2088

INDUCED POLARIZATION GEOPHYSICAL SURVEY
ON THE NES PROPERTY, CLAIM NOS. BIN 129 TO 151 INCLUSIVE,
DDH 1 AND 2, AND FRACTIONAL CLAIM NOS. DDH 3 FR. TO 6 FR.
INCLUSIVE, SITUATED 15 MILES SOUTHEAST OF SPENCES BRIDGE,
IN THE KAMLOOPS MINING DIVISION
50° 18' N, 121° 05' W, NTS: 92 I-6E

Claim	Record Nos.	Requested Assessment Credit
Bin 129 - 151	71880 - 71902	1 year each claim
DDH 1	79297	Nil
DDH 2	79298	2 years
DDH 3 Fr. - 6 Fr.	79405 - 79408	1 year each claim
	TOTAL:	29 years

Geophysical work on the property was conducted during the period September 1 to September 27, 1969.

C O M I N C O L T D.

EXPLORATION

WESTERN DISTRICT

NTS: 92I-6

INDUCED POLARIZATION AND RESISTIVITY SURVEY

NES GROUP

SPENCES BRIDGE AREA

HIGHLAND VALLEY, B. C.

October 8, 1969.

J. M. Hamilton

TABLE OF CONTENTS

SUMMARY

Reconnaissance I.P. profiles totalling 7.12 miles have adequately covered the southeastern third of the Nes Property. No targets for further exploration are present in the data. The resistivity pattern obtained on these profiles supports the hypothesis that a major fault is present in the Skuhun Creek valley. Completion of reconnaissance I.P. coverage over the remaining two thirds of the property is recommended if the area is deemed to have regional geologic merit.

An I.P. profile over a vein-type bornite occurrence using 200 foot dipoles failed to respond to the zone. An economic occurrence is not ruled out by this negative information, but the possibility that an orebody is present here which could be mined by open pit methods has been severely limited. If a drill test is warranted on geological grounds, and if the test is encouraging, the zone could probably be traced accurately across areas of thin overburden cover using I.P. with 25 foot or 50 foot dipoles.

INTRODUCTION

The Nes Group is located about 15 miles southeast of Spences Bridge in the Highland Valley area. The property straddles Skuhun Creek, and is centred about two miles downstream from the intersection of Skuhun and Skuhost Creeks. Access is by way of a dirt road to Chataway Lakes Resort which joins the Spences Bridge - Merritt highway 14.2 miles southeast of Spences Bridge. The property is located about six or seven miles up the dirt road, and, since the road is located close to Skuhun Creek, it provides an access route up the centre of the Nes Group. The property consists of twenty-three claims and six fractional claims, and is held by Cominco Ltd under an option agreement with B. I. Nesbitt.

The present geophysical survey was conducted over an area in the southeast portion of the property, comprising about one-third of the property, at the suggestion of R. J. Nicholson of Cominco. The purpose of the survey was to look for large volumes of weakly disseminated sulphides in the Skuhun Creek valley, which is expected on the basis of nearby seismic data to contain as much as 300 feet or more of glacial drift. Other work by Cominco to date consists of line-cutting, and a regional geological survey, as well as limited magnetometer and soil geochemical tests.

GEOLOGY

The property is largely drift-covered, but nearby outcrops located on and around the border of the group are Guichon intrusives. Bornite is present about 1000 feet off the north end of Line 0 + 00 as an apparent vein-type occurrence in Guichon rocks. This occurrence was the object of limited

underground workings many years ago.

Faulting may be present in the Skuhun Creek valley.

INDUCED POLARIZATION AND RESISTIVITY SURVEY

Method:

The survey was performed by field technician Rob Pearson of McPhar Geophysics Ltd. assisted by Art Gates and local personnel between September 1 and September 27, 1969. The survey was performed with a McPhar Model HPTx frequency domain I.P. unit, using frequencies of 0.31 and 5.0 c.p.s.

In all, 7.12 miles of line were surveyed, on 10 parallel lines spaced 500 feet apart, using 400 foot dipoles and five separations. In addition, a line at right angles to the main grid, called Line 19 + 00 N, was detailed using 200 foot dipoles and taking five separations, to test for a response with this array over the vein-type bornite occurrence. This comprised 0.64 miles of detail traverse.

Data Presentation:

The following data is included with this report:

Plate NES I.P.-1, grid map showing location of I.P. traverses, Scale 1" = 1000'.

The following data plots:

Line No.	Dipole Length	Plate No.
15E	400 feet	I.P.-50A-1
10E	" "	I.P.-50A-2
5E	" "	I.P.-50A-3
0	" "	I.P.-50A-4
5W	" "	I.P.-50A-5
10W	" "	I.P.-50A-6
15W	" "	I.P.-50A-7
20W	" "	I.P.-50A-8
25W	" "	I.P.-50A-9
30W	" "	I.P.-50A-10
19N	200 feet	I.P.-50A-11

Results:

No I.P. responses of singificance were obtained on this grid. Resistivity lows are present in the Skuhun Creek valley, and these are felt to be due to increased subsurface water content in the valley. The axis of the resistivity low is coincident with Skuhun Creek from Line 10 E to Line 10 W. However, from Line 10 W to Line 30 W (the westerly extent of the survey), the axis of the resistivity low diverges from Skuhun Creek and is located roughly parallel to it, but up to about 700 feet south of it. Accordingly, one is forced to the conclusion that the zone of greatest concentration of

subsurface water, and Skuhun Creek, do not always coincide, even though Skuhun Creek is obviously the zone of greatest concentration of water on surface. This reasoning would support a tentative conclusion that a major fault is present in the valley, close to, but not always coincident with, Skuhun Creek. Such a fault could have controlled glaciation in a general way by fracturing rock in its vicinity, but final deposition and subsequent erosion of glacial drift could easily have formed a present topographic low which is displaced from the fault.

In summary then, the resistivity pattern on this property supports the hypothesis that a major fault lies along the valley. The fault plane, if it in fact exists, is almost certainly straighter than the axis of the resistivity low shown on Plate NES I.P.-1, but it appears to lie south of Skuhun Creek in the area between Lines 10 W and 30 W.

Line 19 N, which forms the Base Line for a geophysical survey grid on the adjoining Highland Queen Property, was extended westward across the Nes Property, and surveyed by I.P. using 200 foot dipoles. This reduced dipole length provides 200 feet of penetration for targets of moderate to large volume, and was deemed adequate to penetrate the reduced thickness of overburden along this line. The object of this survey was to test a vein-type showing of bornite for I.P. response, with the thought that the zone could be traced across areas of thin overburden cover with I.P.

No response of significance was obtained over the zone, which is located at about 0 + 00 on Line 19 N. Apparently, therefore, the zone does not contain a large enough volume of mineralized rock to produce responses with the 200 foot dipoles used. The negative information obtained on this traverse does not preclude the possibility that an "Alwin-type" zone of possible economic importance is present, nor does it mean that the zone could not be traced by I.P. using a much reduced dipole length. However, the possibility that a broad near-surface zone of disseminated sulphides is present around a more concentrated "vein-type" core underneath Line 19 N has been largely eliminated by the results of this traverse.

CONCLUSIONS

1. An I.P. survey over the southeast third of the Nes Property did not obtain any responses worthy of further expenditures. The resistivity pattern obtained supports the hypothesis that a major fault is present in the Skuhun Creek valley.

2. An I.P. traverse along Line 19 N over a vein-type bornite occurrence using 200 foot dipoles did not obtain a response from this mineralization. It is concluded therefore that in the area of this test, the vein is not accompanied by large flanking zones of disseminated sulphides. The negative results of this test do not rule out the possibility of an economic vein-type orebody, but the attractiveness of the zone seems severely limited because an open-pit proposition does not appear to be present here.

RECOMMENDATIONS

1. No further work can be recommended in the area of the main reconnaissance I.P. survey on the basis of the geophysical data obtained. An I.P. survey of the remaining two thirds of the property is recommended, provided the area is deemed to have regional geologic merit.

2. A drill-test of the bornite vein-type occurrence may be warranted from geological considerations on a low priority basis. Should such a test be encouraging, an attempt to trace the zone using I.P. with 25 foot or 50 foot dipoles could be considered, if geologic control from surface outcrops is deemed inadequate.

Submitted by:

John M. Hamilton, P. Eng.,
Geophysicist, Vancouver.

Endorsed for
Release by:

J. Richardson, P. Eng.,
Assistant Chief Geologist,
Vancouver.

JMH:ma
October 8, 1969

Distribution

Exploration, Montreal	1
Chief Geologist, Exploration	1
Western District	3
Mining Recorder, Vancouver	2
Geophysics File, Vancouver	1

APPENDIX I

NOTES ON THE INDUCED POLARIZATION METHOD

March 10, 1969. John M. Hamilton

THEORY:

Polarization is the separation of charge, or blocking action, of metallic or electronic conductors within a medium of ionic solution conduction. Induced polarization refers to this blocking action when caused by an applied electric current.

