'80 - #930 - # 8601

GEOPHYSICAL REPORT

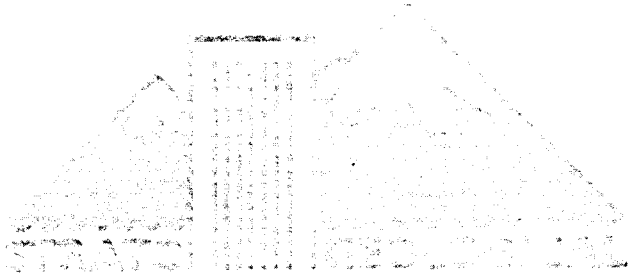
On The Yaky 3 Claim

Latitude 53°32'N Longitude 132° 12'W

NTS 103F/9E

QUEEN CHARLOTTE ISLAND, B. C.

Skeena M. D.



for

Consolidated Cinola Mines Ltd.

Vancouver, B. C.

by

K. G. Sanders P. Eng.

December 10, 1980

8601 part 2 of 2

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APPENDIX

MAPS

Ref.No.

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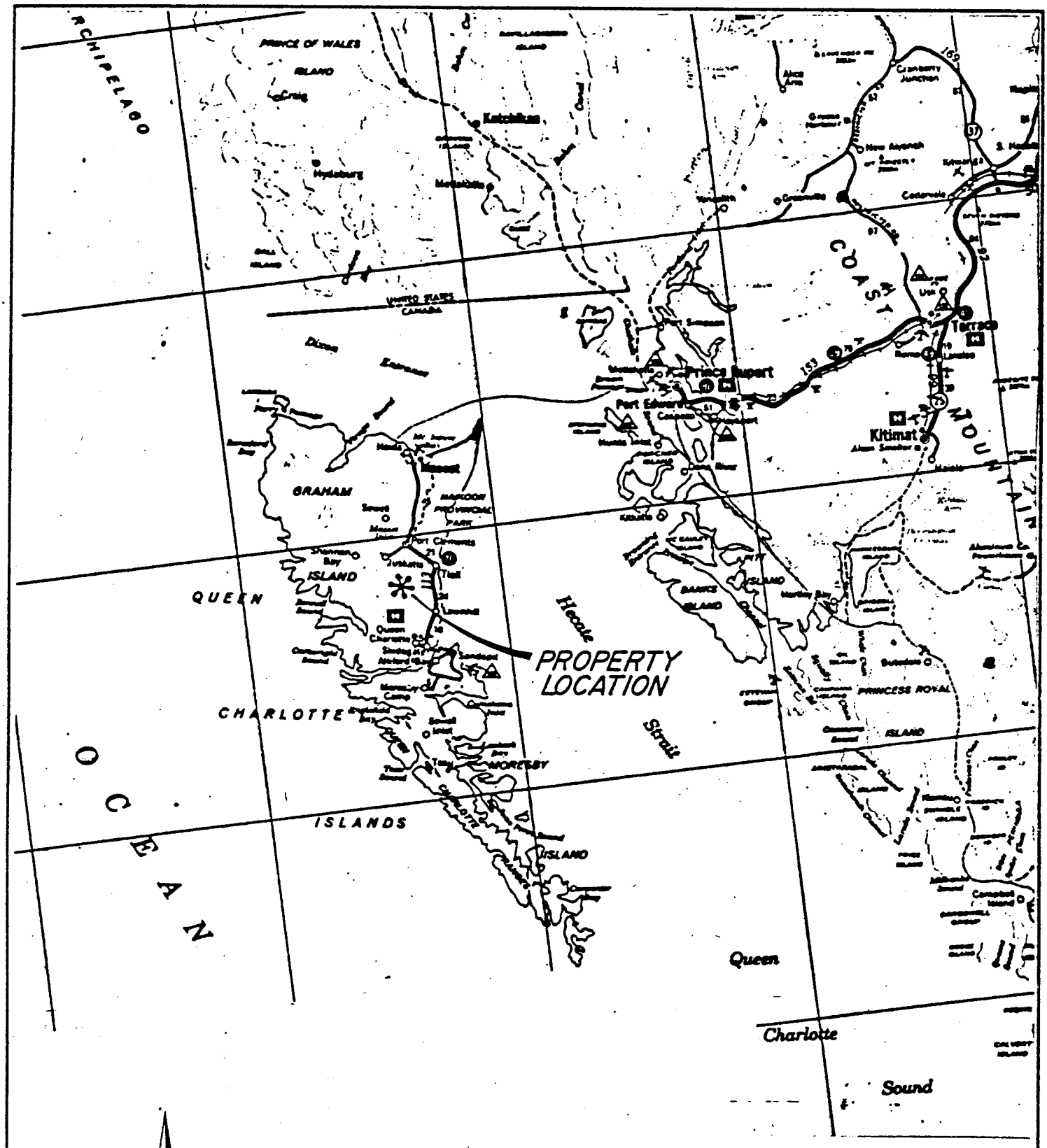
REFERENCES

Ref.No.

3] B.C.Department of Mines & petroleum Resources, Bulletin 54, Geology of the Queen Charlotte Islands, A. Sutherland Brown, 1968

4] B.C. Depart of Mines & Petroleum Resources, Report on the Specogna Gold Prospect, Queen Charlotte Islands, B.C., A. Sutherland Brown, T.C. Schroeter, 1975

5] Contouring VLF-EM Data, D.C.Fraser, Geophysics Vol. 34. No.6, 1969



TO ACCOMPANY REPORT BY
KEN SANDERS DATED
DECEMBER 10, 1980.

