83-#92-11097

Assessment Report

Airborne INPUT Electromagnetic & Magnetometer Survey

Imperial H Claim

(1137 (4))

Victoria and Nanaimo Mining Division

NTS 92C/16E

Lat. 49°00' Long. 124°01'

For

Imperial Metals Corporation

3104 - 1055 Dunsmuir Street

Vancouver, B.C. V7X 1R1

By

Stephen P. Quin B.Sc. A.R.S.M.

Mining Geologist

Imperial Metals Corporation

And

Robert DeCarle B.A.Sc.

Chief Geophysicist

Questor Surveys Ltd.

March 1983

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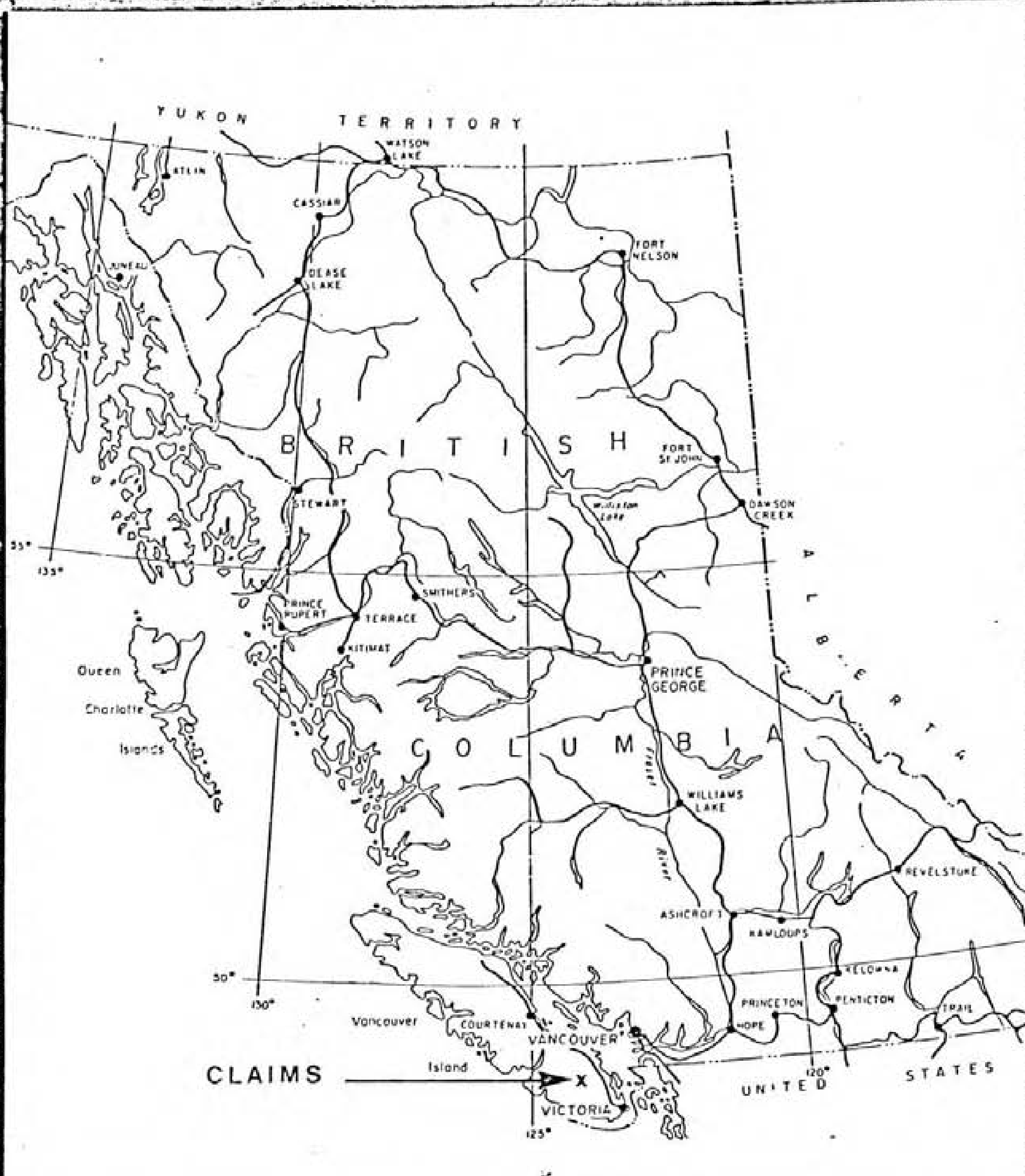


	IMPERIAL METALS CORPORATION
	Property Location Map
	HASLAM CREEK
600 Kilometres	Nanaimo Mining Division — Figure 1
	S P QUIN B.Sc., ARSM. — 24 March 1983

1. Introduction

Imperial Metals Corporation owns a 20 unit modified grid claim at the headwaters of Haslam Creek, South Vancouver Island. See Figure 1. On July, 10th 1982 Imperial contracted Questor Surveys Ltd. to fly an INPUT EM and Magnetometer Survey over the claim, totalling 42 line kilometres.