In its geological context, polarization, or I.P., refers to the electrochemical blocking phenomenon exhibited by metallic minerals such as most sulphides, magnetite and graphite, under the influence of an applied current. When a current is passed through the subsurface, conduction is ionic and is dependent upon ions in the water content of the subsurface because most minerals have a much higher specific resistivity than ground water. The "metallic" minerals have specific resistivities which are much lower than ground water. The I.P., effect occurs at the interfaces between ionic conductive conditions in ground water and electronic conductive conditions in metallic minerals. Electronic charges are built up on these interfaces which oppose the flow of current that produces them.

The blocking action, or I.P. effect, increases with the time during which the current is flowing in a given direction. Hence, if the current is periodically reversed, a high frequency current will be subject to less blocking, or I.P. effect, than will a low frequency, since less time is available for the blocking to occur at a high frequency. It is therefore possible to measure the I.P. effect by measuring resistivity at two frequencies. This is the basis of the frequency domain I.P. system. Field readings consist of current readings between the transmitter electrodes, and voltage readings between the receiver electrodes, at both the high and the low frequency. From these readings a resistivity can be calculated for each frequency, using the relationship V= IR (Ohm's Law) and geometrical constants applicable to the electrode array.

The resistivity values so obtained are actually apparent resistivity values, being an average of all the material sampled for each reading. The resistivity plotted is the high frequency value, since it is least dependent on blocking action or I.P. effect, and hence is a truer value if polarizable material is present. The units used are ohm-feet/2π . To convert these units into ohm-meters used in some other I.P. systems, the ohm-feet/2π values should be multiplied by 1.9.

The percent frequency effect, actually an apparent frequency effect, is defined as $(R_L - R_H)/R_H \times 100\%$, where R_L and R_H are the resistivities at the low and high frequencies, respectively. The percent frequency effect is the parameter measured to show the I.P. effect, and is the frequency domain equivalent of the chargeability "m" used in time domain I.P. work,

The metal factor values are obtained by dividing the percent frequency effect by the resistivity and multiplying by 1000. The metal factor is proportional to the change in conductivity as the frequency of the applied current is varied, and can be shown to be equal to $(\sigma_H - \sigma_L) \times 2\pi \times 10^5$, where σ_H and σ_L are the conductivities at the high and low frequencies, respectively. The metal factor is generally more indicative of the conductive metallic content than is the frequency effect, although there are exceptions to this.

FIELD PROCEDURE:

Current is applied to the ground at two current electrodes (C_1 and C_2) spaced a distance x apart as shown in the accompanying diagram. The potential is measured at two potential electrodes (P_1 and P_2) also spaced a distance x apart and in line with the current electrodes. For any given locations of C_1 and C_2, readings are taken when the distance between the nearest current and potential electrodes is equal to nx, and n has values of 1, 2, 3, etc. The electrode spacing x is determined by the requirements of the survey. Larger values of x would be used when the object is greater depth penetration and faster progress, whereas smaller values of x are employed in more detailed surveys, to provide more accurate anomaly location, but for the smaller values of x, the penetration is less and the survey slower. The value chosen for x should not greatly exceed the width of the target sought. The penetration is greater for the larger values of n.

INTERPRETATION:

The values of the resistivity, metal factor and percent frequency effect are plotted on "pseudo-sections", where the plotting point is determined by the intersection of lines drawn at 45° from the horizontal, and originating at the mid-points of the current electrode spread and the potential electrode spread, as shown in the accompanying diagram. The choice of 45° from the horizontal is made because it simplifies plotting on gridded paper. There is no other basis for it, and lines at any other angle would produce just as "correct" a distribution of plotted values. The percent frequency effect is shown either as a superscript to each metal factor value, or as a separate, contoured plot similar to the first two. Depths to causative bodies cannot be scaled from the "pseudo-section," because the relationship between "pseudo-section" depths and true depths depends on anomalous body configuration and size, and other other inhomegeneities in the true resistivity distribution in the earth, as well as on the method used to plot the section.

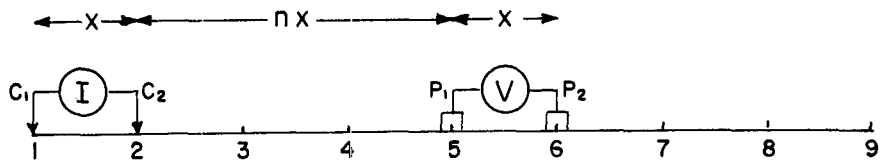
The most favourable type of anomaly would show a frequency effect high with a resistivity low, to provide a marked metal factor high. A frequency effect high, with little or no change in resistivity, to provide a metal factor high, mirroring the frequency effect high, is also favourable. Of lesser interest, but of possible importance, are those anomalies showing no frequency effect change, but a distinct resistivity low, to produce a metal factor anomaly. The type of anomaly, its strength, size and shape should be considered in relation to the geological setting and the target sought.

The surface projection of anomalous zones are shown under the base line of the "pseudo-sections", or data plots. The location of anomalous zones is made after studying the responses at all separations, and is aided by data from computer and tank model-studies, as well as case histories and local geology when known. The source of an anomaly can at best be located only to within one electrode interval or x distance.

Anomalies are classified into three groups: definite, probable and possible. Grouping is based on the strength of the metal

factor, the frequency effect, and the pattern of the anomaly. In general, the true metal factor is dependent on the concentration and distribution of chargeable material in the source, but the survey measures the apparent metal factor, which is an average. A large volume with a small percentage of sulphides could show the same metal factor as a smaller body with more concentrated sulphides. The apparent metal factor will approach the true metal factor when the anomalous body is large, and its depth to top small, relative to the electrode interval.

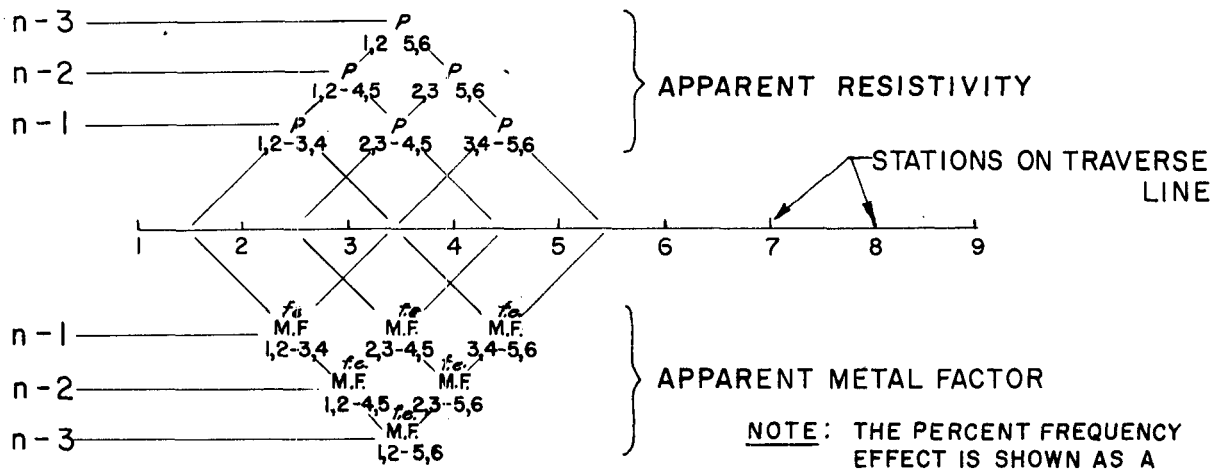
In some cases, a contoured data-plan is prepared, to show frequency effect, metal factor or resistivity values. Only data obtained at one separation is used on such a plan, and commonly the second separation data is plotted, to show results from an intermediate level of investigation. The surface projection of anomalous zones, as determined from the profiles, are also shown, and in many cases these will not coincide with contoured peaks, because data at other separations, if anomalous, will have been considered when locating anomalies. The most profitable use of contoured plans is as a trend indicator.