Consolidated Cinola Mines

YAKY 3 CLAIMS

QUEEN CHARLOTTE ISLANDS, B.C.
SKEENA M.D.
NTS 103 F/8E, 9

LOCATION MAP

SCALE IN KILOMETRES
0 24 48 72 96

Geophysical Report
On The Yaky 3 Claims
Latitude 53°32'N Longitude 132°12'W
NTS 103F/9E
Queen Charlotte Islands, B. C.
Skeena M. D.
for
Consolidated Cinola Mines Ltd.
Vancouver, B. C.
by
K. G. Sanders P. Eng.
December 10,1980

Introduction

This report is authorized by the Directors of the Company.

The field work was carried out as recommended by the writer. Strato Geological Ltd. of Vancouver was responsible for the field work. This survey was carried out during the period September 13 - September 24, 1980.

Location Access Topography [1]

The Queen Charlotte Islands are located off the coast of northern British Columbia. P.W. Airlines provides a daily flight from Vancouver to Sandspit. Access to the islands is also possible by public and private ferry service from Prince Rupert to Masset and Skidegate respectively on Graham Island.

The island roads are generally good. MacMillan Bloedell logging roads are well maintained. As they are limited-use roads, permission to use them must be obtained by contacting either the Juskatla or Queen Charlotte City Office of MacMillan Bloedell.

The property is located approximately 25 kilometers south of Juskatla via logging roads. Branch road 40

traverses the southern portion of the claim closely following the course of the Yakoun River. The claim is covered by a variety of timber. The northern portion is virgin timber. The southern portion is regrowth, with occassional swampy ground.

The claim is low in the south having been influenced by Yakoun River in the recent geological past. In the north, elevations periodically rise to about 60 meters.

There are several areas of boggy grounds which will inhibit a road building program.

The survey located no evidence of outcrops suggesting a significant overburden. Some small streams were located draining to the south, however water on the property could be considered seasonal. Water sources for diamond drilling might be sparse during the summer months.

Claim [2]

The claim is described as follows:

NAME	UNITS	RECORD NO.	EXPIRY DATE
Yaky 3	20	1929	December 5

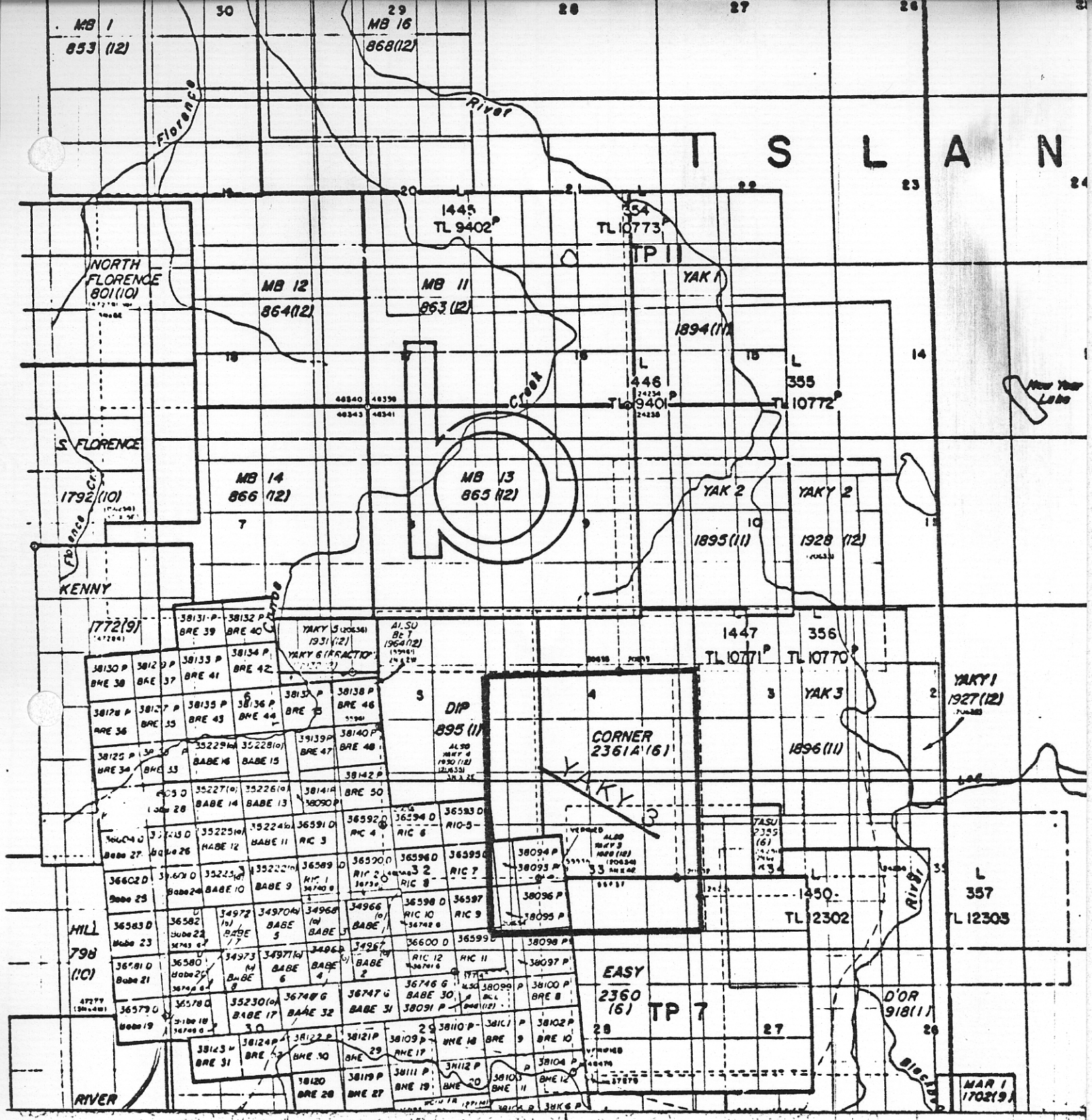
The LCP is located north of the extremity of Branch 40A, approximately 200 meters inside an area of virgin timber, and near a small stream.

