

93M

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A GEOPHYSICAL AND GEOCHEMICAL REPORT

ON THE

SPARK AND JOY CLAIMS

OMINECA MINING DIVISION

55° 126° SE

45 MILES NORTHEAST OF SMITHERS, B. C.

FOR

PALISADE EXPLORATION CORPORATION LTD.

BY

R. W. WOOLVERTON, P. ENG.

BETWEEN

AUGUST 7 AND NOVEMBER 10, 1970

FEBRUARY 26, 1971

VANCOUVER, B. C.

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## INTRODUCTION

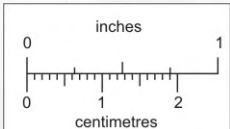
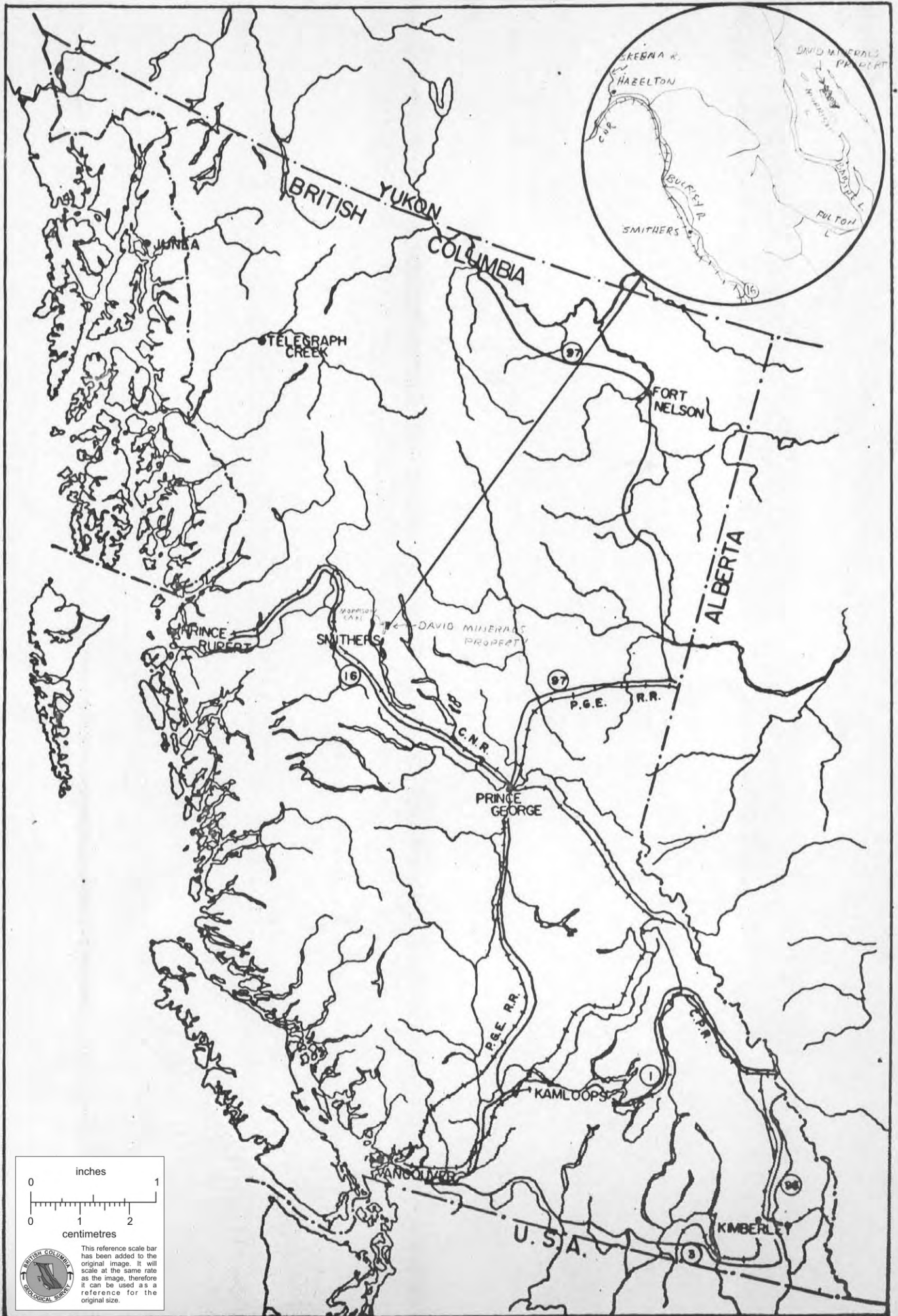
### LOCATION

The Spark and Joy claims are at the northeast corner of Morrison Lake about 45 air miles northeast of Smithers, B. C. at Latitude  $55^{\circ} 16'$  North and Longitude  $126^{\circ} 23'$  West. The area is most conveniently reached by float plane from McLure Lake, near Telkwa, or by helicopter from Smithers (Okanagan) or Houston (Alpine Helicopters). The more tedious route to the claims is by road to Smithers Landing on Babine Lake, by boat from there to the head of Hatchery Arm, by cat road from the Arm to the south end of Morrison Lake, and by boat to the north end of the lake.

Elevations on the claim group range from about 2,400 ft. at lake level to a maximum of 3,000 ft. Exposure is good on about a third of the property, but the remainder is drift covered. Scrub balsam and hemlock are widespread with birch and poplar on the drier hillsides. Several beaver-dammed swamps make travel locally difficult, although the going is about average for the Babine area.

### GEOLOGICAL SETTING

The area is underlain (Carter and Kirkham, Map 69-1, B. C. Department of Mines) by two sedimentary-volcanic groups. The older assemblage contains mudstone, greywacke, conglomerate, limestone, tuff and vesicular andesite. The clastic rocks predominate and are locally quite fossiliferous. The group is complexly folded, faulted and



This reference scale bar has been added to the original image. It will scale at the same rate as the image, therefore it can be used as a reference for the original size.

intruded by a few thin sills of hornblende diorite. The younger rocks belong to the Sustut Group (Cretaceous and Tertiary) and include cross-bedded arkose, conglomerate, quartzite and siliceous tuffs. The Sustut, which is confined to the western portion of the property along the shore of Morrison Lake, strikes north-northwesterly and dips steeply to the east. It appears to be locally ~~dr~~<sup>g</sup> folded near its north-northwesterly striking faulted contact with the older assemblage.

#### 1970 PROGRAM

In 1969, David Minerals Ltd. (the property vendors) surveyed the claim group with helicopter-mounted magnetic and electromagnetic equipment. Two areas of possible interest were outlined. Subsequent follow-up during 1970, which is the subject of this report, included the establishment of 35 line miles of cut grid and 42 line miles of flagged grid. This grid was soil sampled and surveyed with induced polarization and VLF-EM equipment. All survey work was done by experienced Evergreen Exploration personnel under the writer's supervision.

GEOCHEMISTRY

SOIL SURVEY

SAMPLING PROCEDURE AND ANALYSIS

Soil samples were collected at 200 ft. stations on the grid. They were taken by shovel from the "B" horizon, placed in wet strength paper bags, partially dried at room temperature, and shipped to Barringer Research Laboratory in Vancouver, where they were analyzed for total Cu and Mo. The results are plotted on Maps 2 and 3 which accompany this report. The analytical procedure used by Barringer is described in Appendix I.

RESULTS

The copper and molybdenum values are generally uniformly low and spotty. Most areas of over 40 ppm correlate with swampy areas or other topographic lows and the lower slopes of hillsides where the soils would be expected to contain more copper. Topographic highs, where bed-rock outcrops are mostly very low in copper.

The copper in the soils bear out the lithologic differences between the younger arkose sequence and older greywacke volcanic mudstone sequence. The soils on the older rocks show generally slightly higher copper values. An increase in overburden thickness in the northern part of the area also shows in the copper values. The values are generally lower except in swampy areas. Over a known showing of

very sparse chalcopyrite mineralization, the copper content of the soils shows no appreciable increase above background values. In most cases, molybdenum in the soils was very low and uniform.

GEOPHYSICS

RADEM SURVEY

EQUIPMENT AND SURVEY

The Radem unit used in the survey is a 1-man EM radio receiver utilizing the 12 to 24 kilocycle United States Naval Communication Broadcast Stations. It was built by Crone Geophysics Limited, 3607 Wolfedale Road, Mississauga, Ontario. The instrument utilizes higher than normal EM frequencies and is capable of detecting disseminated sulfides. However, due to the high frequency, it is affected by clay and other conductive overburden. Also, experience indicates that the numerous weak conductors usually present in a "porphyry environment" are masked by 50 ft. or more of cover even if it doesn't contain conductive layers. Some type curves and specifications are included as Appendix II of this report.

Readings were taken using the Cutler, Maine, Station (17.8 Kc) and Seattle, Washington (18.6 Kc). Both in-phase (dip angle) and out-of-phase (HF field strength) readings were recorded. The out-of-phase is a better measure of the intensity of conductivity than is the dip angle. However, the field strength response is a function of the transmitter power (which fluctuates daily) as well as the intensity of nearby conductivity. The results of the radem survey are plotted on Maps 4 to 7 which accompany this report.

A few lines on the south grid were surveyed with a Ronka EM16, also using the Cutler and Seattle Stations.

## RESULTS

Optimum coupling is obtained when the bearing from the operator to the transmitter is parallel to the strike of the conductor. Therefore, strong planar conductors such as massive sulfide veins and graphitic sediments will usually give a much stronger response on only one of a pair of orthogonal (or nearly so) frequencies such as Seattle and Cutler. Where conductive fractures are multi-directional, such as in a "porphyry environment," the responses from all the VLF frequencies are similar. Although Cutler and Seattle are not quite orthogonal, an anomalous area indicated by only one of the frequencies is very likely planar.

In general, the VLF responses on the Spark and Joy claims indicate fairly shallow cover (50 ft. or less) over most of the grid area except around the three small lakes between 64 North and 96 North and at the north end of the grid. Although many crossovers were found, only one area appears conductive on both frequencies and has associated out-of-phase response. This area of interest is centered on Line 120 North at 75 West. However, the response on Seattle is very much stronger than that on the Cutler frequency. This would indicate a strong planar conductor with a strike almost perpendicular to the bearing of Cutler from the property or roughly north-northeast.

Several narrow conductors just east of and parallel to the shore of Morrison Lake responded to the Seattle frequency only. Since there are several of them (i.e. 80 North at 109 West), they probably represent shearing in or weak conductivity within the northwest striking Sustut sediments.

## I. P. SURVEY

### EQUIPMENT AND SURVEY

A "Sabre" 500 watt pulse-type unit was used in the survey. This I.P. unit is manufactured by Sabre Electronics of Burnaby, B. C., and is powered by a 12 volt aircraft storage battery. Steel rods 4 ft. long by 1/2 in. diameter were used as current electrodes. The potential electrodes were two porous pots filled with a supersaturated copper sulfate solution. Where necessary, the current electrodes were "soaked down" with a soapy saline solution to reduce the contact resistance. Communication between the operator and electrode men was by walkie-talkie.

A 400 ft. Wenner Array was used in the survey with 200 ft. spreads used to check anomalous areas. Experience has shown that this unit is capable of penetration equal to the spread when using a Wenner array. At Newman (See Appendix III), a good response was obtained through 100 ft. (measured by several diamond drill holes along the profile) of cover on Line 25 East using a 400 ft. Wenner Array.

### RESULTS

The chargeabilities and apparent resistivities recorded during the survey are plotted on Maps 8 and 9, which are enclosed in the pocket in the back of this report.



The southern part of the surveyed area does not have any areas of I.P. interest. Beginning at 42 North and about 50 West and extending northwesterly through the northern part of the property is a large zone of very low apparent resistivity which indicates a possible major geological change. Towards the northern limit of the survey, this low resistivity zone widens to about three-quarters of the length of the survey lines. An irregular area of chargeability highs from 45 West to 100 West on 120 North extends in a roughly triangular shape to 50 West on 152 North. The trend and continuity of this zone is not clear because the lines are interrupted by the swampy pond on Line 136 North.

Notably, two highs on Line 120 North (at 85 West and 95 West), within this triangular area are not repeated on either Line 116 or 124 North. Also, the extreme highs all disappeared when the 200 ft. array was used but the adjacent intermediate chargeabilities remained about the same for the shorter spread. Such erratic response is typical of graphite.

The eastern edge of this triangular area of interest has distinctly different I.P. characteristics from the highs noted above. The chargeabilities increase more smoothly and the highs can be traced from line to line suggesting a sulfide source. Also, this chargeability zone does not fall within the large formational resistivity low discussed previously. The zone has a general north-south trend from 144 North at 52 West to 116 North at 57 West. The chargeability intensity does not appreciably decrease at 200 ft. spreads indicating relatively shallow cover. The one exception to this is at 144 North, 52 West where

the response disappears at the 200 ft. spread. However, an esker was noted on the air photos indicating a local increase in overburden depth.

CONCLUSIONS

The southern part of the surveyed area is reasonably well exposed. What little cover is present would probably not mask a geochemical expression. Since not only the soils but also the radem and I.P. were not anomalous in this area, no further work is warranted.

Both the soil sample results and the radem profiles indicate an increase in overburden thickness over the northern portion of the property. A conductive and chargeable zone centered on Line 120 North at 75 West is probably due to a north-northeasterly trending zone of graphite.

The north-south trending I.P. zone through 144 North at 52 West is possibly due to sulfides under locally shallow cover. Although the soil samples were unanomalous, the terrain slopes gently to the northwest into an area of apparently greater overburden depths so that a geochemical expression could be masked.

Respectfully submitted,



R. W. Woolverton, P. Eng.

**APPENDIX I**

**GEOCHEMICAL ANALYTICAL PROCEDURE**



304 CARLINGVIEW DRIVE  
REXDALE, ONTARIO, CANADA  
PHONE: 416-677-2491  
CABLE: BARESEARCH

December 8th, 1969

Evergreen Explorations Limited  
635-789 W. Pender Street  
Vancouver 1, B.C.

Attention: Mr. Woolverton

Dear Sir:

Our laboratory procedures for your samples are as follows:-

Total Copper - a portion of -80M material is digested in concentrated (soils) perchloric acid, diluted with water and analysed by atomic absorption.

HCl copper - same as above but using a dilute solution of hydrochloric (stream sed.) acid.

Total Molybdenum - a -80M portion of sample is fused with a carbonate flux and the molybdenum is colorimetrically determined using zinc dithiol.

Total copper was done on the "Donna" and "Red Top" projects and both total copper and moly on the "Allie". Our reports 168-B (for total copper) and 161-B (for HCl copper) had no project no. specified on the work order form received from you.

Should you require any further information, please do not hesitate to contact me.

Yours sincerely

BARRINGER RESEARCH LIMITED

*y. M. Hazeldene*

Yvonne Hazeldene  
Chief Analyst  
Department of Geochemistry

YH:lh

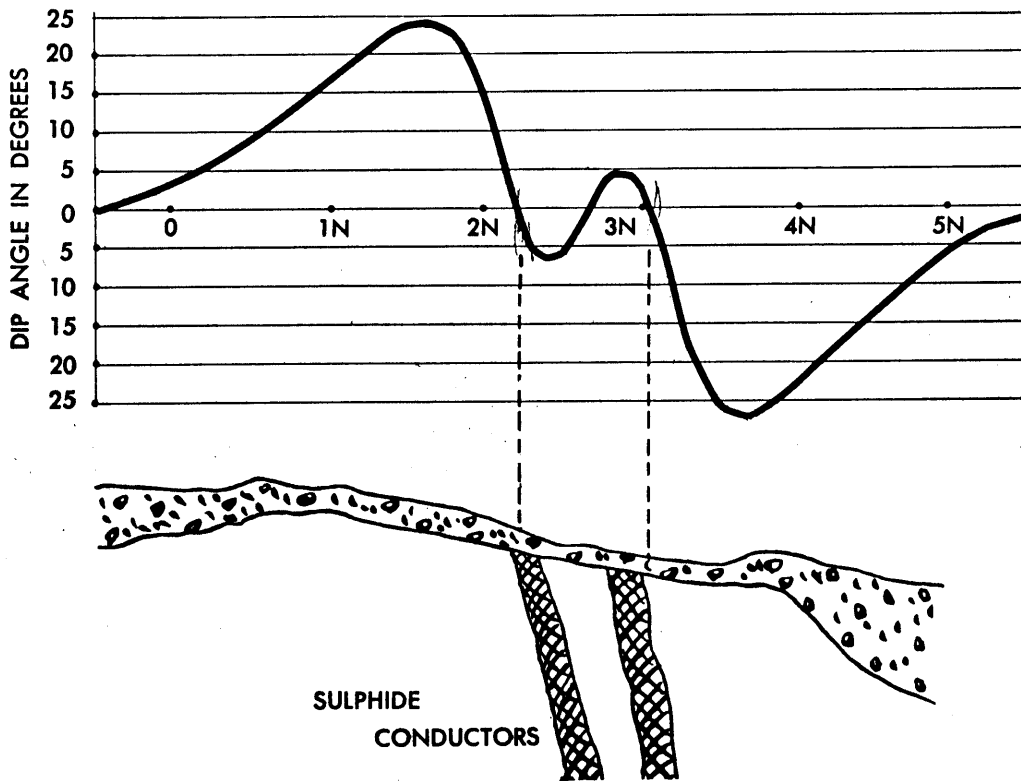
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**APPENDIX II**

**RADEM SPECIFICATIONS**

Example of a RADEM traverse over a Banded Conductor in the Timmins area of Ontario.