X = ELECTRODE SPREAD LENGTH OR ELECTRODE SPACING OR DIPOLE LENGTH

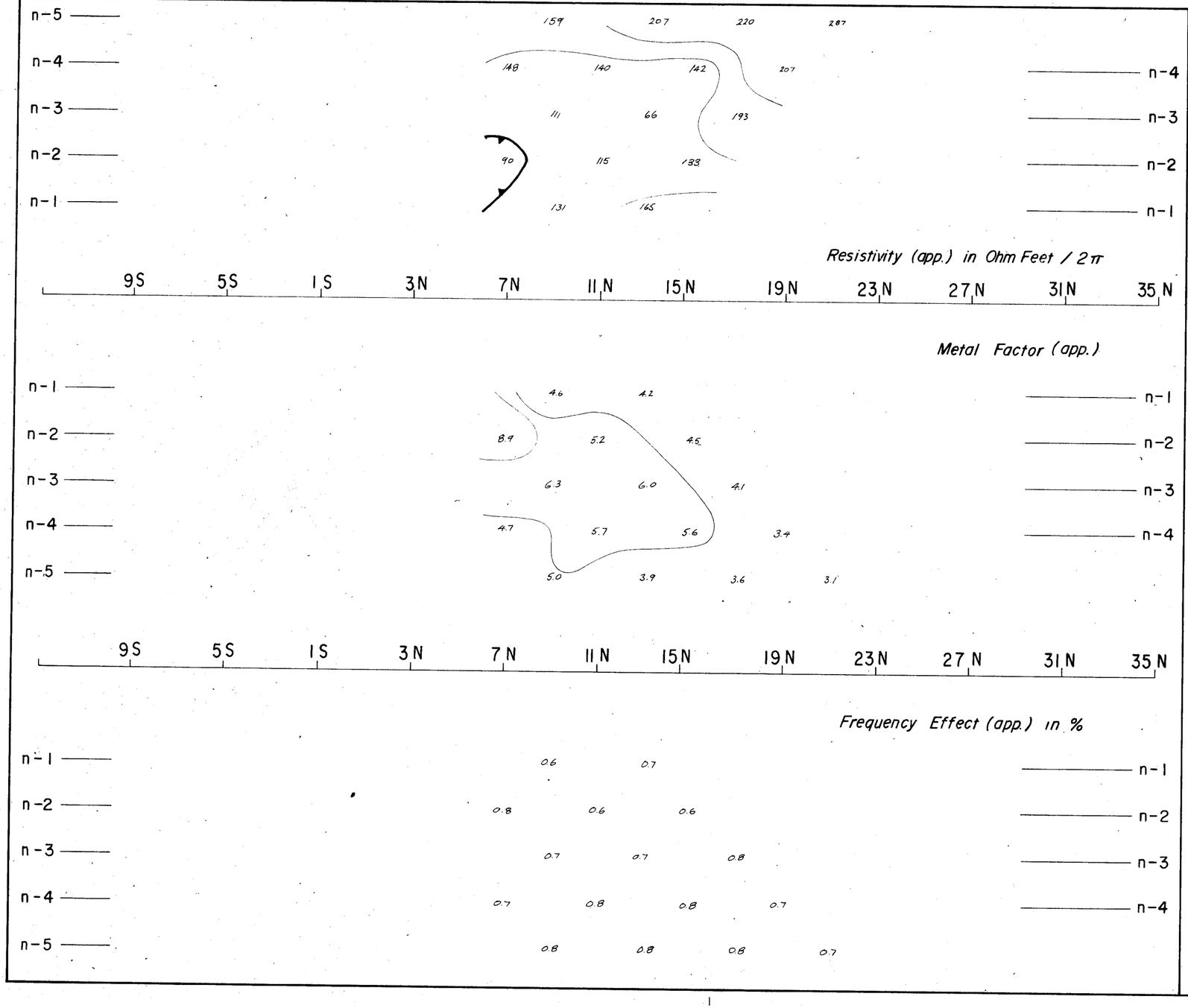
n = ELECTRODE SEPARATION = 1, 2, 3 . . . .

DIPOLE – DIPOLE ELECTRODE ARRAY



NOTE: THE PERCENT FREQUENCY EFFECT IS SHOWN AS A SUPERSCRIPT TO EACH METAL FACTOR VALUE, OR AS SEPARATE CONTOURED PLOT.

DIAGRAM SHOWING PLOTTING METHOD



DWG. NO. - I.P. - 50A - 1

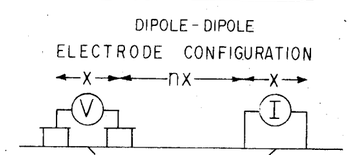
COMINCO LTD.

NES GROUP

HIGHLAND VALLEY AREA, B.C.

LINE NO.- 15+00 E

DIPOLE - DIPOLE
ELECTRODE CONFIGURATION



SURFACE PROJECTION
OF ANOMALOUS ZONES

DEFINITE
PROBABLE
POSSIBLE

FREQUENCIES: 0.31 & 5.0 cps

DATE SURVEYED: Sept. 1969

APPROVED:

DATE: Oct 7/69

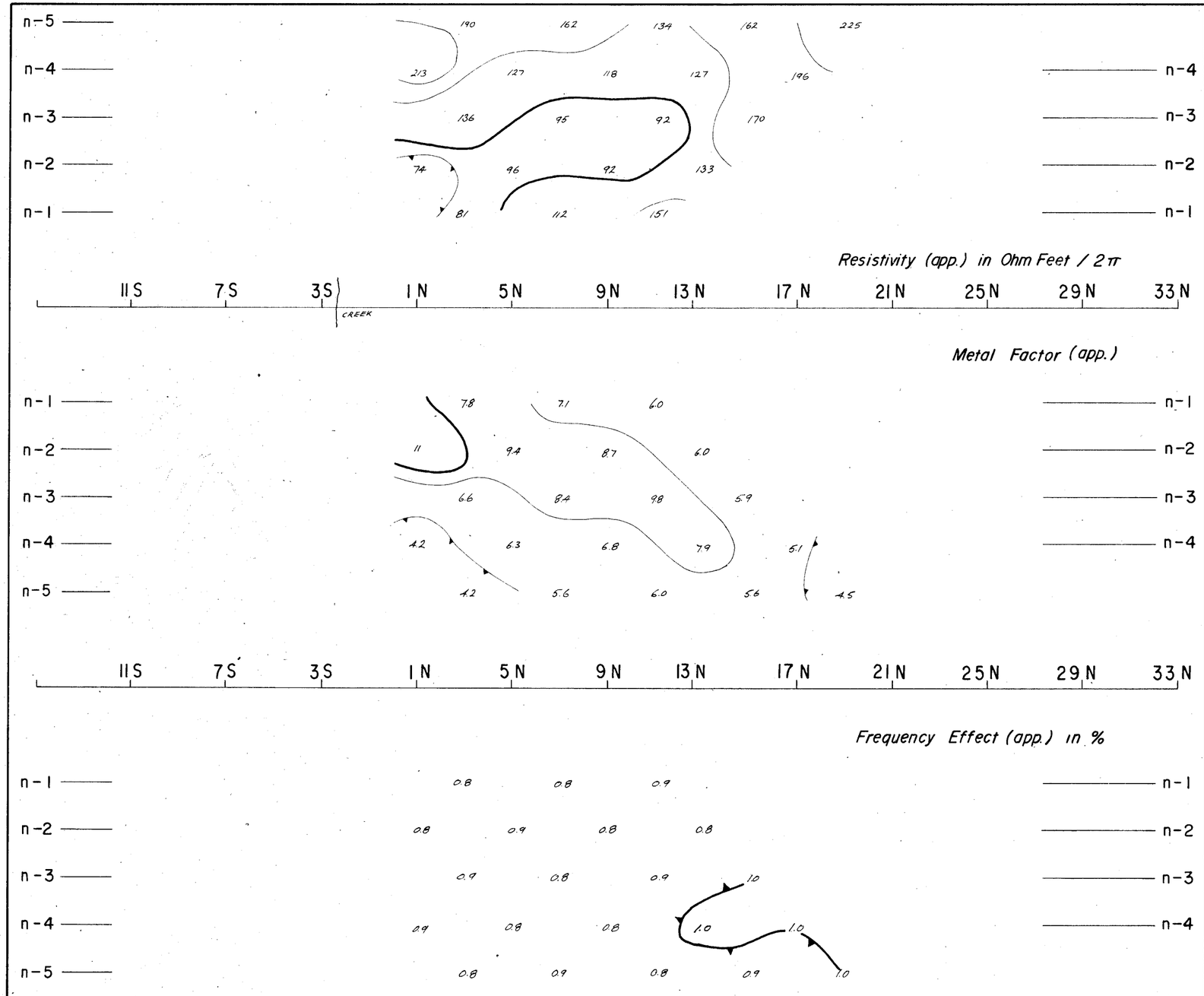
NOTE: CONTOURS AT
LOGARITHMIC INTERVALS
1.-1.5-2.-3.-5.-7.5-10

2088

FREQUENCY DOMAIN PROFILE

INDUCED POLARIZATION AND RESISTIVITY SURVEY
SURVEYED BY McPHAR GEOPHYSICS LIMITED

LINE NO. 15+00 E



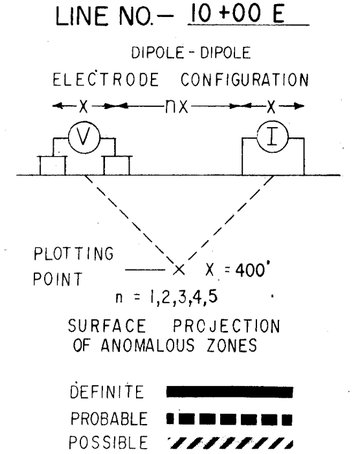
DWG. NO. - I.P. - 50A-2

COMINCO LTD.

NES GROUP

HIGHLAND VALLEY AREA, B.C.