The exact location and the amount of ground covered can only be determined by a legal survey.

General Geology [3][4]

As there is no evidence of outcrops on the claim, the following description is from Bulletin 54.

The claim is overlain by Quaternary sediments, estimated as being up to 50 feet thick. These sediments overlie the Skonun Formation of sandstone, mudstone and conglomerates.



LOCATION MAP

To accompany a report by
K.G. Sanders, P. Eng, dated
December 10, 1980.

CONSOLIDATED CINOLA MINES

YAKY 3 CLAIM
Queen Charlotte Islands, B.C.
Skeena M.D.
NTS 103F/9E

The above are underlain by the Masset Formation of sub-aerial flows of basalt and rhyolite, with their various ash flows, all being brecciated.

The basement rock is argillite probably of the Kunga (Jurassic Formation).

No structures have been mapped or have been noted in ground traverses during the survey.

It is possible that the area may have been penetrated by a strand of the Sandspit fault. This fault is believed to have caused the mineralization of the Consolidated Cinola property located just east of the Yaky 3 Claim.

VLF - EM Survey

Strato Geological Ltd. of Vancouver, B.C. conducted the geophysical survey. The lines were flagged west to east as recommended for best reception of the Seattle signal. Stations were read each 25 metres along the line. The instrument used was the Sabre Model 27 VLT-EM unit. Serial No.57. This instrument reads the dip angle and the total horizontal field.

There are few features revealed by the instrument over the property.

The depth of overburden appears to have influenced the readings on the majority of the lines. The effectiveness of this instrument is limited in excess of 30 metres.

The dip angle, Fraser filter calculation, and the total field were plotted simultaneously as cross sections for each line.

Contour map of the Fraser filter, dip angle and total field are included in the report. Further work programs should consider a survey using an instrument with greater penetration.

Statement of Costs

Yaky 3 Claims (20 Units)

Record No.1929

Direct Costs

Labour.....	$2,100.00
E.M. Rental.....	210.00
Transportation.....	67.65
Supplies.....	25.00
Drafting.....	100.00
Total	$2,502.65

Personnel

(Sept 13 - 24,1980)

G. Smith
J. McLeod
A. Lawrence
A. House
K. Dorland

The above data supplied by Strato Geological of Vancouver, B.C. the contractors.

The above is a true statement of the costs of the project.

K. G. Sanders

K. G. Sanders

CERTIFICATE

I, Kenneth G. Sanders of 1940 Limerick Place, North Vancouver, in the Province of British Columbia, hereby certify as follows:

I am a registered Geological Engineer in the Association of Professional Engineers of British Columbia, Certificate No.4536.

I have practiced in this profession for thirty years after graduation from the University of Toronto in 1949.

I personally supervised the electromagnetic survey program referred to in this report submitted for assessment purposes.

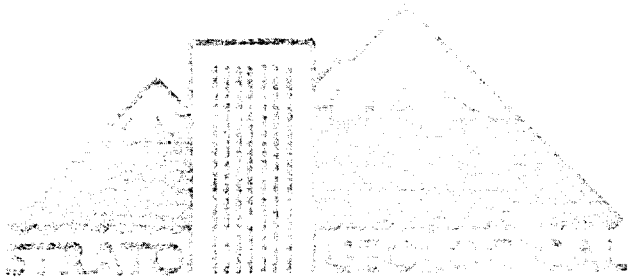
Dated at Vancouver, British Columbia, this 22nd day of September, 1980.

K. G. Sanders

K. G. Sanders, P. Eng.
December 10, 1980.

APPENDIX

Operating Instuction for Sabre Model 27. VLF-EM, Fraser Filter Calculations.



SABRE ELECTRONIC
INSTRUMENTS LTD.

4245 EAST HASTINGS STREET • BURNABY, B.C. V5C 2J5 • TELEPHONE: 291-1617

SABRE MODEL 27 VLF-EM RECEIVER

The model 27 EM unit was designed originally for a large Canadian mining company to overcome the deficiencies inherent in existing units.

The instrument is so stable and selective that completely reliable measurements can be made on distant stations without interference from nearby powerful transmitters. Stability and selectivity are especially important when making field-strength measurements, which are now being emphasized as a means of locating conductors.

This EM receiver is very compact, requires no earphones or loudspeakers and is housed in a heavy scotch saddle leather case. All of these features add up to make an ideal one-man EM unit of unexcelled electrical performance and mechanical ruggedness.

SPECIFICATIONS

Source of Primary Field - VLF radio stations (12 to 24 KHz.)

Number of Stations - 4, selected by switch; Cutler, Main on 17.8 KHz. and Seattle, Washington on 18.6 KBz. are standard, leaving 2 other stations that can be selected by the user.

Types of Measurement

1. Dip angle in degrees, read on a meter-type inclinometer with a range of $\pm 60^{0}$ and an accuracy of $\pm \frac{1}{2}^{0}$.
2. Field strength, read on a meter and a precision digital dial with an accuracy exceeding 1%.
3. Out of phase component, read on the field strength meter as a residual reading when measuring the dip angle.

