82-185-10510

part 2
of 2

GEOPHYSICAL REPORT

OF THE

GROUND ELECTROMAGNETIC SURVEY

OF THE

REG GROUP

Bronson Creek Area, B.C.

131°02' N. Long.; 56°37' N. Lat.
N.T.S. 104B/11

LIARD MINING DIVISION

on behalf of

SKYLINE EXPLORATIONS LTD.

Claim Name	Record Number	Anniversary
REG 1 - 6	1247 - 1252	April 1

by

P.P. Nielsen, B.Sc., Geophysicist

NIELSEN GEOPHYSICS LTD.
Vernon, B.C.

January, 1982

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INTRODUCTION

During the period from July 27 to August 13, 1981 a Horizontal Loop ground electromagnetic survey was executed on the REG group of mineral claims, Bronson Creek area, B.C.

The survey was carried out by Nielsen Geophysics Ltd. on behalf of Skyline Explorations Ltd., the owner of the claims.

The purpose of the survey was to search for conductors related to known copper mineralization containing high gold values in an area covered by glaciers and morainal material. The survey was carried out in conjunction with conventional prospecting, geological mapping, trenching, and diamond drilling.

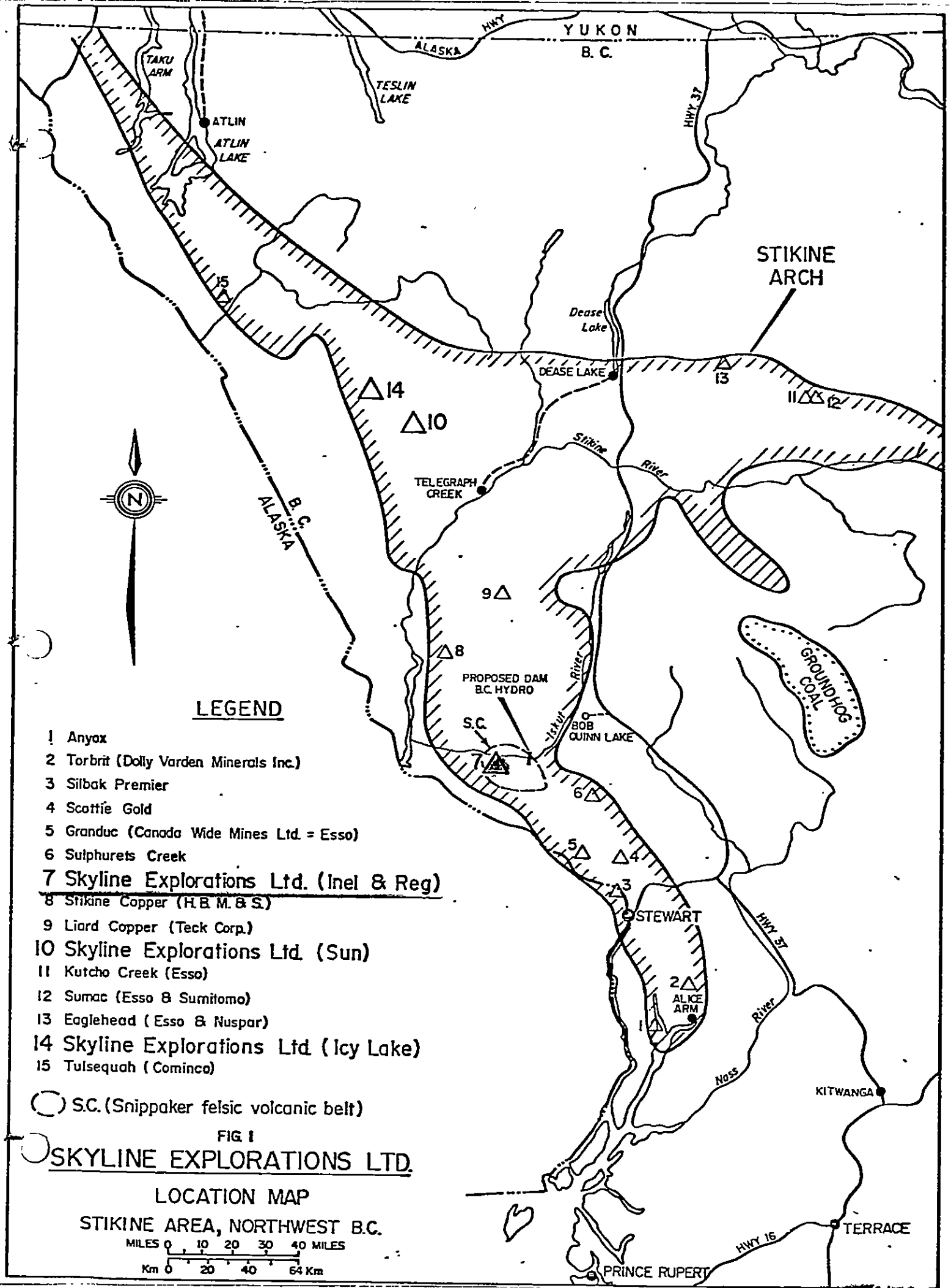
A total of 18.0 line kilometres using various operating frequencies, coil separations, station intervals and line orientations was surveyed.

The work was executed by P.P.Nielsen, the author of this report and R. Klanjseck, assistant working out of a camp on the property provided by Skyline Explorations Ltd.

LOCATION AND ACCESS

The REG Group lies about 115 air kilometres northwest of Stewart, B.C. at 131°02' W. Longitude and 56°37' N. Latitude. The grid is located between 3,500 and 4,500 A.S.L. on the northwestern flank of Johnny Mountain.