LINE NO.- 10+00 E



SURFACE PROJECTION OF ANOMALOUS ZONES

DEFINITE
PROBABLE
POSSIBLE

FREQUENCIES: 0.31 & 5.0 cps

DATE SURVEYED: Sept. 1969

APPROVED:

DATE: Oct 7/69

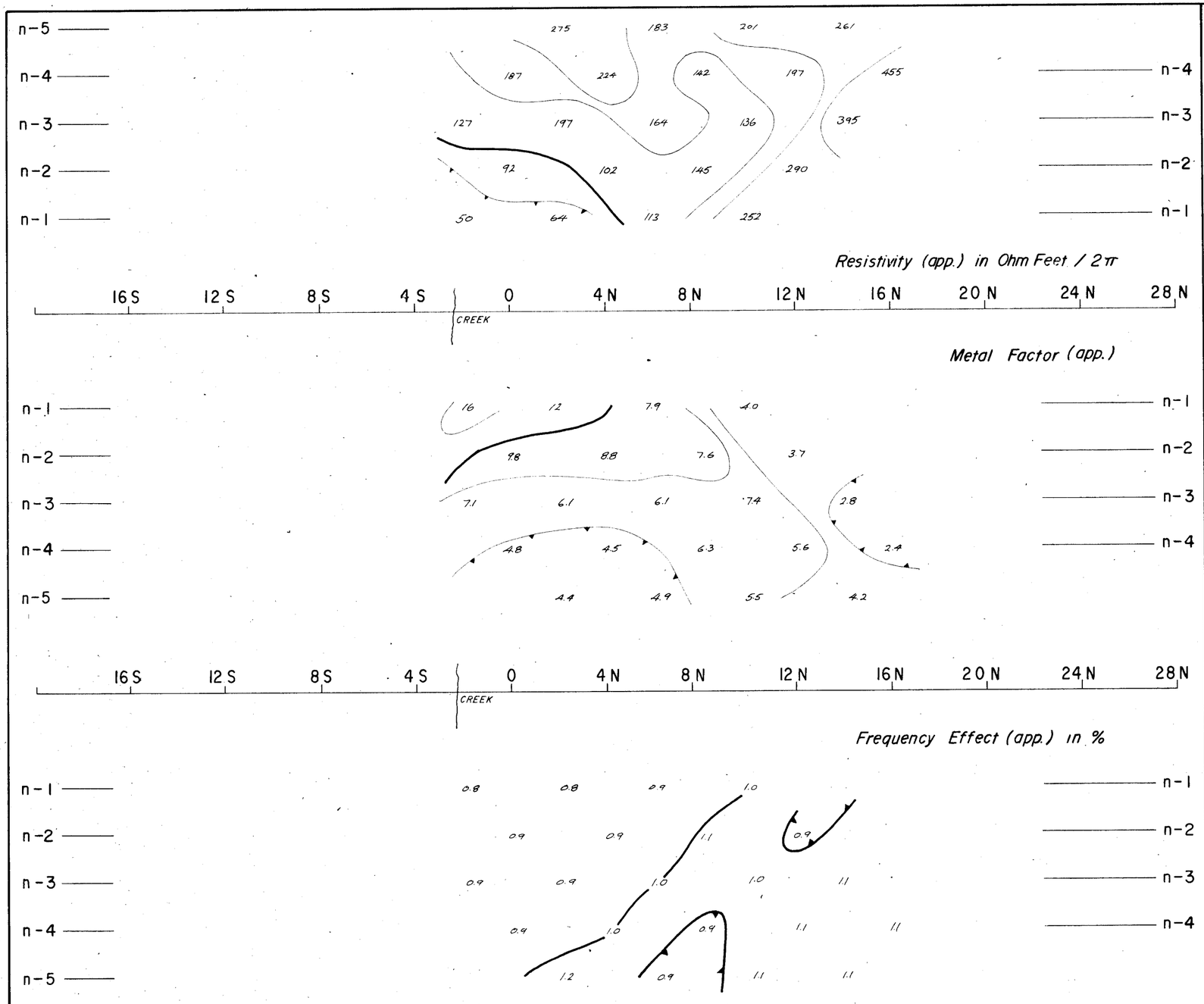
NOTE: CONTOURS AT LOGARITHMIC INTERVALS
1. - 1.5 - 2. - 3. - 5. - 7.5 - 10

2088

FREQUENCY DOMAIN PROFILE

INDUCED POLARIZATION AND RESISTIVITY SURVEY
SURVEYED BY McPHAR GEOPHYSICS LIMITED

LINE NO. 10+00 E



DWG. NO. - I.P. - 50 A - 3

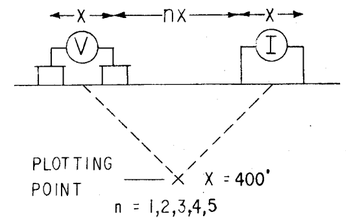
COMINCO LTD.

NES GROUP

HIGHLAND VALLEY AREA, B.C.

LINE NO.- 5+00 E

DIPOLE - DIPOLE
ELECTRODE CONFIGURATION



SURFACE PROJECTION
OF ANOMALOUS ZONES

DEFINITE
PROBABLE
POSSIBLE

FREQUENCIES: 0.31 & 5.0 cps

DATE SURVEYED: Sept. 1969

NOTE: CONTOURS AT
LOGARITHMIC INTERVALS
1. - 1.5 - 2. - 3. - 5. - 7.5 - 10

APPROVED:

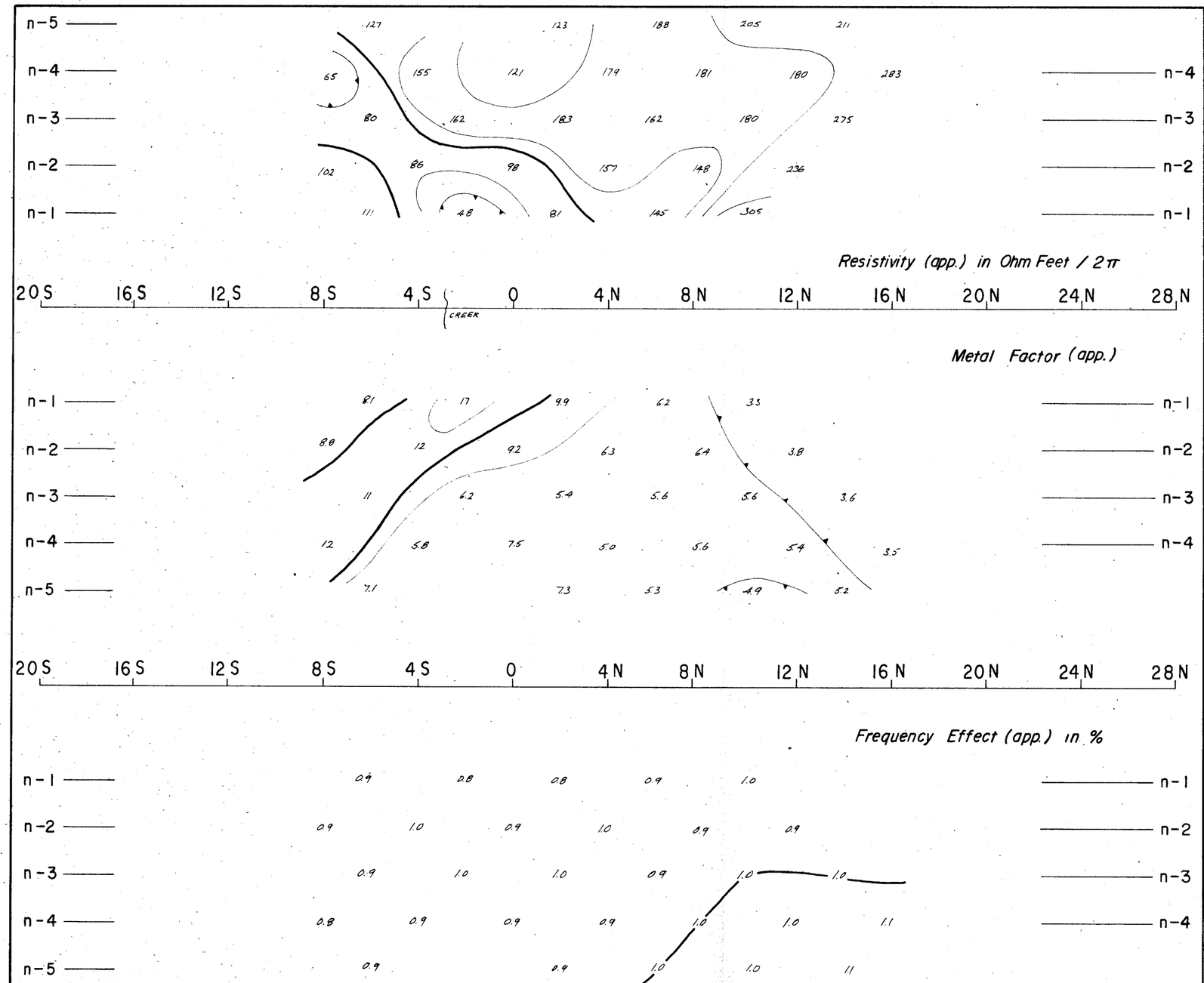
DATE: 10 Oct 69

2088

FREQUENCY DOMAIN PROFILE

INDUCED POLARIZATION AND RESISTIVITY SURVEY
SURVEYED BY McPHAR GEOPHYSICS LIMITED

LINE NO. 5+00 E



DWG. NO. - I.P. - 50A - 4

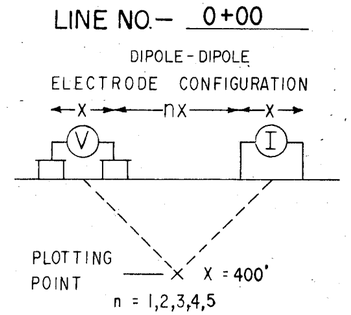
COMINCO LTD.