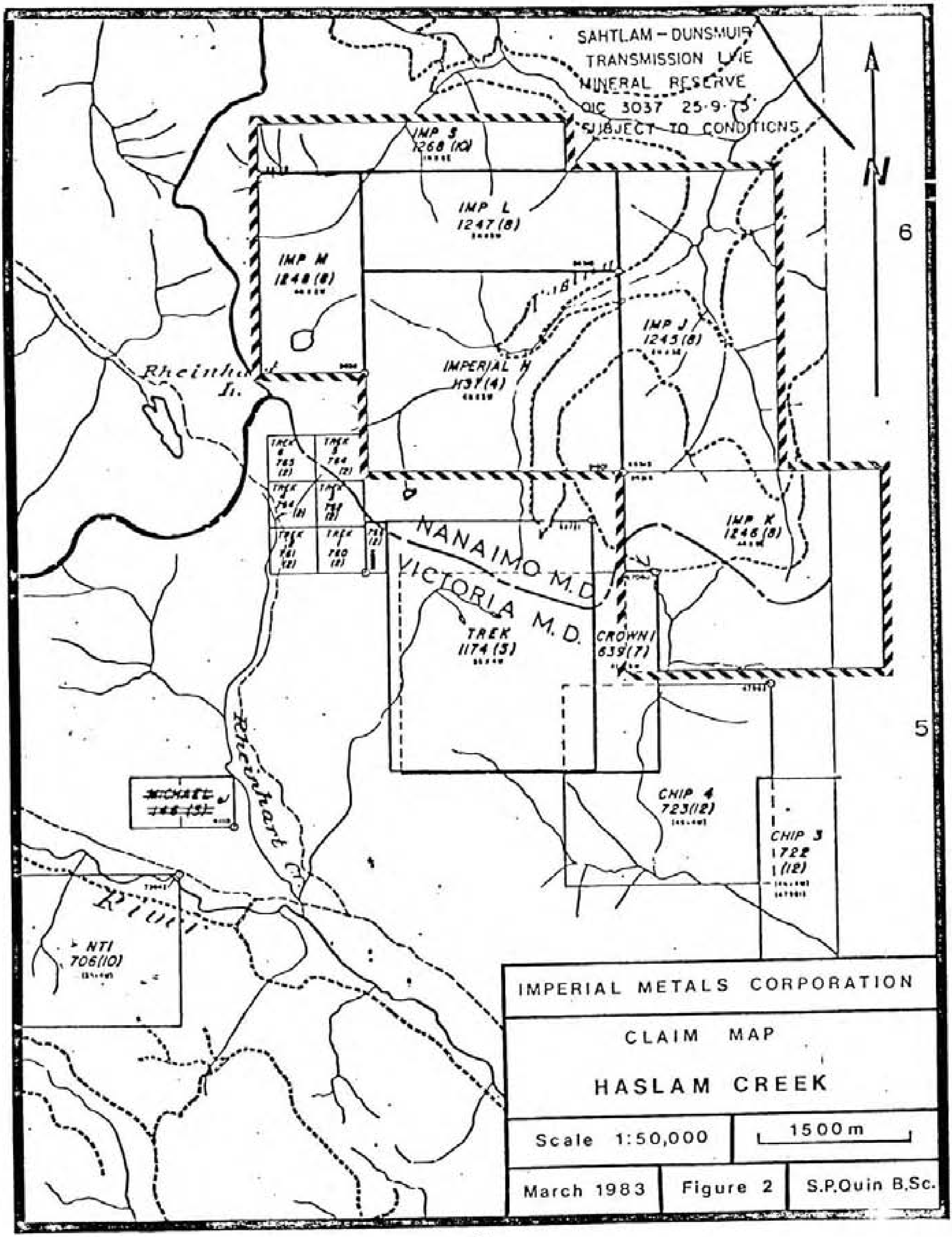
2. The Property

The claim is a single modified grid of 20 units, the Imperial H, record number 1137 (4). See Figure 2.

3. Itemized Cost Statement

42 line km of airborne INPUT EM & Magnetometer

Survey	$5,007.00
Mobilization	1,023.00
Total	$6030.00


SAHTLAM – DUNSMUIR
TRANSMISSION LINE
MINERAL RESERVE
OIC 3037 25·9·73
SUBJECT TO CONDITIONS
N
6
5
IMP S
1268 (10)
IMP L
1247 (8)
IMP M
1248 (8)
IMPERIAL H
1137 (4)
IMP J
1245 (8)
IMP K
1246 (8)
Rheinhart L.
NANAIMO M.D.
VICTORIA M.D.
TREK
1174 (5)
CROWN I
639 (7)
CHIP 4
723 (12)
CHIP 3
1722
(12)
Rheinhart Cr.
River
NTI
706 (10)
IMPERIAL METALS CORPORATION
CLAIM MAP
HASLAM CREEK
Scale 1:50,000
1500 m
March 1983
Figure 2
S.P.Quin B.Sc.

4. Statement of Qualifications

I, Stephen Paul Quin, of 1504 - 1260 Nelson Street, Vancouver, B.C. state that

a) I am a permanent employee of Imperial Metals Corporation with offices at suite 3104 - 1055 Dunsmuir Street, Vancouver, B.C.

b) I graduated from the Royal School of Mines, London, Great Britain, with a Bachelor's Honours degree in Mining Geology in 1980.

c) I have been employed by Imperial Metals Corporation predecessor, Invex Resources Ltd., for a period of two-and-a-half years, since graduation.

28 February 1983.

Stephen P. Quin B.Sc., ARSM
Mining Geologist

5. Geophysical Report

The complete report by R. DeCarle, of Questor Surveys, on the Imperial H claim is included here.

HELICOPTER INPUT E.M. SURVEY

IMPERIAL METALS CORPORATION

HASLAM CREEK AREA, VANCOUVER ISLAND

BRITISH COLUMBIA

FILE NO: 24H35I SEPTEMBER, 1982

Questor Surveys Limited, 6380 Viscount Road, Mississauga, Ontario L4V 1H3

CONTENTS

INTRODUCTION

This report contains the results of a helicopter MK VI INPUT survey flown in the Haslam Creek area, British Columbia, on July 10, 1982.

A brief description of the survey procedure is included.

The survey mileage was 42 line kilometres and the survey was performed by QUESTOR SURVEYS LIMITED. The survey aircraft was a Bell 205 Helicopter C-GLMC and the operating base was Nanaimo, British Columbia.

The area outline is shown on a 1:50,000 map at the end of this report. This is part of the National Topographical Series, sheet number 92C/16.

The following were the personnel involved with the airborne survey:

Pilot	-	Dan Davis
Navigator	-	Bill Smith
Operator	-	Dennis Borsoi
Engineer	-	Laughin Currie
Geophysicist	-	Robert de Carle

SURVEY PROCEDURE

Terrain clearance was maintained as close to 122 metres as possible, with the E.M. Bird at approximately 45 metres above the ground. Rough terrain could be a factor for the helicopter not being at 122 metres. A normal S-pattern flight path using approximately one half kilometre turns was used. Consecutive lines were flown in alternate directions for the sole purpose of interpreting dipping conductors. This phenomenon will be dealt with later.

A line spacing of 150 metres was used over the entire survey area with an east-west flight direction.

The equipment operator logged the flight details and monitored the instruments. It was the responsibility of the geophysicist to maintain and check the ground magnetic station, Geometrics G-806, which was recording the daily diurnal changes. The results of these recordings have been included in the final shipment.

MAP COMPILATION

The base map for navigation and flight path recovery was supplied to the contractor by the client. These mylars were at a scale of approximately 1:10,000. The final map was reproduced at a scale of 1:10,000 on stable transparent film from which white prints can be made. A copy of the map layout is located on each sheet using topographical reference numbers. The map sheet is an approximate 4.5 minute photographic quadrangle.

Flight path recovery was accomplished by comparison of the 35mm half frame film with the mosaic in order to locate the fiducial points. Most picked points are between 400 and 600 metres depending on the difficulty of the area, some picked points are much in excess of this figure.

DATA PRESENTATION

The results of the INPUT survey are presented to the client in the following manner:

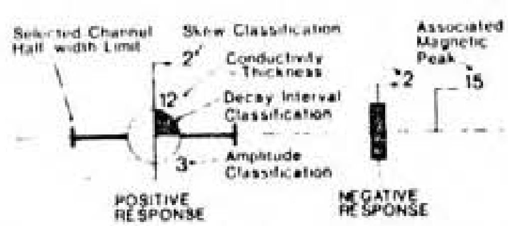
- a blank 4.5 minute photographic base at a scale of 1:10,000
- a photographic base showing combined INPUT anomalies, half peak width of channel 2, conductive overburden, selected targets, skew classification and flight lines
- a clear overlay showing the contoured form of the total magnetic field

See Appendix for a comprehensive description of the interpretational approach used in helicopter INPUT surveys.

QUESTOR's conventional form for presenting the helicopter INPUT data on a base map is as follows and is self-explanatory:

DECAY INTERVAL CLASSIFICATION:

1 Channel (340 microseconds)
2 Channel (540 microseconds)
3 Channel (840 microseconds)
4 Channel (1,240 microseconds)
5 Channel (1,740 microseconds)
6 Channel (2,340 microseconds)



RESULTS

The survey block is located approximately 26 kilometres south of Nanaimo, British Columbia and roughly 15 kilometres north of the Village of Lake Cowichan.

It is an area which the writer is not familiar with historically (previous work) or geologically (rock types). Referring to Geology map 1069A, it is noted that the eastern extension of the survey block into the area covered by N.T.S. map 92B/13, would be underlain by Permian and possibly Triassic rock units. This would include the Sicker Group consisting mainly of chert, pyroclastic rocks and limestone and also, volcanic rocks with their sedimentary equivalents along with some associated intrusive rocks of the Vancouver Group. Referring to the magnetic map, the large, circular shaped magnetic feature, in all probability, is a sphere or perhaps a cylindrical shaped basic intrusive with magnetite the source. The only other magnetic trends are towards the northern and western edge of the survey block. These may be related to a basic dyke. Zone 1 has a very subtle magnetic feature associated with it so one suspects minute amounts of pyrrhotite as being the possible source. So one can appreciate from the lack of outcrops, that in this particular area, the geological mapping will be quite inaccurate.