Access to the property is made by wheeled aircraft to the Snippacker Creek airstrip, 13 km east of the property; thence by helicopter to the claims area. Local transportation is by helicopter or on foot.



LEGEND

1 Anyox
2 Torbrit (Dolly Varden Minerals Inc.)
3 Silbak Premier
4 Scottie Gold
5 Granduc (Canada Wide Mines Ltd. = Esso)
6 Sulphurets Creek
7 Skyline Explorations Ltd. (Inel & Reg)
8 Stikine Copper (H.B.M. & S.)
9 Liard Copper (Teck Corp.)
10 Skyline Explorations Ltd. (Sun)
11 Kutcho Creek (Esso)
12 Sumac (Esso & Sumitomo)
13 Eaglehead (Esso & Nuspar)
14 Skyline Explorations Ltd. (Icy Lake)
15 Tulsequah (Cominco)

S.C. (Snippaker felsic volcanic belt)

FIG. 1

SKYLINE EXPLORATIONS LTD.

LOCATION MAP

STIKINE AREA, NORTHWEST B.C.

MILES 0 10 20 30 40 MILES
Km 0 20 40 64 Km

TOPOGRAPHY AND SURVEY CONDITIONS

The survey grid occurs over relatively gentle relief in an area of very rugged and steep terrain. The total relief of the survey area was approximately 1,000 feet. Some lines were terminated by steep cornice crowned cliffs. The area of interest is covered by 1 to 8 metres of blocky moraine boulders. The northeast edge of the survey grid was terminated by a large lateral moraine.

Vegetation over most of the grid is non-existent save for patches of moss, lichen, grass and heather.

PREVIOUS WORK

The property area has been explored by various individuals and companies as far back as 1907.

The PICK-AXE showing, which is roughly centred on the present E.M. grid, was discovered in 1954 by Hudson's Bay Mining & Smelting Co. Ltd.

Geophysically, the only known previous work consisted of three Induced Polarization traverses spaced 500 feet apart run over the PICK-AXE showing. The survey was carried out by Geoterrex Ltd. on behalf of Ecstall Mining Ltd., a subsidiary of Texas Gulf (Sulhpur) Ltd. during the 1973 field season. A significant high chargeability anomaly was encountered in the vicinity of the main showing and was interpreted by Geoterrex to be caused by scattered veinlets and a stockwork of pyrite and chalocpyrite mineralization.

THE GRID

Prior to the arrival of the E.M. survey crew, a grid was installed using the compass and hip-chain (topofill) method. Lines were oriented N 45°E which were believed at the time to be roughly normal to the strike of the mineralized zones. The lines were spaced 100 metres apart from 10+00 N to 3+00 S. Marked flags mounted on metal stakes were placed at 50 metre intervals along these lines.

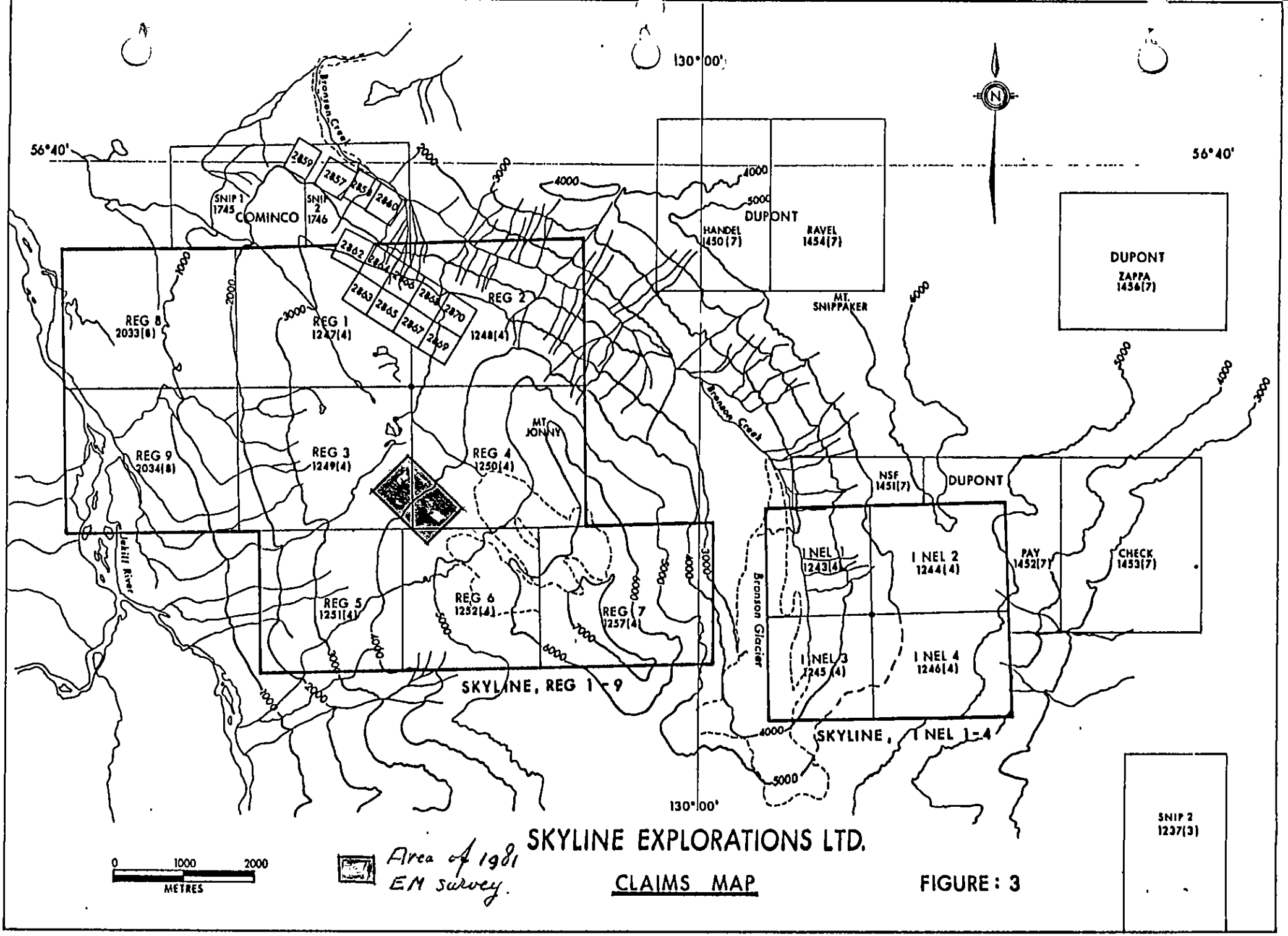
After geophysically surveying five of these lines it was determined that the P-12 showing, and possibly the other showings as well, were striking sub-parallel to this line direction. It was decided therefore to re-construct the grid normal to this bearing, i.e. lines were run on a bearing of N 45°W. By the time the E.M. survey was completed, many intermediate lines and segments of lines were installed and surveyed. In some areas, the line spacing was 25 metres and the station interval was 12.5 metres.