## SPECIFICATIONS

- READOUT** — Dip angle of resultant VLF magnetic field component from an inclinometer of  $\pm \frac{1}{2}$  degree sensitivity
- NULL INDICATOR** — Both audio (loudspeaker) and visual by means of an averaging field strength meter
- TUNING** — Preset switch tuning
- BATTERIES** — 2 of 9 volt Eveready # 216, independent test indicators
- STATIONS** — Standard 5 stations — Cutler, Maine 17.8; Seattle, Wash. 18.6; Ft. Collins, Colorado 20.0; Annapolis, Md. 21.4; Balboa, Panama 24.0 KCs.
- Optional — N.W. Cape, Australia 15.5; Lualualei, Hawaii 23.4; Rugby, England 16.0 KCs.
- Other stations as they become operational
- WEIGHT** — Receiver — 4 lb. Leather Case — 2 lb. Shipping Weight — 15 lb.

PRICE — \$2,250.00 Canadian

RENTAL — \$150.00 per month

FIGURE 2.

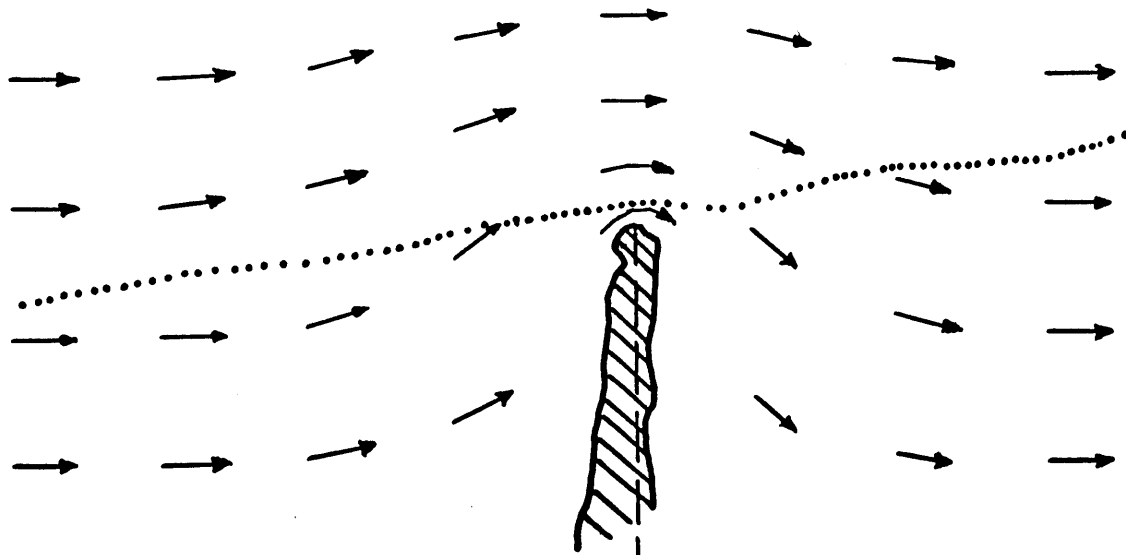
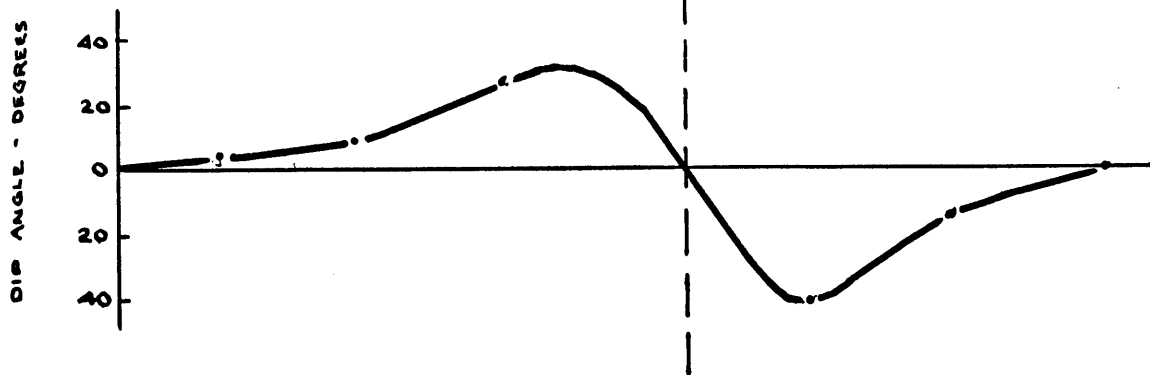


FIGURE 3.



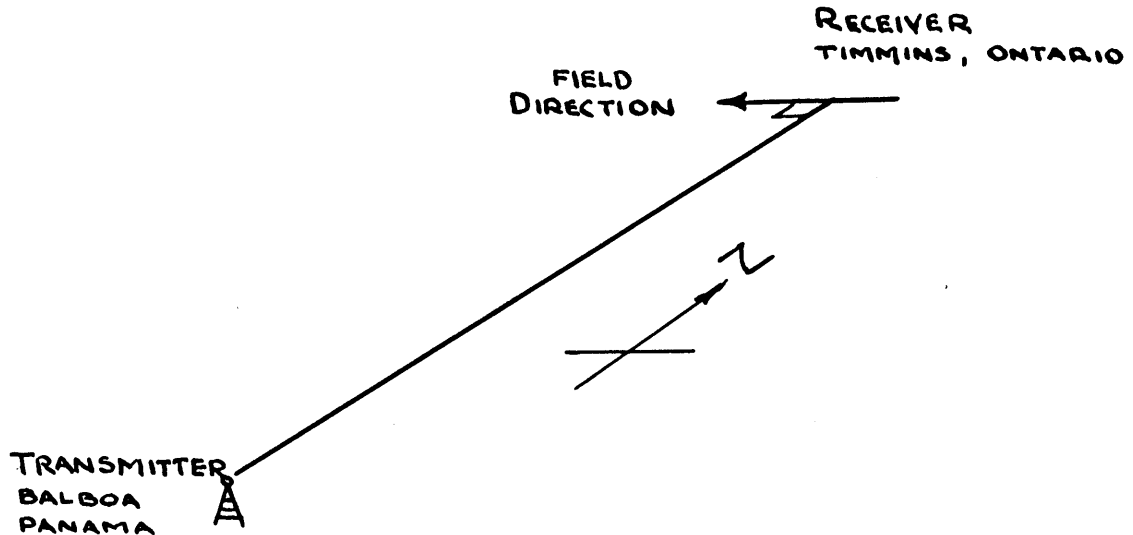
### THE VERY LOW FREQUENCY RADIO TRANSMITTING STATIONS

The purpose of these stations is to broadcast over large distances navigational and other information for use by ships and submarines. Numerous stations are situated around the globe and a considerable number are in the process of construction. Operational stations are located at Cutler Maine, Annapolis Maryland, Fort Collins Colorado, Seattle Washington, Balboa Panama, Rugby England, Lualualei Hawaii, Guam and N.W. Cape Australia. The frequency range used varies between 12 and 24 KC's and is thus 10 times higher than the normal frequencies used in mineral prospecting. This results in the RADEM method being more sensitive to lower conductivity and smaller sized bodies than normal EM equipment.



The direction of the magnetic component of the field from a VLF station is horizontal and perpendicular to the line between the operator and the transmitting station (see Figure 4). In this example

FIGURE 4.



the receiver at Timmins, Canada, is using the Panama Station that is due south of Timmins. The normal field direction in this case will be horizontal in an east-west direction. This field would couple with a north-south striking conductor. Thus for maximum coupling and therefore best results select a transmitter station located in the same direction as the geological strike. With the Timmins, Ontario, example Panama should be used in areas of north-south geological strike and Seattle Washington in areas of east-west strike. If the geological strike is not known then it is best to read two stations that are located in directions perpendicular to each other.

The U.S. naval VLF stations are shut down for periods of 4 to 8 hours every week for routine maintenance. This shutdown schedule is published by the U.S. Navy and is forwarded to RADEM users by Crone Geophysics.

#### OPERATION OF THE RADEM RECEIVER:

- Turn the unit ON by means of the ON-OFF switch. This can be left on all day since the battery drain is very low.
- Turn the station selector switch to the station you wish to use.
- Adjust the volume control knob such that the signal can be clearly heard.

# CRONE GEOPHYSICS LIMITED

979 LAKESHORE ROAD E.  
PORT CREDIT, ONTARIO

TELEPHONE 274-3704

CASE HISTORY # 1

March 1, 1968

Two Radem (VLF Radio EM) Traverses in the Timmins Area, Ontario.

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The use of the VLF radio transmitters as an EM primary field source is not new, but rather one of the oldest and earliest (1929) EM methods. The recent revival of this method is due to the greatly increased power and reliability of the transmitter stations. The method still has, however, its original advantages and limitations. If used properly it can be very effective; if pushed beyond its basic limitations disappointing results will be obtained. The following two profiles illustrate this point.

The first profile, over the Canadian Jamieson Mine near Timmins, illustrates the ability of the method to detect the three in echelon ore bodies. This is rather remarkable from three aspects: 1) no other EM method (horizontal loop, vertical loop - fixed and broadside, or JEM) was capable of detecting even one of these ore lenses; 2) the traverse crossed the yard of a producing mine, thus operating in an area of high hydro noise; 3) the dip angles obtained were very large, +30° to -30°.

The ore lenses are excellent conductors, but were not detected by previous EM surveys, due to their being discontinuous and of limited size.

The second profile, also from the Timmins area, is a traverse over a strong conductor buried below 75 ft. of clay and sand overburden. The RADEM profile fails to detect the conductor which is clearly outlined by the dual frequency vertical loop survey. (Note: The ratio of low frequency, 480 cps, to high frequency, 1800 cps, is unity.) This illustrates the inability of the VLF - EM method to penetrate the overburden. The VLF - EM method will produce large tilt angles from the clay bed itself. These large angles will occur towards the edge of the clay bed and thus complicate interpretation in these areas.

Conclusion: The VLF - EM method is a highly effective and rapid reconnaissance tool. It is limited by its high frequency and the inability to interpret from the results the conductivity and shape of the conductor. Until more experience is gained, this method should be used in shallow (less than 30 ft.) overburden areas.

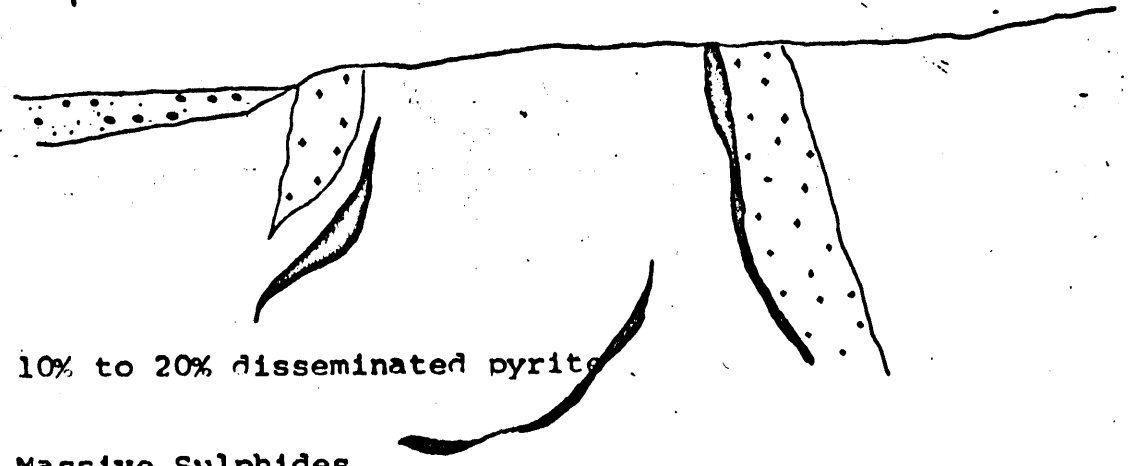
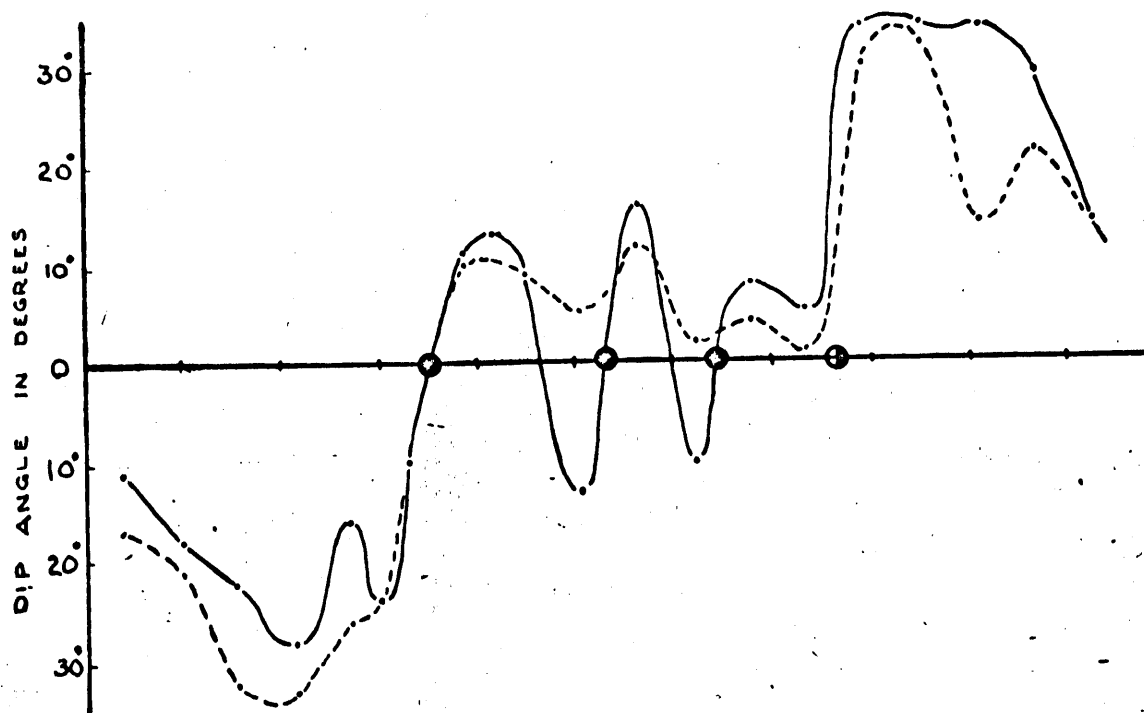
  
J. Duncan Crone,  
Geophysicist.

CASE HISTORY # 1

RADEM PROFILES OVER CANADIAN JAMIESON MINE, TIMMINS, ONTARIO.