I have indicated 6 zones on the map and a brief discussion on each of them follows. The flying of this block was carried out utilizing a horizontal axis coil sensor. In this mode, the secondary field from a flat lying conductor as received by this coil configuration would result in minimum coupling and thus a weaker signal is received. Conversely, a vertical axis coil sensor configuration would 'see' the secondary field in the maximum coupled mode. Hence, at the time this survey block was being completed with the horizontal coil, QUESTOR made available a vertical axis coil sensor and installed it on the helicopter and surveyed several lines within the survey block. It is evident from the results that a much larger E.M. response was obtained, thus the theory of maximum coupling is shown. A few extra lines were added to the survey, with the vertical mode sensor, lines 90160 and 90170 and extensions to ZONES 3, 4, 5 and 6 resulted. It is obvious from the results from the vertical coil sensor that the conductors are shallow dipping.

ZONE 1

The lone, isolated trend, which is approximately 400 metres long, displays fair to good conductivity and also has a subtle magnetic feature, in the order of 4-6 gammas.

Direction of skew or stagger of the channel peaks is to the west and the amount of skew suggests that the bedrock conductor may be dipping to the west anywhere from 30^{o}-60^{0}. Note the anomaly intercepted on tie line 99020 and how sharp the profile is. This suggests that the tie line has probably been flown at right angles to the conductor in this particular area and thus optimum electromagnetic coupling. Another interesting observation about this latter anomaly is the very rapid decay rate versus the large amplitude. This phenomenon indicates that the mineralization possibly has a limited depth extent (or bottoms out).

The geology is not known in this area as outcrop exposures are sparce. Towards the west, related with the magnetic high, is perhaps an ultra basic intrusive while the circumventing rock types could be of volcanic nature.

A ground geophysical survey is recommended for this conductor with surface grid lines striking northeast-southwest.

ZONE 2

These two intercepts are extremely weak electromagnetic responses which could very easily be related to conductive overburden.

Further work in this area is not recommended.

ZONE 3

It would appear, after referring to the analog records, that the flight lines may have been flown parallel to the strike of the conductors in this particular part of the survey block. The anomalies are broad, generally low amplitude, with conductance values in the order of 1 siemen or less.

The anomalies on all three lines, 90130, 90140 and 90150, display this type of response, however, a bedrock source is still suspected.

Further work in the field is definitely warranted.

ZONES 4, 5 and 6

All three conductors display exceptionally good conductivity but have little or no magnetic correlation. Only ZONE 5 has assemblance of magnetic association, although in this area it is wondered if this is just more a case of coincidence than actually a relationship.

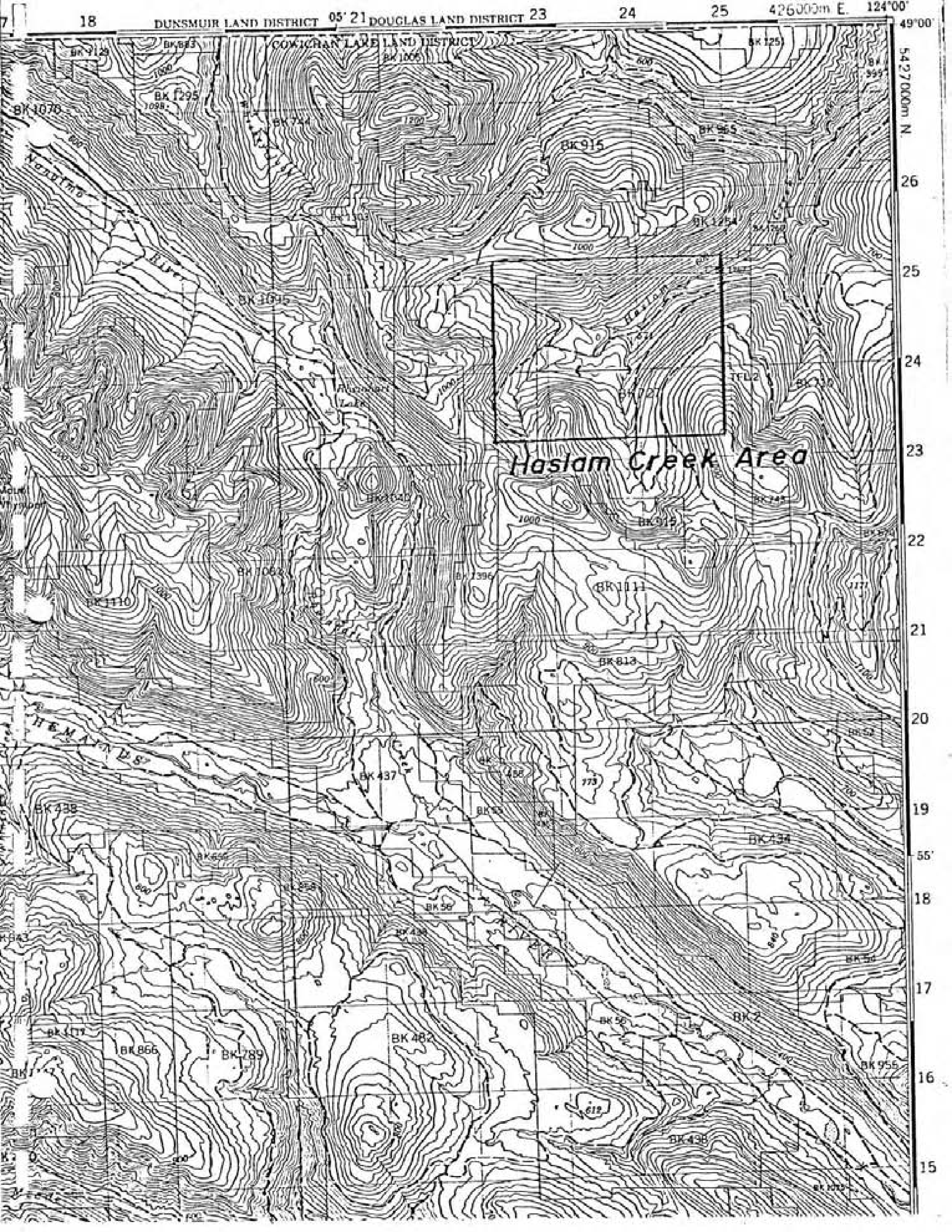
Note the negative peaks after intercepts 90130D and 90150E. The indications here are that ZONE 6 is dipping to the west with a dip of approximately 50° near intercept 90130D and dip of 30° near intercept 90150E. ZONES 4 and 5 are also thought to be dipping to the west but their magnitudes are not known.

Conductor axes have been indicated on the map as being near NE-SW, however, with some of the anomalies displaying very broad electromagnetic responses (intercept 90150C) one wonders if the strike direction of the trends should not be more E-W. This is something to keep in mind when doing the ground follow-up.

A possible source for all three zones may be graphite. However, some of the conductance values are quite high, usually only associated with massive sulphide bodies. In any event, ground surveys are recommended for the three areas.

R. J. de Carle

R.J. de Carle,
Chief Geophysicist.



18
DUNSMUIR LAND DISTRICT
05' 21
DOUGLAS LAND DISTRICT
23
24
25
426000m E.
124°00'
49°00'
5427000m N.
COWICHAN LAKE LAND DISTRICT
26
25
24
23
22
21
20
19
55'
18
17
16
15
Haslam Creek Area
BK 1070
BK 1295
BK 1095
BK 915
BK 1254
BK 727
TFL 2
BK 1040
BK 1063
BK 1396
BK 1111
BK 1110
BK 813
BK 437
BK 438
BK 434
BK 482
BK 866
BK 789
BK 2
BK 956
BK 56
1000
800
600
773
612

APPENDIX

EQUIPMENT

The helicopter is equipped with a Mark VI INPUT (R) E.M. system and Sonotek P.M.H. 5010 Proton Magnetometer. Radar altimeters are used for vertical control. The outputs of these instruments together with fiducial timing marks are recorded by means of galvanometer type recorders using light sensitive paper. Thirty-five millimeter half frame cameras are used to record the actual flight path.