SABRE MODEL 27 VLF-EM RECEIVER - (Continued)

Dimensions and Weight

Approx. 9½" x 2½" x 8½"; Weighs 5 lbs.

Batteries

8 alkaline penlite cells. The instrument will run continuously on 1 set of batteries for over 200 hours; So that in normal on-off use, the batteries will last all season. The battery condition under load is shown by pushing a button and reading voltage on the field strength meter.

VLF-EM OPERATING INSTRUCTIONS

The equipment is operated in the usual way as follows:

1. With the instrument held horizontal in front of you, turn around until a null appears on the field strength meter. You should now be facing the station.

2. With the receiver still facing the station, lift it to the vertical position and rotate it slightly in the vertical plane to your right or left until the best null appears on the field strength meter. Record the angle on the inclinometer at which the null appears. This is the DIP ANGLE (Positive or negative).

3. Return the instrument to the horizontal plane and turn around until the field strength meter is at its maximum reading. Set this maximum reading at 100 on the meter and record the reading on the gain control dial. This is the Field Strength Reading.

4. Repeat steps 1, 2 and 3 at each station.

5. To test the batteries turn the power switch on and push the test button. The field strength meter should read above the red mark. Battery life is approximately 200 hours and if the instrument is turned off between readings, the batteries should last for an entire season.

NOTE: An alternative way of measuring field strength is as follows:

PREFERRED METHOD

Proceed as in step 3, setting the meter to 100. Now push the field strength button (marked FS) and the meter will read 50. (If it doesn't, adjust the gain control slightly). Leave the Gain Control setting where it is and take comparative Field Strength readings at each station by pressing the Field Strength button and recording the meter reading, which will vary from its Base Station Reading as you pass over conductive zones.

SELECTION OF STATIONS:

The stations are selected by the switch on the control panel, with the following abbreviations being used;

C = Cutler, Maine.	Frequency =	17.8 Khz.
S = Seattle, Wash.	Frequency =	18.6 Khz.
A = Annapolis, Md.	Frequency =	21.4 Khz.
H = Hawaii.	Frequency =	23.4 Khz.

The two most useful stations are Cutler and Seattle and these will be used almost exclusively. Note that Seattle is off the air for several hours on Thursdays for maintenance (between 10 A.M. and 2 P.M. usually). Cutler is off the air for the same length of time every Friday.

If Equipment fails to operate:

(a) Check that station is transmitting (see above). If one station appears to be dead, check another one to see if it is operating normally.

(b) Check batteries. If they read low or the reading begins to drop after the test button is held down for a few seconds, replace them. Note also that there are 8 batteries in the instrument and they cannot be individually checked by the test button. If the batteries have been in the unit for a long time it is possible that one is dead or very weak but that the total voltage indicated by the test button is near normal. It is cheap insurance to instal new batteries before starting a big survey.

(c) If unit still fails to operate check that battery connectors are tight, then check wiring of battery connectors for breaks or damage.

DETAILED

OPERATING INSTRUCTIONS
SABRE VLF-EM RECEIVER

INTRODUCTION:

The VLF-EM method utilizes electromagnet field transmitted from radio stations in the 15-25 K Hz range. The signals are propagated with the magnetic component of the field being horizontal in undisturbed areas.

Conductivity contrasts in the earth create secondary fields, producing a vertical component and changes in the field strength or amplitude. These conductive areas may be located, and to a degree, evaluated by measuring the various parameters of this electromagnetic field.

The Sabre VLF-EM receiver is tuned to receive any 4 transmitter stations: usually C-Cutler Maine, S-Seattle, H-Hawaii and P-Panama.

The station used in the survey should be selected so that the direction of the signal is roughly perpendicular to the direction of the grid lines which, in turn, should be laid out perpendicular to the regional strike.

MEASUREMENTS:

The Sabre VLF-EM receiver can be used to measure the following characteristics of the VLF field.

(a) Tilt angle of resultant field;

(b) Field strength of (a) horizontal component of field
(b) vertical component of field

Field Procedure

The following procedure should be followed to measure the dip angle of null and the field strength of the horizontal component of the VLF field.

Initial Field Strength Adjustment

Adjust the gain control to provide a suitable relative field strength measurement, as follows:-

(a) hold receiver in horizontal position (meter faces horizontal) and rotate in a horizontal plane until a null is indicated on the F.S. meter; rotate 90° in this horizontal plane (F.S. meter reads maximum)

(b) adjust fain control so that the F.S. meter reads 100

(c) record gain control setting (000 to 999). Close guard over gain control and do not readjust unless a major field strength occurs.

The above procedure should be carried out at the beginning of each day's survey and checked during the day.

Dip Angle Measurement Procedure

1. Hold receiver in horizontal position and rotate in the horizontal plane until a null is observed. This aligns receiver in the field and the operator should be facing southerly or easterly depending on transmitter location.

2. Bring receiver up to the vertical position (meter faces vertical) and rotate the receiver in the vertical plane perpendicular to the transmitter direction until a null or minimum reading is observed on the field strength meter.

3. Hold the receiver in this field strength null position and read the inclinometer in degrees. Record this dip angle of null along with sign (+ or -).

Horizontal Field Strength Measurement Procedure

1. Return receiver to the horizontal position.
2. Reestablish null bearing in horizontal plane.
3. Rotate receiver 90° in the horizontal plane.
4. Depress damp push button switch and observe field strength meter reading for sufficient time to obtain an average F.S. meter reading. (depressed damp switch slows needle action and reduces meter reading by half. The reading will normally range around 50).
5. Record F.S. reading.