Scale 1" = 20°; 1" = 200'

- Annapolis 21.4 kcs
- - - Panama 24.0 kcs
- True Cross-Over
- Indicated Cross-Over



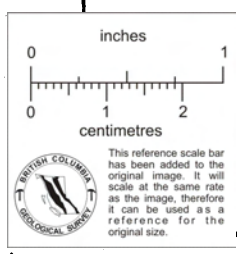
10% to 20% disseminated pyrite

Massive Sulphides

Sizes of ore lenses - 105,000, 135,000 and 280,000 tons

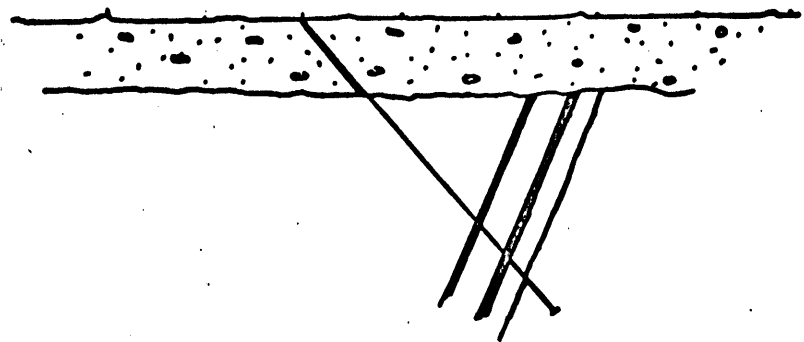
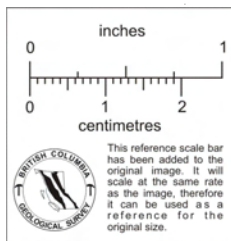
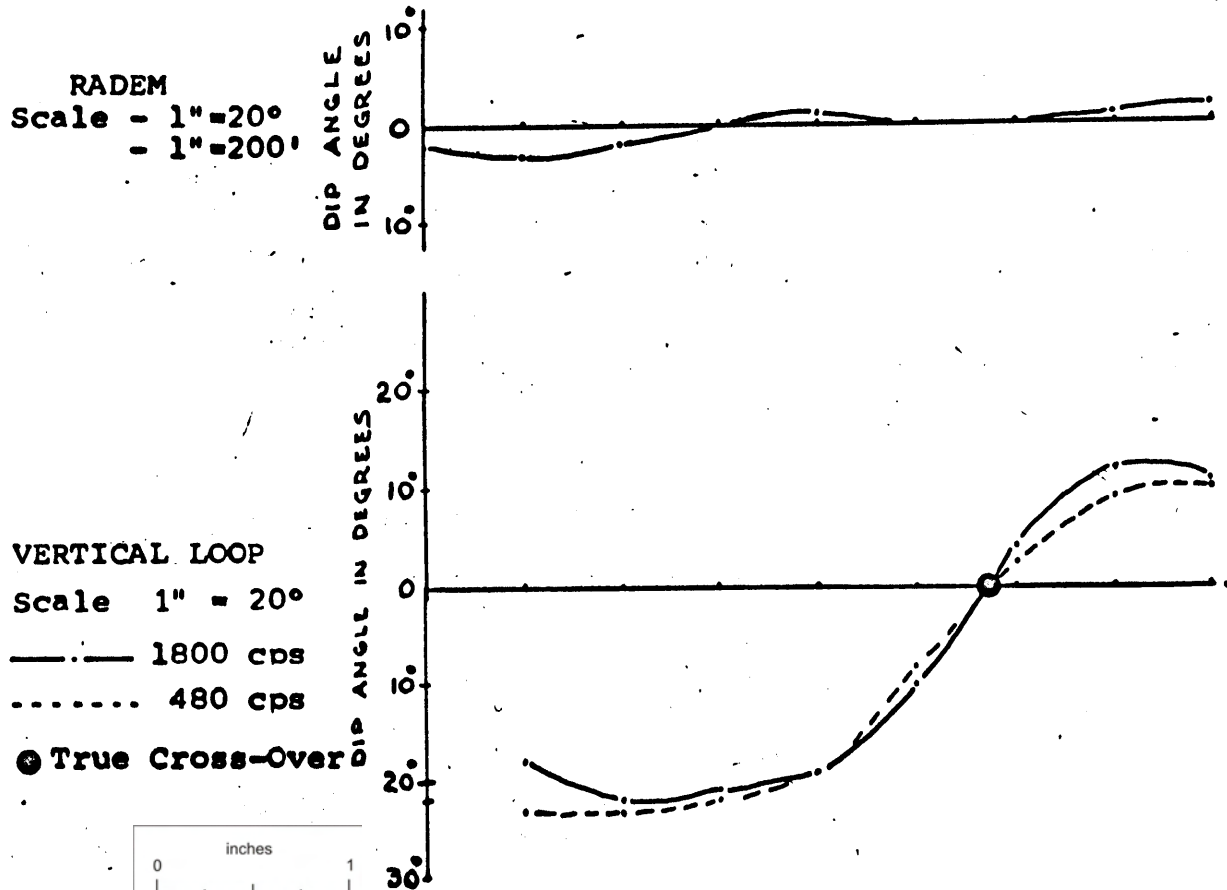
Only one of the ore lenses outcrops

Overburden is shallow over mineralized area.



CASE HISTORY # 1

RADEM AND DUAL FREQUENCY VERTICAL LOOP TRAVERSES OVER AN EXCELLENT CONDUCTOR BURIED AT MODERATE DEPTH (75'), TULLY TOWNSHIP, TIMMINS, ONTARIO.



Graphitic conductor with 10% pyrite

Depth of overburden = 75'

Overburden extends for at least one mile in all directions

**APPENDIX III**

**"SABRE" I. P. SPECIFICATIONS**

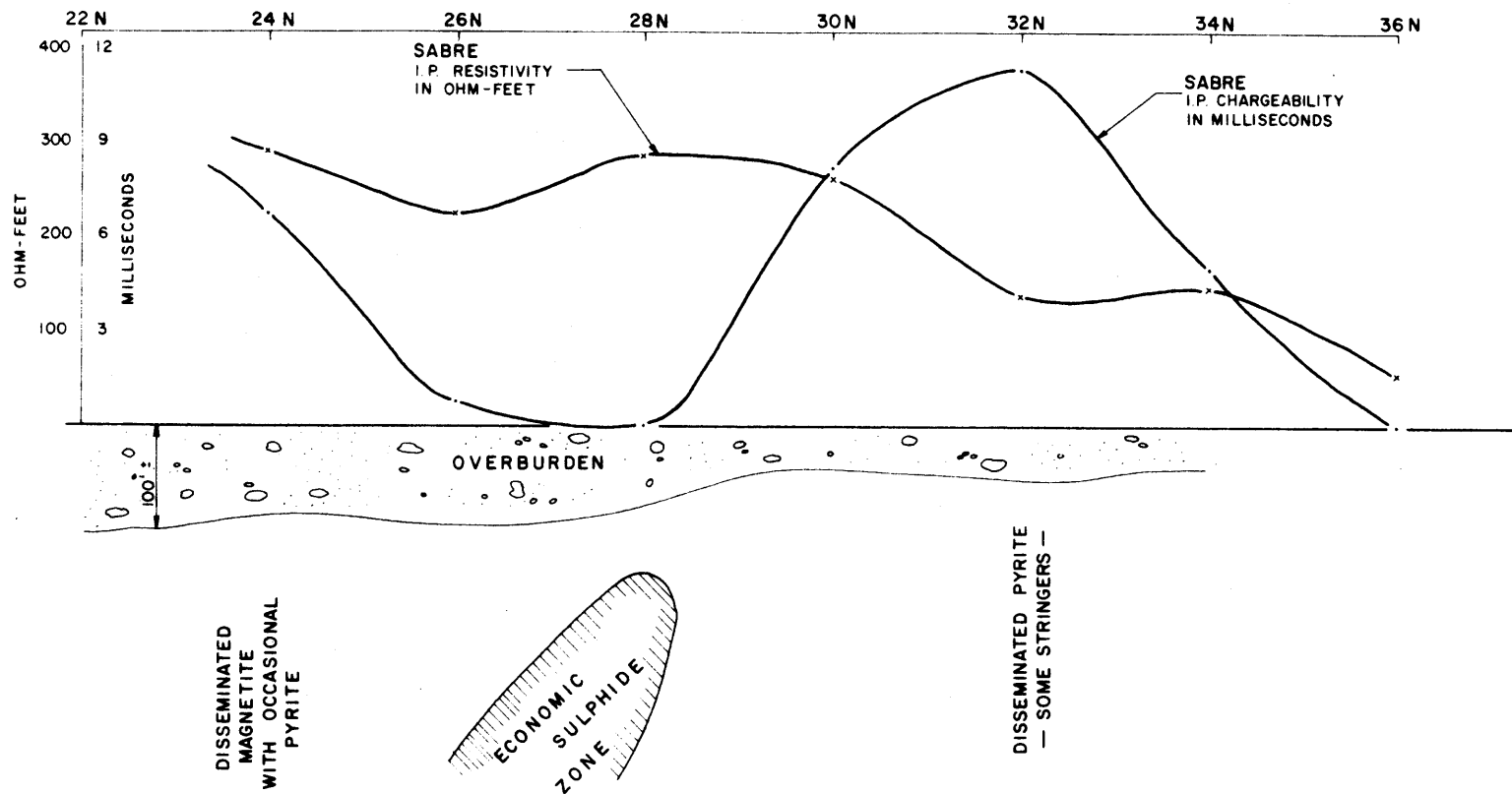
## INDUCED POLARIZATION:

The Sabre Portable Pulse Type instrument is a 500 watt unit capable of 3 or 4 hundred foot penetration as shown on the accompanying profiles. Very little reduction in anomaly intensity was noted over the northern limb of Noranda's Newman ore body, where it is covered by 100 feet of glacial till.

Because of its light weight, the "Sabre" is ideal for reconnaissance work. Using a 400 foot Wenner array, Radem (V.L.F./E.M.), and Magnetometer readings can be taken, soil samples collected, and the chargeability and resistivity determined by a 4 man crew simultaneously in open bush without pre-existing lines. Cut lines are necessary only in areas of high magnetic intensity where it is impossible to maintain a straight line by compass.

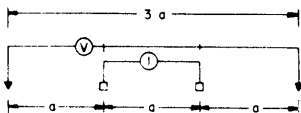


The "SABRE" at NEWMAN



**INSTRUMENT**

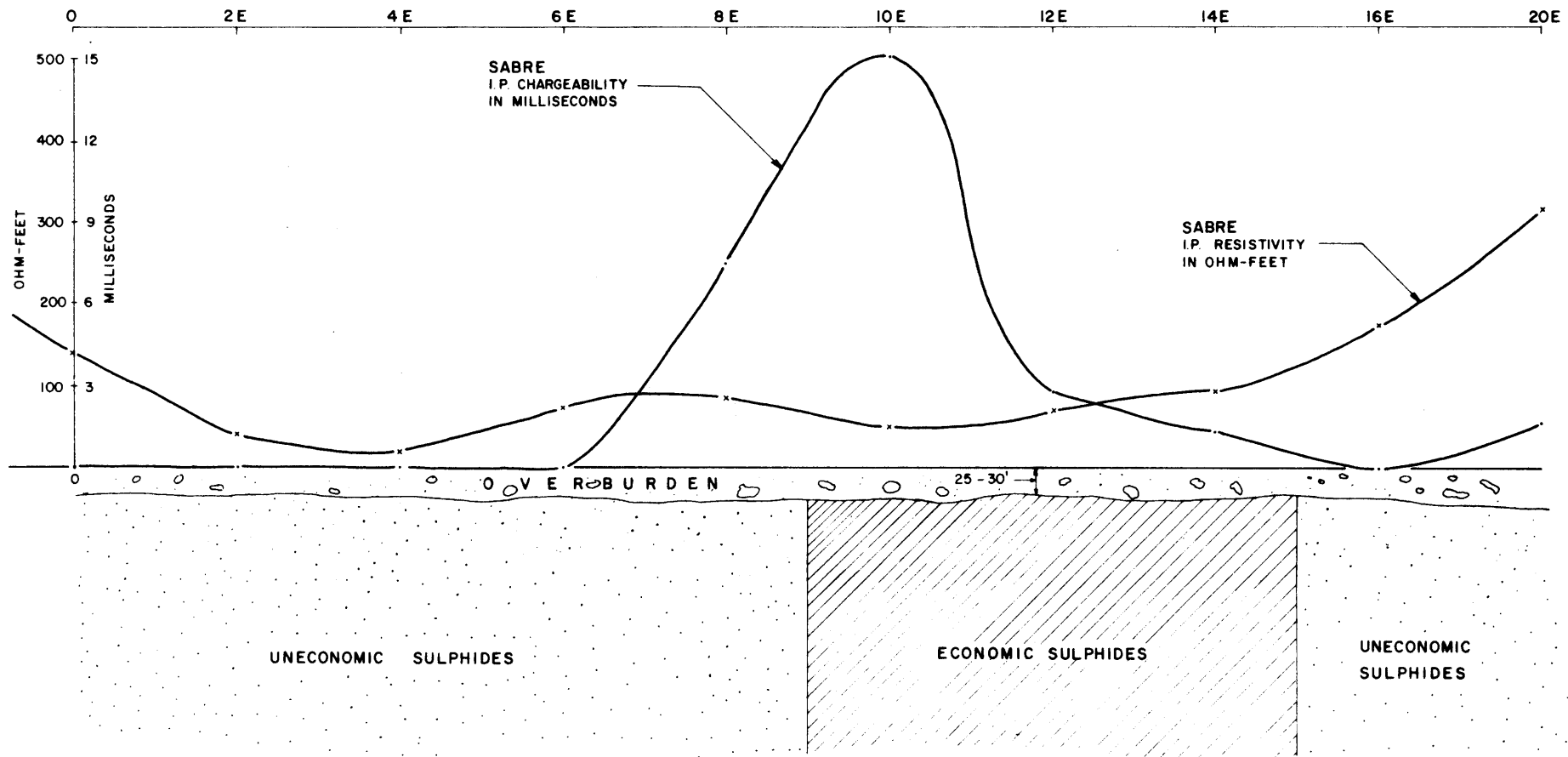
SABRE - PORTABLE PULSE TYPE  
500 WATTS  $\rho = 400'$  WENNER ARRAY



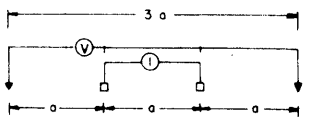
**NOTE:**

GEOLOGICAL DATA COURTESY OF  
NORANDA EXPLORATION Co. LTD.

LINE 25 E  
NEWMAN PROPERTY  
AT  
BABINE LAKE, B.C.



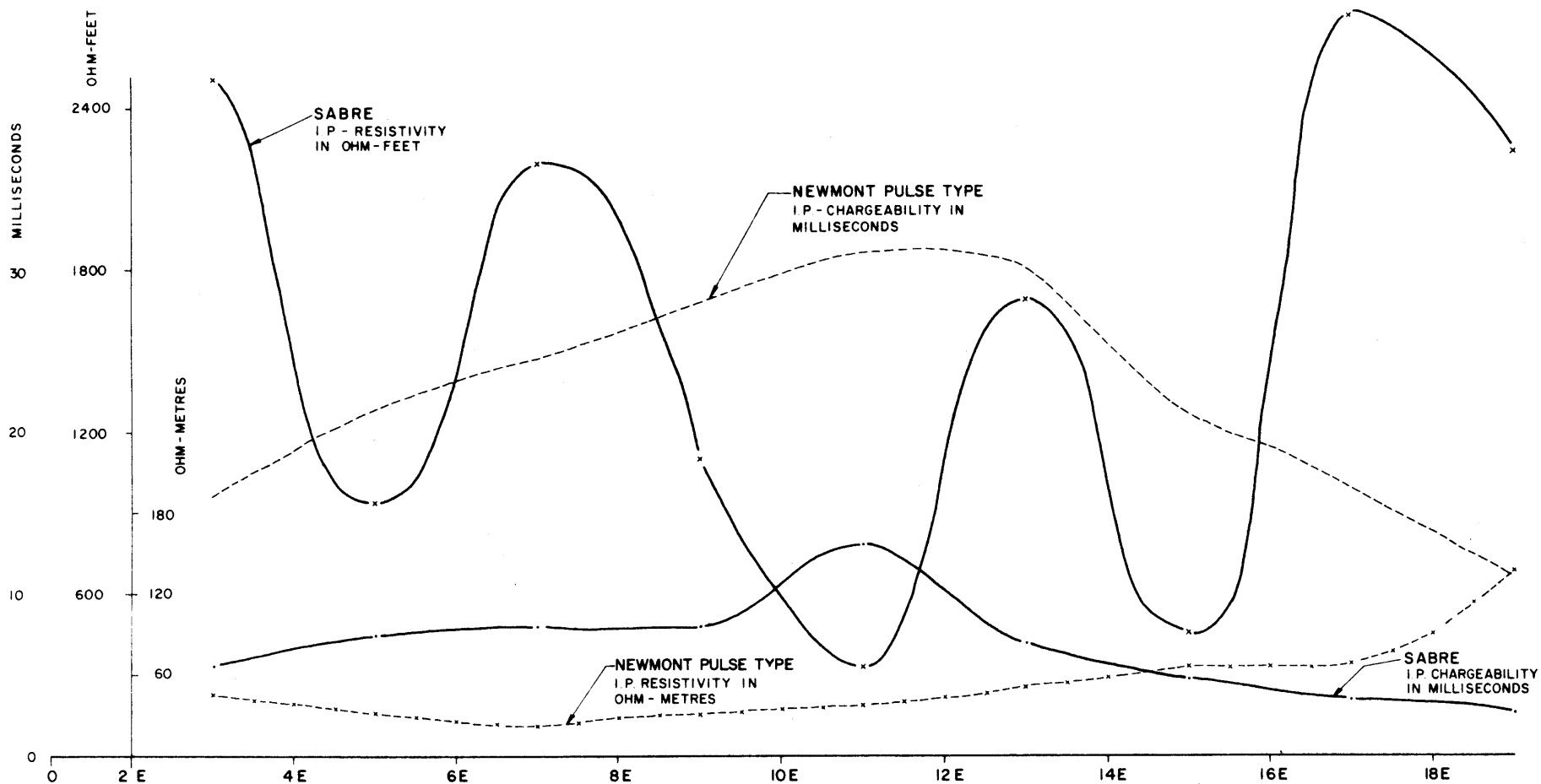
INSTRUMENT  
 SABRE - PORTABLE PULSE TYPE  
 500 WATTS  $a = 400'$  WENNER ARRAY



NOTE:  
 GEOLOGICAL DATA COURTESY OF  
 NORANDA EXPLORATION Co. LTD.

LINE 20 N  
 NEWMAN PROPERTY  
 AT  
 BABINE LAKE, B.C.





INSTRUMENTS:

SABRE - PORTABLE PULSE TYPE  
 500 WATTS  $a = 200'$  WENNER ARRAY  
 NEWMONT - PULSE TYPE  
 7500 WATTS  $n=1, a = 200'$  POLE-DIPOLE

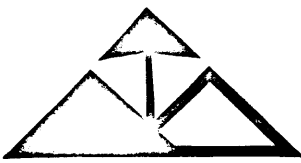
NOTE:

SURVEY PERMISSION COURTESY OF  
 CYPRUS EXPLORATION CORPORATION LTD.

LINE 16 N  
 BIG ONION PROSPECT  
 AT  
 SMITHERS, B. C.