An estimate of the total length of grid lines installed is about 20 km.

CLAIMS

The REG group of 112 claim units is situated in the Liard Mining District and was staked by Skyline Explorations Ltd. in March, 1980.

NAME	RECORD NO.	ANNIVERSARY
REG 1 - 6	1247 - 1252	April 1



SKYLINE EXPLORATIONS LTD.

CLAIMS MAP

FIGURE : 3

GEOLOGY After "Summary Report on the Reg Mineral Claims", by T.C.Scott and C.K.Ikona, March, 1981.

The regional setting consists of "Middle Triassic or older shales, limestones and coarse clastic rocks overlain uncomformably by a eugeosynclinal assemblage of probable Late Upper Triassic to Middle Jurassic age which in turn is overlain by the successor Bowser Group basin clastics". Several dioritic to granitic stocks are present in the district. Coast range intrusions border the area to the west and south.

Locally, the rocks consist of "a sequence of folded Middle Triassic shales, siltstones, graywackes, and conglomerates intruded and covered by intermediate to siliceous intrusive and extrusive rocks of the Johnny Mountain igneous complex".

Structurally, the strata along the west margin of the property appears to form a major isoclinal fold exhibiting a steep dip with a southeast trend. Near the centre of the property this fold seems to swing to the northeast with moderately steep dips to the north. Important mineralization appears to be associated with this hinge zone.

A northwest striking fault through the central grid area appears to have a 300 feet right-hand offset which is thought to shift the mineralized belt without undue change in mineralization character.

The numerous mineral occurrences observed to date are comprised mainly of massive pyrite-chalcopyrite in lenses and veins containing varying amounts of gold and silver. This mineral assemblage is "associated with quartz-sericite (carbonate) alteration zones occurring in pyroclastic rocks of the basal part of the volcanic sequence. Although minor amounts of lead and zinc are associated with the volcanics, the bulk of these metals is located within the underlying sediments....".

"Felsite bodies with heavy inpregnations of pyrite and subordinate chalcopyrite are, in general, closely associated with the massive sulphide mineralization and the alteration zones within both the sedimentary and volcanic units.

THE GROUND ELECTROMAGNETIC SURVEY

General Comments

Initially, various operating frequencies and coil separations were tested over known showings to determine the optimum survey parameters to be employed over the survey grid.

As mentioned above under "GRID", five of the existing survey lines (N 45°E bearing) were surveyed. Although a possibly significant conductor was detected under the toe of a glacier at the south-west (called West on pickets) end of Line 0+00, it soon became apparent that the main showings (ie PICK AXE and P-12) were striking sub-parallel to these pre-installed lines.

Due to the limited time available and drilling considerations, the E.M. survey was concentrated on the Cloutier zone (P-12 showing) area and the PICK-AXE showing.

Prior to mobilizing to the property and because of its remoteness it was decided to provide an applied potential (mise-à-la-masse) survey capability. This instrument therefore, was rented and included with the rest of the gear shipped to the property.

As a result of the success of the E.M. method with its relatively low unit cost, the applied potential technique was not employed.

Instrumentation and Survey Method

The instrument used for this survey was the MAX-MIN II manufactured by Apex Parametrics Ltd. of Markham, Ontario, Canada.

This unit can be in either the Horizontal Loop (slingram) or Vertical Loop modes.

Five operating frequencies (222, 444, 888, 1777 and 3555 Hz) and interconnecting cable lengths of 25, 50, 100, 150, 200 and 250 metres are provided to cover a broad range of geological conditions.

The Horizontal Loop method was employed using this unit with coil separations 'a' of 25, 50 and 100 metres and an operating frequency of 3555 Hz.

Two men, a Receiver operator and Transmitter operator, travel along grid lines separated by the taut, interconnecting cable. Readings are taken mid-point between the receiver and transmitter at regular intervals, usually half the 'a' spacing, along these lines.

Because of the wide popularity of both the MAX-MIN II instrument and the Horizontal Loop method and the preponderance of literature available, details on instrument specifications and theory of the method are not fully discussed in this report.

Treatment of Data

The in-phase and out-of-phase (Quadrature) profiles have been grouped and plotted for the various 'a' spacings and line orientations used.