BARRINGER/QUESTOR MARK VI INPUT (R) SYSTEM

The Induced Pulse Transient (INPUT) system is particularly well suited to the problems of overburden penetration. Currents are induced into the ground by means of a pulsed primary electromagnetic field which is generated in a transmitting loop around the helicopter. By using half sine wave current pulses and a loop of large turns-area, the high output power needed for deep penetration is achieved.

The induced current in a conductor produces a secondary electromagnetic field which is detected and measured after the termination of each primary pulse. Detection is accomplished by means of a receiving coil towed behind the helicopter on two hundred and fifty feet of cable, and the received signal is processed and recorded by equipment in the helicopter. Since the measurements are in the time domain rather than the frequency domain common to continuous wave systems, interference effects of the primary transmitted field are eliminated. The secondary field is in the form of a decaying voltage transient originating in time at the termination of the transmitted pulse. The amplitude of the transient is, of course, proportional to the amount of current induced into the conductor and, in turn, this current is proportional to the dimensions, the conductivity and the depth beneath the helicopter.

The rate of decay of the transient is inversely proportional to conductivity. By sampling the decay curve at six different time intervals, and recording the amplitude of each sample, an estimate of the relative conductivity can be obtained. By this means, it is possible to discriminate between the effects due to conductive near-surface materials such as swamps and lake bottom silts, and those due to genuine bedrock sources. The transients due to strong conductors such as sulphides exhibit long decay curves and are therefore commonly recorded on all six channels. Sheet-like surface materials, on the other hand, have short decay curves and will normally only show a response in the first two or three channels.

The samples or gates are positioned at 340, 540, 840, 1240, 1740 and 2340 micro-seconds after the cessation of the pulse. The widths of the gates are 200, 200, 400, 400, 600 and 600 micro-seconds respectively.

For homogeneous conditions, the transient decay will be exponential and the time constant of decay is equal to the time difference at two successive sampling points divided by the log ratio of the amplitudes at these points.

SONOTEK P.M.H. 5010 PROTON MAGNETOMETER

The magnetometers which measure the total magnetic field have a sensitivity of 1 gamma and a range from 20,000 gammas to 100,000 gammas.

Because of the high intensity field produced by the INPUT transmitter, the magnetometer results are recorded on a time-sharing basis. The magnetometer head is energized while the transmitter is on, but the read-out is obtained during a short period when the transmitter is off. The precession frequency is being recorded and converted to gammas during the 0.2 second interval when there is no power in the transmitter loop.

For this survey, a lag factor has been applied to the data. Magnetic data recorded on the analogue records at fiducial 10.00 for example would be plotted at fiducial 9.95 on the mosaics.

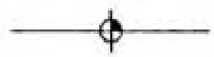
DATA SYMBOLOGY

The symbols used to designate the anomalies are shown in the legend on each map sheet and the anomalies on each line are lettered in alphabetical order in the direction of flight. Their locations are plotted with reference to the fiducial numbers on the analog record.

A sample record is included to indicate the method used for correcting the position of the E.M. Bird and to identify the parameters that are recorded.

All the anomaly locations, magnetic correlations, conductivity-thickness values and the amplitudes of channel number 2 are listed on the data sheets accompanying the final maps.

POSITIVE ANOMALY SYMBOL

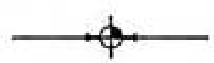


A symbol ascribed to spatially represent the position of peak response amplitude from a conventional secondary field direction. The convention is based on the response type most frequently detected with the geometrical configuration of the system.

CONDUCTIVITY-THICKNESS

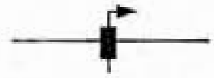
A numerical value based on a ratio between early and late channel amplitudes. It normalizes the DECAY INTERVAL CLASSIFICATION against the AMPLITUDE CLASSIFICATION to derive a value based on the temporal rate of decay of the secondary field.

SELECTED CHANNEL HALF WIDTH LIMIT



A planimetric representation of the profile-derived half-width of a positive response. It may also be used to indicate the group half-width of multiple responses.

NEGATIVE ANOMALY SYMBOL



A symbol ascribed to spatially represent the position of peak response amplitude from a reverse secondary field direction- (see POSITIVE ANOMALY SYMBOL)

ASSOCIATED MAGNETIC PEAK

A symbol ascribed to spatially represent the position and magnitude of a magnetic susceptibility anomaly proximate to a recognized conductivity anomaly. For purposes of plotting simplifications, only positive monopoles and the positive component of dipolar responses are mapped in this manner.

GENERAL INTERPRETATION

The INPUT system will respond to conductive overburden and near-surface horizontal conducting layers in addition to bedrock conductors. Differentiation is based on the rate of transient decay, magnetic correlation and the anomaly shape together with the conductor pattern and topography.

Power lines sometimes produce spurious anomalies but these can be identified by reference to the monitor channel.

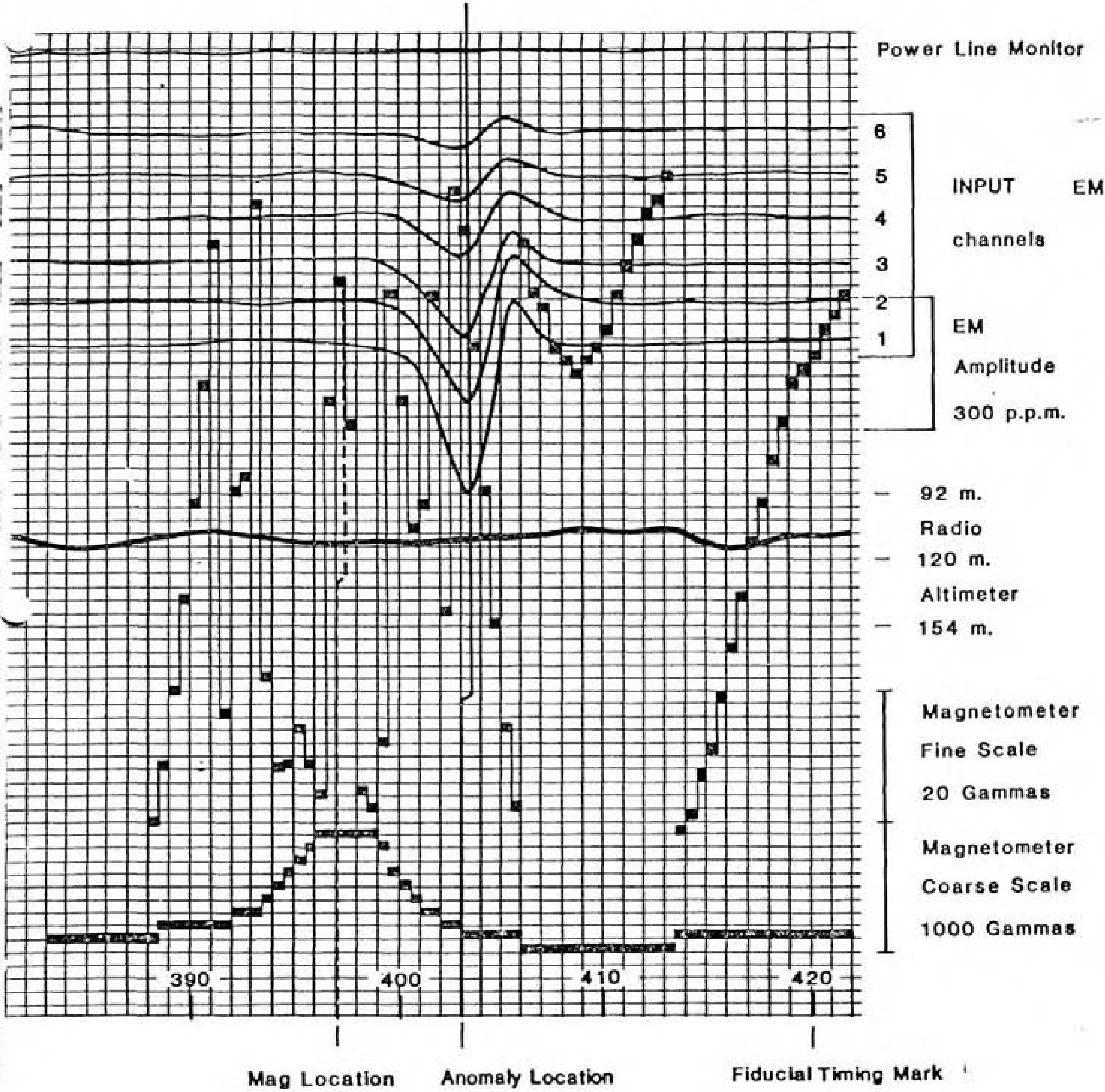
Railroad and pipeline responses are recognized by studying the film strips.