Filtering Techneque For VLF-EM Dip Angle Data

The standard profile method of presenting dip angle data may be difficult to interpret. A filtering technique, described by D.C. Fraser 1969 (Geophysics, V.34 No. 6,P. 958-967) enables the data to be presented on a plan map with conductive areas defined by contours.

The following explains the calculation:-

Line	Station	Null		Filter
8N	0 E	+ 3		
			+3+4= +7	
	1 E	+ 4		
			+4+4= +8	+7-(+10)= -3
	2 E	+ 4		
			+4+6= +10	+8-(+13)= -5
	3 E	+ 6		
			+13	+10-(+16)= -6
	4 E	+ 7	+16	-8
	5 E	+ 9	+21	-12
	6 E	+ 12	+28	+3
	7 E	+ 16	+18	+30
	8 E	+ 2	-2	+32
	9 E	- 4	-14	+14
	11 E	- 6	-16	-14-(-7)= -7
			-6-1= -7	
	12 E	- 1		

Fig. 1 is an example of a field sheet showing null angle reading, filtered reading and relative field strength. Fig. 2 shows the field sheet with filter card overlaid. The small window in the side of the card shows the four readings used to calculate the filtered reading, and an arrow showing that the filter reading is to be plotted between station 8E and 9E as indicated in fig. 1. The card is moved down the field sheet, one reading at a time as a guide while carrying out the filtering procedure. Throughout the survey care must be taken to ensure that the filtered data has the correct sign. The positive values only are plotted and contoured while for negative values, only the negative sign is plotted.

Crone suggests in instructions for the Radem VLF-EM, the use of N-S or E-W notation instead of (+ or -) signs, however for filtering a sign must be substituted.

The following convention may be used to ensure the correct sign of filtered data and provide a consistent crossover pattern when studying the profiled null angle data.

1. When taking a reading, always face southerly, on east-west lines, and always face easterly on north-south lines.

2. Record data on field sheets (top to bottom) as follows: on N-S lines record from south to north
: on E-W lines record from west to east

3. Plot and profile dip angle data on plan maps facing map north or map west.

The above convention will provide correct data regardless of the property location relative to the transmitter being used.

