variations normally affect both data sets to a similar degree and are much reduced on a difference plot. The amplitude of the response due to a conductive body is dependent upon the relationship between the conductors' strike and direction to the transmitter station. In most instances the anomalous responses will vary between frequencies and therefore remain evident on the difference plot.

## DISCUSSION OF RESULTS

Approximately 225 km of flight line data from the regional survey was reviewed to evaluate the Esperanza-La Teko properties covered in this report. Magnetic data is presented in contour form as Figure 2 and VLF-EM data as Figures 3-5. An additional 25 km of survey was flown with low terrain clearance and 100 metre line spacing to detail the magnetic and VLF-electromagnetic responses in the area of known mineralization on Tillicum Mountain. Magnetic data is presented as Figure 6 and VLF-electromagnetic data as Figures 7 to 9.

The detailing survey delineates magnetic highs associated with topographic peaks and ridges on Tillicum Mountain. The area of the Heino-Money Pit zone lies along a narrow finger of high magnetic values which is cut by a west-northwesterly trending magnetic low. This low intensity zone is part of a regional trend which extends across the property. A magnetic high similar to the one associated with the Heino-Money Pit is observed to the north of the magnetic low and is most prominent on lines 8 through 10 inclusive (Figure 6). In the area of the Heino zone, mineralization is described as occurring along a contact between greenstones & argillites. No discrete magnetic low is observed to correlate with the argillite zone. This is an indication that the argillite sequence may be relatively thin and underlain by greenstones.

The area on west end of line 10 (Figure 6) shows a weak closed magnetic high which is not directly associated with a topographic high. This response occurs on the north side of the regional magnetic low trend.



The detailing VLF-EM data is presented in profile form as Figure 7,8 and 9. No definitive responses were observed to cross the grid which could be interpreted as reflections of regional structures or lithological contacts. A number of localized anomalies were observed which are reflecting discreet, small conductivity increases. No such response is associated with the Heino-Money Pit zone but based on the reported mineral concentrations, none was expected. Localized VLF-EM anomalies are posted on the interpretation map (Figure 6).

That portion of the regional airborne survey data which pertains to the Esperanza and La Teko properties is presented as Figures 2-5 of this report. Local geology, as described by the Geological Survey of Canada, is illustrated on Plate 1. The Snowslide Creek Stock, East Caribou Stock, and Lower Caribou Creek Stock are well represented as magnetic highs (greater than 58,000 gammas). It is unclear where the G.S.C. defines the borders of the Goat Canyon Stock but at least part of it is associated with the same high intensity magnetic values. The Halifax Creek Stock is mapped as underlying the major portion of the Wolf, Goat, Halifax and Hail Claims. The magnetic intensity in this area (57,800 to 57,900 gammas) is lower than expected and more similiar to the response observed across the metasediments in other areas. The Juanita claim, and the area immediately west and north respond with even lower magnetic values (less than 57,800 gammas).

The southeast portion of the claims area is mapped as metasediments of the Milford Group. Magnetic values are slightly higher than observed elsewhere over similiar rocks. This could indicate either a different facies of the sedimentary sequence or that it is relatively thin and underlain by higher magnetically susceptible intrusive rocks. Isolated high magnetic values observed on Tillicum Mountain and the east-west trending ridge along the southern property boundary may reflect areas where underlying

intrusives approach the surface through windows in the sedimentary sequence.

Two major magnetic lineaments are observed to cross this property. An abrupt gradient extends eastward from a geophysically mapped extension to the Rod Creek Fault. This zone runs on to the property along the southern border of the Juanita claim. A second lineament extends northwest from the area of the Snowslide Creek Stock, across Tillicum Mountain and intersects the east-west lineament near the legal corner post of the Juanita claim. These two linears are most likely reflections of major faults.

VLF-EM profiles are presented as Figures 3,4 and 5. The extremely strong responses observed on lines 66B and 68 were generated by interruptions in the transmission signal from the Annapolis station and not valid conductivity anomalies.

Weak, high spatial frequency responses are noted on the Annapolis frequency data along lines 73 to 75 coincident with the strong magnetic gradient described above. These reflect conductivity increases probably paralleling the survey lines in the area. Similar responses parallel the east-west trending ridge which follows the southern claim boundary. These responses are present to a lesser degree on the Seattle frequency data as well.

VLF-EM field strength increases are associated with the topographic ridge which runs northerly across the Goat and Hail claims and also along the ridge which runs to the east of and parallel to Juanita Creek. These are areas where the G.S.C. indicates metasedimentary rocks at the surface. The general VLF-EM trends observed are likely caused by a combination of topographic effects and an increased conductivity of the sedimentary rocks compared to the surrounding intrusives. There are however, higher frequency conductivity anomalies present along the general trends which could be reflecting increased conductivity due to sulphide type mineralization.

Isolated anomalies, both along these trends and elsewhere are delineated on Figure 2 of this report.

#### SUMMARY AND CONCLUSIONS

In November, 1982 Western Geophysical Aero Data Ltd. conducted a regional airborne magnetometer and VLF-electromagnetometer survey in the Tillicum Mountain Gold Prospect area. A portion of the survey was reviewed to evaluate the area of the Wolf, Goat, Hail, Halifax, Juanita and Til 1 to Til 4 claims on behalf of Esperanza Explorations Ltd. and La Teko Resources Ltd. In March, 1983 a second airborne survey was undertaken at the request of these companies to detail the geophysical responses across the areas of gold mineralization on Tillicum Mountain.

The major portion of the property is reported by the G.S.C. to be underlain by Cretaceous stocks. No further subdivision has been cited, however, the magnetic field intensity data clearly delineates three levels of magnetic susceptibility within these stocks. This suggests that the Cretaceous stocks can be subdivided into different facies based on the concentration of high magnetic susceptibility minerals. No distinctive magnetic response delineates the areas of metasedimentary outcrop mapped within these stocks. There is however, a conductivity increase associated with these sequences which is detected in the VLF-EM data.

In the vicinity of Tillicum Mountain, the G.S.C. maps indicate the presence of Milford Group metasediments. The magnetic intensity in this area is slightly higher than observed elsewhere across this group. This could be indicating either a different rock facies or the presence of intrusive units beneath the metasedimentary sequence.

A prominent magnetic gradient extends east from the Rod Creek Fault on to the property. A second magnetic lineament strikes northwest-southeast across Tillicum Mountain and intersects the first lineament in the vicinity of the legal corner post of the Juanita claim. These trends are interpreted as major faults and the coincidence of the northern termination of the Heino-Money Pit zone on Tillicum Mountain with the interpreted fault suggests they may in some way control mineralization. It will first be necessary to determine whether these faults pre-date or post-date the mineralization to understand the relationship.

A magnetic high in the southeast corner of the Hail claim and another along the northern border of the Wolf claim are interpreted as reflections of high magnetic susceptibility intrusives within the metasedimentary sequences. The east-west trend of localized magnetic highs along the southern border of the Til 2 and Til 3 claims are likely caused by the same type of geology.

The detailing survey across the gold bearing zones on Tillicum Mountain was conducted to determine whether the airborne survey could directly map the mineralization. No anomalies were observed which could be attributed directly to the mineralization in the Heino-Money zone however, definite magnetic and VLF-electromagnetic trends were noted in the area. These responses must be compared to a detailed geological map to determine their effectiveness as a mapping tool.



### RECOMMENDATIONS

Due to the reconnaissance nature of the airborne survey and the questions raised concerning its' correlation with the reported geology, the following recommendations are directed towards the geologists familiar with this play. The magnetic and VLF-electromagnetic maps produced by the detailing survey should be compared with the geological maps based on the drilling and trenching results of the past season. A number of magnetic and conductivity features were observed in the data which should be qualified by geological mapping. This comparison may provide anomalies for priority ground investigation in the vicinity of known mineralization.

On a more regional basis, the following questions have been raised which warrant geological input:

- What facies changes cause the three levels of magnetic intensities observed in the Cretaceous stocks?
- Do the two major magnetic gradients observed represent regional faulting and if so what is their relationship to observed mineralization?
- What geological facies, unit or contact is causing the high frequency VLF-EM anomalies associated with the windows of metasedimentary rocks in the Halifax Creek Stock?