Graphite or carbonaceous material exhibits a wide range of conductivity. When long conductors without magnetic correlation are located on or parallel to known faults or photographic linears, graphite is most likely the cause.

Contact zones can often be predicted when anomaly trends coincide with the lines of maximum gradient along a flanking magnetic anomaly. It is unfortunate that graphite can also occur as relatively short conductors and produce attractive looking anomalies. With no other information than the airborne results, these must be examined on the ground.

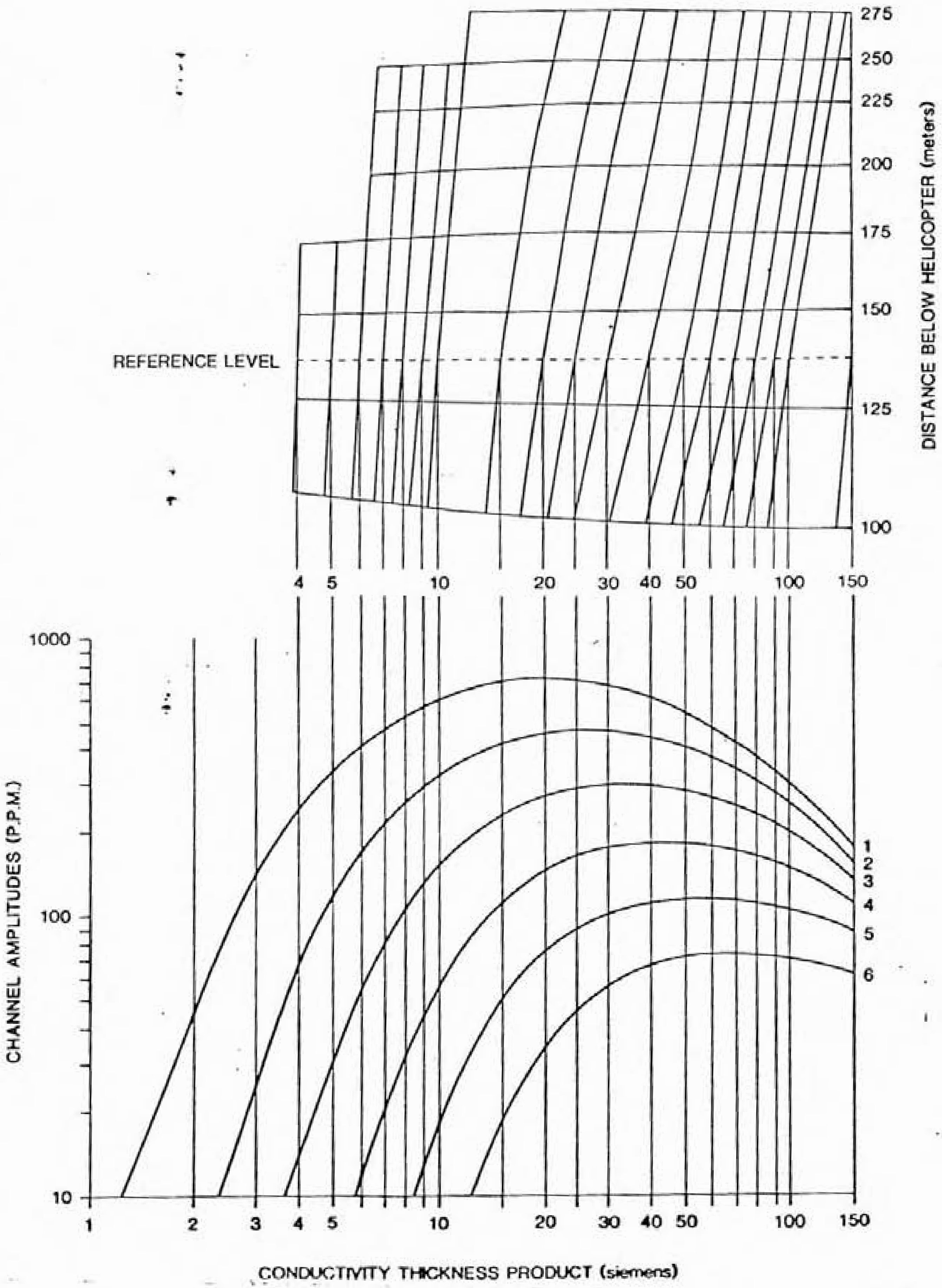
Serpentinized peridotites often produce anomalies with a character that is fairly easy to recognize. The conductivity which is probably caused in part by magnetite, is fairly low so that the anomalies often have fairly large response on channel # 1, they decay rapidly and they have strong magnetic correlation. INPUT E.M. anomalies over massive magnetites show a relationship to the total Fe content. Below 25-30%, very little or no response at all is obtained but as the percentage increases the anomalies become quite strong with a characteristic rate of decay which is usually greater than that produced by massive sulphides.

Commercial sulphide ore bodies are rare and those that respond to helicopter survey methods usually have medium to high conductivity. Limited lateral dimensions are to be expected and many have magnetic correlation caused by magnetite or pyrrhotite. Provided that the ore bodies do not occur within formational conductive zones as mentioned above, the anomalies caused by them will usually be recognized on an E.M. map as priority targets.