**APPENDIX IV**

**DECLARATION OF EXPENDITURES**



# Evergreen Explorations Ltd.

- R. WOOLVERTON  
GEOLOGIST, P.ENG.
- R. C. O'BRIEN  
FIELD SUPERVISOR
- JOHN C. OSWALD & CO., C.A.'s  
ACCOUNTANTS:

## CONTRACT EXPLORATION

- 5424 HALIFAX ST., BURNABY 2, B.C., CANADA, PHONE - 299-6998
- P.O. BOX 604, SMITHERS, B.C., CANADA PHONE - 847-3523

635 - 789 W. PENDER ST.  
VANCOUVER 1, B.C., CANADA

January 11, 1971.

Palisade Exploration Corporation Ltd.,  
c/o Cyprus Explorations Corp. Ltd.,  
510 West Hastings Street,  
Vancouver 2. B.C.

### INVOICE (David Project)

Geochemical and geophysical survey at Morrison Lake, B.C.,  
per contract as follows -

125 line miles @ \$130/mile	\$ 16,250.00
365 man days room and board @ \$7/day	<u>2,555.00</u>
	18,805.00

<u>Disbursements</u>	<u>Chq. #</u>		
Trans-Provincial Airlines	782	\$ 140.00 V	
Trans-Provincial Airlines	806	142.00 V	
Trans-Provincial Airlines	836	135.00 V	
B.C. Telephone Co.	854	20.50 V	
Trans-Provincial Airlines	864	207.70 V	
Greyhound Lines	R.W. #27	8.65 V	
Okanagan Helicopters	874	1,745.00 V	
Alpine Helicopters	875	300.00 V	
Trans-Provincial Airlines	893	45.00 V	
Greyhound Lines	R.W. #28	<u>30.00 V</u>	
			<u>2,773.85</u>
			21,578.85

Less received on account from  
Cyprus Explorations Corp. Ltd. -

1970

October 30th

December 9th

\$ 5,130.00

10,295.00

15,425.00

\$ 6,153.85

V - copies of invoices attached

E & O E

*John C. Oswald & Co.*  
Accountants

# Trans-Provincial Airlines Ltd.

CHARTER AND  
CONTRACT TICKET

Invoice  
Number

Report  
Number

Charge to: *CYPRUS EXPLORATION*

Date <i>20/9/70</i>	Cash	Phone
A/C Type <i>Boeing</i>	CF- <i>TOS</i>	Warrant or Reg. No.
Base <i>Malindi</i>	Pilot <i>S. J. JONES</i>	

From: *Malindi* To (1) *Morrison*  
 (2) To (3)  
 (4) To (5)

FARE <i>70</i>	Miles @ \$ <i>78</i>	\$ <i>54.60</i>
Contract Rate	Hours @ \$	
Waiting Time @ \$		
Extra Landings @ \$		
Pilot Expenses		
Other		
TOTAL CHARGES		\$ <i>54.60</i> ✓

Authorized By *[Signature]*

THIS TICKET IS EXPRESSLY SUBJECT TO THE CONDITIONS PRINTED ON THE REVERSE SIDE OF TICKET AND WHICH ARE HEREBY ACCEPTED: (PASSENGERS' SIGNATURES)

*Handwritten notes:* 27.17.21, 24, 15.53

**RECEIVED**  
OCT 5 - 1970

Nº 15155

# Trans-Provincial Airlines Ltd.

CHARTER AND  
CONTRACT TICKET

Invoice  
Number

Flt. Report  
Number

Charge to: *Cyprus Exploration Exp. Corp*

Date	Cash	Phone
A/C Type <i>Super cut</i>	CF- <i>TUE</i>	Warrant or Reg. No.
Base <i>Malindi</i>	Pilot <i>P. Marshall</i>	

From: *Malindi* To (1) *Morrison*  
 To (2) To (3)  
 To (4) To (5)

FARE <i>96</i>	Miles @ \$ <i>37</i>	\$ <i>35.52</i>
Contract Rate	Hours @ \$	
Waiting Time @ \$		
Extra Landings @ \$		
Pilot Expenses		
Other <i>Daw</i>		
TOTAL CHARGES		\$ <i>35.52</i> ✓

Authorized By *[Signature]*

THIS TICKET IS EXPRESSLY SUBJECT TO THE CONDITIONS PRINTED ON THE REVERSE SIDE OF TICKET AND WHICH ARE HEREBY ACCEPTED: (PASSENGERS' SIGNATURES)

*Handwritten notes:* R. W

**RECEIVED**  
OCT 5 - 1970

Nº 15129

# Trans-Provincial Airlines Ltd.

Flt. Report Number

CHARTER AND CONTRACT TICKET

Invoice Number

Charge to:

*Various Expenses*

Date *8/14/70* Cash Phone  
 A/C Type *55012R* CF- *505* Warrant or Reg. No.  
 Base *Moncton* Pilot *S. Harrison*

From: *Moncton* To (1) *Moncton*  
 To (2) *Moncton* To (3)  
 To (4) To (5)

FARE *1300* Miles @ \$ *2.75* *\$ 7800*  
 Hours @ \$

Contract Rate

Waiting Time @ \$

Extra Landings @ \$

Pilot Expenses

Other

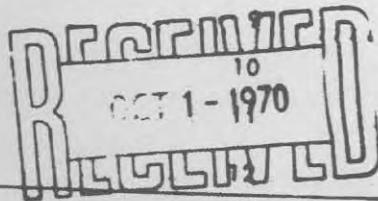
TOTAL CHARGES

*\$ 7800*

Authorized By *Pete Bland*

THIS TICKET IS EXPRESSLY SUBJECT TO THE CONDITIONS PRINTED ON THE REVERSE SIDE OF TICKET AND WHICH ARE HEREBY ACCEPTED. (PASSENGERS' SIGNATURES)

1 *George Biquette*  
 2 *Paul P. Bland* 8



No 14878

# Trans-Provincial Airlines Ltd.

Flt. Report Number

CHARTER AND CONTRACT TICKET

Invoice Number

Charge to:

*Various Expenses*

Date *8/10/70* Cash Phone  
 A/C Type *55012R* CF- *505* Warrant or Reg. No.  
 Base Pilot *S. Harrison*

From: *Moncton* To (1) *Moncton*  
 To (2) *Moncton* To (3)  
 To (4) To (5)

FARE *1000* Miles @ \$ *60* *\$ 6240*  
 Hours @ \$

Contract Rate

Waiting Time @ \$

Extra Landings @ \$

Pilot Expenses

Other

TOTAL CHARGES

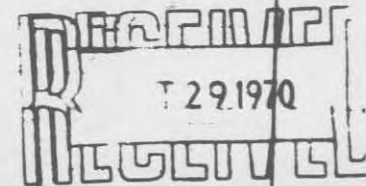
*\$ 6240*

Authorized By *Pete Bland*

THIS TICKET IS EXPRESSLY SUBJECT TO THE CONDITIONS PRINTED ON THE REVERSE SIDE OF TICKET AND WHICH ARE HEREBY ACCEPTED. (PASSENGERS' SIGNATURES)

1  
2  
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12



No 14396

Daw. 143

# Trans-Provincial Airlines Ltd.

Flt. Report Number	CHARTER AND CONTRACT TICKET	Invoice Number
--------------------	-----------------------------	----------------

Charge to: **CYPRUS EXPL CORP. LTD.**

Date <b>AUG 23 55</b>	Cash	Phone
A/C Type <b>SEALER</b>	CF- <b>30</b>	Warrant or Reg. No.
Base <b>YD</b>	Pilot <b>J.M. ARSENAULT</b>	

From: **S.M. THEIRS** To (1) **MURRISON**  
 To (2) **S.M. THEIRS** To (3)   
 To (4)  To (5)

FARE **100** Miles @ \$ **80** \$ **80.00**  
 Hours @ \$

Contract Rate  
 Waiting Time @ \$  
 Extra Landings @ \$  
 Pilot Expenses  
 Other

TOTAL CHARGES

\$ **80.00**

Authorized By **Pete Blond**

THIS TICKET IS EXPRESSLY SUBJECT TO THE CONDITIONS PRINTED ON THE REVERSE SIDE OF TICKET AND WHICH ARE HEREBY ACCEPTED (PASSENGERS' SIGNATURES)

- 1 7
- 2 8
- 3 9
- 4 10
- 5 11
- 6 12

**David M.**  
**143**

**Nº 14953**

# Trans-Provincial Airlines Ltd.

Flt. Report Number	CHARTER AND CONTRACT TICKET	Invoice Number
--------------------	-----------------------------	----------------

Charge to: **CYPRUS EXPL CORP. LTD.**

Date <b>7/17/55</b>	Cash	Phone
A/C Type <b>172R</b>	CF- <b>11.1</b>	Warrant or Reg. No.
Base <b>Pilot</b>	Pilot <b>Plus</b>	

From: **M. L. L...** To (1) **MURRISON (M. L.)**  
 To (2) **M. L. L...** To (3)   
 To (4)  To (5)

FARE **100** Miles @ \$ **1.10** \$ **110.00**  
 Hours @ \$

Contract Rate  
 Waiting Time @ \$  
 Extra Landings @ \$  
 Pilot Expenses  
 Other **INTERNAL MIN**

TOTAL CHARGES

\$ **125.00**

Authorized By **Pete Blond**

THIS TICKET IS EXPRESSLY SUBJECT TO THE CONDITIONS PRINTED ON THE REVERSE SIDE OF TICKET AND WHICH ARE HEREBY ACCEPTED (PASSENGERS' SIGNATURES)

- 1 7
- 2 8
- 3 9
- 4 10
- 5 11
- 6 12

**David M.**

**Nº 14685**



# Trans-Provincial Airlines Ltd.

Fit Report Number

CHARTER AND CONTRACT TICKET

Invoice Number

Charge to:

CYPRUS MINES

EXPLORATION

Date **OUT 6**

Cash

Phone

A/C Type **C-119S**

CF-

**YYM**

Warrant or Reg. No.

Base **MCLURE**

Pilot

**CAMERON**

From: **MCLURE**

To (1) **MORRISON**

To (2) **MCLURE**

To (3)

To (4)

To (5)

FARE

**96**

Miles @ \$

**.60**

\$ **58.00**

Hours @ \$

Contract Rate

Waiting Time

• \$

Extra Landings

• \$

Pilot Expenses

Other

TOTAL CHARGES

\$ **58.00**

Authorized By

*C. McFall*

THIS TICKET IS EXPRESSLY SUBJECT TO THE CONDITIONS PRINTED ON THE REVERSE SIDE OF TICKET AND WHICH ARE HEREBY ACCEPTED (PASSENGERS' SIGNATURES)

1 **Mark Wilson** 7

2 **Gregg Silson** 8

3

4

5

6

12

RECEIVED  
NOV 29 1970

Daw. 143

No 13862

# Trans-Provincial Airlines Ltd.

Flt Report Number _____	<b>CHARTER AND CONTRACT TICKET</b>	Invoice Number _____
----------------------------	--	-------------------------

Charge to: CYPRUS

Date	Cash	Phone
A/C Type <u>C-119</u>	CF- <u>807</u>	Warrant or Reg. No.
Base <u>St. John's</u>	Pilot <u>W. Hopwood</u>	

From: MCC harrise To (1) McKissick  
 To (2) McChone To (3) \_\_\_\_\_  
 To (4) \_\_\_\_\_ To (5) \_\_\_\_\_

FARE <u>90</u>	Miles @ \$ <u>1.10</u>	\$ <u>99.00</u>
	Hours @ \$ _____	
Contract Rate _____		
Waiting Time @ \$ _____		
Extra Landings @ \$ _____		
Pilot Expenses _____		
Other <u>10.00 (EXCESSIVE CHARGES)</u>		..... <u>15.00</u>
<b>TOTAL CHARGES</b>		<b>\$ <u>114.00</u></b>

Authorized By \_\_\_\_\_

THIS TICKET IS EXPRESSLY SUBJECT TO THE CONDITIONS PRINTED ON THE REVERSE SIDE OF TICKET AND WHICH ARE HEREBY ACCEPTED (PASSENGERS' SIGNATURES)

- |   |    |
|---|----|
| 1 | 7  |
| 2 | 8  |
| 3 | 9  |
| 4 | 10 |
| 5 | 11 |
| 6 | 12 |

No 15058



Sept. 10<sup>th</sup> - Oct 30<sup>th</sup> 1970

M. Cypress Exploration Corporation Ltd.

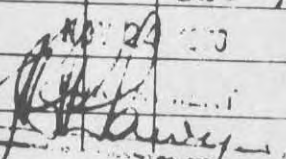
DAVID # 143

1101-510 West Hastings St.  
Vancouver 2 B.C.

In account with Indian River Exploration Services

Terms \_\_\_\_\_ Box 635  
Smithers B.C.

Project 143				
Morrison Lake				
6 1/2 miles of cut line @	125 <sup>00</sup> per mile			812 50
25 miles flag and blazed lines	@ 75 <sup>00</sup> per mile			1875 00
5 1/2 miles line chopped with axes	@ 100 <sup>00</sup> per mile			550 00
Cut 1 helicopter pad				25 00
TOTAL				3262 50

APPROVED  
 NOV 24 1970  


Aug. 21 - Sept. 9

1970

*M* Cyprus Exploration Corporation Ltd.

1101 - 510 West Hastings Street  
Vancouver 2, B.C.

*In account with* Indian River Exploration Services

Box 635, Smithers, B.C.

*Terms* Please expedite

Project 143

Morrison Lake

12 miles cut grid lines @ 125.00 per mile

✓ 1500.00

11 miles blazed and flagged line @ 75.00 per mile

✓ 825.00

1 mile access trail

✓ 100.00

Total

2425.00

*Less: Attached Bill*

4.47

2,420.53

RECEIVED  
SEP 28 1970  
RECEIVED

APPROVED

NOV 2 1970

FINANCE

Aug 12<sup>th</sup> - Apr 12<sup>th</sup> 1970

M. Cyprus Exploration Corp. Ltd.

1101 - 510 West Hastings St.  
Vancouver 2 B.C.

142

In account with Indian River Exploration Services

Box 635

Smithton B.C.

Terms

3 months boat rental @ 75 <sup>00</sup> per month	225	00
3 months rent for 10 H.P.	375	00
Current water @ 125 <sup>00</sup> per month		
	520	00

AUG 7<sup>th</sup> - AUG 21<sup>st</sup> 1970

N. CYPRUS EXPL. CORP LTD

In account with INDIAN RIVER EXPLORATION SERVICES

Box 635 SMITHERS B.C.

(PER PETE BLAND)

Terms

PROJECT # 143  
MORRISON LAKE

15 MILES CUT GRID LINES @ 125<sup>00</sup> PER MILE

1875<sup>00</sup>

7 MILES OF BLAZED AND FLAGGED GRID  
LINES @ 75<sup>00</sup> PER MILE

525<sup>00</sup>

TOTAL

2400<sup>00</sup>

RECEIVED  
AUG 31 1970  
REGULATORY



# SOUTH COAST AIR SERVICES LTD.

~~PO BOX 630 PRINCE RUPERT B.C.~~  
 P.O. Box 385 Smithers B.C.  
 Charter and Contract Ticket

Flt. Report Number	TELEPHONES: 624-6452 AND 624-6434	Invoice Number
--------------------	--------------------------------------	----------------

Charge to: ~~XXXX~~ CYPRUS EXPLORATION  
 101-510 W. HODGINS, VAN. SOC  
DAVID MINERAL PROJECT.

Date <u>AUG. 29/70</u>	Cash	Phone
A/C Type <u>CESSNA</u>	CF- <u>VZS</u>	Warrant or Reg. No.
Base <u>SMITHERS</u>	Pilot <u>J. HODGE</u>	

From: SMITHERS To (1) MORRISON  
 To (2) SMITHERS To (3) MORRISON  
 To (4) SMITHERS To (5) \_\_\_\_\_

FARE 180 Miles @ \$ 55 \$ 99.00  
 Hours @ \$ \_\_\_\_\_  
 Contract Rate \_\_\_\_\_  
 Waiting Time @ \$ \_\_\_\_\_  
 Extra Landings @ \$ \_\_\_\_\_  
 Pilot Expenses \_\_\_\_\_  
 Other (Including Gas Surcharges, Etc.) \_\_\_\_\_  
**TOTAL CHARGE \$ 99.00**

*David*

Authorized [Signature]  
**SEP 28 1970**  
 This ticket expressly subject to the conditions printed on the reverse side of this ticket and which are hereby accepted:  
 (Passenger signatures)

For Office Use Only  
 A No 445



# Alpine HELICOPTERS LTD.

P O BOX 208 KELOWNA BRITISH COLUMBIA

CYPRESS EXPLORATION CORP. LTD.,  
822 - 510 W. HASTINGS ST.,  
VANCOUVER 2, B.C.

INVOICE NO. K 2022

DATE SEPTEMBER 17, 1970

CONTRACT NO K800

WORK ORDER NO

TO: CHARGE FOR HIRE OF BELL 47G3B HELICOPTER  
IN THE HOUSTON AREA

CF-NOB AUG.30/70 FLIGHT REPORT NO. 3029 2:15 hrs.