A number of smaller magnetic and conductivity anomalies are also present in this data set as illustrated on the accompanying maps. These anomalies all warrant ground investigation, however, the priorities assigned will likely depend on the conclusions drawn from the comparison between the detail airborne survey and Tillicum Mountain mineralization.



Depending on the overburden conditions, many of these airborne anomalies may require reconnaissance ground magnetometer or VLF-electromagnetometer lines to pinpoint the anomalous areas.

Respectfully submitted



E. Trent Pezzot, B.Sc., Geophysicist



Glen E. White, B.Sc., P.Eng.  
Consulting Geophysicist

INSTRUMENT SPECIFICATIONSBARRINGER AIRBORNE MAGNETOMETER

**MODEL:** Nimbin M-123  
**TYPE:** Proton Precession  
**RANGE:** 20,000 to 100,000 gammas  
**ACCURACY:**  $\pm 1$  gamma at 24 V d.c.  
**SENSITIVITY:** 1 gamma throughout range  
**CYCLE RATES:**  
     Continuous 0.6, 0.8, 1.2 and 1.9 seconds  
     Automatic 2 seconds to 99 minutes in 1 second steps  
     Manual Pushbutton single cycling at 1.9 seconds  
     External Actuated by a 2.5 to 12 volt pulse longer than 1 millisecond.

**OUTPUTS:**  
     Analogue 0 to 99 gammas or 0 to 990 gammas  
             - automatic stepping  
     Visual 5 digit numeric display directly in gammas

**EXTERNAL OUTPUTS:**  
     Analogue 2 channels, 0 to 99 gammas or 0 to 990 gammas at 1 m.a. or 1 volt full scale deflection.  
     Digital BCD 1, 2, 4, 8 code, TTL compatible.

**SIZE:** Instrument set in console  
           30 cm X 10 cm X 25 cm

**WEIGHT:** 3.5 Kg

**POWER REQUIREMENTS:** 12 to 30 volts dc, 60 to 200 milliamps maximum.

**DETECTOR:** Noise cancelling torroidal coil installed in airfoil.

Instrument SpecificationsSABRE AIRBORNE VLF SYSTEM

- Source of Primary Field: VLF radio stations in the frequency range of  $14 \text{ KH}_z$  to  $30 \text{ KH}_z$ .
- Type of Measurement: - Horizontal field strength
- Number of Channels: - Two; Seattle, Washington at  $18.6 \text{ KH}_z$   
- Annapolis, Maryland at  $21.4 \text{ KH}_z$
- Type of Sensor: - Two ferrite antennae arrays, one for each channel, mounted in magnetometer bird.
- Output: - 0 - 100 mV displayed on two analogue meters (one for each channel)  
- recorder output posts mounted on rear of instrument panel
- Power Supply: - Eight alkaline 'AA' cells in main instrument case (life 100 hours)  
- Two 9-volt alkaline transistor batteries in bird (life 300 hours)
- Instrument Console: - Dimensions - 30 cm x 10 cm x 25 cm  
- Weight - 3.5 Kg.

INSTRUMENT SPECIFICATIONSFLIGHT PATH RECOVERY SYSTEMi) T.V. Camera

Model: RCA TC2055 Vidicon  
Power Supply: 12 volt dc  
Lens: variable, selected on basis of expected terrain clearance  
Mounting: Gimbal and shock mounted to housing  
- housing bolted to helicopter skid

ii) Video Recorder

Model: Sony SLO - 340  
Power Supply: 12 volt dc / 120 volt AC (60Hz)  
Tape: Betamax  $\frac{1}{2}$ " video cassette - optional length  
Dimensions: 30 cm X 13 cm X 35 cm  
Weight: 8.8 Kg  
Audio Input: Microphone in - 60 db low impedance microphone  
Video Input: 1.0 volt P-P, 75 $\Omega$  unbalanced, sync negative from camera

iii) Altimeter

Model: KING KRA-10A Radar Altimeter  
Power Supply: 27.5 volts dc  
Output: 0-25 volt (1 volt /1000 feet) dc signal to analogue meter, 0-10 v (4mv/ft) analogue signal to microprocessor  
Mounting: fixed to T.V. camera housing, attached to helicopter skid

INSTRUMENT SPECIFICATIONSDATA RECORDING SYSTEMi) Chart Recorder

Type: Esterline Angus Miniservo III Bench AC Ammeter -  
Voltmeter Power Recorder

Model: MS 413 B

Specification: S-22719, 3-pen servo recorder

Amplifiers: Three independent isolated DC amplifiers  
(1 per channel) providing range of accept-  
able input signals

Chart: 10 cm calibrated width 2-fold chart

Chart Drive: Multispeed stepper motor chart drive,  
Type D850, with speeds of 2, 5, 10, 15,  
30 and 60 cm/hr. and cm/min.

Controls: Separate front mounted slide switches for  
power on-off, chart drive on-off, chart  
speed cm/hr - cm/min. Six position chart  
speed selector. Individual front zero  
controls for each channel.

Power Requirements: 115/230 volts AC at 50/60 Hz  
(Approximately 30 VA)

Writing System: Disposable fibre tipped ink cartridge  
(variable colors)

Dimensions: 38.6 cm X 16.5 cm X 43.2 cm

Weight: 9.3 Kg

ii) Digital Video Recording System

Type: L.M. Microcontrols Ltd. Microprocessor Control  
Data Acquisition System

Model: DADG - 68

Power Requirements: 10-14 volts dc, Maximum 2 amps

Input Signal: 3, 0-100 mvolt dc signals  
1, 0-25 volt dc signal

Microprocessor: Motorola MC-6800

CRT Controller: Motorola MC-6845

Character Generator: Motorola MCM-6670

Analogue/Digital Converter: Intersil 7109

Multiplexer: Intersil IH 6208

Digital Clock: National MM 5318 chip  
9 volt internal rechargeable nickle-  
cadmium battery

Fiducial Generator: Internally variable time set controls  
relay contact and audio output

Dimensions: 30 cm X 30 cm X 13 cm

Weight: 3 Kg

DATA RECORDING SYSTEM (CON'T)iii) Digital Magnetic Tape

Type: Hewlett Packard cartridge tape unit

Model: 9875A

Power Requirements: 24 volt d.c.

Data Format: HP's Standard Interchange Format (SIF)

Tape Cartridge: HP 98200A 225K byte cartridge compatible with HP Series 9800 desktop computers.

Tape Drive: Dual tape drives providing up to 8 hours continual recording time.

Controller: Internal micro-computer provides 23 built in commands.

: External computer generated commands.

COST BREAKDOWN

A. Survey Dates: Regional, November 1982  
Detail, March 16, 1983

B. Personnel:

Survey: J. Behenna - Operator Navigator  
M. McDermott- Navigator  
T. Pezzot- Geophysicist

Data Processing: January 1983

M. McDermott- Technician  
T. Pezzot- Geophysicist  
N. Porter- Draftsman

Supervisor- Interpretation  
Glen E. White, P.Eng.  
Geophysicist

C. Project Fee:

This survey was flown and processed by agreement for an all inclusive fee of \$16,250.00. Based on the percentage of total kilometerage. The claims are prorated at;

Til 1-4 (46%)	\$7,475.00
Halifax, Goat, Hail, Wolf, Juanita (54%)	\$8.775.00

STATEMENT OF QUALIFICATIONS

NAME: PEZZOT, E. Trent

PROFESSION: Geophysicist - Geologist

EDUCATION: University of British Columbia -  
B.Sc. - Honors Geophysics and Geology

PROFESSIONAL  
ASSOCIATIONS: Society of Exploration Geophysicist

EXPERIENCE: Three years undergraduate work in  
geology - Geological Survey of Canada,  
consultants.

Three years Petroleum Geophysicist,  
Senior Grade, Amoco Canada Petroleum  
Co. Ltd.

Two years consulting geophysicist,  
Consulting geologist - B.C., Alberta,  
Saskatchewan, N.W.T., Yukon, western  
U.S.A.

Three years geophysicist with Glen E.  
White Geophysical Consulting & Services  
Ltd.



STATEMENT OF QUALIFICATIONS

NAME: WHITE, Glen E., P.Eng.

