DIGHEM<sup>III</sup> SURVEY

OF THE

824441

ADAMS LAKE AREA, B.C.

FOR

CORPORATION FALCONBRIDGE COPPER

BY

DIGHEM LIMITED

TORONTO, ONTARIO JUNE 11, 1984

P.A. SMITH
GEOPHYSICAL INTERPRETER

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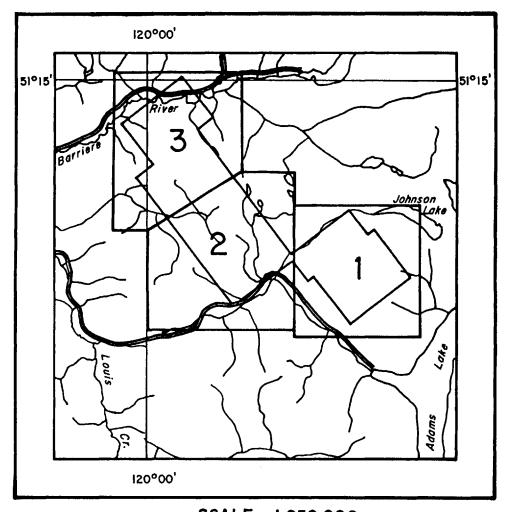
#### SUMMARY AND RECOMMENDATIONS

A total of 525 km (326 miles) of survey was flown in April 1984, over a property near Adams Lake, B.C., for Corporation Falconbridge Copper.

The survey outlined several discrete bedrock conductors associated with areas of low resistivity. Most of these anomalies appear to warrant further investigation using appropriate surface exploration techniques. Areas of interest may be assigned priorities for follow-up work on the basis of supporting geological and/or geochemical information. Due to the presence of cultural features in the survey area, any interpreted bedrock conductors, which occur close to cultural sources, should be confirmed as bedrock conductors prior to drilling.

The area of interest contains at least 800 anomalous features of which approximately 75% are considered to be of moderate to high priority as exploration targets.

# LOCATION MAP



SCALE 1.250,000
FIGURE 1
THE SURVEY AREA

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- A. The Flight Record and Path Recovery
- B. EM Anomaly List

## INTRODUCTION

A DIGHEM<sup>III</sup> survey totalling 525 line-km was flown with a 200 m line-spacing for Corporation Falconbridge Copper, from April 11 to 18, 1984, in the Adams Lake area of B.C. (Figure 1).

The CG-DEM turbine helicopter flew at an average airspeed of 105 km/h with an EM bird height of approximately Ancillary equipment consisted of a Sonotek PMH 5010 50 m. magnetometer with its bird at an average height of 65 m, a Sperry radio altimeter, a Geocam sequence camera, an RMS GR-33 analog recorder, a Sonotek SDS 1200 digital data acquisition system and a Digidata 1640 9-track 800-bpi magnetic tape recorder. The analog equipment recorded four channels of EM data at approximately 900 Hz, two channels of EM data at approximately 7200 Hz, two ambient EM noise channels (for the coaxial and coplanar receivers), two channels of magnetics (coarse and fine count), and a channel of radio altitude. The digital equipment recorded the EM data with a sensitivity of 0.20 ppm at 900 Hz, 0.40 ppm at 7200 Hz and the magnetic field to one nT (i.e., one gamma).

Appendix A provides details on the data channels, their respective sensitivities, and the flight path recovery

procedure. Noise levels of less than 2 ppm are generally maintained for wind speeds up to 35 km/h. Higher winds may cause the system to be grounded because excessive difficulties swinging produces in flving helicopter. The swinging results from the 5  $m^2$  of area which is presented by the bird to broadside gusts. The nevertheless flown DIGHEM system can be under wind conditions that seriously degrade other AEM systems.

It should be noted that the anomalies shown on the electromagnetic anomaly map are based on a near-vertical, This model best reflects "discrete" half plane model. bedrock conductors. Wide bedrock conductors or flat-lying conductive units, whether from surficial or bedrock sources, may give rise to very broad anomalous responses on the EM These may not appear on the electromagnetic profiles. anomaly map if they have a regional character rather than a locally anomalous character. These broad conductors, which more closely approximate a half space model, will be maximum coupled to the horizontal (coplanar) coil-pair and are clearly evident on the resistivity map. The resistivity map, therefore, may be more valuable than the electromagnetic anomaly map, in areas where broad or flat-lying conductors are considered to be of importance.

There are several areas where EM responses are evident only on the quadrature components, indicating zones of poor conductivity. Where these responses are coincident with strong magnetic anomalies, it is possible that the inphase component amplitudes have been suppressed by the effects Most of these poorly-conductive magnetic of magnetite. features give rise to resistivity anomalies which only slightly below background. These weak features are evident on the resistivity map but may not be shown on the electromagnetic anomaly map. If it is expected that poorly-conductive sulphides may be associated with magnetite-rich units, some of these weakly anomalous features may be of interest. In areas where magnetite causes suppression of the inphase components, the apparent conductance and depth of EM anomalies may be unreliable.