2 hrs. .15 mins. @ \$145.00 per hr. \$326.25

TOTAL AMOUNT DUE THIS INVOICE \$326.25

No. 3029 ALPINE HELICOPTERS LTD

MCCALL FIELD, CALGARY 67, ALBERTA. BOX 208, KELOWNA

Charterer *Cypress Exploration Corp.*

Billing address *822 - 510 West Hastings Vancouver 2, B.C.*

I hereby authorize the charter flight(s) to be recorded on this sheet and I certify that I am empowered to give this authorization on behalf of the above-named charterer and in the event of this authority I shall be responsible for payment of the herein incurred.

NAME \_\_\_\_\_ ADDRESS \_\_\_\_\_

A/C	PILOT	LOCATION	DATE	FLIGHT
CF- No.	ENG.	UP	DOWN	HOURS
<i>438</i>	<i>John</i>	<i>Houston</i>	<i>Aug 30 70</i>	<i>2:15</i>
<i>None</i>	<i>None</i>	<i>None</i>	<i>None</i>	<i>None</i>

I certify that the flying was done under the above authority

SIGNATURE *[Signature]*

INVOICE COPY

BASE SMITHERS

BASE NO 112 DATE 22 10 70  
DAY MONTH YEAR

16791

# FLIGHT REPORT



**OKANAGAN HELICOPTERS LTD.**  
HEAD OFFICE  
VANCOUVER INTERNATIONAL AIRPORT  
RICHMOND, B.C.

FLIGHT LOCATION 85 TYPE OF FLIGHT

LOCATION OF FLIGHT Local

ACCOUNT NO. 20530-4 AIRCRAFT REG. CF - CAB  
TYPE OF CONTRACT - X  
 CASUAL  DAILY  TERM  
STATE OF A/C - 1  
UNSERVICABLE  STORED

CHARTERER

CYPRUS EXPLORATIONS LTD.  
1101-510 W. HASTINGS ST.  
VANCOUVER 2, B.C.

PILOT 1 G. Freeman

FUEL & OIL - X		FLYING HOURS ACCORDING TO FUEL USED		PUR. ORDER NO.	
O.H. LTD.	<input checked="" type="checkbox"/> CUST.	O.H.L.	<input type="checkbox"/> CUST.		

OPERATION	TAKE-OFF	LAND	FLYING TIME
<u>SMITHERS - MORRISON LAKE AREA - SMITHERS</u>			<u>35</u>
<u>CAMP &amp; CREW MOVE</u>			
<u>7 SUPPL. LOADS</u>			

#143

**RECEIVED**  
NOV 2 - 1970

OUR TERMS ARE NET 30 DAYS - Interest of 1% per month will be charged if not paid within 30 days.

NO. OF PASSENGERS	DETAILS OF CARGO	EXPENSE CLAIM NO.	AMOUNT	NON REV. HRS.	RATE	REVENUE HRS.
<u>4500</u>					<u>23000</u>	<u>35</u>
					<b>SUB TOTAL →</b>	<u>900.85</u>

BY THE SIGNING OF THIS FLIGHT REPORT I ACKNOWLEDGE THAT THE TERMS AND CONDITIONS THEREOF AS SET FORTH IN THE TARIFF FILED WITH THE A.T.B. ARE AVAILABLE FOR EXAMINATION AT OKANAGAN HELICOPTERS LTD.

EXTRA CHARGES OR ADJUSTMENTS

SIGNED FOR CHARTERER BY  
R Woolbert

SIGNED FOR OKANAGAN HELICOPTERS LTD. BY  
G. Freeman

TOTAL → \$ 900.85  
CUSTOMER INVOICE



# BARRINGER RESEARCH LIMITED

304 CARLINGVIEW DRIVE  
REXDALE, ONTARIO, CANADA  
PHONE: 416-677-2491  
CABLE: BARESEARCH

143

ADVANCED TECHNIQUES AND INSTRUMENTATION FOR THE EARTH SCIENCES

DATE: October 1, 1970

PROJECT: 120-33

PERIOD COVERED:

PROGRESS BILLING:

SHIPPING REPORT:

WORK REPORT: 272-B

FED. SALES TAX: N/A

ONT. SALES TAX: N/A

Cyprus Exploration Corp. Ltd.,  
1101 - 510 W. Hastings St.,  
Vancouver 2, B. C.

TERMS: NET

AUTHORITY: Mr. Paul Sawyer - Your Proj. 143

TO: Geochemical Analysis

107 Samples analysed for total copper	@ \$1.00 each	107.00
107 Samples analysed for total molybdenum	@ \$2.50 each	267.50
107 Soil sample preparation	@ \$0.20 each	21.40

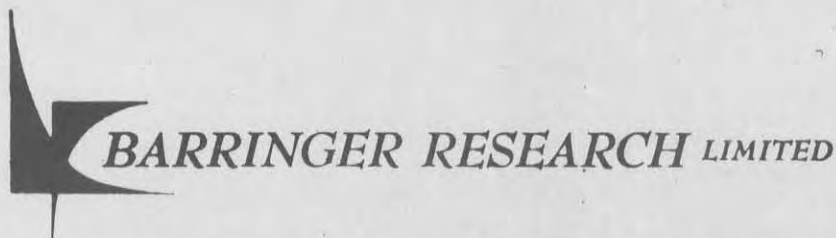
395.90

RECEIVED  
OCT 19 1970  
RECEIVED

APPROVED  
OCT 19 1970  
FOR PAYMENT ✓

INVOICE N° 7891





143

304 CARLINGVIEW DRIVE  
 REXDALE, ONTARIO, CANADA  
 PHONE: 416-677-2491  
 CABLE: BARESEARCH

ADVANCED TECHNIQUES AND INSTRUMENTATION FOR THE EARTH SCIENCES

DATE: October 2, 1970

PROJECT: 120-33

PERIOD COVERED:

PROGRESS BILLING:

SHIPPING REPORT:

WORK REPORT: 273-B

FED. SALES TAX: N/A

ONT. SALES TAX: N/A

Cyprus Exploration Corp. Ltd.,  
 1101 - 510 W. Hastings,  
 Vancouver 2, B. C.

TERMS: NET

AUTHORITY: Mr. C. McFall - Your Proj: 143 "David Minerals"

to: Geochemical Analysis


✓ 336 Samples analysed for total copper	@ \$1.00 each	336.00	
336 ✓ 336 Samples analysed for total moly.	@ \$2.50 each	<del>840.00</del> 837.50	
✓ 336 Soil sample preparation	@ \$0.20 each	67.20	

1240.70  
~~1,243.20~~

**RECEIVED**  
 OCT 19 1970  
**REGISTERED**

**APPROVED**  
  
 OCT 19 1970  
 FOR PAYMENT ✓

INVOICE N<sup>o</sup> 7885



# BARRINGER RESEARCH LIMITED

304 CARLINGVIEW DRIVE  
 REXDALE, ONTARIO, CANADA  
 PHONE: 416-677-2491  
 CABLE: BARESEARCH

ADVANCED TECHNIQUES AND INSTRUMENTATION FOR THE EARTH SCIENCES

DATE: October 31, 1970

PROJECT: 120.33

PERIOD COVERED:

- Cyprus Exploration Corp.
- Searchlight Exploration Corp.
- 1101 - 510 West Hastings St.
- Vancouver, B. C.

PROGRESS BILLING:

SHIPPING REPORT:

WORK REPORT: 301-B

FED. SALES TAX: N/A

ONT. SALES TAX: N/A

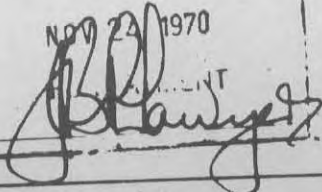
TERMS: NET

AUTHORITY: Mr. Neil A. Thomsen, your Proj. David Minerals # 143

TO: Geochemical Analysis

✓ 414 Samples analysed for total copper	@ \$1.00 each	414.00
✓ 414 Samples analysed for total molybdenum	@ \$2.50 each	1,035.00
✓ 414 Soil sample preparation	@ \$0.20 each	82.80

1,531.80

APPROVED  
 NOV 23 1970  


RECEIVED  
 NOV 17 1970  
 RECEIVED

INVOICE No 7846

#143

# BARRINGER RESEARCH LIMITED

304 CARLINGVIEW DRIVE  
REXDALE, ONTARIO, CANADA  
PHONE: 416-677-2491  
CABLE: BARESEARCH

ADVANCED TECHNIQUES AND INSTRUMENTATION FOR THE EARTH SCIENCES

DATE: November 25, 1970

PROJECT: 120.33

\* Cyprus Exploration Corp. Ltd.  
1101 - 510 West Hastings St.,  
\* Vancouver 2, B. C.

PERIOD COVERED:

PROGRESS BILLING:  
SHIPPING REPORT:  
WORK REPORT: 317-B  
FED. SALES TAX: N/A  
ONT. SALES TAX: N/A

TERMS: NET

AUTHORITY: Mr. R. Woolverton/Mr. N. Thompson, your Project "David Minerals"

TO: Geochemical Analysis

1450				
<del>1,440</del>	Samples analysed for total copper	@ \$1.00 each	1,440.00	1450.00
100	<del>00</del> Samples analysed for HCL copper	@ \$1.00 each	99.00	100.00
<del>1,539</del>	Soil sample preparation	@ \$0.20 each	307.00	310.00
1550				
			<del>1,846.00</del>	
				1,860.00

*I counted these myself - ink figures are correct  
ASL  
23/12/70*

**RECEIVED**  
DEC 23 1970  
**BARRINGER RESEARCH LIMITED**

**APPROVED**  
DEC 29 1970  
FOR PAYMENT

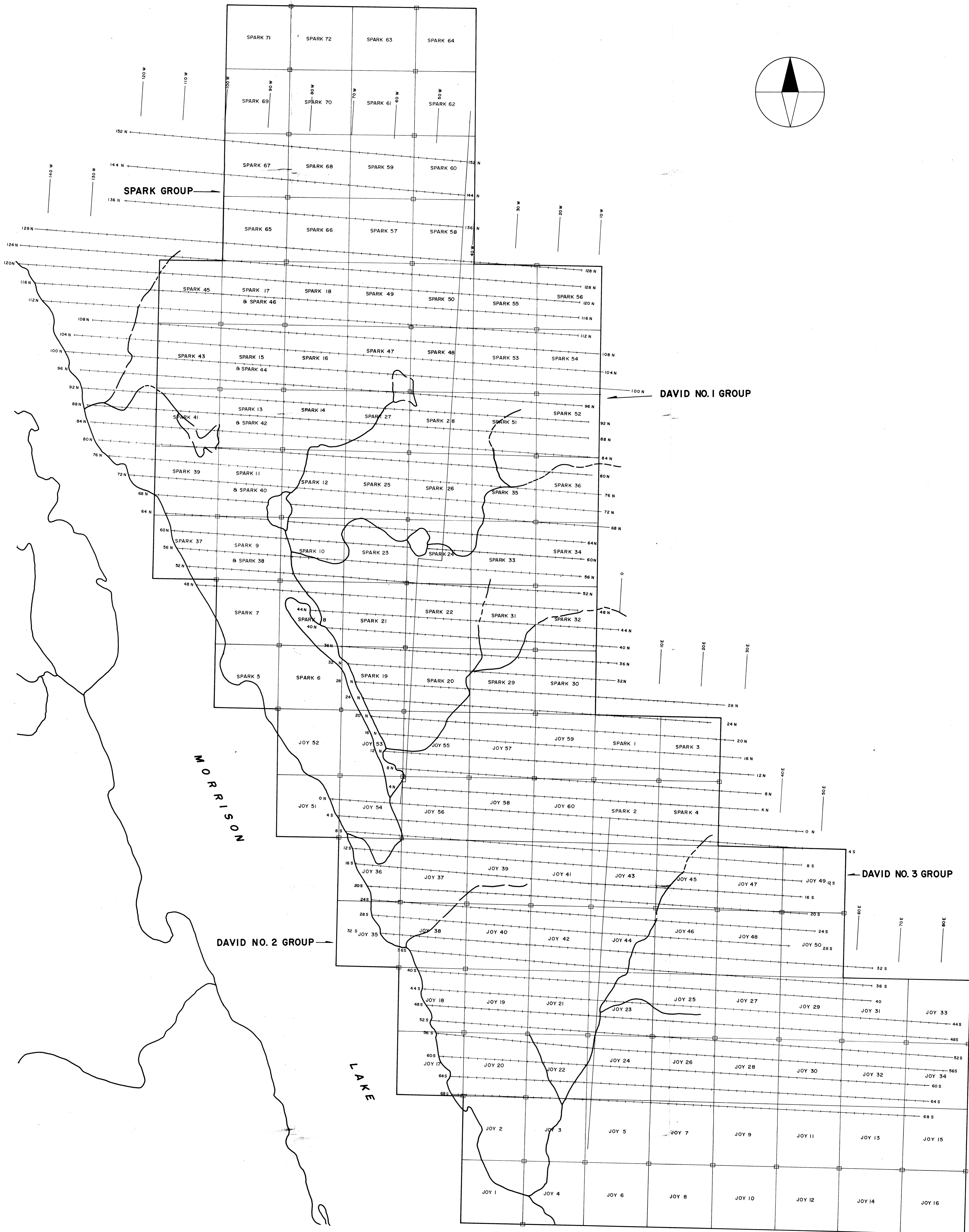
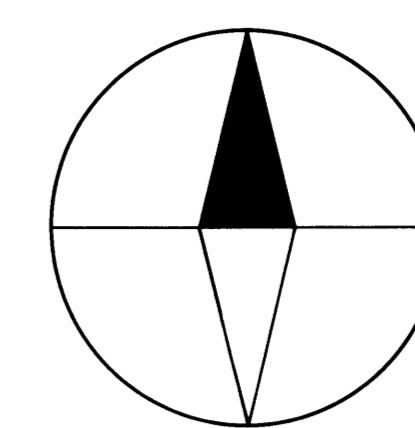
STATEMENT OF PROJECT CHARGES  
(PER PRECEDING INVOICES)

Evergreen Explorations Ltd. - January invoice	\$21,578.85
Trans-Provincial Airlines Ltd.	35.52
" " " "	54.60
" " " "	62.40
" " " "	78.00
" " " "	125.00
" " " "	80.00
" " " "	58.00
" " " "	114.00
Indian River Exploration Services	3,262.50
" " " "	2,420.53
" " " "	600.00
" " " "	2,400.00
North Coast Air Services Ltd.	99.00
Alpine Helicopters Ltd.	326.25
Okanagan Helicopters Ltd.	900.85
Barringer Research Limited	395.90
" " " "	1,240.70
" " " "	1,531.80
" " " "	<u>1,860.00</u>
TOTAL	<u><u>\$37,223.90</u></u>

The undersigned considers the above charges applicable as assessment work.

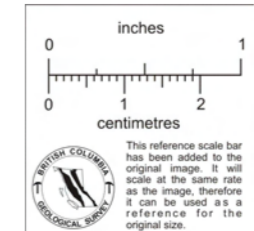
R. W. Woolverton, P. Eng.