PROFESSION: Geophysicist

EDUCATION: B.Sc. Geophysicist - Geology  
University of British Columbia.

PROFESSIONAL ASSOCIATIONS: Registered Professional Engineer,  
Province of British Columbia.

Associate member of Society of Exploration Geophysicists.

Past President of B.C. Society of Mining Geophysicists.

EXPERIENCE: Pre-Graduate experience in Geology -  
Geochemistry - Geophysics with Anaconda  
American Brass.

Two years Mining Geophysicist with  
Sulmac Exploration Ltd. and Airborne  
Geophysics with Spartan Air Services  
Ltd.

One year Mining Geophysicist and Technical  
Sales Manager in the Pacific  
north-west for W.P. McGill and Associates.

Two years Mining Geophysicist and  
supervisor Airborne and Ground Geophysical  
Divisions with Geo-X Surveys  
Ltd.

Two years Chief Geophysicist Tri-Con  
Exploration Surveys Ltd.

Eleven years Consulting Geophysicist.

Active experience in all Geologic provinces  
of Canada.

REFERENCES

Brock, J.S., Vincent, J.S.: The Tillicum Mountain Gold Prospect, An Exploration Case History, John S. Brock, John S. Vincent. March, 1983

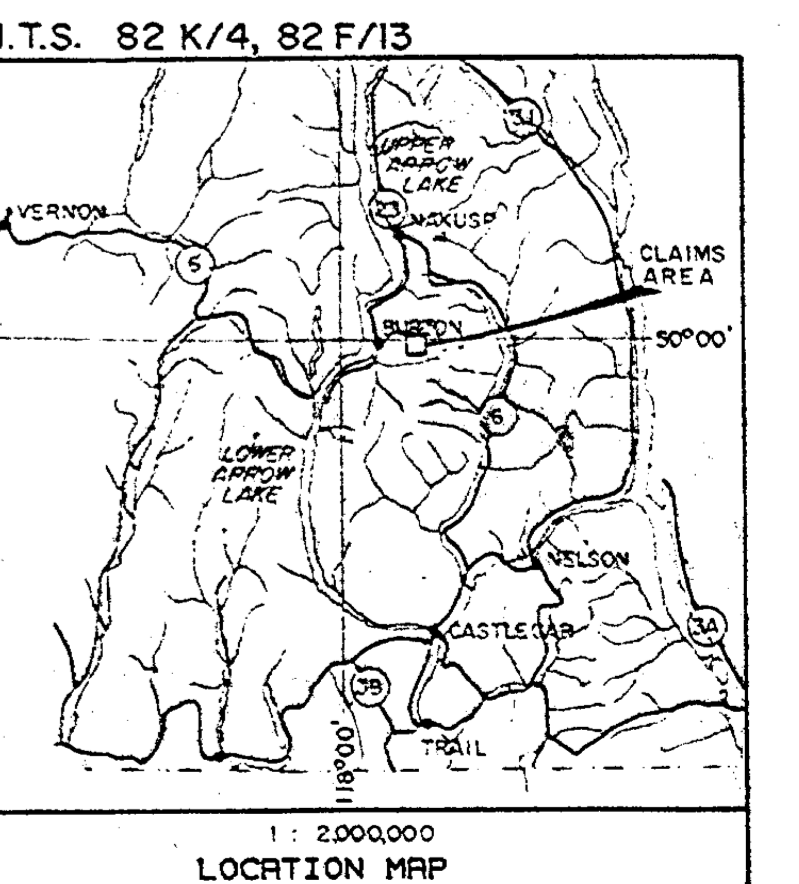


KEY:

- W Interpretated faults
- Area of increased bulk conductivity
- High spatial frequency VLF-EM responses

INSTRUMENT: Barringer M-123 Magnetometer  
 Total Field Intensity magnetic data (gamma)  
 Magnetic data corrected for diurnal  
 Base value = 57888 gamma  
 Contour Interval = 25 gamma

- == Roads
- - - - Claim boundary
- Claim post



N.T.S. 82 K/4, 82 F/13  
 1:200000  
 LOCATION MAP  
 METRES  
 0 100 200 300 400 500 600 700 800 900 1000

ESPERANZA EXPLORATIONS LTD.  
 LA TEKO RESOURCES LTD.  
 TILLICUM GOLD PROPERTY  
 MAGNETIC CONTOUR MAP

DATE: NOV/82 FIG.: 2

To accompany the Geophysical Report on Tillicum Mt.

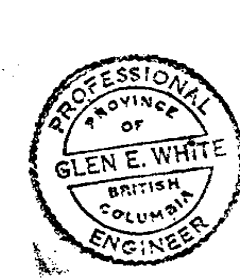
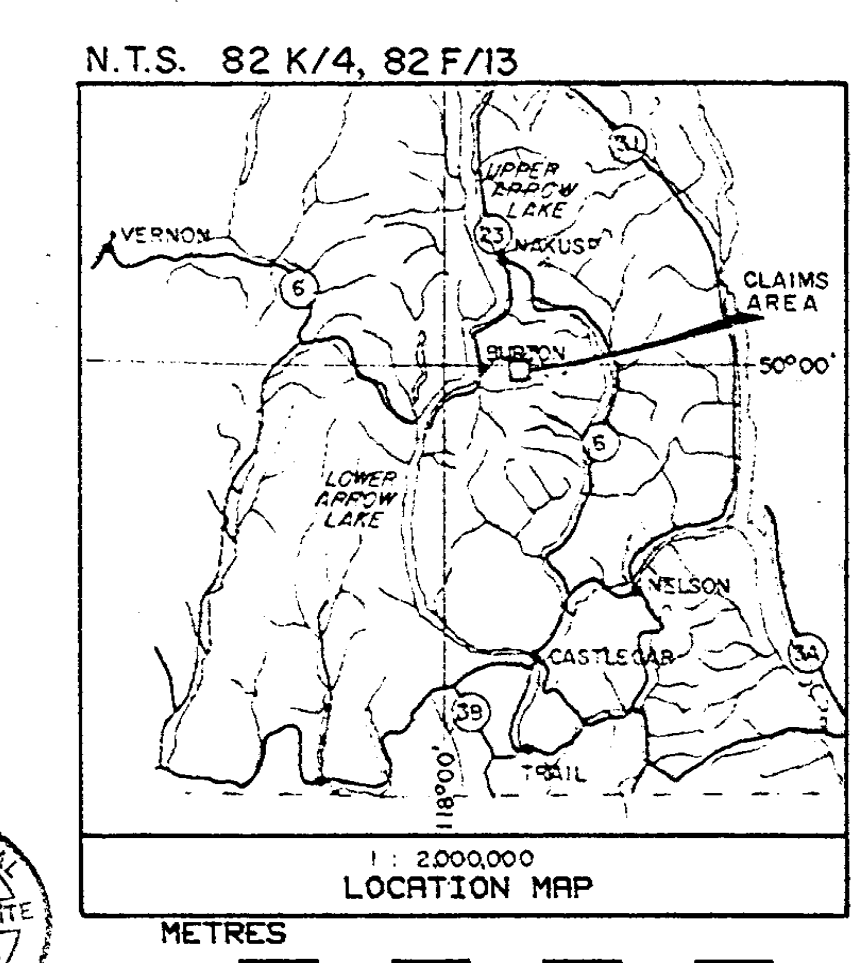
Western  
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Part of 22

GEOLOGICAL BRANCH  
ASSESSMENT REPORT  
**11,161**

- KEY
- INSTRUMENT: Sabre Total Field Intensity VLF-EM
  - Data corrected for long period terrain effects
  - Vertical Scale, 10%/cm.
  - Transmitter Station, Seattle (24.0Khz.)
  - ==== Roads
  - - - Claim boundary
  - Claim post



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LA TEKO RESOURCES LTD.  
TILlicum GOLD PROPERTY  
VLF-EM PROFILES (SEATTLE)