NES GROUP

HIGHLAND VALLEY AREA, B.C.

LINE NO.- 0+00

DIPOLE - DIPOLE
ELECTRODE CONFIGURATION



SURFACE PROJECTION
OF ANOMALOUS ZONES

DEFINITE
PROBABLE
POSSIBLE

FREQUENCIES: 0.31 & 5.0 cps

DATE SURVEYED: Sept. 1969

NOTE: CONTOURS AT
LOGARITHMIC INTERVALS
1. - 1.5 - 2. - 3. - 5. - 7.5 - 10

APPROVED:

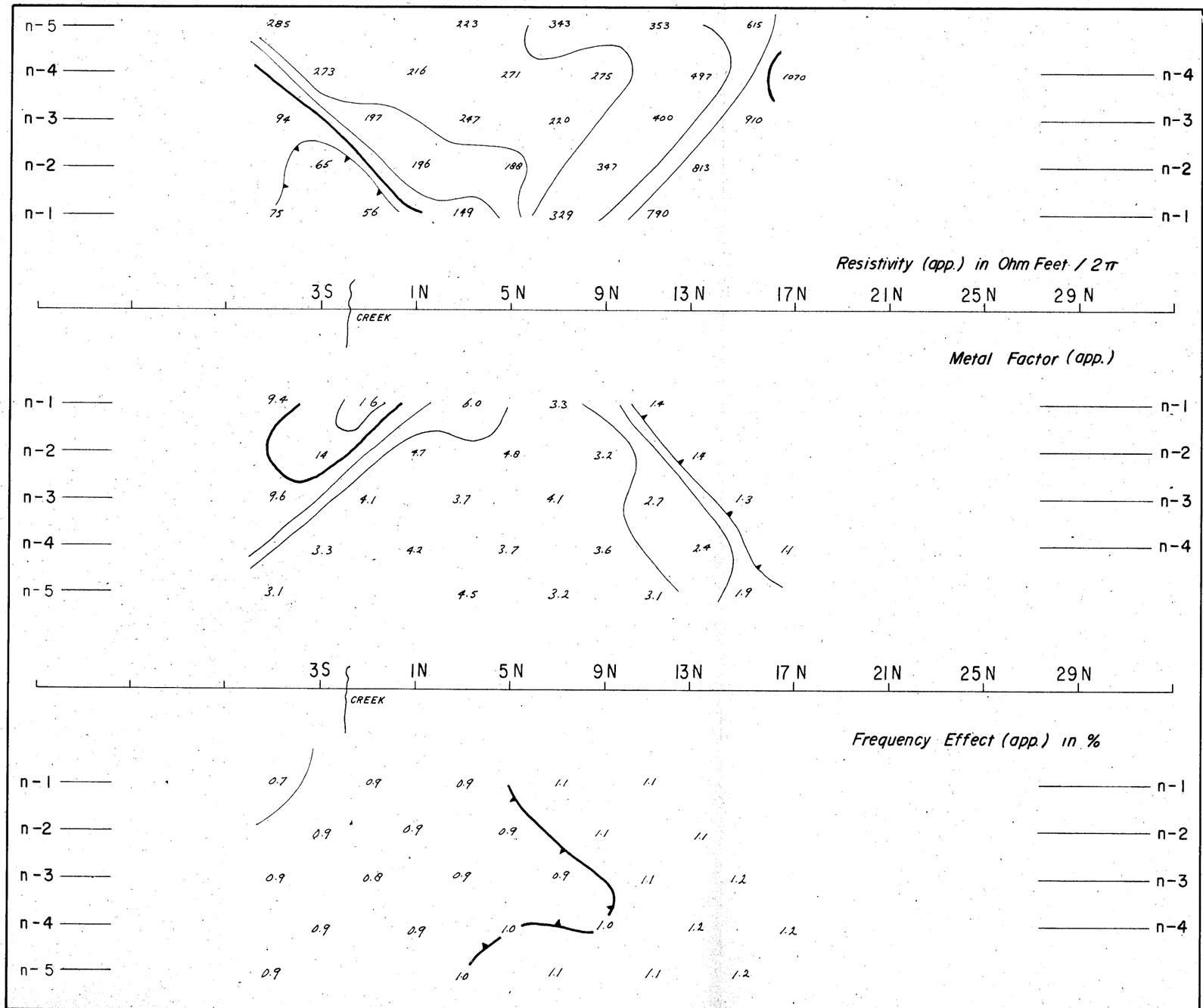
DATE: Oct 7/69

2088

FREQUENCY DOMAIN PROFILE

INDUCED POLARIZATION AND RESISTIVITY SURVEY
SURVEYED BY McPHAR GEOPHYSICS LIMITED

LINE NO. 0+00



DWG. NO. - I.P. - 50A - 5

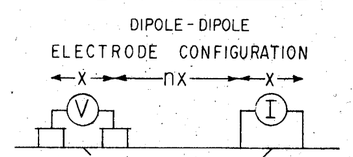
COMINCO LTD.

NES GROUP

HIGHLAND VALLEY AREA, B.C.

LINE NO.- 5+00 W

DIPOLE - DIPOLE
ELECTRODE CONFIGURATION



PLOTTING POINT — X = 400'
n = 1,2,3,4,5

SURFACE PROJECTION
OF ANOMALOUS ZONES

DEFINITE
PROBABLE
POSSIBLE

FREQUENCIES: 0.31 & 5.0 cps

DATE SURVEYED: Sept. 1969

NOTE: CONTOURS AT
LOGARITHMIC INTERVALS
1. - 1.5 - 2. - 3. - 5. - 7.5 - 10

APPROVED:

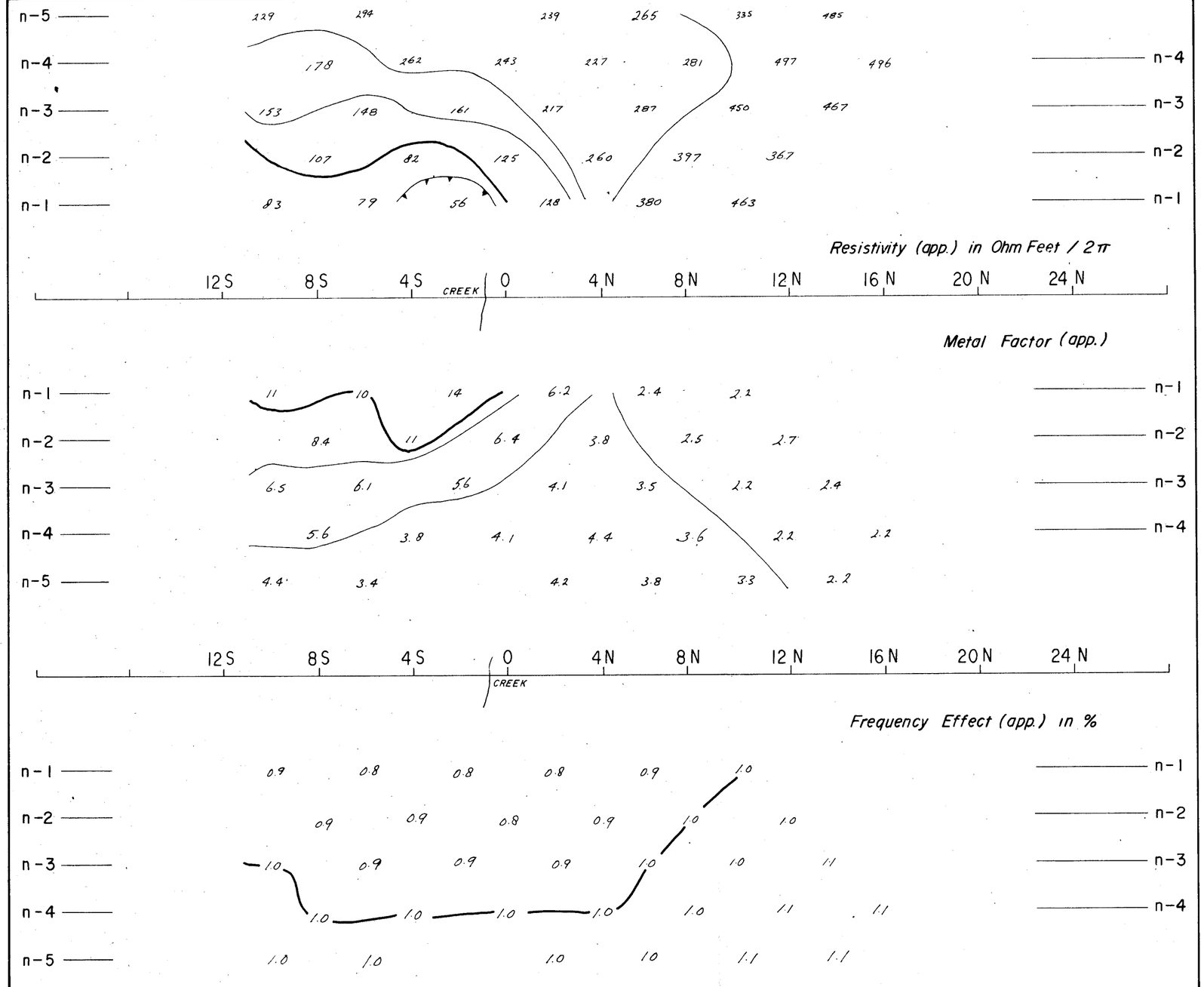
DATE: Oct 1/69

2088

FREQUENCY DOMAIN PROFILE

INDUCED POLARIZATION AND RESISTIVITY SURVEY
SURVEYED BY McPHAR GEOPHYSICS LIMITED

LINE NO. 5+00 W



DWG. NO. - I.P. - 50A - 6

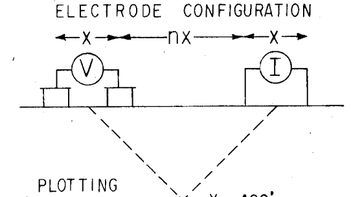
COMINCO LTD.