TO ACCOMPANY A GEOPHYSICAL AND GEO-CHEMICAL REPORT BY R. WOOLVERTON P. ENG. ON THE SPARK 1-72 AND JOY 1-60 CLAIMS. DATED FEBRUARY 24, 1971

PALISADE EXPLORATION CORPORATION, LTD.	
<b>DAVID MINERALS PROJECT</b>	
CLAIM MAP	
DESIGNED DRAWN CHECKED DATE	SCALE HOR. VERT. 1" = 800' DWG. No.
C.L.C. JAN. 1971	

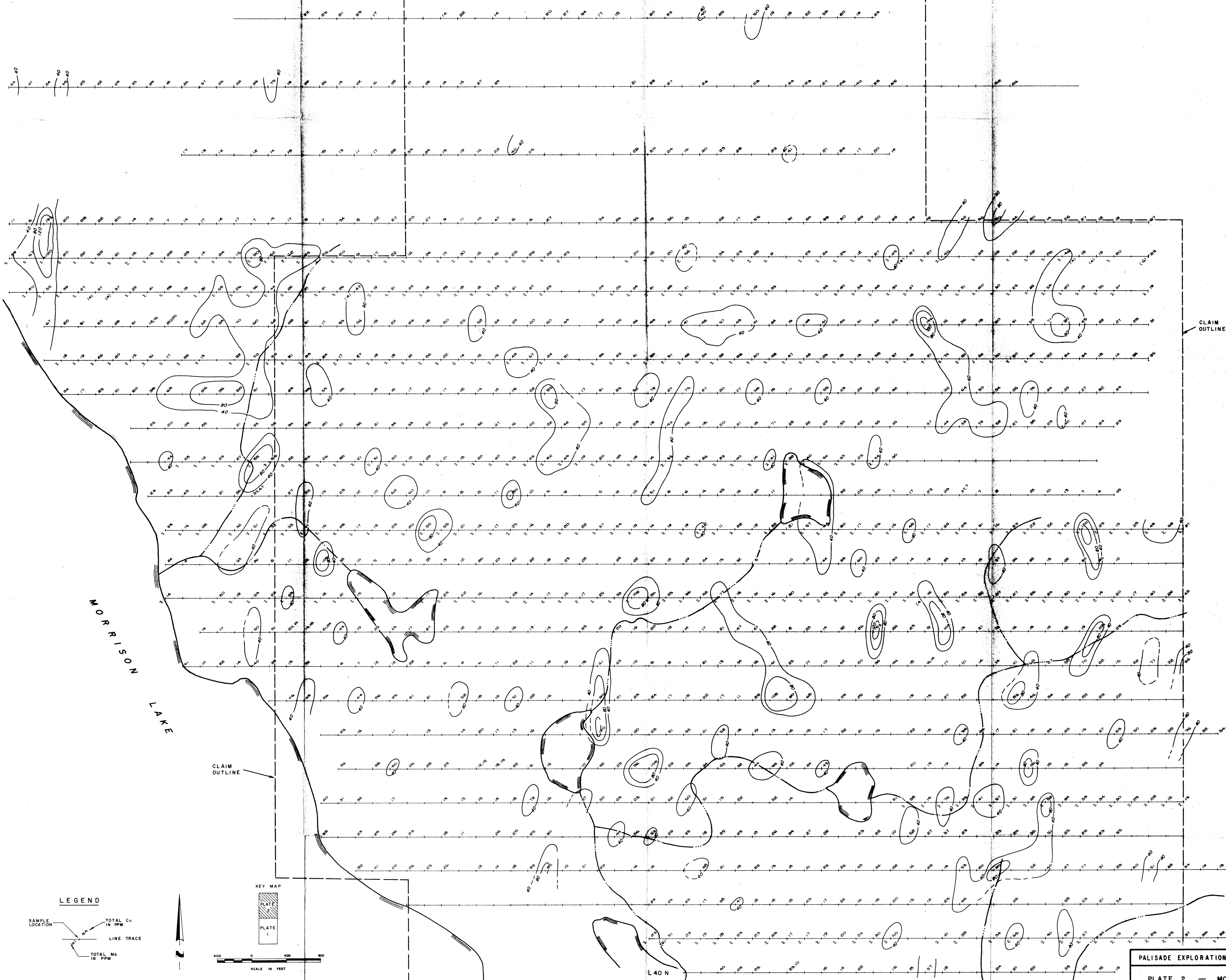


MAP #1



145W 140W 135W 130W 125W 120W 115W 110W 105W 100W 95W 90W 85W 80W 75W 70W 65W 60W 55W 50W 45W 40W 35W 30W 25W 20W 15W 10W 5W 0

BASELINE  
L 152 N  
L 144 N  
L 136 N  
L 128 N  
L 124 N  
L 120 N  
L 116 N  
L 112 N  
L 108 N  
L 104 N  
L 100 N  
L 96 N  
L 92 N  
L 88 N  
L 84 N  
L 80 N  
L 76 N  
L 72 N  
L 68 N  
L 64 N  
L 60 N  
L 56 N  
L 52 N  
L 48 N  
L 44 N



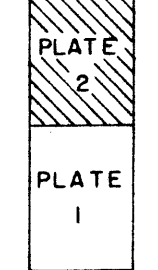
MORRISON LAKE

CLAIM OUTLINE

LEGEND

SAMPLE LOCATION  
TOTAL Cu IN PPM  
LINE TRACE  
TOTAL Mo IN PPM  
40, 60, 80 CONTOURS

KEY MAP



SCALE IN FEET  
0 400 800

MATCH LINE - FOR CONTINUATION SEE PLATE 1

TO ACCOMPANY A GEOPHYSICAL & GEOCHEMICAL REPORT BY  
R. WOOLVERTON P. ENG ON THE SPARK 1-72 & THE JOY 1-60  
CLAIMS. DATED FEBRUARY 26, 1971

PALISADE EXPLORATION CORPORATION LTD.		
PLATE 2 - MORRISON LAKE		
OMINECA M.D. BRITISH COLUMBIA		
GEOCHEMICAL SURVEY		
TOTAL Cu & Mo IN PPM		
WORK BY	DRAWN BY	DATE
VERMAREN EXPLORATION LTD.	VERMAREN DRAFTING LTD.	1 / 27 / 71

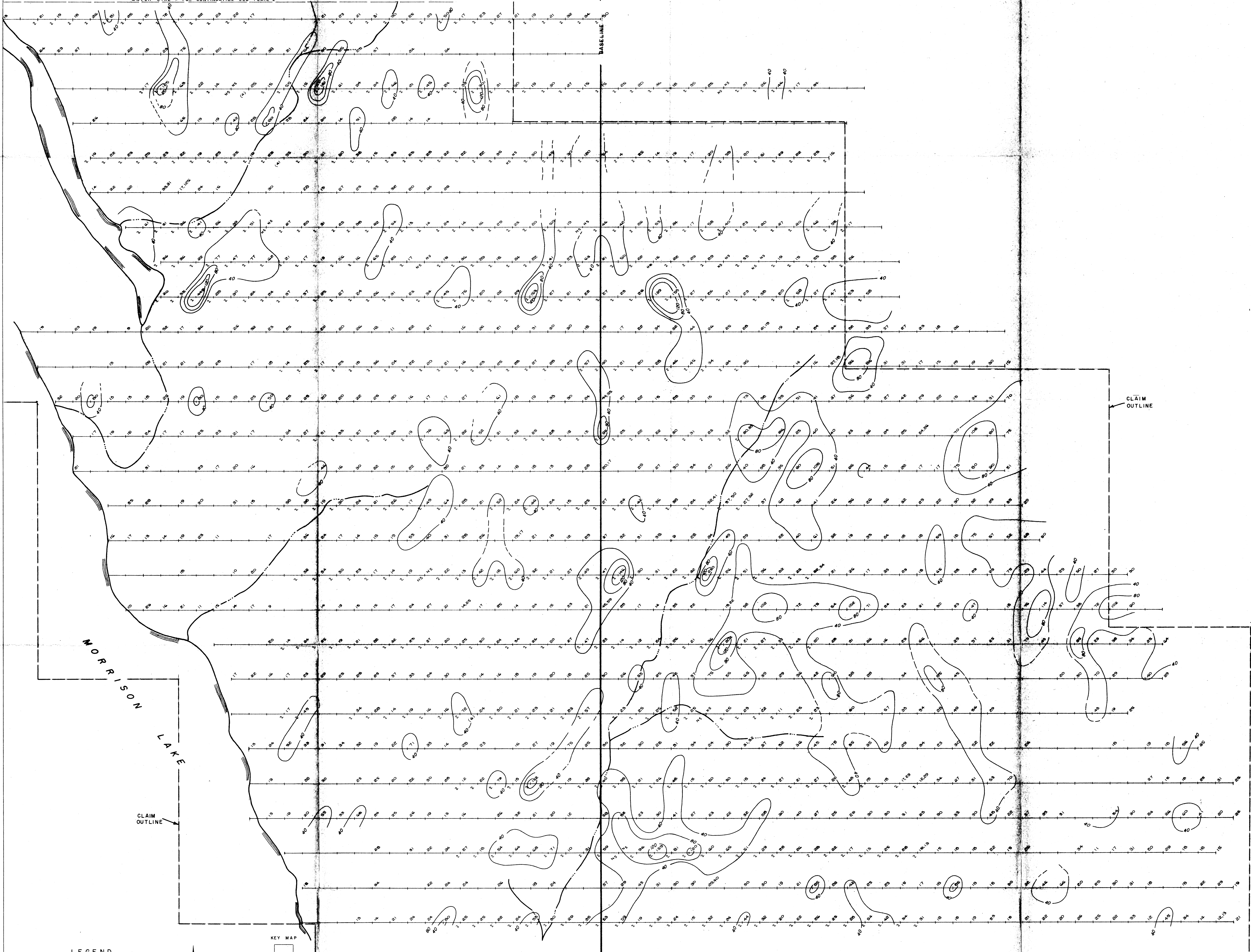


65W 60W 55W 50W 45W 40W 35W 30W 25W 20W 15W 10W 5W 0 5E 10E 15E 20E 25E 30E 35E 40E 45E 50E 55E 60E 65E 70E 75E

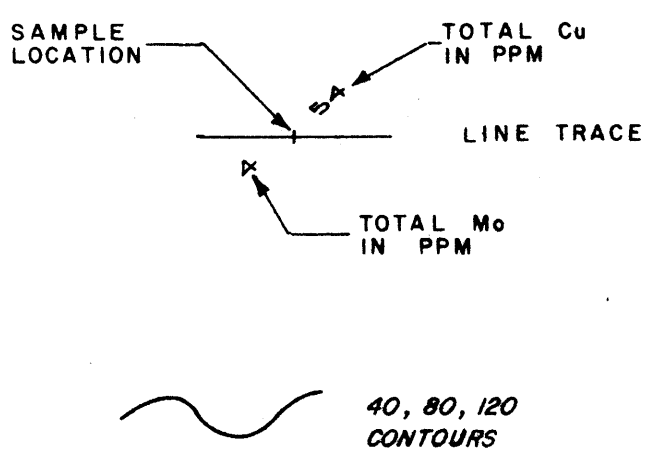
MATCH LINE - FOR CONTINUATION SEE PLATE 2

BASELINE

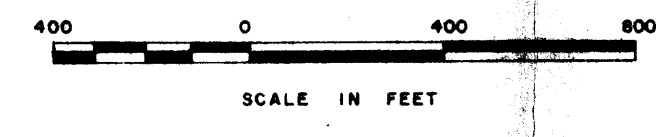
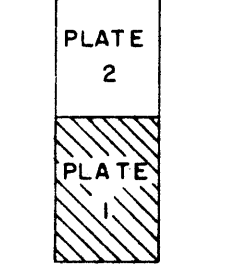
L 36 N  
L 32 N  
L 28 N  
L 24 N  
L 20 N  
L 16 N  
L 12 N  
L 8 N  
L 4 N  
L 0  
L 4 S  
L 8 S  
L 12 S  
L 16 S  
L 20 S  
L 24 S  
L 28 S  
L 32 S  
L 36 S  
L 40 S  
L 44 S  
L 48 S  
L 52 S  
L 56 S  
L 60 S  
L 64 S  
L 68 S



LEGEND

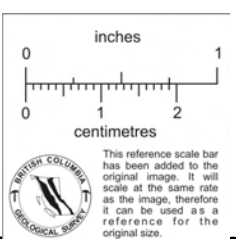


KEY MAP



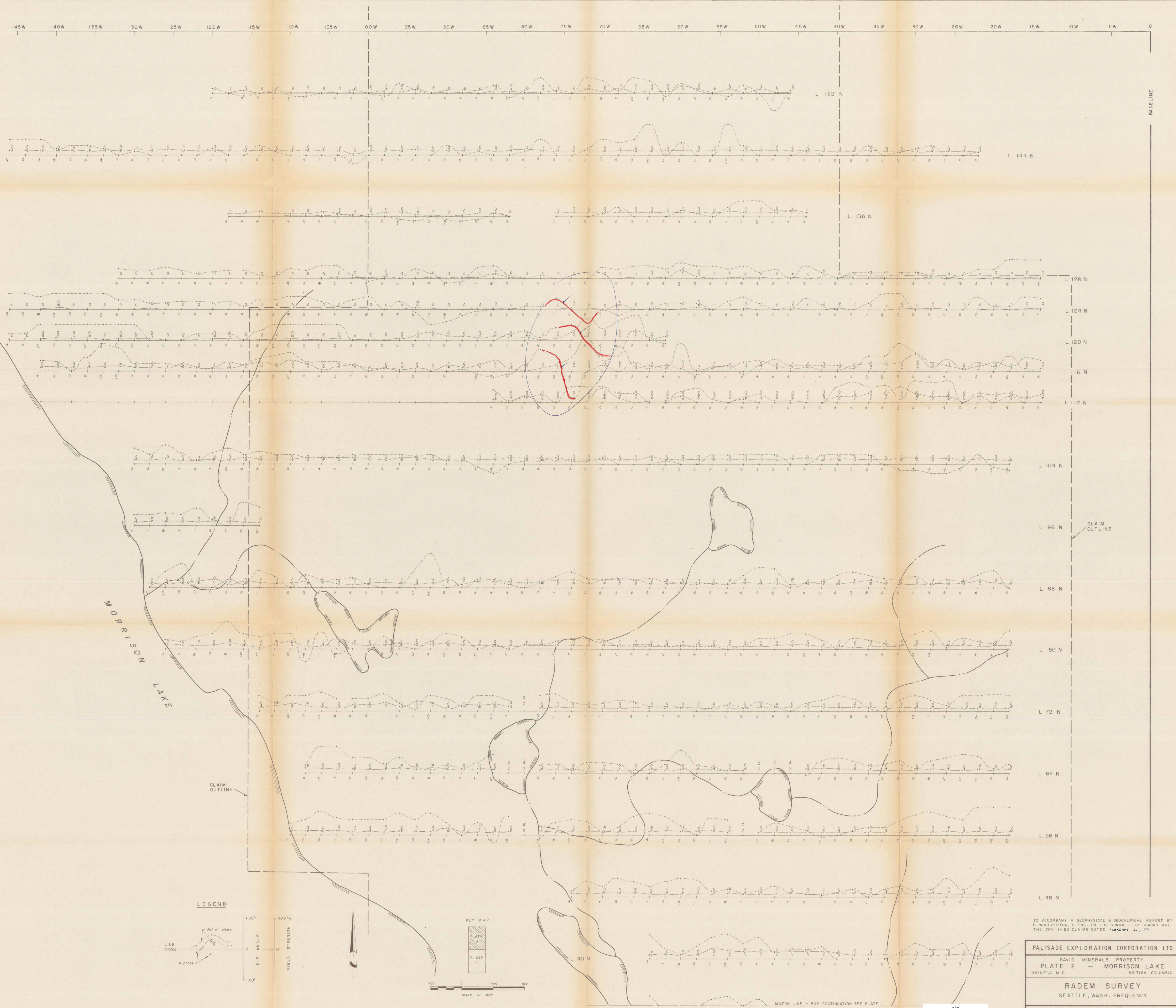
TO ACCOMPANY A GEOPHYSICAL & GEOCHEMICAL REPORT BY R. WOOLVERTON P. ENG ON THE SPARK 1-72 & THE JOY 1-60 CLAIMS, DATED FEBRUARY 26, 1971

PALISADE EXPLORATION CORPORATION LTD.		
PLATE 1 - MORRISON LAKE		
OMINECA M.D. BRITISH COLUMBIA		
GEOCHEMICAL SURVEY		
TOTAL Cu & Mo IN PPM		
WORK BY	DRAWN BY	DATE
VERBEEK EXPLORATION LTD.	VERBEEK GRAPHING LTD.	1/27/71



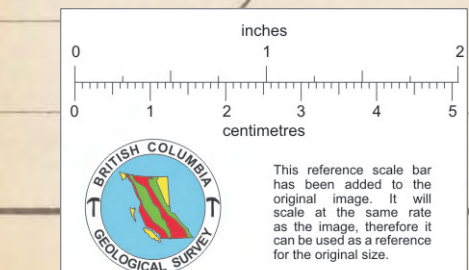


145W 140W 135W 130W 125W 120W 115W 110W 105W 100W 95W 90W 85W 80W 75W 70W 65W 60W 55W 50W 45W 40W 35W 30W 25W 20W 15W 10W 5W 0



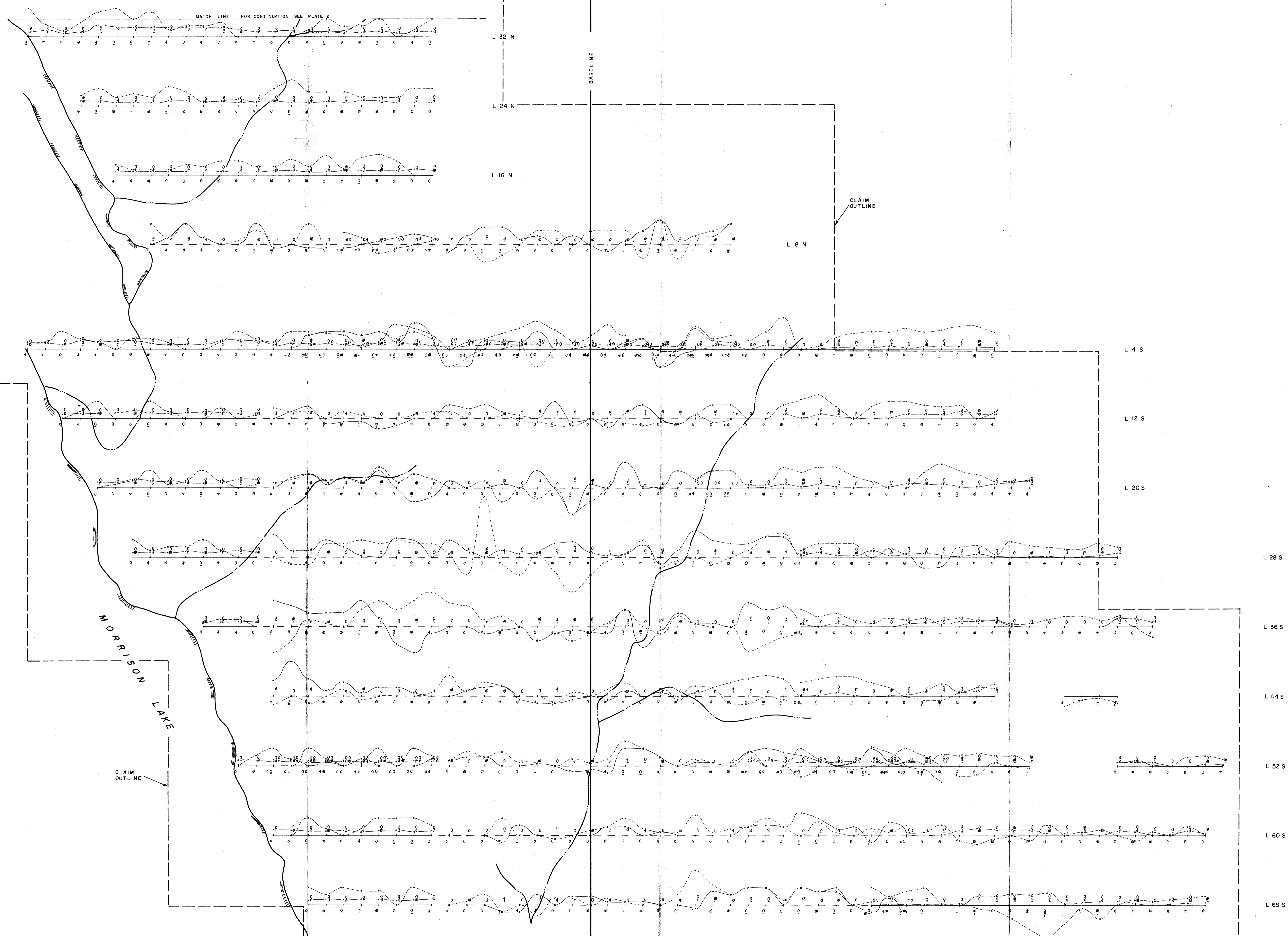
TO ACCOMPANY A GEOPHYSICAL & GEOCHEMICAL REPORT BY R. WOODVERTON, P. ENG. ON THE SPARK 1-72 CLAIMS AND THE JOY 1-80 CLAIMS DATED FEBRUARY 26, 1971