DATE: NOV/82      FIG.: 3

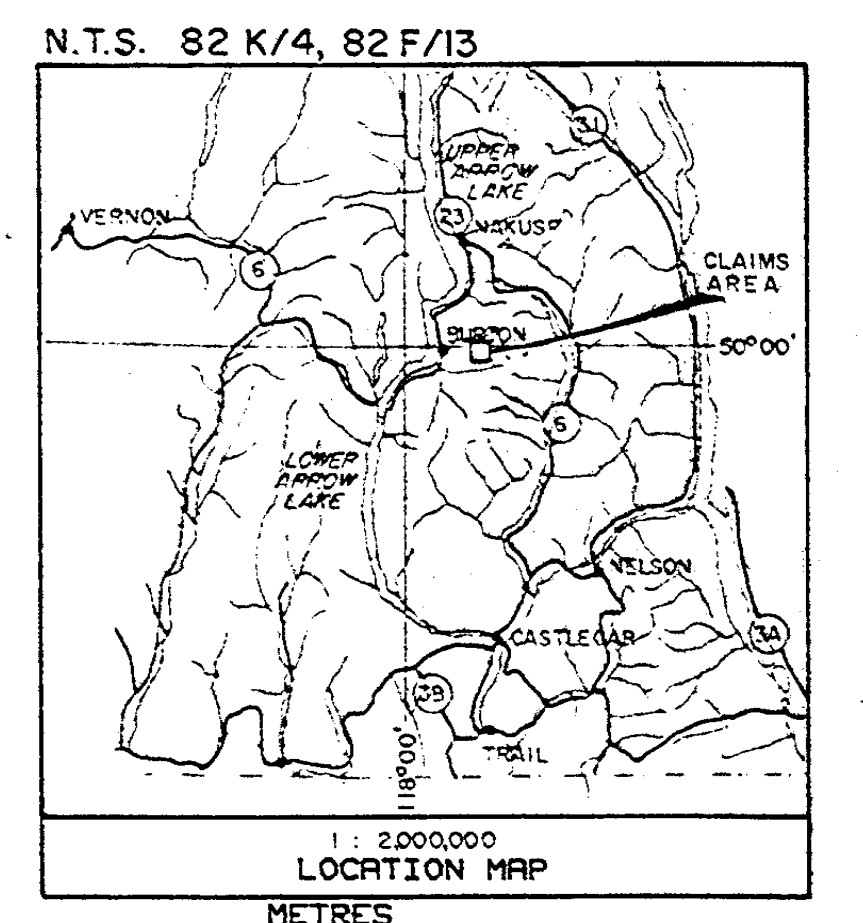
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Geophysical  
Services Ltd.

To accompany the Geophysical Report on Tillicum Gold



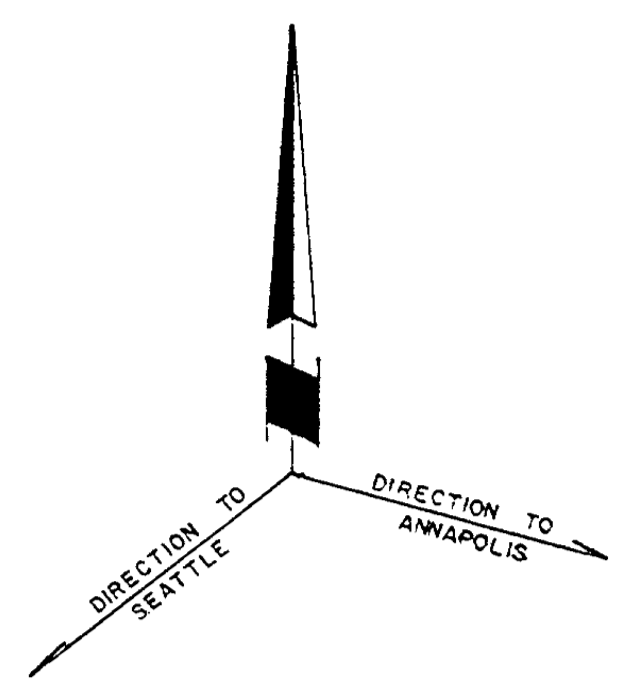
Part 2  
of 2  
GEOLOGICAL BRANCH  
ASSESSMENT REPORT  
11,161

KEY  
 INSTRUMENT: Sabre Total Field Intensity VLF-EM  
 Data corrected for long period terrain effects  
 Vertical Scale, 10%/cm.  
 Transmitter Station, Annapolis (22.4kHz.)  
 == Roads  
 --- Claim boundary  
 ■ Claim post



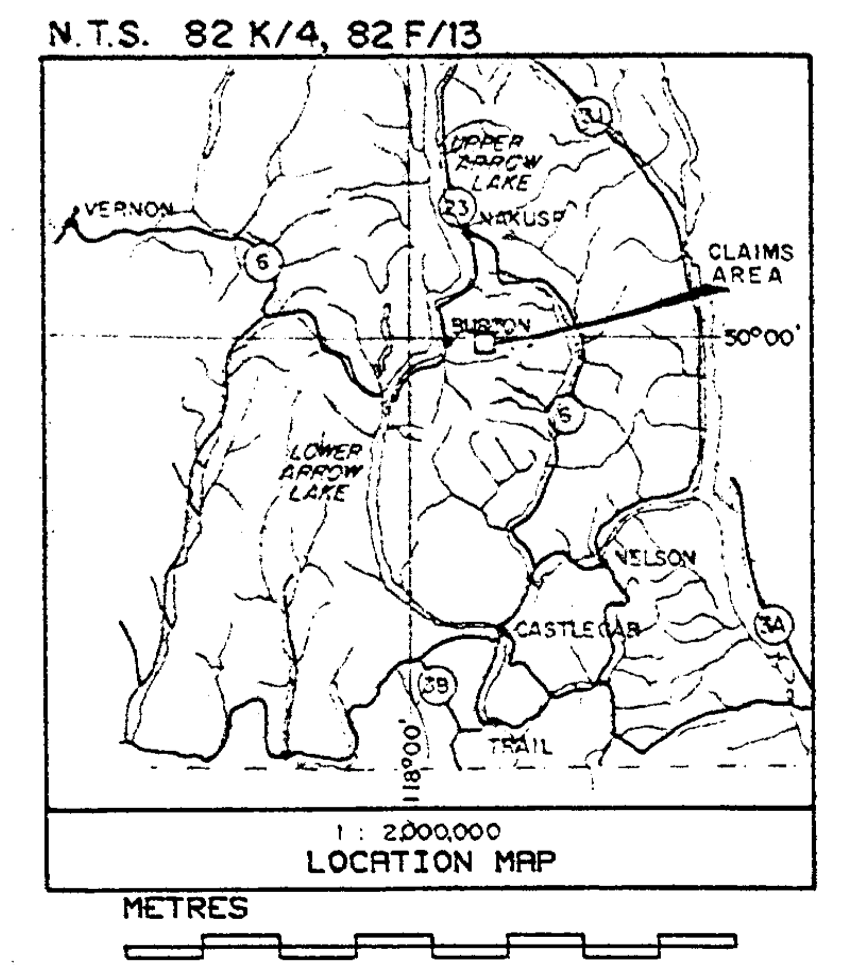
ESPERANZA EXPLORATIONS LTD.  
 LA TEKO RESOURCES LTD.  
 TILlicum GOLD PROPERTY  
 VLF-EM PROFILES (ANNAPOLIS)  
 DATE: NOV/82 FIG.: 4

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Geophysical  
Services Ltd.



part 2  
of 2  
GEOLOGICAL BRANCH  
ASSESSMENT REPORT  
11,161

KEY  
 INSTRUMENTS: Sabre Total Field Intensity VLF-EM  
 Data corrected for long period terrain effects  
 Vertical Scale, 18%/cm.  
 Transmitter Station #1, Seattle (24.8Khz.)  
 Transmitter Station #2, Annapolis (22.8Khz.)  
 == Roads  
 --- Claim boundary  
 ■ Claim post



Western  
Geophysical  
Service Ltd.