Where applicable, qualitative estimates of dips and maximum conductor widths are given on the profiles. The interpretation of these conductors was enhanced by the geological information available to the author but was hindered by the relatively low amplitude responses, particularly the in-phase component, caused by the interference due to conductive overburden and low to moderate conductivity of the features sought.

In viewing the profiles, caution must be used in determining line-to-line continuity of the conductors as the scale tends to change and lines are not constantly related to north.

The combinations of 'a' spacings and line directions of all the profiles and available geological information were used to create the "Interpretation and Grid Location Map". Known showings, geomorphological features and E.M. conductors indicating strike, dip and maximum width at a depth of approximately 50 metres are shown. All conductors covered are closed off except for the "Ice Anomaly" at the westerly end of the grid and possibly the PICK-AXE extension to the east under the 'Main Moraine'.

DISCUSSIONS OF RESULTS AND INTERPRETATION

Profiles

A. Sheet No. 1

(1) "Ice Anomaly" - These profiles are the result of the initial E.M. coverage along the original East-West grid lines. An 'a' spacing of 50 metres was used because of the danger of missing an important conductor which might possibly be of less than 150 metres strike length.

The profiles indicate a background response averaging -7% in-phase and +2% out-of-phase. A recognizable dike-like, out-of-phase response was obtained on L 0+00 centred at STN. 5+75 W. This feature was named the "Ice Anomaly" as it occurred on a steep, sloping toe of a small glacier. It was delineated to the north over a strike distance of 225 metres and is still open in both directions. Further coverage to the south was virtually impossible due to the precipitous terrain and impending threat of avalanches.

No other valid anomalies are interpreted from these profiles. The broad, positive, out-of-phase response on L 3+00 N is due to the sub-parallel conductor now called the "Cloutier Zone". It was primarily this feature that resulted in the decision to run the rest of the survey normal to these lines.

(2) Cloutier Zone - These lines, spaced 25 metres apart were surveyed to delineate the P-12 showing at 3+00 W, 2+80 N. The profiles show strike continuity between L 2+25 W and L 3+50 W. With an 'a' spacing of 25 metres, the effective depth penetration is 15 metres. The low out-of-phase amplitudes over this feature are probably due to surface weathering and the maximum, near surface conductor width is in the order of five metres. The results confirm the interpretation of the positive response observed on L 3+00 N mentioned above.

(3) PICK-AXE Showing - These lines were run to delineate the PICK-AXE (P-1) showing using an 'a' spacing of 25 metres. Line 0+50 E also covered the P-13 showing but no recognizable anomalous readings were detected over either mineralized outcrops at this coil separation.

(4) Diagonal Traverse - This line was run at what was believed to be normal to the strike of mineralization observed at showings P-6, 7 and 10. Although very subtle negative, out-of-phase readings correlate with the showings, they are uninterpretable without a priori knowledge of the location of the showings.

B. Sheet No. 2

These profiles, using a wider 'a' spacing of 50 metres, effectively measure conductors to a depth of 30 metres and greater than 75 metres strike length. Over the Cloutier Zone, the profiles suggest a widening at depth of up to 40 metres at L 2+50 W and up to 25 metres at L 4+50 W. The broad, positive out-of-phase response seen on Line 5+50 W, which is similar in character to that discussed above (L 3+00 N) is thought to be due either to the sub-parallel "Ice Anomaly" or a fault which could explain the westerly termination of the Cloutier Zone.

The Cloutier Zone appears to be cut-off to the east between L 2+25 W and L 1+50 W.

Over the PICK-AXE, the results at this separation are not much more encouraging than they are at the 25 metre 'a' spacing. However, with the geological evidence one can make an attempt at extending this showing westerly past L 2+00 W and to the east past L 0+00 W for a possible continuous strike length of 200 metres of poorly conducting material. Amplitudes are not sufficient to determine attitudes or widths.

There is a possibility of a weak, sub-parallel conductor at STN. 1+40 N from 1+75 N to 0+75 N which might extend even past B/L 0+00.

C. Sheet No. 3

In an attempt to obtain further depth information and to attenuate surficial interferences, the Cloutier Zone and PICK-AXE showing were surveyed using as 'a' spacing of 100 metres. This separation has a depth penetration up to 65 metres and detects continuously conducting mineralization with a strike lingth of greater than 150 metres.

The responses over the Cloutier Zone are definitely anomalous showing excellent, "text-book" anomalies particualrly at L 2+00 W and L 3+00 W where the in-phase readings appear to represent the conductive zone rather than overburden or other lithological conditions.

The illustrated interpreted dips could be in error due to the distorting influences of nearby conductors. The geology, however, suggests that the Cloutier Zone dips steeply to the north.

The moderately high, positive, in-phase readings at the north end of L 3+50 W and all along L 4+50 W are likely due to a change in rock type and/or the absence of conductive cover.

The L 2+00 W profile confirms the 'a' = 50 metre results in that the Cloutier Zone is terminated to the east at about 1+50 W.

The PICK-AXE mineralization seems to be more conductive at depth and shows good continuity from L 1+00 W to L 1+00E. It is quite possible that this linear extends westerly past L 4+50 W, STN. 1+50 N and easterly under the large, lateral moraine. Dips are interpreted to vary from vertical to -80 N along this trend.

The interpreted fault shown on the plan map suggests a small lateral displacement between the easterly half (PICK-AXE) and the westerly half (P-6, 7 and 10) of this feature between L 2+00 W and L 3+00 W.

D. Interpretation and Grid Location Map

This map has been mentioned above under "General Comments" and is quite self-explanatory.

The "Ice Anomaly" requires more coverage but the conductor appears to be near vertical. The P-6, 7 and 10 conductor is too weak to assign a dip or accurate width.