PALISADE EXPLORATION CORPORATION LTD.		
DAVID MINERALS PROPERTY		
PLATE 2 - MORRISON LAKE		
OMINECA M. D. BRITISH COLUMBIA		
RADEM SURVEY		
SEATTLE, WASH. FREQUENCY		
WORK BY	DRAWN BY	DATE
EVENGREEN EXPLORATIONS LTD.	VERSTALE DRAFTING LTD.	1/28/77

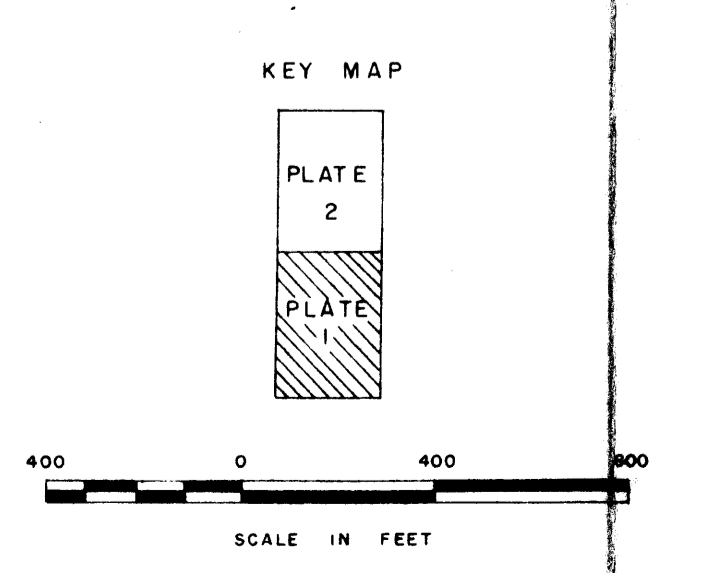
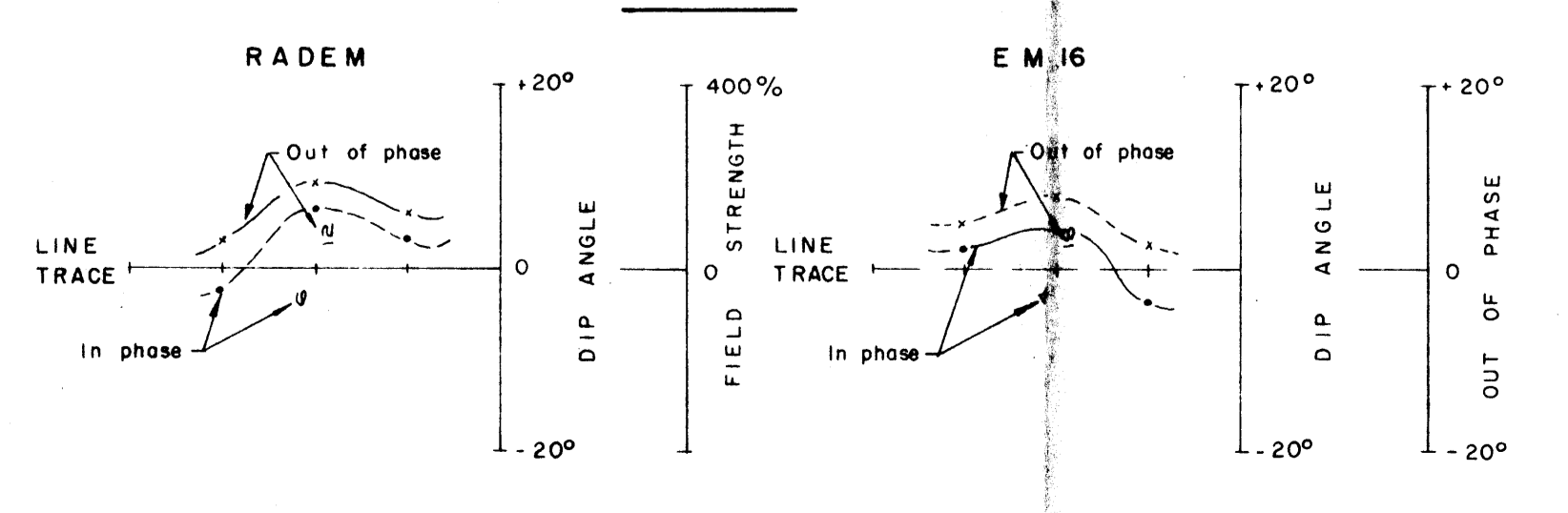




65W 60W 55W 50W 45W 40W 35W 30W 25W 20W 15W 10W 5W 0 5E 10E 15E 20E 25E 30E 35E 40E 45E 50E 55E 60E 65E 70E 75E



LEGEND



TO ACCOMPANY A GEOPHYSICAL & GEOCHEMICAL REPORT BY R. WOOLVERTON, P. ENG., ON THE SPARK 1-72 CLAIMS AND THE JOY 1-60 CLAIMS DATED FEBRUARY 26, 1971

**PALISADE EXPLORATION CORPORATION LTD.**

DAVID MINERALS PROPERTY

**PLATE 1 - MORRISON LAKE**

OMINECA M.D. BRITISH COLUMBIA

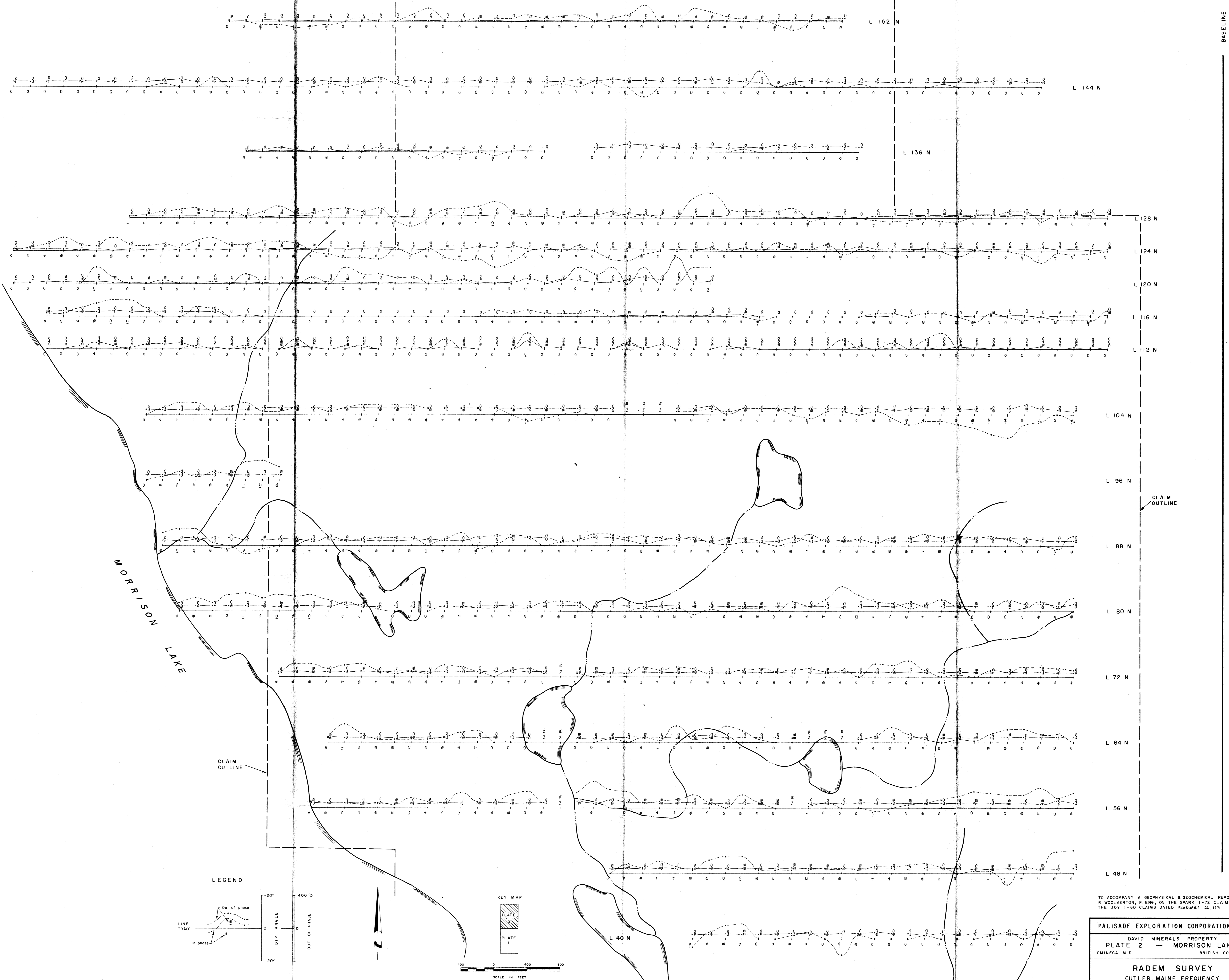
**RADEM SURVEY**

SEATTLE, WASH. FREQUENCY

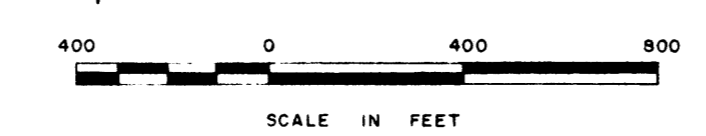
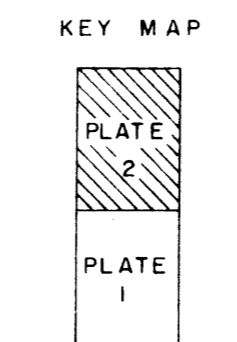
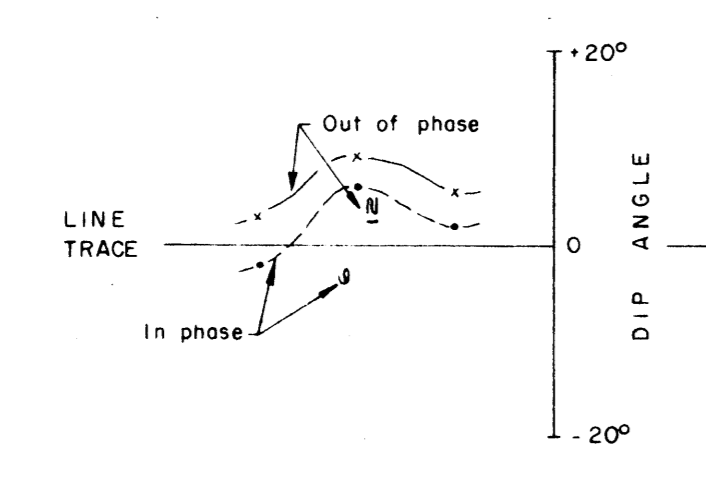
WORK BY	DRAWN BY	DATE
EVERHEIM EXPLORATIONS LTD.	VERBATILE DRAFTING LTD.	1/27/71



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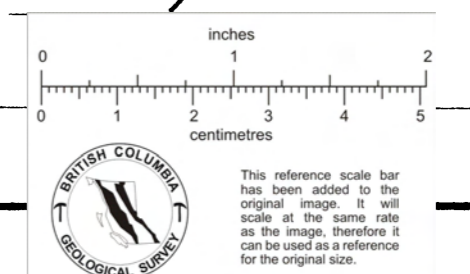


**LEGEND**



TO ACCOMPANY A GEOPHYSICAL & GEOCHEMICAL REPORT BY R. WOOLVERTON, P. ENG. ON THE SPARK 1-72 CLAIMS AND THE JOY 1-60 CLAIMS DATED FEBRUARY 26, 1971

PALISADE EXPLORATION CORPORATION LTD.		
DAVID MINERALS PROPERTY		
PLATE 2 - MORRISON LAKE		
OMINECA M.D. BRITISH COLUMBIA		
RADEM SURVEY		
CUTLER, MAINE FREQUENCY		
WORK BY	DRAWN BY	DATE
VERSATILE EXPLORATION LTD.	VERSATILE DRAFTING LTD.	1/27/71





65W 60W 55W 50W 45W 40W 35W 30W 25W 20W 15W 10W 5W 0 5E 10E 15E 20E 25E 30E 35E 40E 45E 50E 55E 60E 65E 70E 75E

MATCH LINE - FOR CONTINUATION SEE PLATE 2

L 32 N

L 24 N

L 16 N

L 8 N

CLAIM OUTLINE

L 4 S

L 12 S

L 20 S

L 28 S

L 36 S

L 44 S

L 52 S

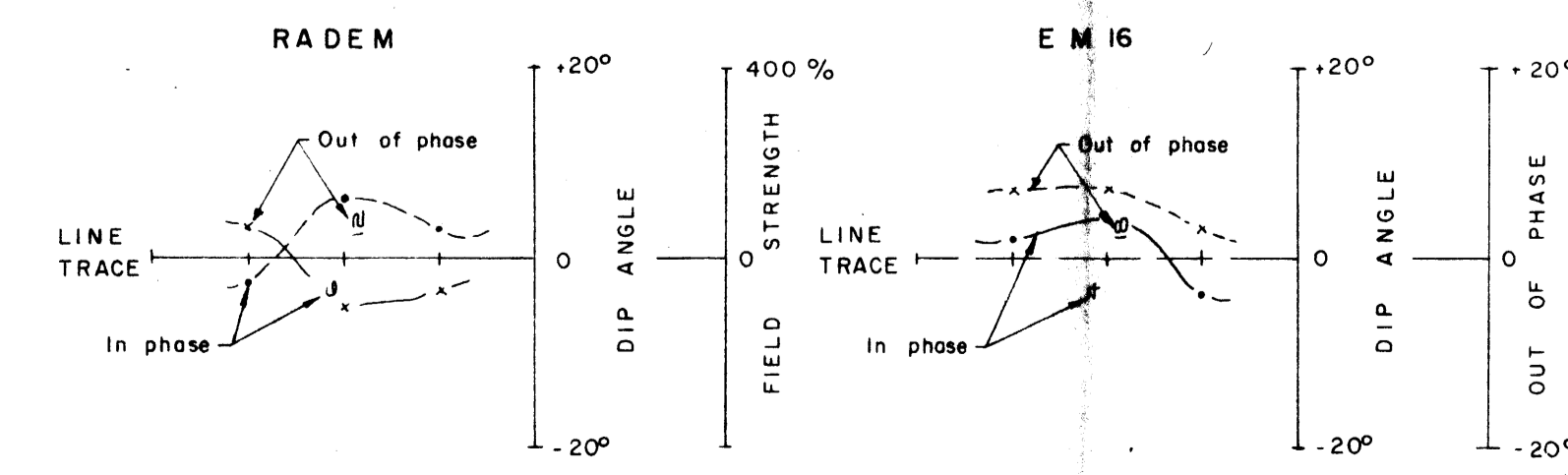
L 60 S

L 68 S

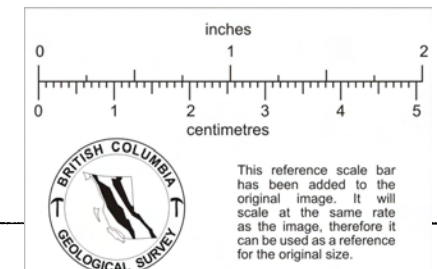
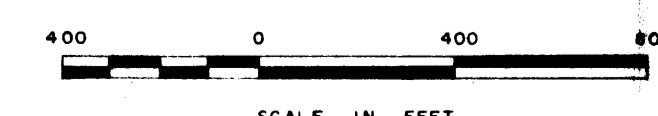
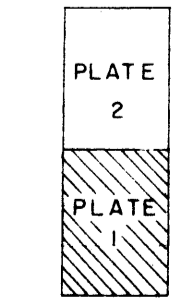
MORRISON LAKE