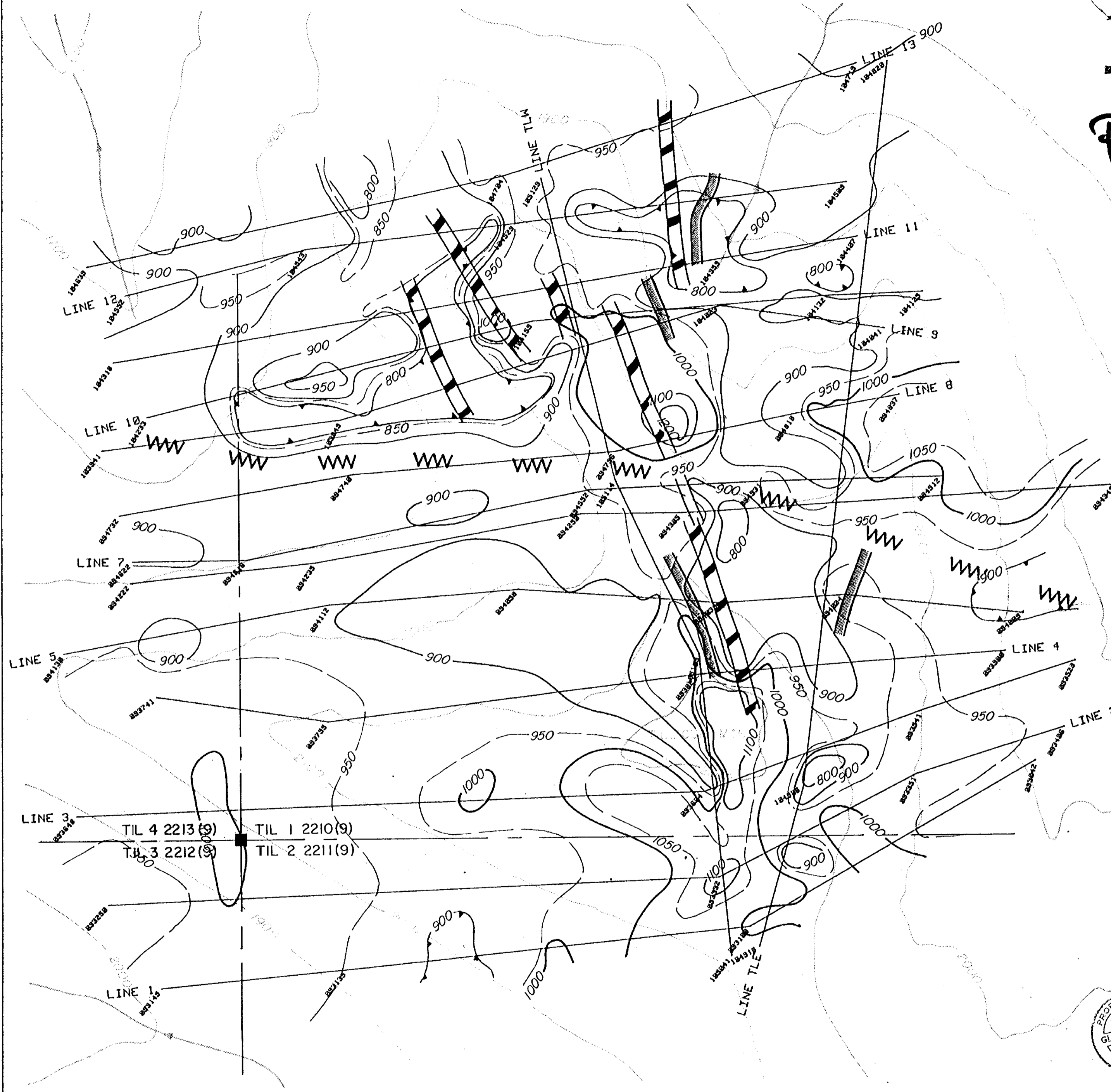
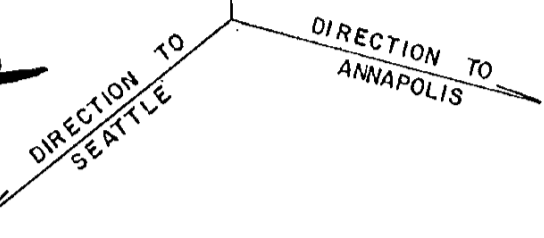


ESPERANZA EXPLORATIONS LTD.  
 LA TEKO RESOURCES LTD.  
 TILLICUM GOLD PROPERTY  
 VLF-EM DIFFERENCE PROFILES

To accompany the Geophysical Report on Tillicum Gold

DATE: NOV/82 FIG.: 5

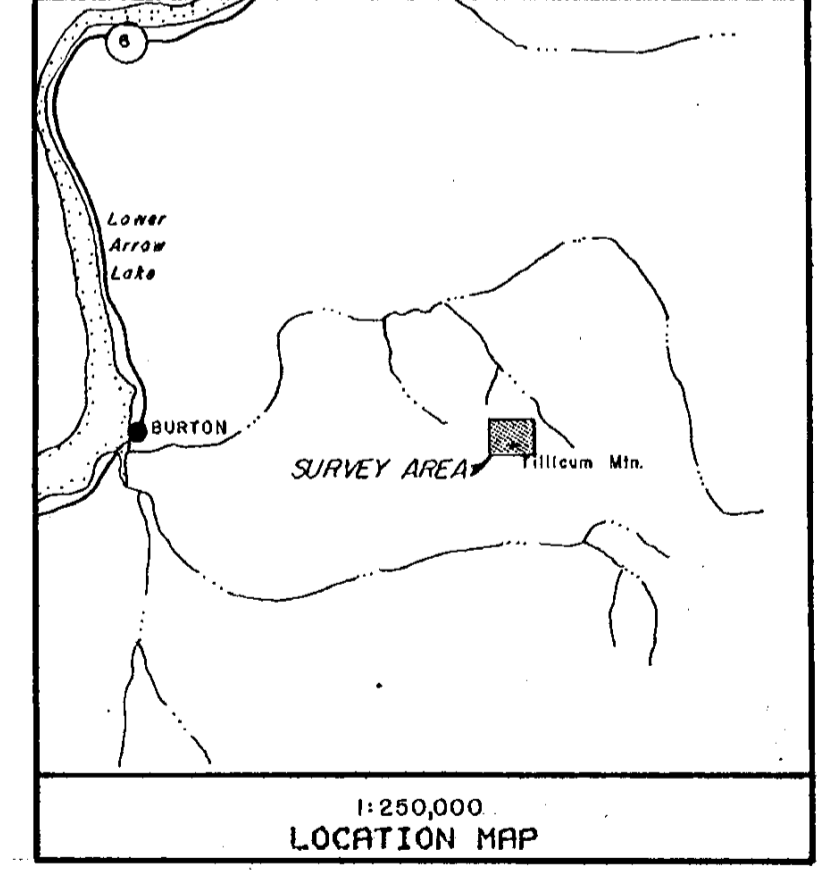
11,161  
part 2  
of 2



KEY

- INSTRUMENT: Barringer M-123 Magnetometer
- Data corrected for diurnal variations
- Base Value = 57000 gammas
- Contour Interval = 50 gammas
- Roads
- .-.- Claim boundary
- Claim post
- W W Inferred Fault
- II VLF-EM Conductor
- █ Approximate position of observed mineralization
- ⤵ Magnetic Low

N.T.S. 82 F/13



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LA TEKO RESOURCES LTD.  
TILLICUM MTN. DETAIL  
TOTAL MAGNETIC FIELD INTENSITY (GAMMAS)