J.T. WALKER

MAY 17, 1974

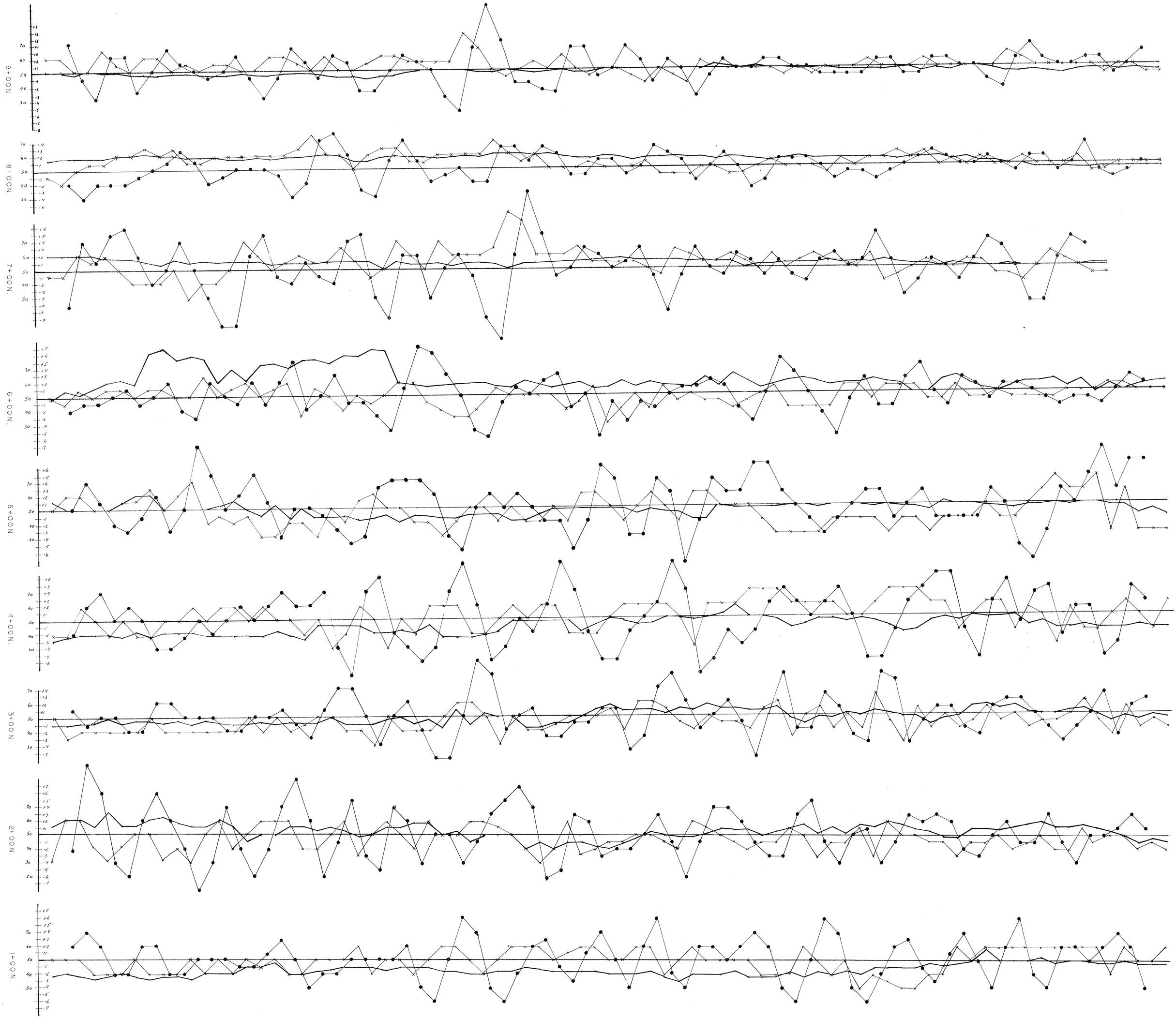
VLF-EM SURVEY

Grain — 0.24

PROPERTY G.I.T.S. TRANS SEATTLE PAGE 1
OPERATOR _____ INSTR. SABRE DATE MAY 4/74

Line	Stn.	Null	Filter	F. S.	
8N	0E	+3		50	
	1E	+4	-3	50	
	2E	+4	-5	52	
	3E	+6	-6	52	
	4E	+7	-9	52	
	5E	+9	-12	52	
	6E	+12	+3	57	
	7E	+16	+30	60	
	8E	+2	+32	65	X OVER
	9E	-4	+14	62	
	10E	-10	-7	50	
	11E	-6	-10	48	
	12E	-1	-14	48	
	13E	+3	-6	50	
	14E	+4	-1	52	
	15E	+4	+6	50	
	16E	+4	+10	55	X OVER
	17E	-2	+1	55	
	18E	0	-3	50	
	19E	+1			
	20E	-1			

Fig. 1 Example of Field Sheet



8601
part 2
of 2

Copper Island Mines Ltd
VANCOUVER B.C.

LARRY 3 CLAIM

Queen Charlotte Islands B.C.

SKEENA M.D.