Representative INPUT Magnetometer and Altimeter Recording

HELICOPTER INPUT
VERTICAL HALF PLANE
CONDUCTIVITY / DEPTH NOMOGRAM



ANOMALY	FIDUCIAL	CHANNELS	HALF WIDTH LEFT	HALF WIDTH RIGHT	HW	AMPLITUDE CLASS	SKEW	SIG-T	ASSOC MAG POSITION	MAGNETIC VALUE
0055A	182.32	3	182.20	182.40	0.20	1	-	6	-	-
	182.55		Negative Anomaly							
90060A	42.10	3	-	-	-	1	-	4	-	-
	42.35		Negative Anomaly							
90070A	51.85	2	-	-	-	1	-	NC	-	-
90080A	55.30	3	55.25	55.40	0.15	1	-	7	-	-
90090A	64.73	3	-	-	-	1	-	6	-	-
90100A	69.72	2	-	-	-	1	-	NC	-	-
90100B	69.95	2	-	-	-	1	-	NC	-	-
90120A	81.45	2	-	-	-	1	-	NC	-	-
90130A	83.85	2	-	-	-	1	-	NC	83.50	8
90130B	84.72	5	84.55	-	-	2	-	17	-	-
90130C	85.17	5	84.98	-	-	2	-	12	84.90	18
90130D	85.62	6	85.50	85.75	0.25	3	-	22	85.50	76
	85.85		Negative Anomaly							
90140A	91.17	6	91.00	91.27	0.27	4	2W	25	-	-
0140B	91.47	6	91.35	91.63	0.28	4	-	35	91.50	80
0140C	92.07	5	91.95	92.25	0.30	2	-	14	91.85	4
90140D	92.65	2	-	-	-	1	-	NC	92.75	8
90140E	93.02	3	-	-	-	1	-	1	-	-
90150A	93.77	2	-	-	-	1	-	NC	-	-
90150B	94.00	3	-	-	-	1	-	15	94.45	28
90150C	95.15	5	94.90	-	-	1	-	60	-	-
90150D	95.85	6	95.65	-	-	3	2W	20	95.85	30
90150E	96.37	6	96.30	96.50	.020	4	-	37	96.45	12
	96.55		Negative Anomaly							
99010A	99.20	3	99.08	-	-	1	-	1	99.15	70
99010B	99.40	3	-	99.60	-	1	-	1	-	-
99020A	106.50	4	106.45	106.55	-	4	-	7	106.50	6
	106.65		Negative Anomaly							

ANOMALY	FID	CHS	HALF WIDTH LEFT	HALF WIDTH RIGHT	HW	AMPLITUDE CLASS	SKEW	SIG-T	ASSOC.MAG POSITION	MAG VALUE
)081A	32.90	5	32.73	33.17	0.44	5	-	5	32.85	4
90132A	59.20	4	59.05	59.40	0.35	2	-	10	-	-
90132B	60.60	6	60.35	-	-	4	4W	17	-	-
90132C	61.25	6	-	-	-	4	-	24	61.35	80
90132D	61.73	6	61.45	61.90	0.45	5	3W	27	-	-
90132E	63.75	2	63.47	63.95	0.48	1	-	NC	-	-
90141A	64.95	2	-	-	-	1	-	NC	-	-
90141B	69.15	6	68.88	-	-	4	3W	20	-	-
90141C	69.60	6	69.35	-	-	5	3W	60	69.65	90
90141D	70.05	6	-	-	-	4	-	100	-	-
90141E	70.65	6	-	71.15	-	4	-	40	-	-
90141F	72.45	5	72.05	72.85	0.80	1	-	30	-	-
90151A	73.85	4	73.25	74.50	1.25	1	-	10	-	-
90151B	75.35	4	-	-	-	1	-	30	75.20	12
90151C	76.90	6	76.65	-	-	4	2W	70	76.50	12
90151D	77.15	6	-	77.25	-	3	-	60	-	-
90160A	82.60	6	82.53	-	-	4	-	80	82.15	16
90160B	82.85	6	-	83.05	-	5	-	50	-	-
90160C	84.50	3	-	-	-	1	-	9	83.90	30
90170A	86.68	6	-	86.93	-	4	-	10	-	-
)170B	89.15	3	-	-	-	1	-	20	89.40	30
90170C	90.35	6	90.15	-	-	4	-	50	-	-
90170D	90.55	6	-	90.65	-	3	-	50	-	-
99010A	94.63	6	94.45	-	-	5	-	27	-	-
99010B	95.00	6	-	95.45	-	5	4S	20	95.35	10
99010C	98.45	4	97.85	98.85	1.00	1	-	15	97.90	50
99021A	110.60	5	-	-	-	5	-	8	110.65	6

INPUT

DECAY INTERVAL CLASSIFICATION

1 Channel (340 microseconds)
2 Channel (540 microseconds)
3 Channel (840 microseconds)
4 Channel (1240 microseconds)
5 Channel (1740 microseconds)
6 Channel (2340 microseconds)

Selected Channel Half-width Limit — Skew Classification — Conductivity - Thickness — Decay Interval Classification — Amplitude Classification — Associated Magnetic Peak
POSITIVE RESPONSE — NEGATIVE RESPONSE

AMPLITUDE CLASSIFICATION
(UNCORRECTED FOR ALTITUDE)

Class 1 (<100 ppm)
Class 2 (100-199 ppm)
Class 3 (200-399 ppm)
Class 4 (400-1000 ppm)
Class 5 (>1000 ppm)

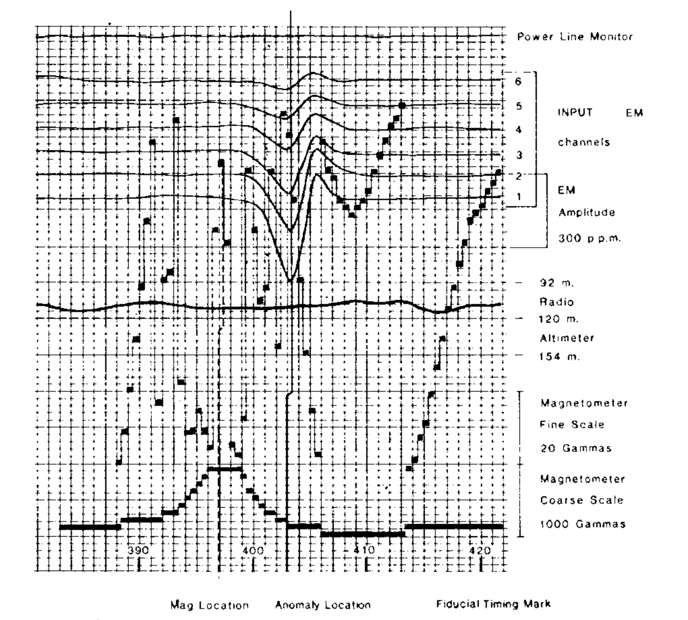
SKEW CLASSIFICATION
(DIP INDICATION)

Class 1 <.25 subfiducial
Class 2 .25 - .49 subfiducial
Class 3 .50 - .74 subfiducial
Class 4 <.74 subfiducial
(Arrow indicates skew direction)

10 GAMMA CONTOUR LINE
50 GAMMA CONTOUR LINE
500 GAMMA CONTOUR LINE
(1 GAMMA = 1 NANOTESLA IN SI UNITS)
MAGNETIC DEPRESSION

INTERPRETATION

20 Conductor Axis, with reference number (good definition)
20 Conductor Axis, with reference number (poor definition)
Vertical Conductor
Conductor Dip
20 Selected Zone, with reference number
Surficial Conductivity
Fault Zone



Representative INPUT Magnetometer and Altimeter Recording

DESCRIPTIVE NOTES

The aircraft is equipped with the Barringer/Questor Mark VI INPUT* airborne E.M. System and the Sonotek PMH 5010 Proton Precession Magnetometer and Sonotek SDS-1200 Series Data Acquisition System. The INPUT* system will respond to conductive overburden and near-surface horizontal conducting layers in addition to bedrock conductors. Discrimination of conductors is based on the rate of transient decay, magnetic correlation and the anomaly shape, together with the conductor pattern and topography.

* Registered Trade Mark of Barringer Research Limited

INTERPRETATION REFERENCES

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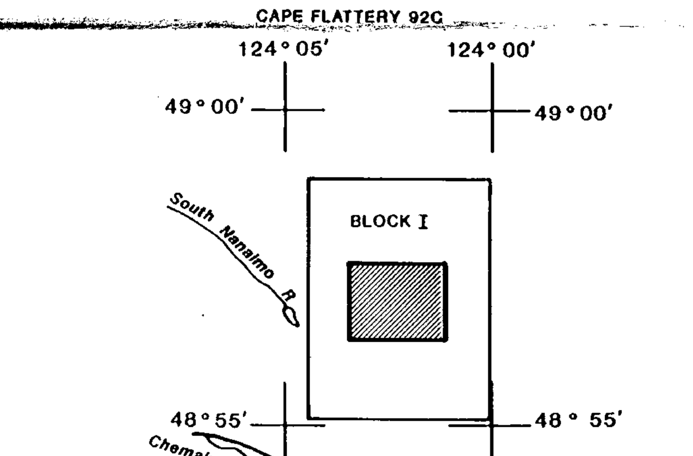
1972: Scale Model Study of Time Domain Electromagnetic Response of Tabular Conductors; Canadian Mining and Metallurgical Bulletin, Volume 65, No. 725, p. 90-96.