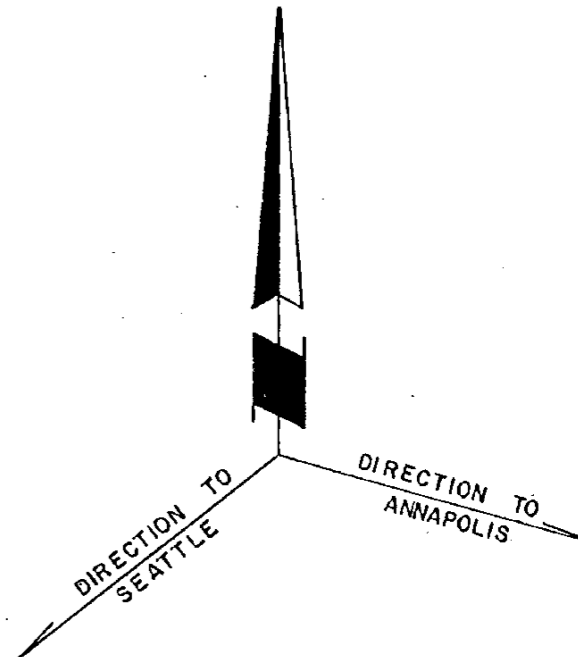
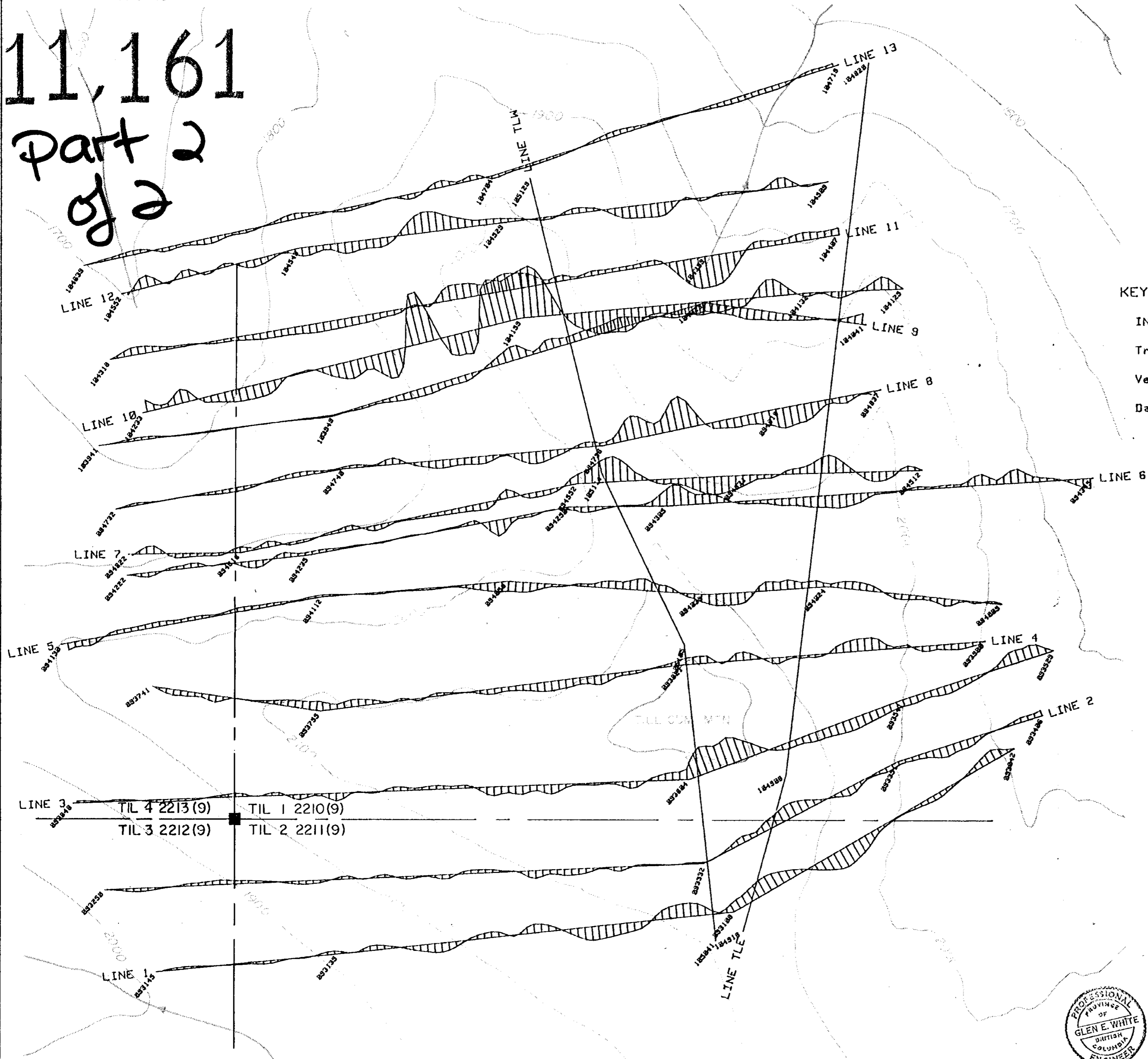
DATE: MAR/83

FIG.: 6



To accompany the Geophysical Report on the Tillicum Mtn. detail survey

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Part 2  
of 2

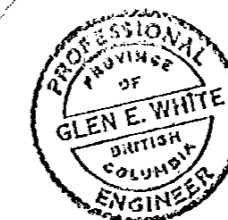
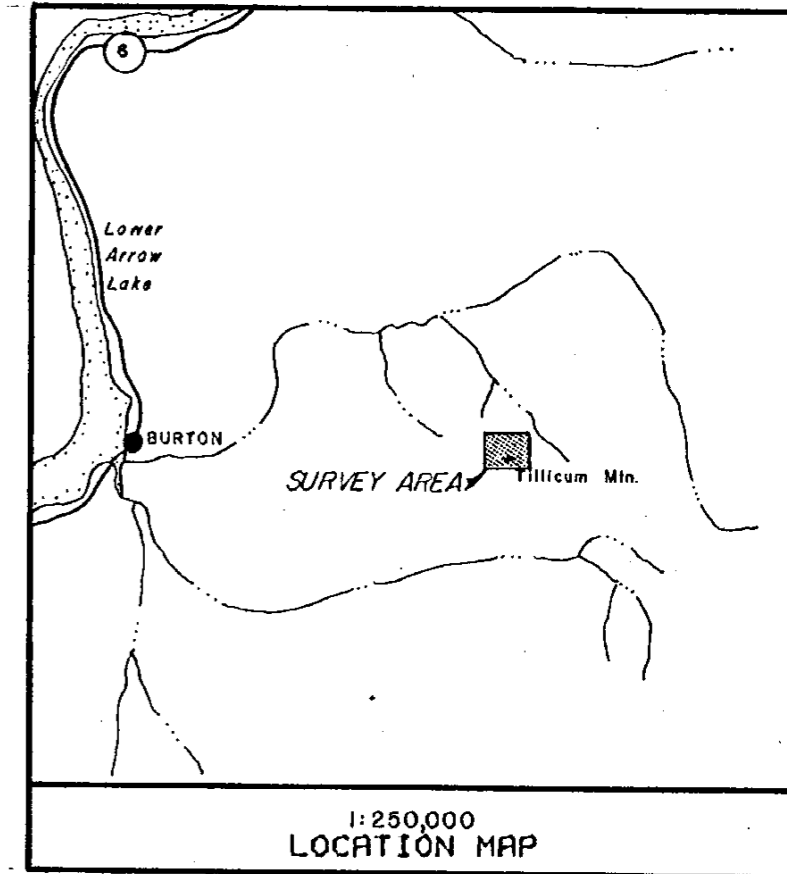


KEY

INSTRUMENT: Sabre Total Field Intensity VLF-EM  
Transmitter Station, Seattle (24.8 KHz)  
Vertical Scale, 10%/cm.  
Data corrected for long period terrain effects

- Roads
- Claim boundary
- Claim post

N.T.S. 82 F/13



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LA TEKO RESOURCES LTD.  
TILlicum MTN. DETAIL  
VLF-EM PROFILES (SEATTLE)

DATE: MAR/83

FIG.: 7

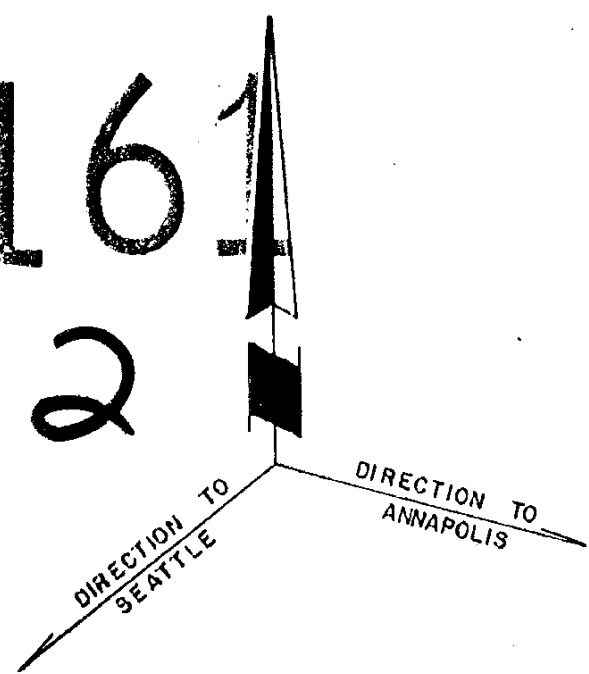
Western  
Geophysical  
Aero Data Ltd.