CLAIM OUTLINE

LEGEND



KEY MAP



TO ACCOMPANY A GEOPHYSICAL & BIOCHEMICAL REPORT BY R. WOOLVERTON, P. ENG. ON THE SPARK 1-72 CLAIMS AND THE JOY 1-60 CLAIMS DATED FEBRUARY 24, 1971

PALISADE EXPLORATION CORPORATION LTD.  
 DAVID MINERALS PROPERTY  
 PLATE 1 - MORRISON LAKE  
 OMINECA M.D. BRITISH COLUMBIA

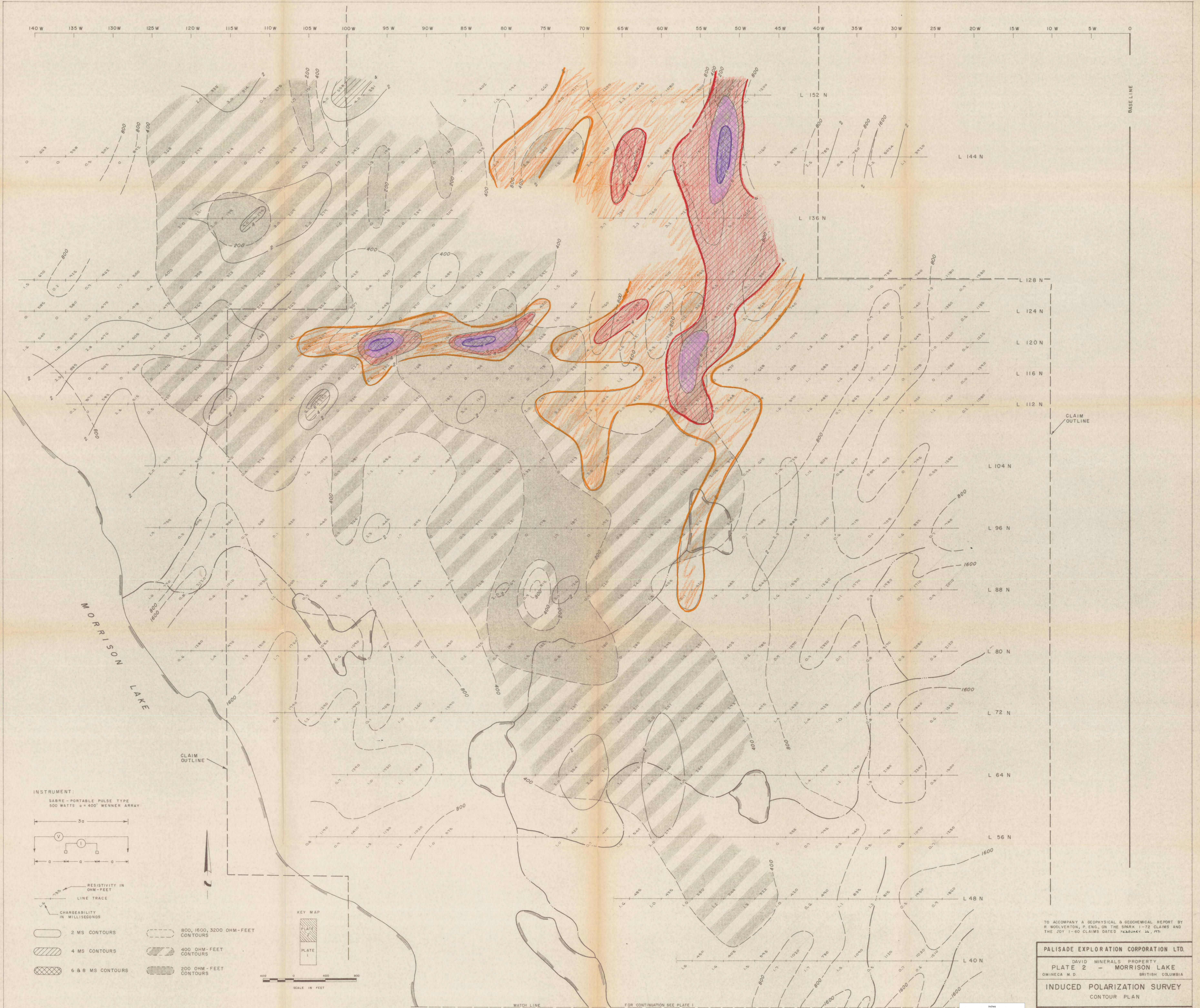
RADEM SURVEY  
 CUTLER, MAINE FREQUENCY

WORK BY: DRAWN BY: DATE:  
 VERBEEK EXPLORATIONS LTD. VERBEEK DRAFTING LTD. 1/27/71

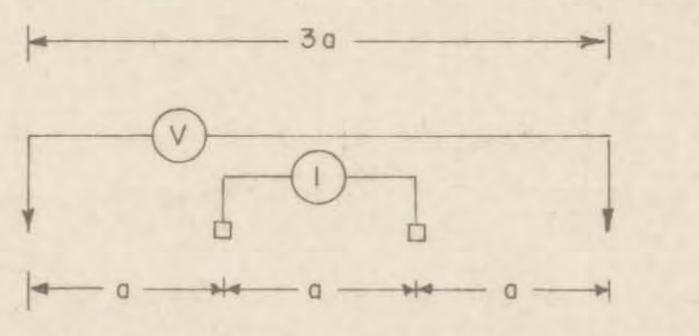


140 W 135 W 130 W 125 W 120 W 115 W 110 W 105 W 100 W 95 W 90 W 85 W 80 W 75 W 70 W 65 W 60 W 55 W 50 W 45 W 40 W 35 W 30 W 25 W 20 W 15 W 10 W 5 W 0

BASE LINE



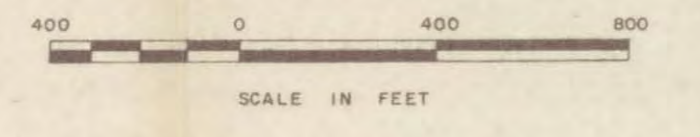
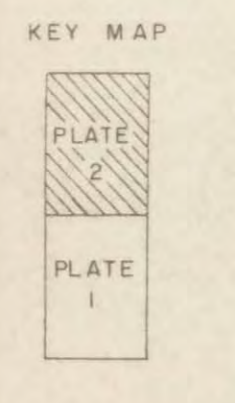
**INSTRUMENT:**  
 SABRE-PORTABLE PULSE TYPE  
 500 WATTS  $\sigma = 400'$  WENNER ARRAY



RESISTIVITY IN OHM-Feet  
 LINE TRACE

CHARGEABILITY IN MILLISEC  
 LG

- 2 MS CONTOURS
- 800, 1600, 3200 OHM-Feet CONTOURS
- 4 MS CONTOURS
- 400 OHM-Feet CONTOURS
- 6 & 8 MS CONTOURS
- 200 OHM-Feet CONTOURS

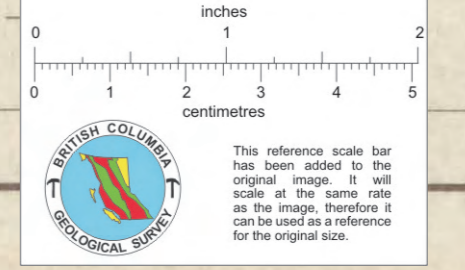


TO ACCOMPANY A GEOPHYSICAL & GEOCHEMICAL REPORT BY  
 R. WOOLVERTON, P. ENG. ON THE 398K, 1-72 CLAIMS AND  
 THE JOY 1-60 CLAIMS DATED FEBRUARY 26, 1971

**PALISADE EXPLORATION CORPORATION LTD.**  
 DAVID MINERALS PROPERTY  
**PLATE 2 - MORRISON LAKE**  
 OMINICA M.D. BRITISH COLUMBIA

**INDUCED POLARIZATION SURVEY  
 CONTOUR PLAN**

WORK BY	DRAWN BY	DATE
EVERGREEN EXPLORATIONS LTD.	VERSARLE DRAFTING LTD.	1/27/71

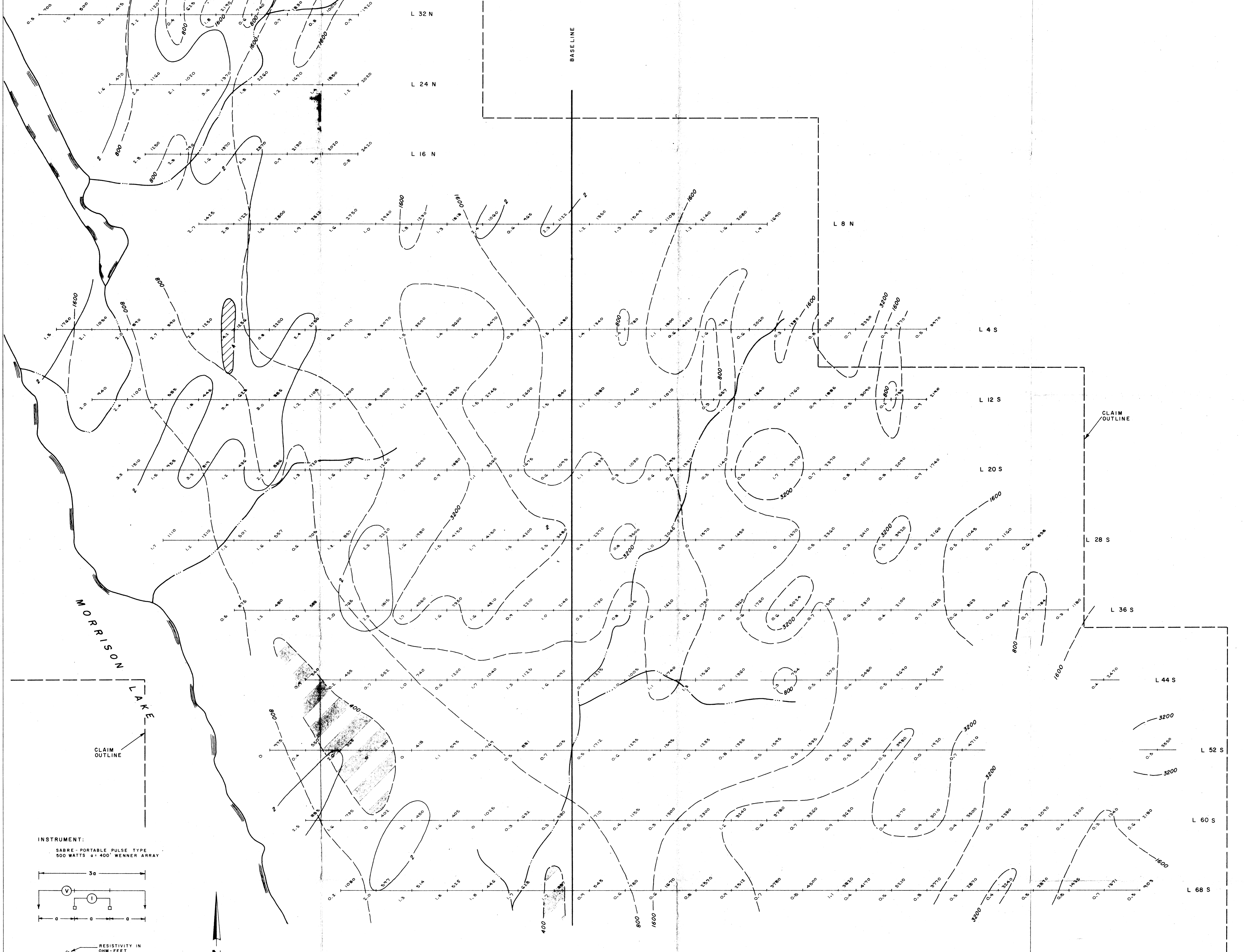


MAP# 8

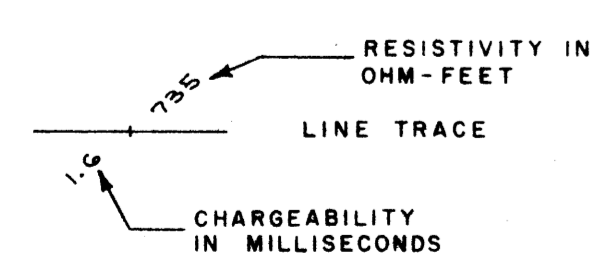
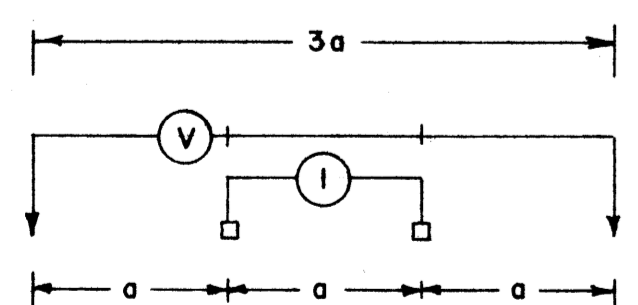


60W 55W 50W 45W 40W 35W 30W 25W 20W 15W 10W 5W 0 5E 10E 15E 20E 25E 30E 35E 40E 45E 50E 55E 60E 65E 70E 75E

MATCH LINE FOR CONTINUATION SEE PLATE 2

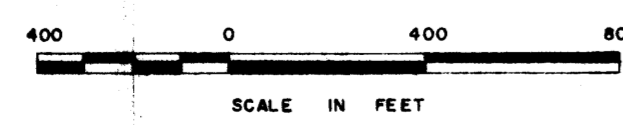
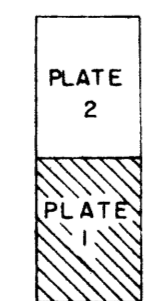


INSTRUMENT:  
SABRE - PORTABLE PULSE TYPE  
500 WATTS 4' 400' WENNER ARRAY



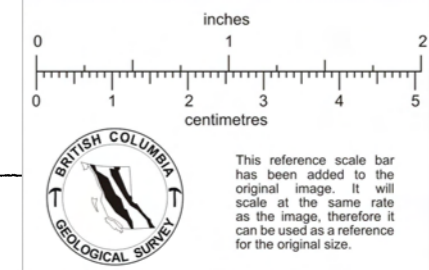
- 2 MS CONTOURS
- ▨ 4 MS CONTOURS
- ▩ 6 & 8 MS CONTOURS
- 800, 1600, 3200 OHM- FEET CONTOURS
- ▨ 400 OHM- FEET CONTOURS
- ▩ 200 OHM- FEET CONTOURS

KEY MAP



TO ACCOMPANY A GEOPHYSICAL & BIOCHEMICAL REPORT BY  
R. WOOLVERTON, P. ENG., ON THE SPARK 1-72 CLAIMS AND  
THE 207 1-60 CLAIMS DATED FEBRUARY 26, 1971

PALISADE EXPLORATION CORPORATION LTD.		
DAVID MINERALS PROPERTY		
PLATE I - MORRISON LAKE		
OMINECA M. D. BRITISH COLUMBIA		
INDUCED POLARIZATION SURVEY		
CONTOUR PLAN		
WORK BY	DRAWN BY	DATE
OMINECA EXPLORATION LTD.	VENETILE GRAPHING LTD.	1/27/71





## CYPRUS MINES CORP.

From C. A. Mark

Date

March 18

To

James J

depending on the results of the  
geol. maps which are forthcoming of  
age with Paul G. that we should detail  
the anomalies at 50W. with high  
powered McPherson eqpt. & test by  
drilling if warranted.

Cliff

INTER OFFICE MEMO

CYPRUS EXPLORATION CORPORATION LTD.  
VANCOUVER OFFICE

To: C. A. Mark  
From: J.B.P. Sawyer  
Subject: DAVID MINERALS REPORT

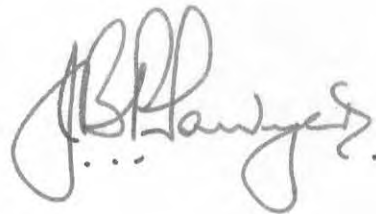
TO	REPLY	
RETURN TO	COMMENT	
MAR 5 1971		
1	5	
2	6	
3	7	
4	8	

Date: March 2, 1971

Ref. 983-CVL

I enclose for your information and Los Angeles office files a copy of the report on geophysical and geochemical work on the David Minerals property, by Roy Woolverton. We have also got a geological map and report which is mainly Gregg Jilson's work, a copy of which will be forwarded very shortly.

As will be evident from this report, there are no very strongly anomalous areas, however, the one zone at the north end of the property at around 50W would seem to suggest that we should do a little further checking before abandoning this prospect. I would like to have your comments on this data. If you agree that some further checking is in order, I would suggest a detailed McPhar I.P. survey over this limited portion of the property followed by drill testing of significant anomalies. This could be completed before the anniversary date so that we could reach a decision without embarking on a second year.



JBPS/jel

Encl.

c.c. Mr. W. O. Irish