Dyck, A.V., Becker, A., and Collett, L.S.
1974: Surficial Conductivity Mapping with the Airborne INPUT* System; Canadian Mining and Metallurgical Bulletin, Volume 67, No. 744, p. 104-109.

Lazenby, P.G.
1973: New Developments in the INPUT* Airborne E.M. System; Canadian Mining and Metallurgical Bulletin, Volume 66, No. 732, p. 96-104.

CAPE FLATTERY 92C



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Approx. Scale 1: 10000

FIG. 4A

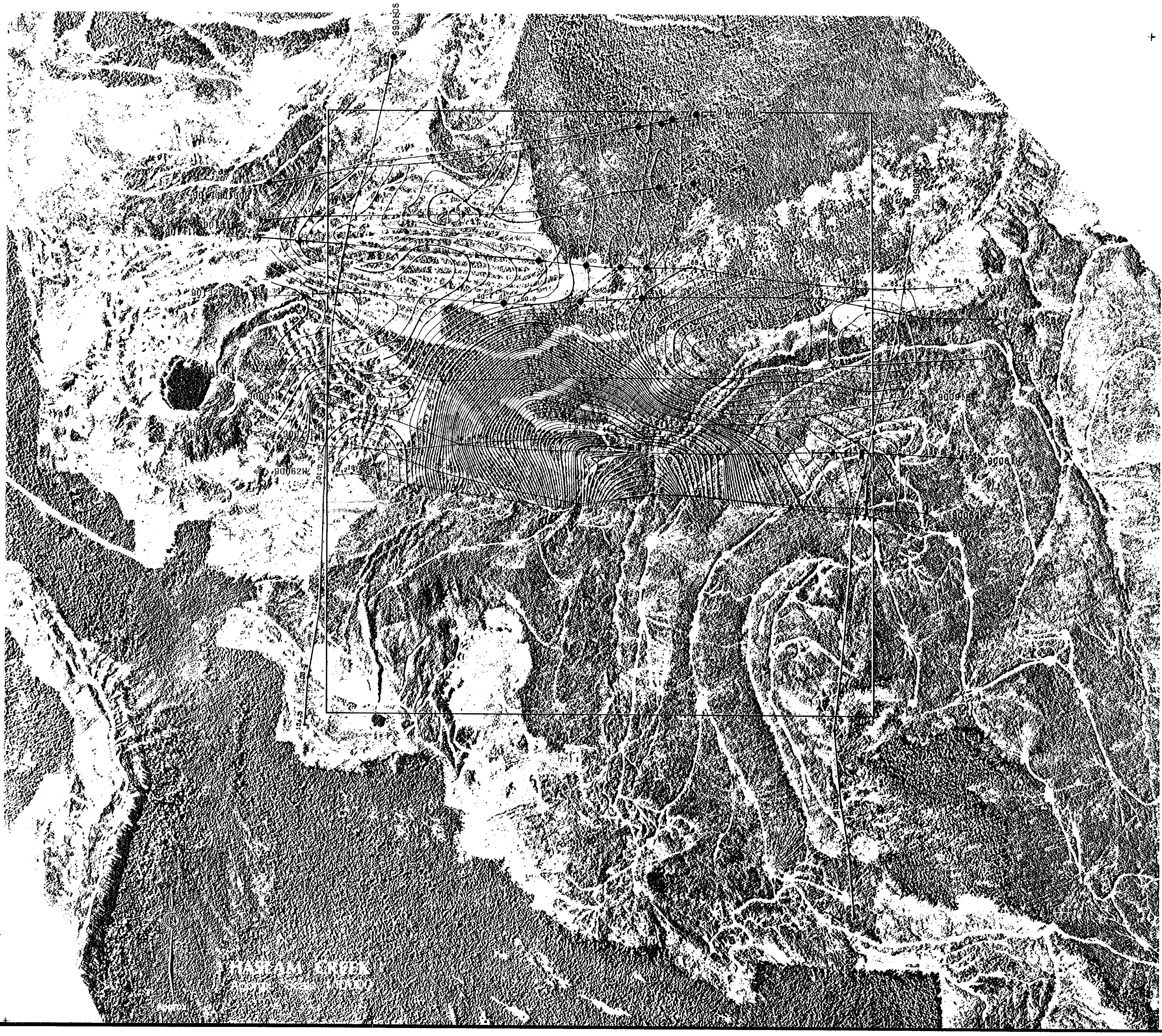
HELICOPTER MK VI INPUT® SURVEY
(Horizontal Coil)
TOTAL MAGNETIC INTENSITY SURVEY

IMPERIAL METALS CORPORATION

HASLAM CREEK
Province of BRITISH COLUMBIA

FILE NO.	SHEET NO.	DATE	DRAWN BY
24H35I	1 of 1	July, 1982	Questor Surveys Limited

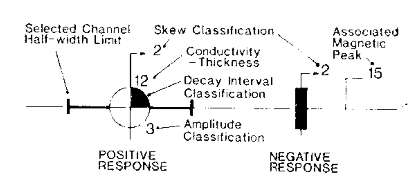
Questor Surveys Limited
Mississauga Ontario Canada



INPUT

DECAY INTERVAL CLASSIFICATION

1 Channel (340 microseconds)
2 Channel (540 microseconds)
3 Channel (840 microseconds)
4 Channel (1240 microseconds)
5 Channel (1740 microseconds)
6 Channel (2340 microseconds)



AMPLITUDE CLASSIFICATION
(UNCORRECTED FOR ALTITUDE)

Class. 1 (<100 ppm)
Class 2 (100-199 ppm)
Class 3 (200-399 ppm)
Class 4 (400-1000 ppm)
Class 5 (>1000 ppm)

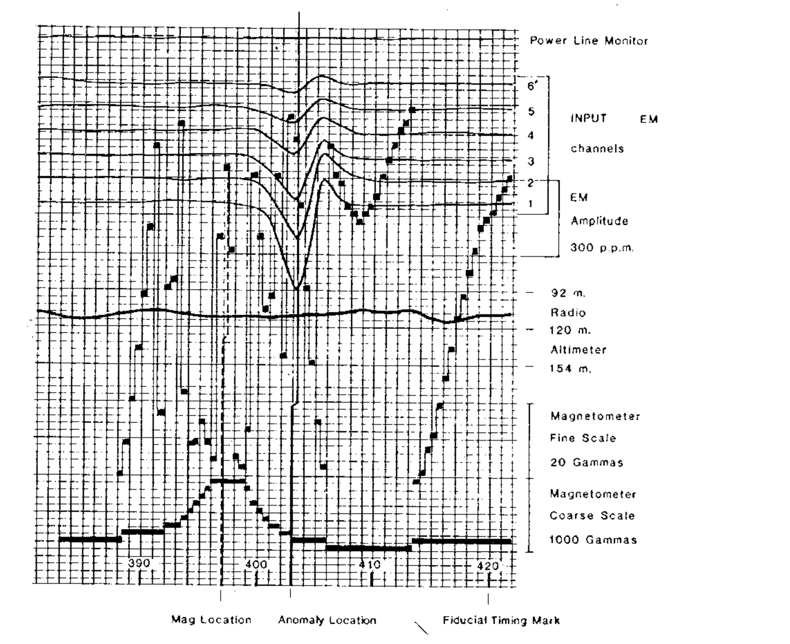
SKEW CLASSIFICATION
(DIP INDICATION)