To accompany the Geophysical Report on the Tillicum Mtn. detail survey



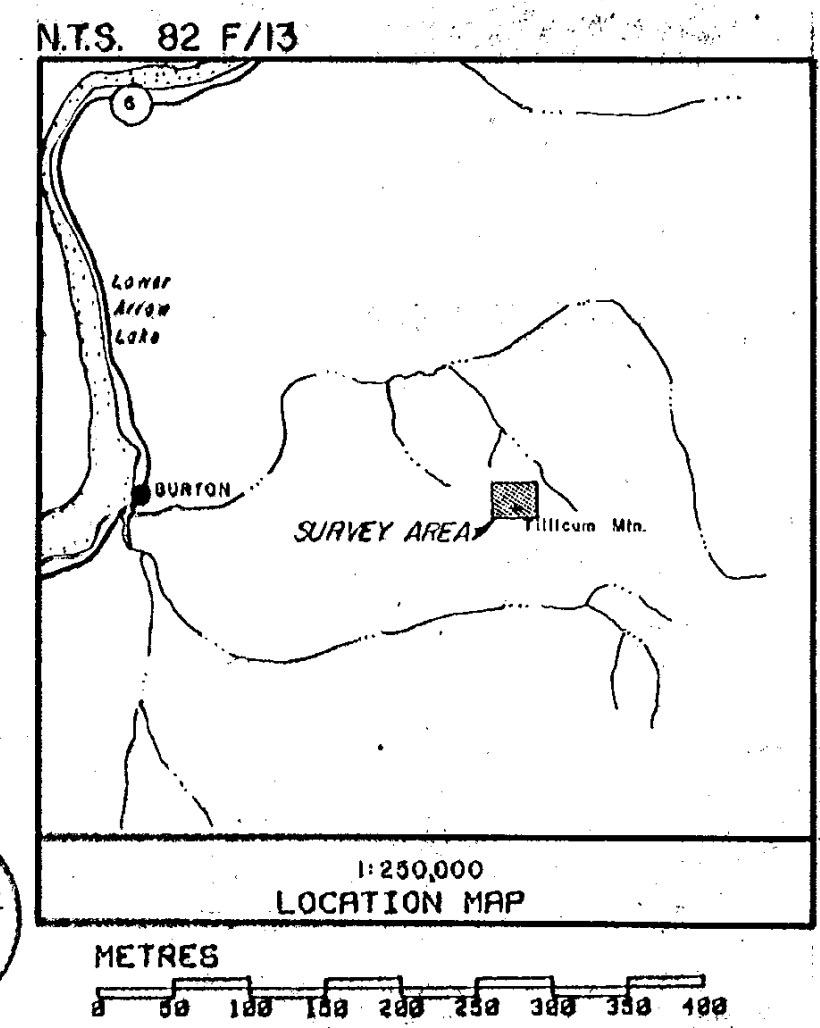
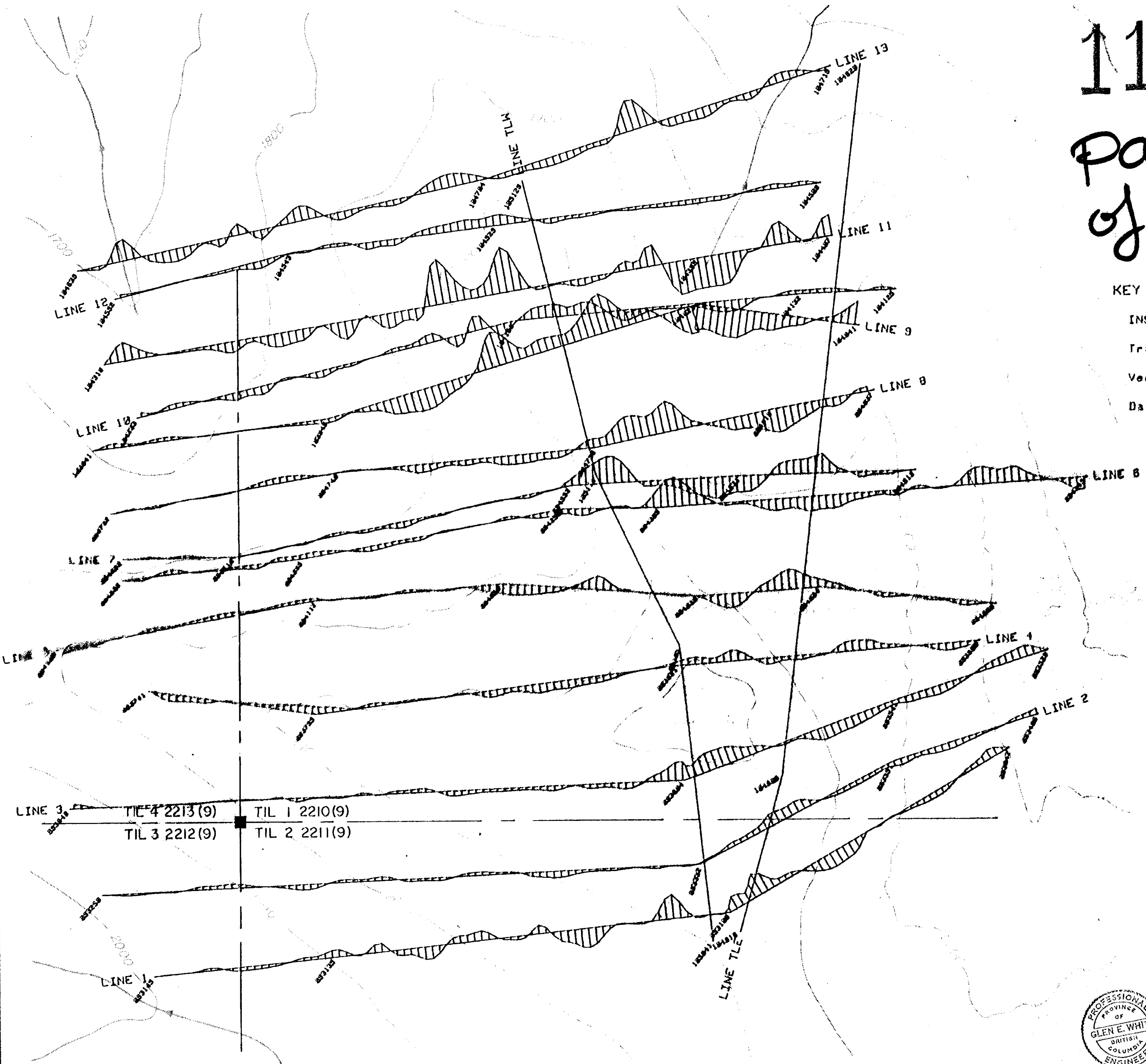
GEOLOGICAL BRANCH  
ASSESSMENT REPORT

11,161  
Part 2  
of 2



KEY

- INSTRUMENT: Sabre Total Field Intensity VLF-EM
- Transmitter Station, Annapolis (21.4 Khz)
- Vertical Scale, 10%/cm.
- Data corrected for long period terrain effects
- Roads
- Claim boundary
- Claim post



ESPERANZA EXPLORATIONS LTD.  
LA TEKO RESOURCES LTD.  
TILLICUM MTN. DETAIL  
VLF-EM PROFILES (ANNAPOLIS)