NTS 103F / 8E 9F

Scale 1cm 25m

0 100

Accompany a report by K.G. Sanders P. Eng
dated Dec 10 1980

LEGEND

Electromagnetic Survey

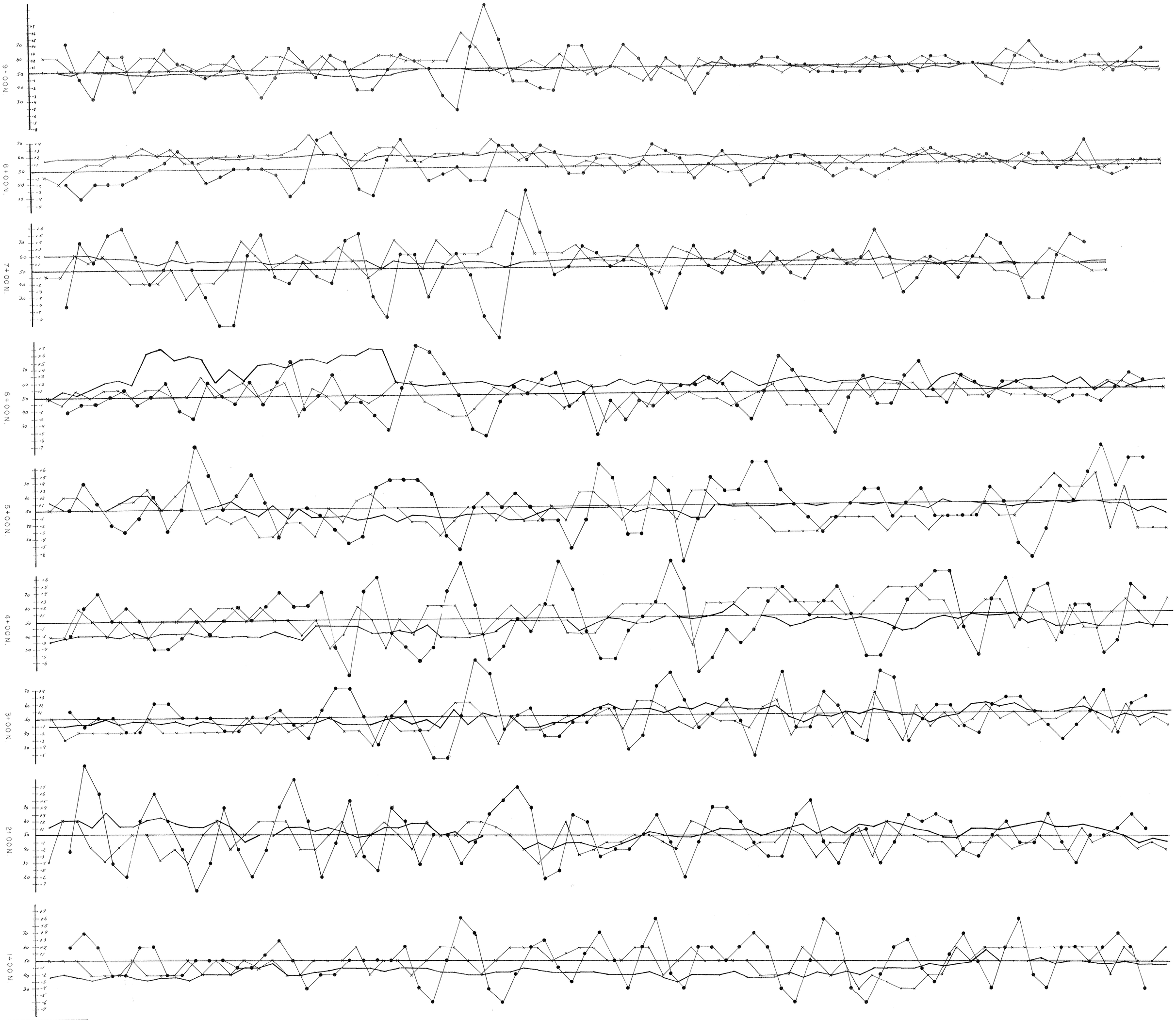
FIELD STRENGTH

AZIMUTH

K.G. Sanders

PLATE A

CROSS SECTIONS



860/
part 2 of 2

Consolidated Cinola Mines Ltd

VANCOUVER B C

YAKY 3 CLAIM

Queen Charlotte Islands B C

SKEENA M D

NTS 103F / 8E 9F

scale 1cm 25m

Accompany a report by K G Sanders P Eng dated Dec 10 1980

LEGEND

Electromagnetic Survey

STRENGTH

ANGLE

K. G. Sanders

PLATE A

CROSS SECTIONS

Consolidated Cinola Mines Ltd

VANCOUVER B C

YAKY 3 CLAIM

Queen Charlotte Islands B C

SKEENA M D

NTS 103F / BE 9F

Scale 1cm 25m

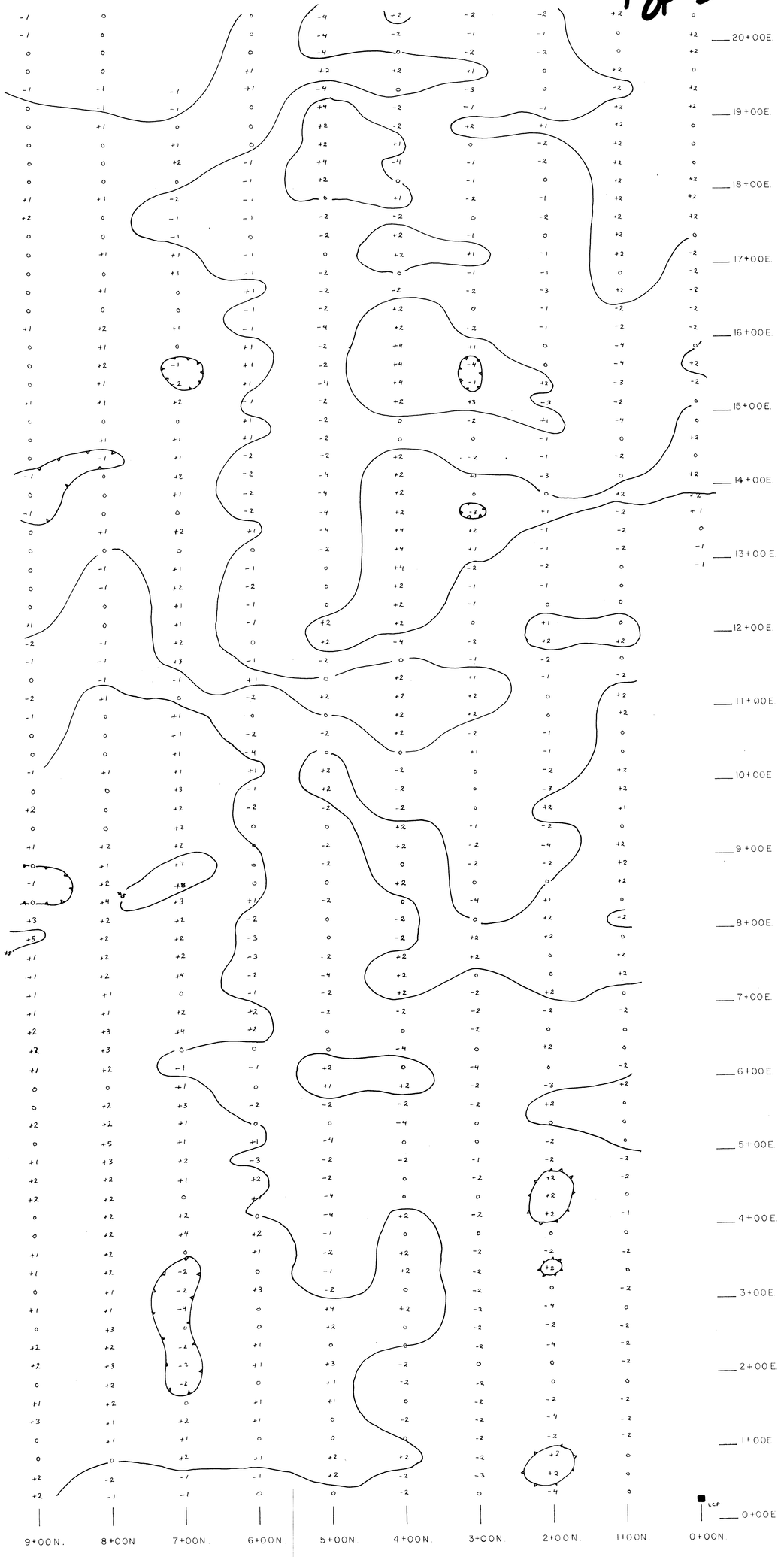
To accompany a report by K G Sanders P Eng dated Dec 10 1980