Class 1 <.25 subfiducial
Class 2 .25 - .49 subfiducial
Class 3 .50 - .74 subfiducial
Class 4 <.74 subfiducial
(Arrow indicates skew direction)

10 GAMMA CONTOUR LINE
50 GAMMA CONTOUR LINE
500 GAMMA CONTOUR LINE
(1 GAMMA = 1 NANOTESLA IN SI UNITS)
MAGNETIC DEPRESSION

INTERPRETATION

20 Conductor Axis, with reference number (good definition)
20 Conductor Axis, with reference number (poor definition)
Vertical Conductor
Conductor Dip
20 Selected Zone, with reference number
Surficial Conductivity
Fault Zone



Representative INPUT Magnetometer and Altimeter Recording

DESCRIPTIVE NOTES

The aircraft is equipped with the Barringer/Questor Mark VI INPUT* airborne E.M. System and the Sonotek PMH 5010 Proton Precession Magnetometer and Sonotek SDS-1200 Series Data Acquisition System. The INPUT* system will respond to conductive overburden and near-surface horizontal conducting layers in addition to bedrock conductors. Discrimination of conductors is based on the rate of transient decay, magnetic correlation and the anomaly shape, together with the conductor pattern and topography.

* Registered Trade Mark of Barringer Research Limited

INTERPRETATION REFERENCES

Becker, A., Gauvreau, C., and Collett, L.S.
1972: Scale Model Study of Time Domain Electromagnetic Response of Tabular Conductors; Canadian Mining and Metallurgical Bulletin, Volume 65, No. 725, p. 90-96.

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CAPE FLATTERY 92C

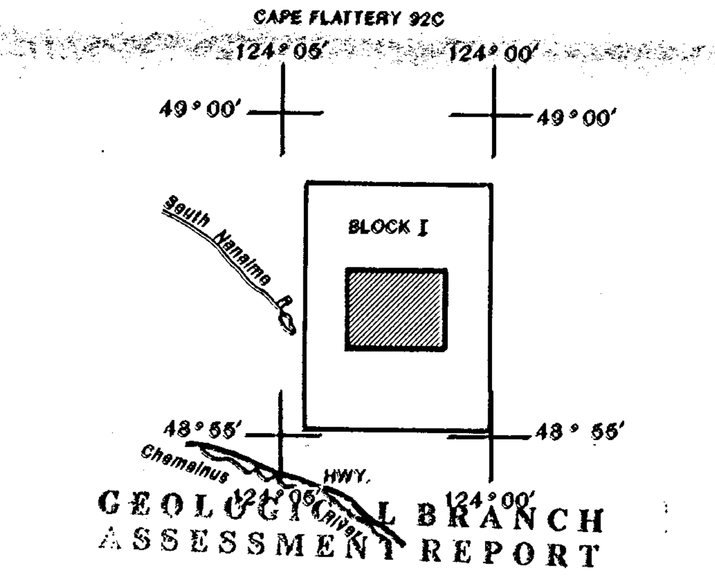

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Fig. 4B

HELICOPTER MK VI INPUT® SURVEY
(Vertical Coil)
TOTAL MAGNETIC INTENSITY SURVEY

IMPERIAL METALS CORPORATION

HASLAM CREEK
Province of BRITISH COLUMBIA

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Mississauga, Ontario Canada

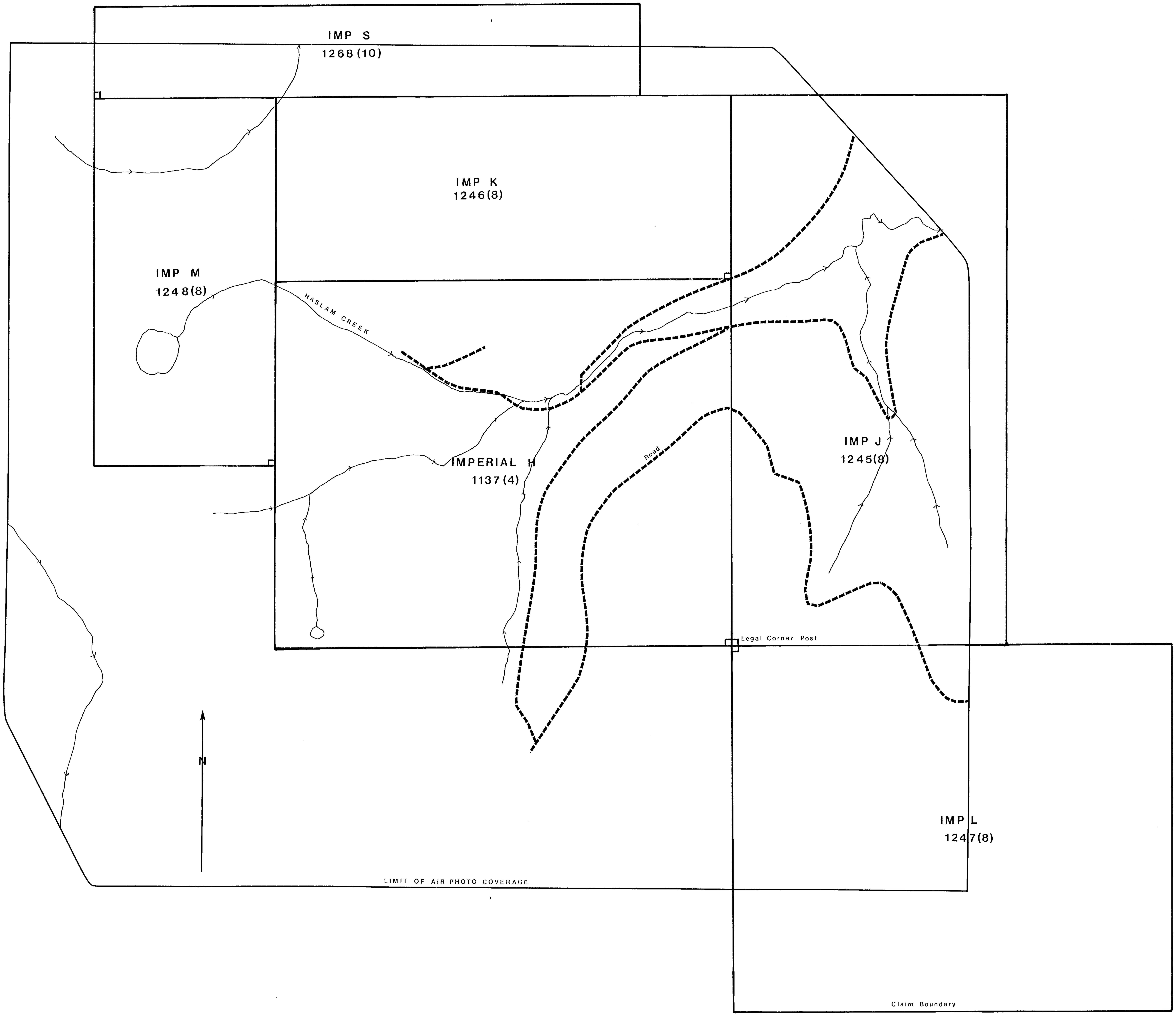

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Fig. 3

IMPERIAL METALS CORPORATION		
Claim Map HASLAM CREEK		
NANAIMO MIN. DIV.	S. P. QUIN B.Sc.	FEB 1983
1 Km Scale 1:10,000		