NES GROUP

HIGHLAND VALLEY AREA, B.C.

LINE NO.- 10+00 W

DIPOLE - DIPOLE
ELECTRODE CONFIGURATION



SURFACE PROJECTION OF ANOMALOUS ZONES

DEFINITE
PROBABLE
POSSIBLE

FREQUENCIES: 0.31 & 5.0 cps

DATE SURVEYED. Sept. 1969

NOTE: CONTOURS AT LOGARITHMIC INTERVALS
1.-1.5-2.-3.-5.-7.5-10

APPROVED:

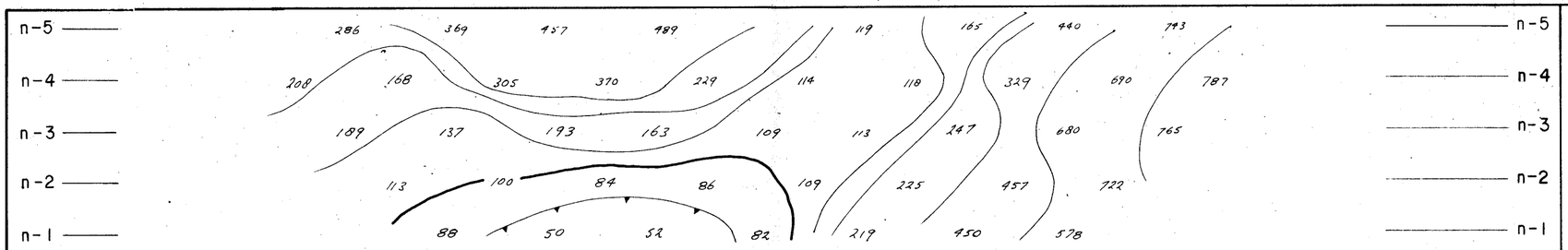
DATE: Oct 7/69

2088

FREQUENCY DOMAIN PROFILE

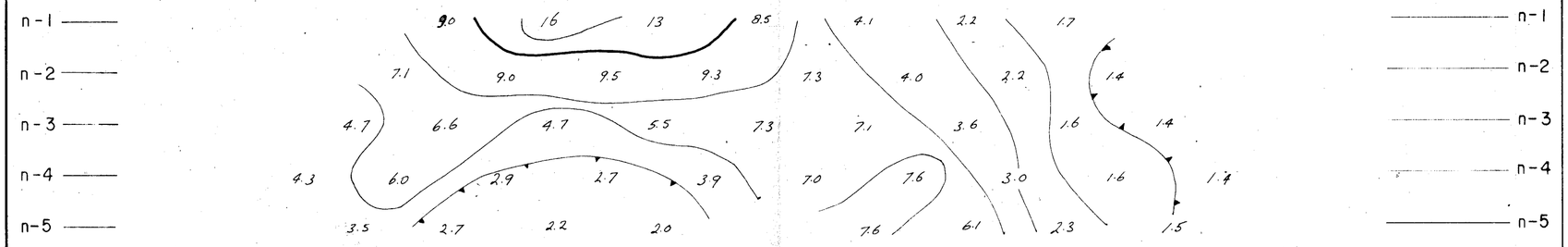
INDUCED POLARIZATION AND RESISTIVITY SURVEY
SURVEYED BY McPHAR GEOPHYSICS LIMITED

LINE NO. 10+00 W

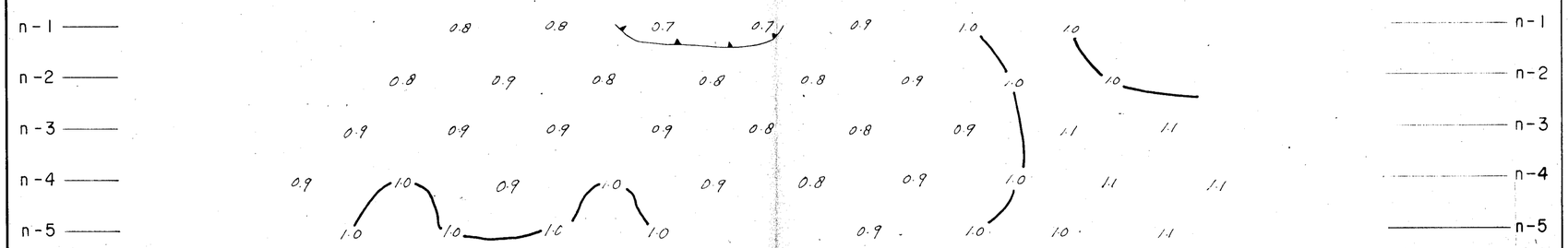


Resistivity (app.) in Ohm Feet / 2π

Metal Factor (app.)



Frequency Effect (app.) in %



DWG. NO. - I.P. - 50A - 7

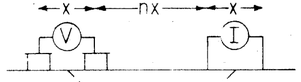
COMINCO LTD.

NES GROUP

HIGHLAND VALLEY AREA, B.C.

LINE NO.- 15+00 W.