DATE: MAR/83

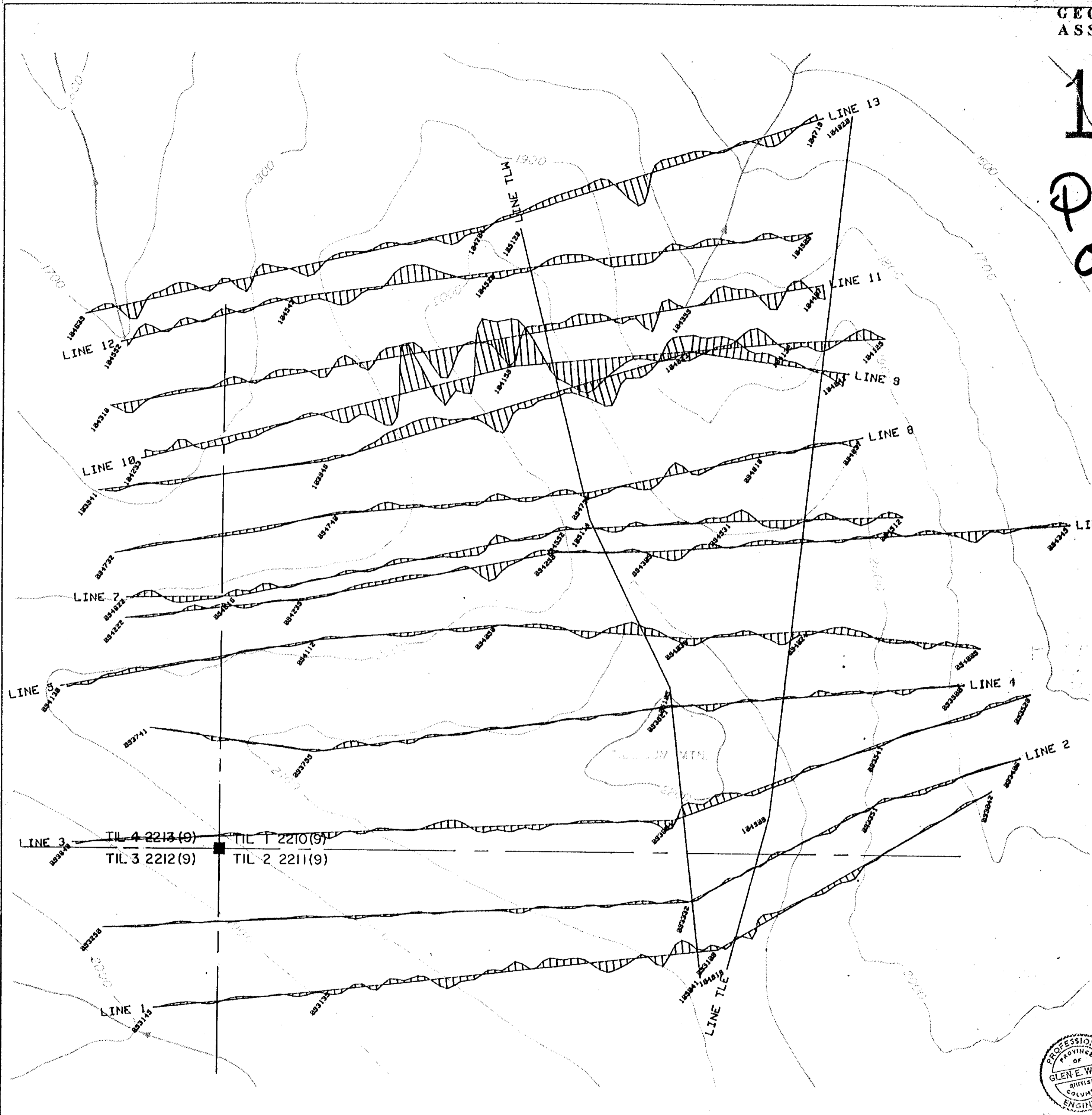
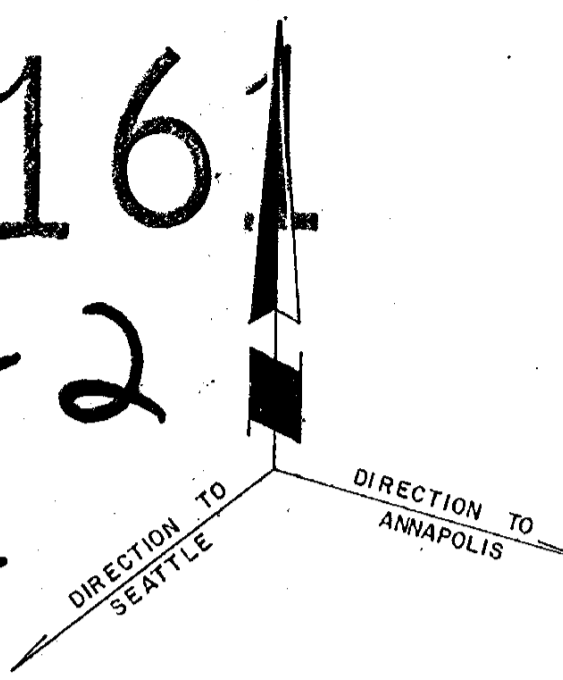
FIG.: 8

Western  
Geophysical  
Data Ltd.

To accompany the Geophysical Report on the Tillicum Mtn. detail survey

GEOLOGICAL BRANCH  
ASSESSMENT REPORT

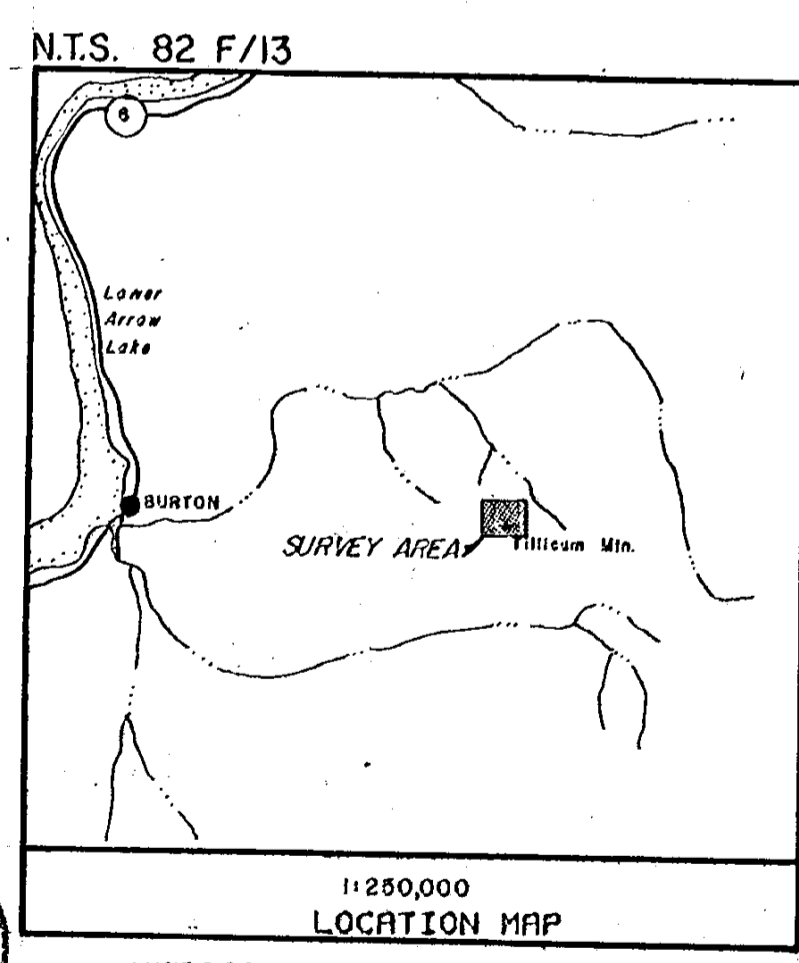
11,161  
part 2  
of 2



KEY

INSTRUMENTS: Sabre Total Field Intensity VLF-EMS  
 Transmitter Station#1, Seattle (24.8 Khz)  
 Transmitter Station#2, Annapolis (21.4 Khz)  
 Vertical Scale, 10%/cm.  
 Data corrected for long period terrain effects

Roads  
 Claim boundary  
 Claim post



Western  
Geophysical  
Data Ltd.

To accompany the Geophysical Report on the Tillicum Mtn. detail survey

ESPERANZA EXPLORATIONS LTD.  
 LA TEKO RESOURCES LTD.  
 TILLICUM MTN. DETAIL  
 VLF-EM DIFFERENCE PROFILES

DATE: MAR/83

FIG.: 9