The "Cloutier Zone" is quite accurately defined and is shown at its maximum possible lateral dimensions.

The PICK-AXE Zone is a relatively poor conductor which could extend easterly under the Main Moraine. A larger halo of disseminated mineralization probably exists around this conductor as witnessed from viewing the Induced Polarization profiles carried out by Ecstall Mining Ltd. in 1973. The questionable, sub-parallel anomaly to the north could be within this halo.

CONCLUSIONS AND RECOMMENDATIONS

The Electromagnetic Survey succeeded in defining a number of drill targets within the bounds of the grid west of the Main Moraine. It also assisted in determining the strike direction and extension of the P-12 and PICK-AXE Showings.

The survey also detected a new target to the west, called the "Ice Anomaly". Further E.M. coverage is required to define this feature, although a drill hole, if convenient, could be spotted in the L 0+00, STN. 5+50 W area to determine the cause of the response.

It must be appreciated that economic mineralization is not necessarily confined to these conductors but that the E.M. survey has narrowed the search, helped to explain the geology and mineralization found previously and will undoubtedly serve as a useful, relatively inexpensive tool for finding new targets in the future.

This, coupled with the high unit cost and electrode contact problems inherent in alternative methods, such as I.P. and Applied Potential, suggests that further coverage of the claims be done using the present E.M. technique as the primary geophysical exploration tool. Ground magnetics should be considered to assist in mapping rock types and structure.

Other techniques, such as Applied Potential, may be required from time to time to deal with specific problems.

It is recommended that the E.M. coverage be extended to the west, north and east. The present grid and extended grid should be magnetically surveyed.

Drill hole locations should be determined in consultation with the project geologist.

Respectfully submitted,

P.P.Nielsen, B.Sc.,
Geophysicist

CERTIFICATE

I, Peter H. Sevensma, of 7052 Sierra Drive, Burnaby, B.C., hereby certify:

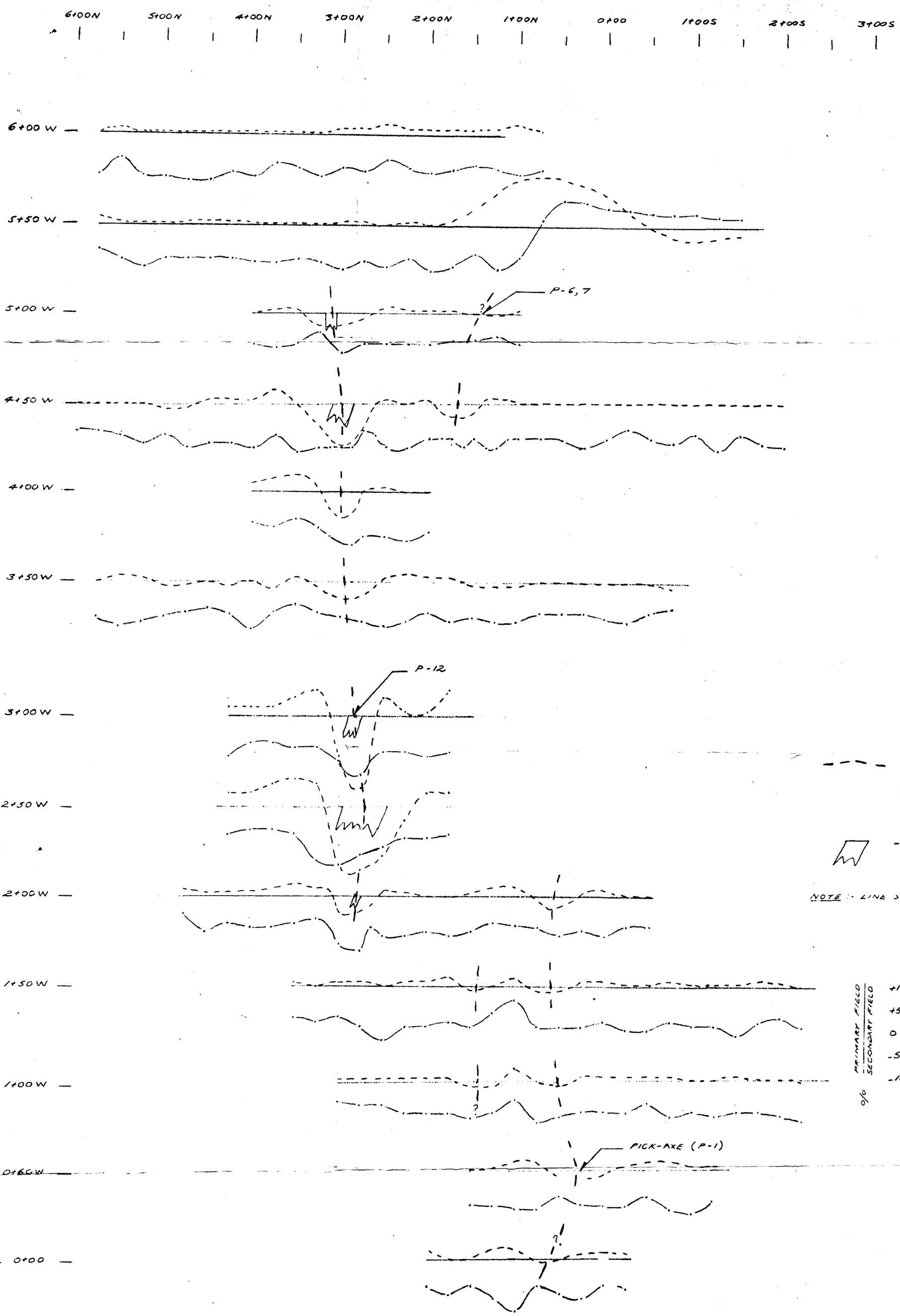
1. THAT I am a Consulting Geologist with business address as above.
2. THAT I am a member in good standing of the Association of Professional Engineers of British Columbia.
3. THAT I graduated from the University of Geneva, Switzerland in Geological and Mineralogical Sciences and obtained my Ph.D. in these subjects in January 1941 at this same institution.
4. THAT I have practiced my profession for the last 45 years.
5. THAT my report on the Reg Group of November 13, 1981 is based on personal supervision of the program in the field from July 25th to September 20th, 1981, including the geophysical program herein described.
6. THAT I am a Director and Shareholder of Skyline Explorations Ltd.