DIPOLE - DIPOLE
ELECTRODE CONFIGURATION



PLOTTING POINT — X = 400'
n = 1,2,3,4,5

SURFACE PROJECTION OF ANOMALOUS ZONES

DEFINITE
PROBABLE
POSSIBLE

FREQUENCIES 0.31 & 5.0 cps

NOTE CONTOURS AT LOGARITHMIC INTERVALS
1 - 1.5 - 2 - 3 - 5 - 7.5 - 10

DATE SURVEYED: Sept 1969

APPROVED

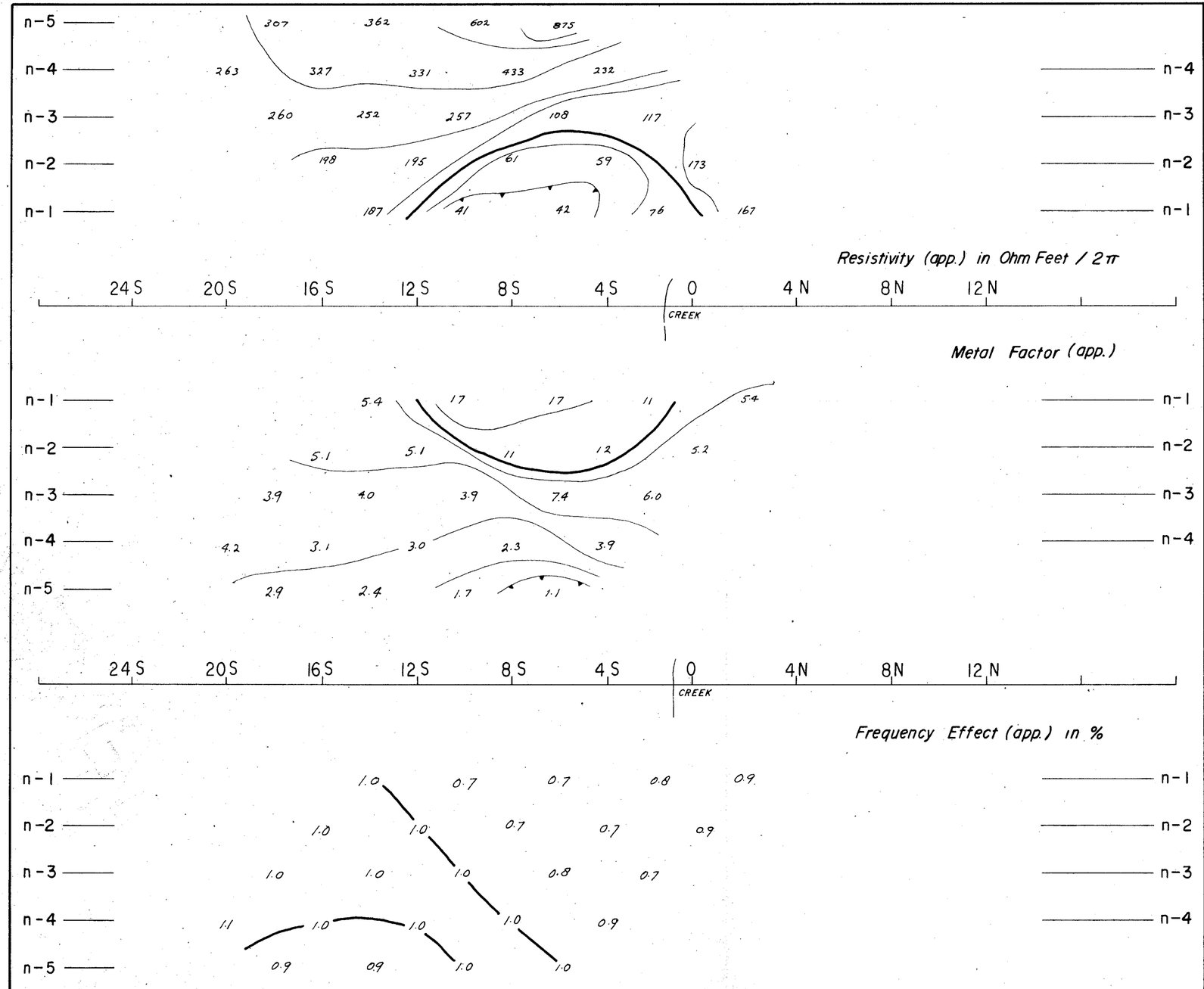
DATE: Oct 1969

2088

FREQUENCY DOMAIN PROFILE

INDUCED POLARIZATION AND RESISTIVITY SURVEY
SURVEYED BY McPHAR GEOPHYSICS LIMITED

LINE NO. 15+00 W



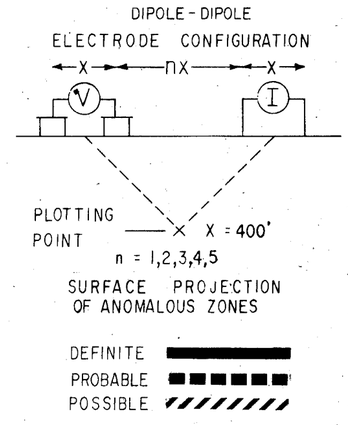
DWG. NO. - I.P. - 50A-8

COMINCO LTD.

NES GROUP

HIGHLAND VALLEY AREA, B.C.

LINE NO.- 20+00 W



FREQUENCIES: 0.31 & 5.0 cps

DATE SURVEYED: Sept. 1969

APPROVED:

DATE: Oct 7/69

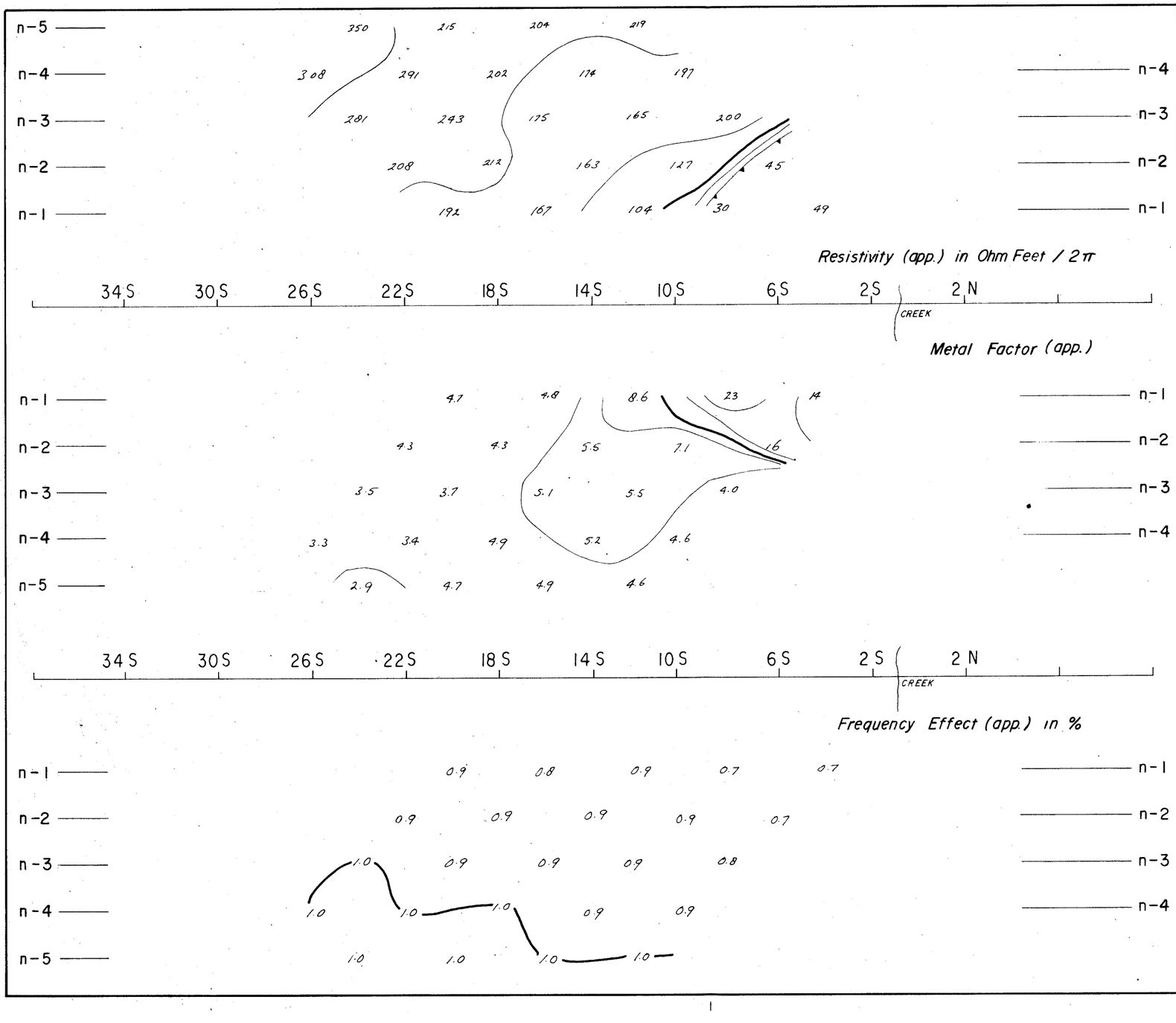
NOTE: CONTOURS AT LOGARITHMIC INTERVALS
1.-1.5-2.-3.-5.-7.5-10

2088

FREQUENCY DOMAIN PROFILE

INDUCED POLARIZATION AND RESISTIVITY SURVEY
SURVEYED BY McPHAR GEOPHYSICS LIMITED

LINE NO. 20+00 W



DWG. NO. - I.P. - 50A-9

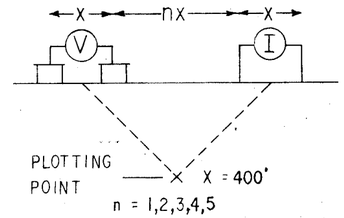
COMINCO LTD.

NES GROUP

HIGHLAND VALLEY AREA, B.C.

LINE NO.- 25+00 W

DIPOLE - DIPOLE
ELECTRODE CONFIGURATION



SURFACE PROJECTION
OF ANOMALOUS ZONES

DEFINITE
PROBABLE
POSSIBLE

FREQUENCIES: 0.31 & 5.0 cps

DATE SURVEYED. Sept. 1969

APPROVED:

DATE: Oct 7/69

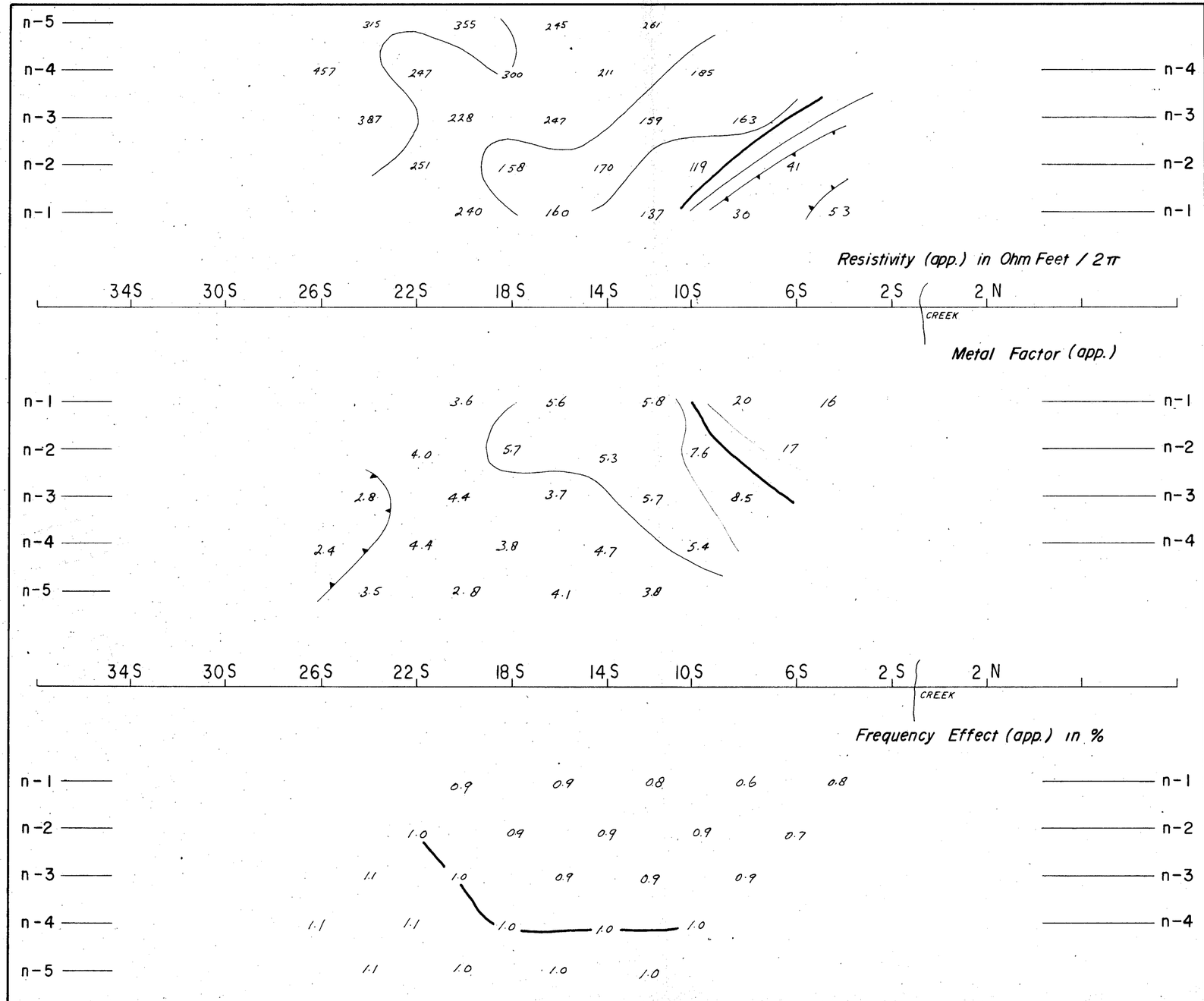
NOTE: CONTOURS AT
LOGARITHMIC INTERVALS
1.-1.5-2-3.-5.-7.5-10