Electromagnetic Survey

8601 part of 2 K.B. Sanders

DIP ANGLE

PLATE B



FRASER FILTER

PLATE C

Consolidated Cinola Mines Ltd

VANCOUVER B C

YAKY 3 CLAIM

Queen Charlotte Islands B C

SKEENA M D

NTS 103F / 8E 9F

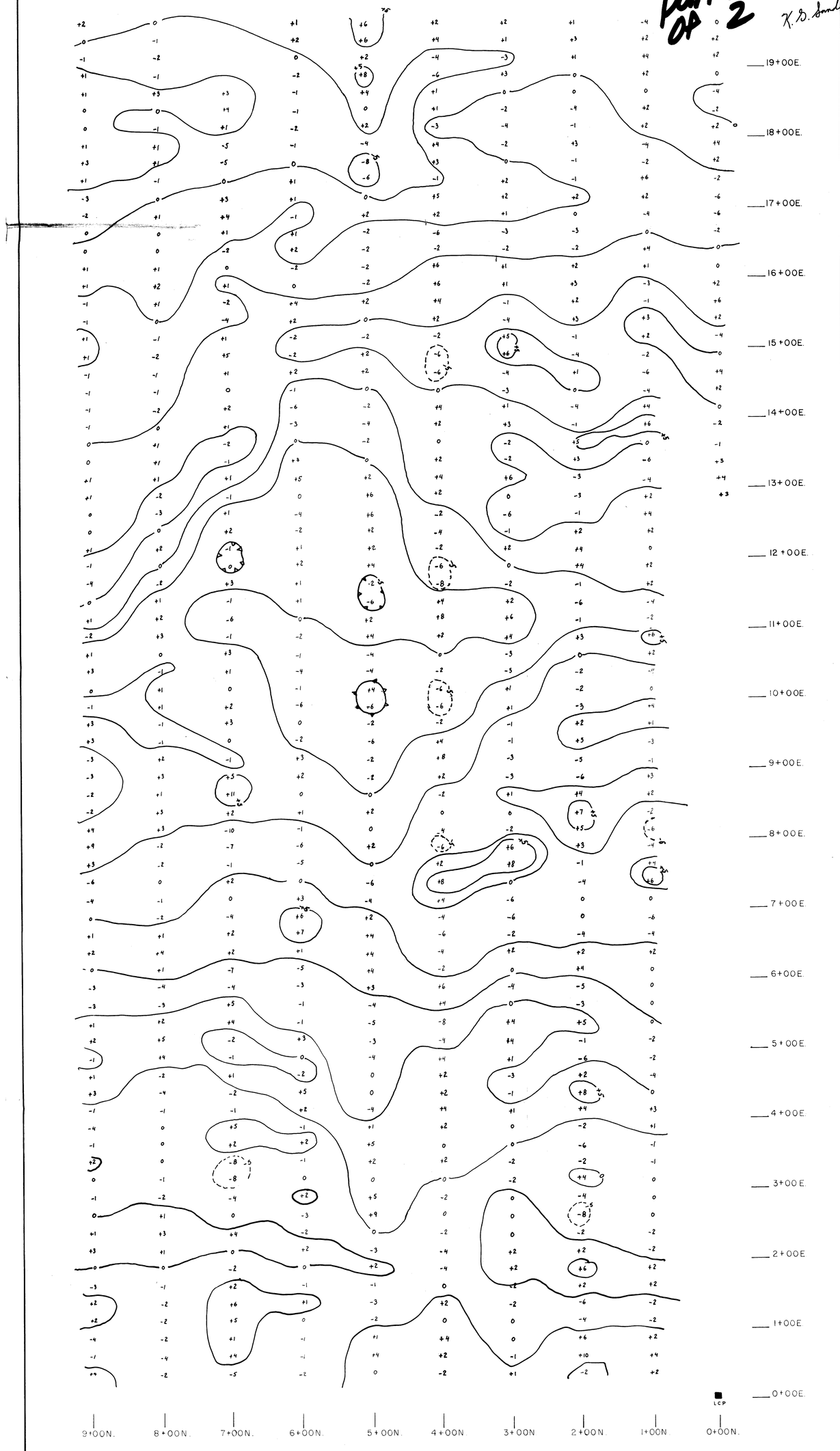
Scale 1cm 25m

To accompany a report by G. Sanders P Eng dated Dec 01 1980

Electromagnetic Survey

8691
PART 2
OF 2

K. B. Sanders



Consolidated Cinola Mines Ltd
VANCOUVER B C
YAKY 3 CLAIM
Queen Charlotte Islands B C
SKEENA M D
NTS 103F / 8E 9F
Scale 1cm 25m
0
100
To accompany report by K G Sanders P Eng
Dec 10 1980
Electromagnetic Survey
8601 part 2 of 2
FIELD STRENGTH
PLATE D
20+00E.
19+00E.
18+00E.
17+00E.
16+00E.
15+00E.
14+00E.
13+00E.
12+00E.
11+00E.
10+00E.
9+00E.
8+00E.
7+00E.
6+00E.
5+00E.
4+00E.
3+00E.
2+00E.
1+00E.
0+00E.
LCP
9+00N.
8+00N.
7+00N.
6+00N.
5+00N.
4+00N.
3+00N.
2+00N.
1+00N.
0+00N.

Consolidated Cinola Mines Ltd

VANCOUVER B C

YAKY 3 CLAIM

Queen Charlotte Islands B C

SKEENA M D

NTS 103F / 8E 9F

Scale 1cm 25m

To accompany a report by K G Sanders P Eng dated Dec 10 1980

Electromagnetic Survey

FIELD STRENGTH

PLATE D

K.G. Sanders

20+00E. 19+00E. 18+00E. 17+00E. 16+00E. 15+00E. 14+00E. 13+00E. 12+00E. 11+00E. 10+00E. 9+00E. 8+00E. 7+00E. 6+00E. 5+00E. 4+00E. 3+00E. 2+00E. 1+00E. 0+00E.

9+00N 8+00N 7+00N 6+00N 5+00N 4+00N 3+00N 2+00N 1+00N 0+00N

LCP