P.H. Sevensma

P.H. Sevensma, Ph.D., P.Eng.

P.H. Sevensma

Vancouver, B.C.
31 March 1982



LEGEND

- INTERPRETED CONDUCTOR AXIS NEAR SURFACE

OPERATING FREQ. = 3555 Hz.

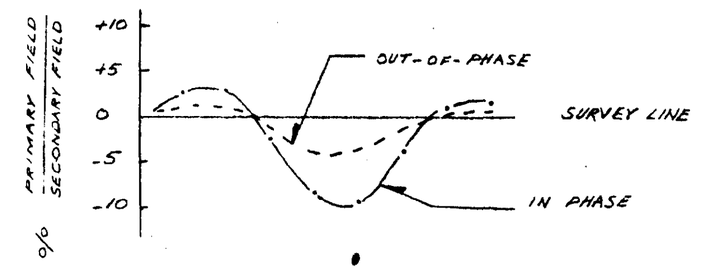
COIL SEPARATION "a" = 50 METRES

STATION INTERVAL = 25 METRES

- CONDUCTOR INDICATING APPROXIMATE DIP & MAXIMUM WIDTH NEAR SURFACE

INSTRUMENT USED :- MAX-MIN II

NOTE :- LINE SPACING NOT NECESSARILY TO SCALE



To Accompany Report By:-

P.P. NIELSEN, B.Sc., GEOPHYSICIST.

Part 2 of 2

SKYLINE EXPLORATIONS LTD.

REG CLAIMS, BRONSON CREEK AREA, B.C.

GROUND ELECTROMAGNETIC SURVEY

HORIZONTAL LOOP

PROFILES

LIARD M.D. SHEET NO. 2 N.T.S. 104B/11

NIELSEN GEOPHYSICS LTD

VERNON, B.C.

JAN. 1982 BY:- P.P.N.

0 25 50 100

HOR. SCALE (IN METRES)

8+00W 7+00W 6+00W 5+00W 4+00W 3+00W 2+00W 1+00W B/L 0+00 1+00E

6+00N 5+00N 4+00N 3+00N 2+00N 1+00N 0+00 1+00S 2+00S 3+00S 4+00S

500 m. N. TO LEGAL POST REG 3 AND 4

CLOUTIER ZONE

P.12

P.6,7

P.10

ICE ANOMALY

PICK-AXE ZONE

P.1

P.?

P.13

CAMP

MAIN MORAINE

EASTERLY BASE OF

POSITIVE (APPROX.) GLACIER

REG 3

REG 4

SURVEY PARAMETERS

INSTRUMENT USED - MAX-MIN II
MODE - HORIZONTAL LOOP E.M
OPERATING FREQUENCY:- 3555 HZ.
COIL SEPARATIONS :- 25, 50 & 100 M.

LEGEND

- INTERPRETED ZONES OF WEAK TO MODERATE CONDUCTIVITY INDICATING :- MAX. WIDTH, DIP (STEEP OR VERTICAL), OPEN OR CLOSED ALONG STRIKE, & SHOWINGS.

P.1 - FAULT TRACE

NOTE - GRID LINES ONLY SHOWN OVER WHICH E.M. SURVEY WAS PERFORMED USING VARIOUS SURVEY PARAMETERS

To Accompany Report By :-

P.P. NIELSEN, B.Sc., GEOPHYSICIST.

part 2 of 2

SKYLINE EXPLORATIONS LTD

REG CLAIMS, BRONSON CREEK AREA, B.C.