2088

FREQUENCY DOMAIN PROFILE

INDUCED POLARIZATION AND RESISTIVITY SURVEY
SURVEYED BY McPHAR GEOPHYSICS LIMITED

LINE NO. 25+00 W



DWG. NO. - I.P. - 50A-10

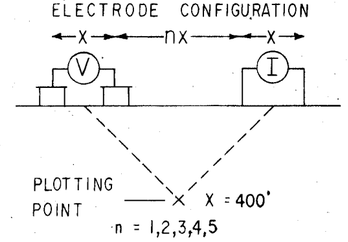
COMINCO LTD.

NES GROUP

HIGHLAND VALLEY AREA, B.C.

LINE NO.- 30+00 W

DIPOLE - DIPOLE
ELECTRODE CONFIGURATION



SURFACE PROJECTION OF ANOMALOUS ZONES

DEFINITE
PROBABLE
POSSIBLE

FREQUENCIES: 0.31 & 5.0 cps

DATE SURVEYED: Sept. 1969

APPROVED: J. M. Wright

DATE: Oct 1969

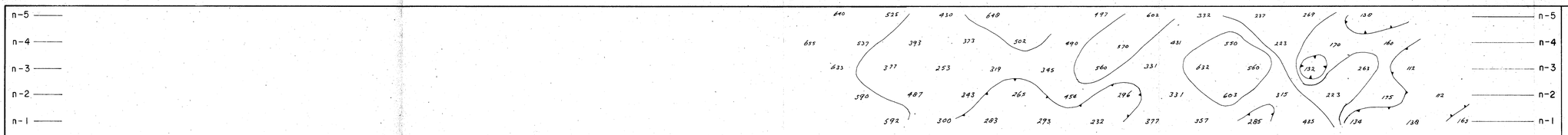
NOTE: CONTOURS AT LOGARITHMIC INTERVALS
1. - 1.5 - 2. - 3. - 5. - 7.5 - 10

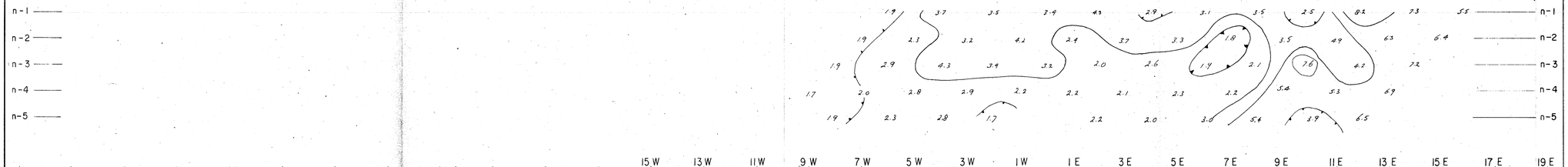
2088

FREQUENCY DOMAIN PROFILE

INDUCED POLARIZATION AND RESISTIVITY SURVEY
SURVEYED BY McPHAR GEOPHYSICS LIMITED

LINE NO. 30+00 W





DWG. NO. - I.P. - 50 A - II

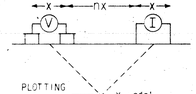
COMINCO LTD.

NES GROUP

HIGHLAND VALLEY AREA, B.C.

LINE NO.- 19+00 N

DIPOLE - DIPOLE
ELECTRODE CONFIGURATION



SURFACE PROJECTION OF ANOMALOUS ZONES

DEFINITE
PROBABLE
POSSIBLE

FREQUENCIES 0.31 & 5.0 cps

DATE SURVEYED: Sept. 1969

NOTE CONTOURS AT LOGARITHMIC INTERVALS 1 - 1.5 - 2 - 3 - 4.5 - 7.5 - 10

APPROVED

DATE: 08/7/69

2088

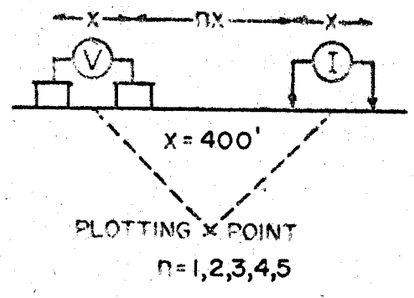
FREQUENCY DOMAIN PROFILE

INDUCED POLARIZATION AND RESISTIVITY SURVEY
SURVEYED BY McPHAR GEOPHYSICS LIMITED

LINE NO. 19+00 N

LEGEND

DIPOLE - DIPOLE
ELECTRODE CONFIGURATION



FREQUENCIES 0.31 & 5.0 cps

Grid lines
Limits of effective I.P. coverage
Axis of Resistivity Low
Main road
Secondary road
Skuhun Creek
Intermittant creeks
Property boundaries

To accompany report by
J.M. Hamilton, P.Eng.

2088

Cominco

Drawn by: G.K.T.		Traced by:	
Revised by	Date	Revised by	Date

NES PROPERTY
LOCATION OF I.P. TRAVERSES

KAMLOOPS M.D. N.T.S. 92 I 6

Scale: 1" = 1000' | Date: Oct. 6, 1969 | Plate: NES-I.P.-1

210-0620

DOMINION OF CANADA:

PROVINCE OF BRITISH COLUMBIA.

TO WIT:

In the Matter of STATUTORY DECLARATION RELATING TO EXPENDITURES ON A GEOPHYSICAL SURVEY OF THE NES PROPERTY, KAMLOOPS MINING DIVISION

I, JOHN MURRAY HAMILTON, PROFESSIONAL ENGINEER

of City of North Vancouver

in the Province of British Columbia, do solemnly declare that

1. Copies of a report regarding a geophysical survey on certain mineral claims situated in the Kamloops Mining Division are being filed with the Mining Recorder in Vancouver.

2. Attached hereto, and marked with the letter "A" upon which I have signed my name at the time of declaring hereof, is a statement of expenditures incurred in connection with the geophysical survey of the said claims showing in addition the dates during which those making the said survey performed their work.

And I make this solemn declaration conscientiously believing it to be true, and knowing that it is of the same force and effect as if made under oath and by virtue of the "Canada Evidence Act."

Declared before me at the City of Vancouver, in the Province of British Columbia, this 13 day of October, 1969, A.D.

J. M. Hamilton

A Commissioner for taking Affidavits within British Columbia or ~~A Notary Public and for the Province of British Columbia.~~

EXHIBIT "A"

C O M I N C O L T D.

EXPLORATION — WESTERN DISTRICT

INDUCED POLARIZATION AND RESISTIVITY SURVEY COSTS
NES PROPERTY, KAMLOOPS M.D. SPENCES BRIDGE AREA,
HIGHLAND VALLEY, B.C.
NTS: 92 I-6E, 50° 20' N, 121° 02' W

Operating Day Charge (McPhar) 5 days @ $180.00 per day	$	900.00
Standby, Travel and Bad-Weather Day Charge (McPhar) 3½ days @ $85.00 per day		297.50
Expense Accounts (McPhar)		32.00
Helpers' Wages (McPhar) 4 men @ $20 per day for 9 days plus 20%		864.00
Drafting (Altair and Cominco)		163.23
Truck Rental (McPhar)		55.84
Report Writing (Cominco)		150.00
Camp Costs (Cominco) 6 men for 9 days @ $7.75 per day		408.50
Communications		35.00
TOTAL:	$	2,906.07

Signed by _____
John M. Hamilton, P. Eng.

This is Exhibit "A" to the Statutory
Declaration of J.M. Hamilton, declared
before me the 13th day of October, 1969 A.D.

_____
A Commissioner for taking Affidavits for
British Columbia.