GROUND ELECTROMAGNETIC SURVEY

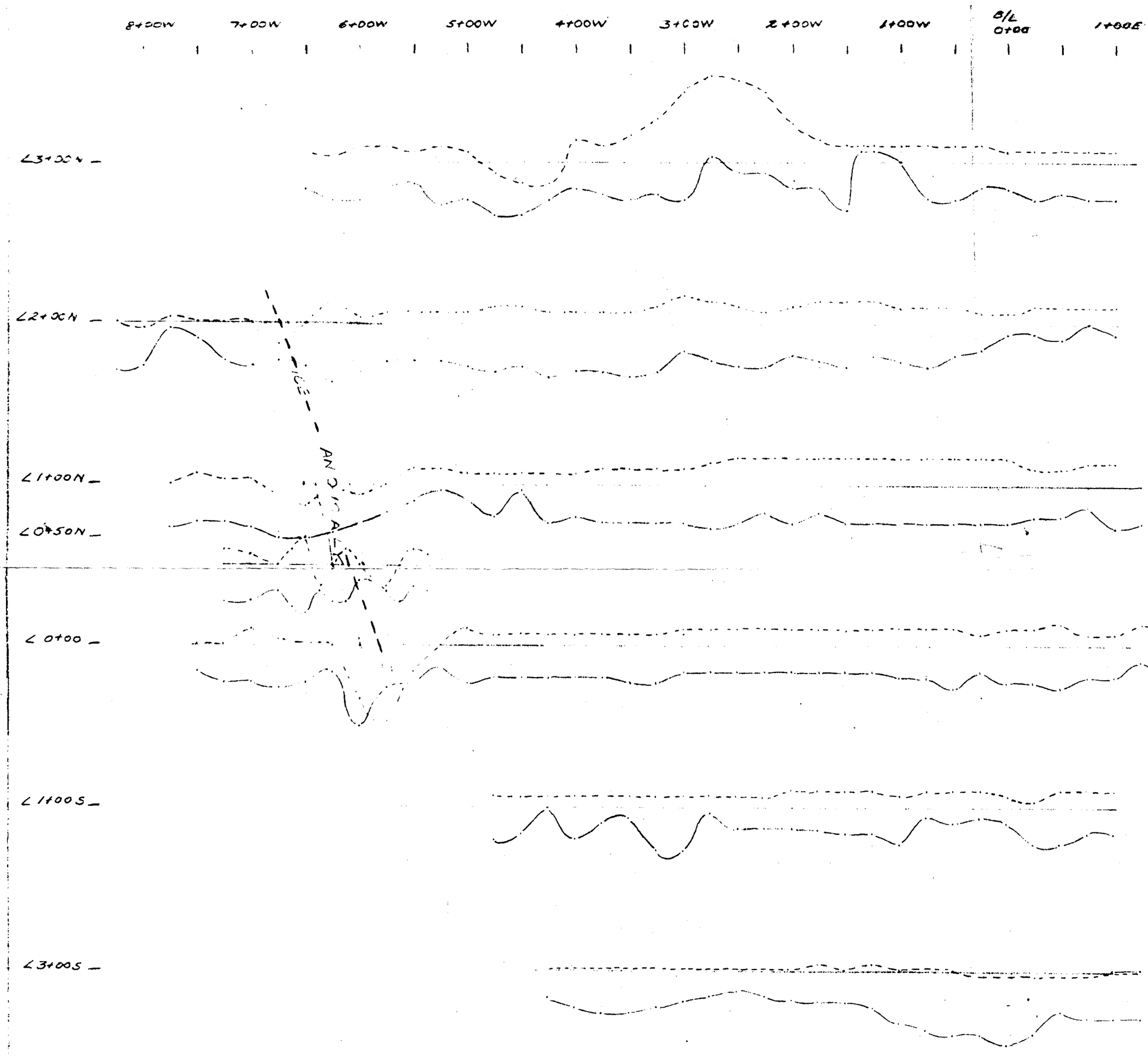
INTERPRETATION & GRID LOCATION MAP

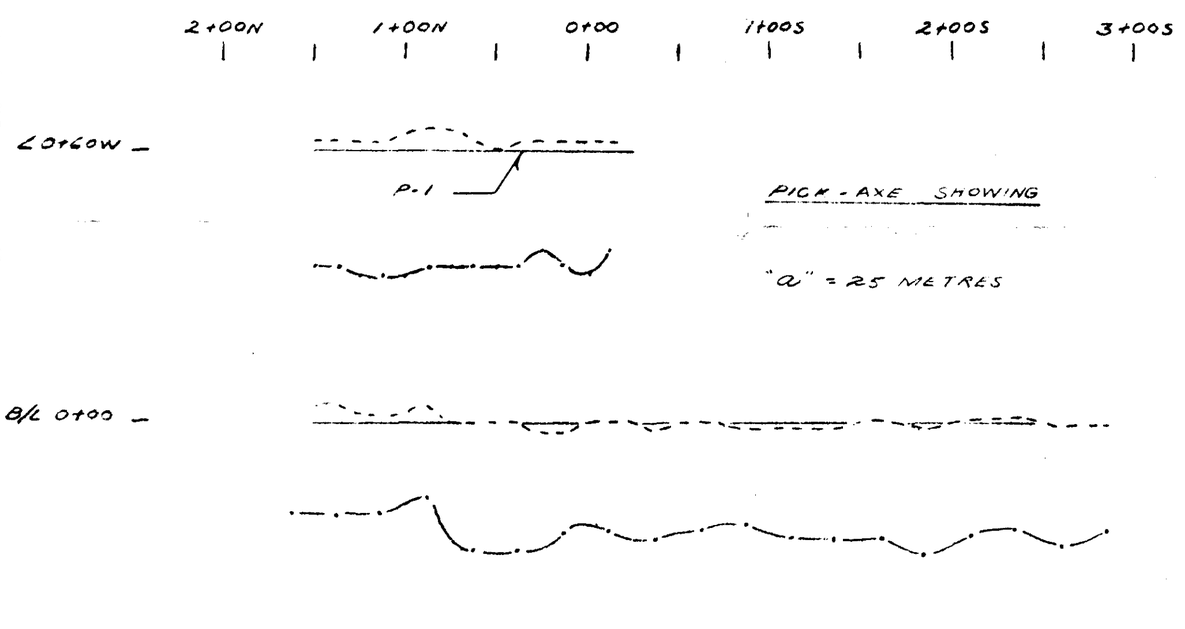
LIARD M.D. N.T.S. 104 B/11

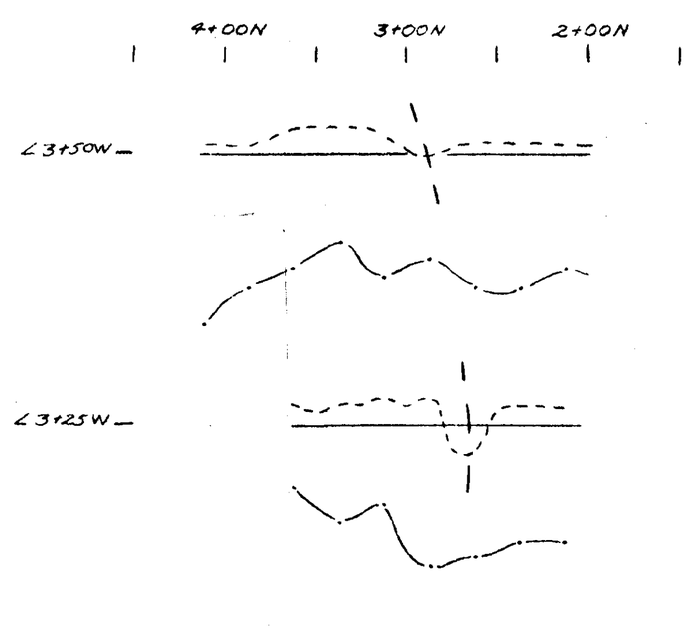
NIELSEN GEOPHYSICS LTD
VERNON, B.C.

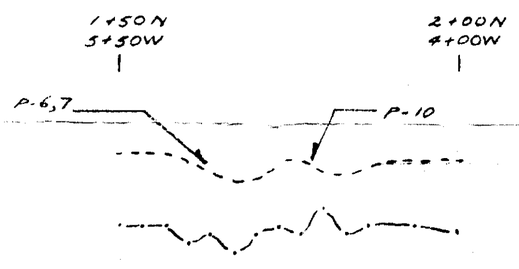
JAN, 1982 BY: P.P.N.

0 25 50 100
SCALE IN METRES





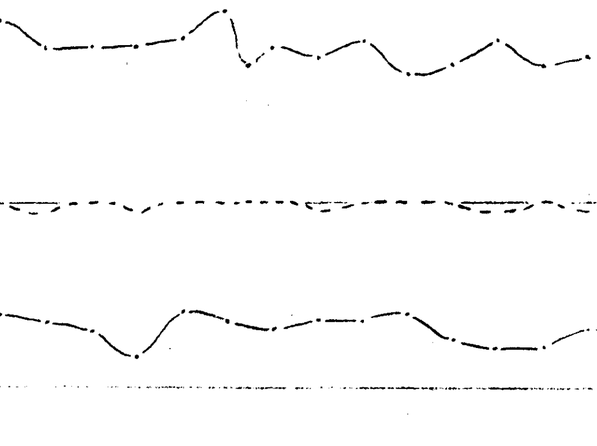




DIAGONAL TRAVERSE ACROSS P-6,7 & 10

"a" = 50 METRES

LEGEND



INTERPRETED CONDUCTOR AXIS NEAR SURFACE

OPERATING FREQ. = 3555 Hz.

COIL SEPARATION "a" - INDICATED ABOVE

STATION INTERVAL = 12.5 & 25.0 METRES

INSTRUMENT USED :- MAX-MIN II

NOTE :- INTERLINE SPACING NOT NECESSARILY TO SCALE.

TO ACCOMPANY REPORT BY:-

P. P. NIELSEN, B.Sc., GEOPHYSICIST.

SKYLINE EXPLORATIONS LTD.

REG CLAIMS, BRONSON CREEK AREA, B.C.

GROUND ELECTROMAGNETIC SURVEY

HORIZONTAL LOOP

PROFILES

LIARD M.D. SHEET NO. 2 N.T.S. 104B/11

NIELSEN GEOPHYSICS LTD.

VERNON, B.C.

JAN. 1982 BY:- P.P.N.

0 25 50 100

HOR. SCALE IN METRES

6+00N 5+00N 4+00N 3+00N 2+00N 1+00N 0+00 1+00S 2+00S 3+00S 4+00S

L 4+50W

L 3+50W

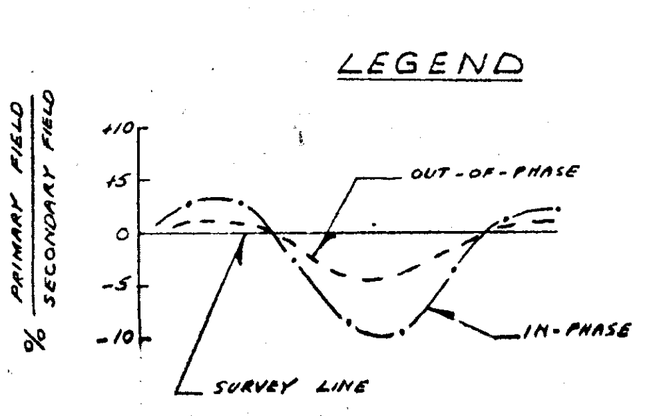
L 3+00W

L 2+00W

L 1+00W

B/L 0+00

L 1+00E



LEGEND

INTERPRETED CONDUCTOR AXIS AT DEPTH

CONDUCTOR INDICATING APPROX. DIP & MAX. WIDTH AT DEPTH.

NOTE :- INTERLINE SPACING NOT TO SCALE

OPERATING FREQ. = 3555 Hz.
COIL SEPARATION "a" = 100 METRES
STATION INTERVAL = 25 METRES
INSTRUMENT USED:- MAX-MIN II

part 2 of 2

To Accompany Report By:-

P.P. NIELSEN, B.Sc., GEOPHYSICIST.

SKYLINE EXPLORATIONS LTD.
REG CLAIMS, BRONSON CREEK AREA, B.C.

GROUND ELECTROMAGNETIC SURVEY
HORIZONTAL LOOP PROFILES

LIARD M.D. SHEET NO.3 N.T.S. 104B/11

NIELSEN GEOPHYSICS LTD.
VERNON, B.C.

JAN, 1982 BY:- P.P.N.

0 25 50 100
HOR. SCALE IN METRES