Anomalies which occur beyond the last line fiducial (outside the designated survey area) should be viewed with caution. Although the flight line extensions appear on the maps as straight lines projected from the last two fiducials, they may not reflect the true flight path, which actually consists of a fairly tight loop between consecutive flight lines. The location of anomalies which are situated beyond the end fiducials may, therefore, be uncertain, although an accurate location can be determined by comparing

the 35 mm flight path film with the photomosaic base. (The anomaly fiducial will correspond to the flight path frame with the same number.) Furthermore, some of the weaker anomalies which are evident primarily on the coaxial channels could be due to aerodynamic noise, i.e., bird bending, created by abnormal stresses to which the bird is subjected during the climb and turn of the aircraft between lines.

Due to the relatively poor quality of the air photographs used in the preparation of the photomosaic base, there are at least two areas where scalar distortions of up to 400 m are evident between photo segments. Although EM anomalies are located as accurately as possible with respect to the photo segment on which they occur, distortions in contoured parameters may result in such areas.

#### SECTION I: SURVEY RESULTS

The survey covered a single grid with 525 km of flying, the results of which are shown on three separate map sheets for each parameter. Tables I-1 to I-3 summarize the EM responses on the three sheets with respect to conductance grade and interpretation.

The electromagnetic anomaly map shows the anomaly interpreted conductor locations with the type, dip, conductance and depth being indicated by symbols. magnetic correlation is also shown if it exists. The strike direction and length of the conductors are indicated when anomalies can be correlated from line to line. When studying the map sheets for follow-up planning, consult the anomaly listings appended to this report to ensure that none of the conductors are overlooked.

The resistivity map shows the conductive properties of the survey area. The resistivity patterns may aid geologic mapping and in extending the length of known zones.

TABLE I-1

## EM ANOMALY STATISTICS OF THE ADAMS LAKE AREA, B.C. SHEET 1

CONDUCTOR GRADE	CONDUCTANCE RANGE	RESPONSES
6	> 99 MHOS	0
5	50-99 MHOS	0
4	20-49 MHOS	8
3	10-19 MHOS	15
2	5- 9 MHOS	29
1	< 5 MHOS	93
X	INDETERMINATE	32
TOTAL		177
CONDUCTOR MODEL	MOST LIKELY SOURCE	RESPONSES
D	DISCRETE BEDROCK	45
T	DISCRETE BEDROCK	6
P	DISCRETE BEDROCK	1
В	DISCRETE BEDROCK	97
G	ROCK OR COVER	7
н	ROCK OR COVER	6
S	COVER	15
TOTAL		177

(SEE EM MAP LEGEND FOR EXPLANATIONS)

TABLE I-2

## EM ANOMALY STATISTICS OF THE ADAMS LAKE AREA, B.C. SHEET 2

CONDUCTOR GRADE	CONDUCTANCE RANGE	RESPONSES
6	> 99 MHOS	0
5	50-99 MHOS	0
4	20-49 MHOS	22
3	10-19 MHOS	33
2	5- 9 MHOS	49
1	< 5 MHOS	158
X	INDETERMINATE	31
TOTAL		293
CONDUCTOR MODEL	MOST LIKELY SOURCE	RESPONSES
CONDUCTOR MODEL	MOST LIKELY SOURCE	RESPONSES
а	DISCRETE BEDROCK	58
D T	DISCRETE BEDROCK DISCRETE BEDROCK	58 21
D T P	DISCRETE BEDROCK DISCRETE BEDROCK DISCRETE BEDROCK	58 21 1
D T P B	DISCRETE BEDROCK DISCRETE BEDROCK DISCRETE BEDROCK DISCRETE BEDROCK	58 21 1
D T P B G	DISCRETE BEDROCK DISCRETE BEDROCK DISCRETE BEDROCK DISCRETE BEDROCK ROCK OR COVER	58 21 1 147 15
D T P B G H	DISCRETE BEDROCK DISCRETE BEDROCK DISCRETE BEDROCK DISCRETE BEDROCK ROCK OR COVER ROCK OR COVER	58 21 1 147 15 37

(SEE EM MAP LEGEND FOR EXPLANATIONS)

TABLE I-3

## EM ANOMALY STATISTICS OF THE ADAMS LAKE AREA, B.C. SHEET 3

CONDUCTOR GRADE	CONDUCTANCE RANGE	RESPONSES
6	> 99 MHOS	7
5	50-99 MHOS	18
4	20-49 MHOS	42
3	10-19 MHOS	43
2	5- 9 MHOS	66
1	< 5 MHOS	115
X	INDETERMINATE	42
TOTAL		333
CONDUCTOR MODEL	MOST LIKELY SOURCE	RESPONSES
D	DISCRETE BEDROCK	69
T	DISCRETE BEDROCK	41
В	DISCRETE BEDROCK	136
E	EDGE OF BEDROCK	1
G	ROCK OR COVER	34
H	ROCK OR COVER	42
S	COVER	9
${f L}$	CULTURE	1
TOTAL		333

(SEE EM MAP LEGEND FOR EXPLANATIONS)

## CONDUCTORS IN THE SURVEY AREA

geophysical data suggest a regional geologic The structure which strikes roughly north-northwest/south-southeast, with dips generally to the northeast. At least five major magnetic units have been defined, all of which appear to have been subjected to intensive faulting and/or folding in several areas. Resistivities vary from less than 1 ohm m to more than 8000 ohm m, although about 50% of the area is quite conductive, yielding resistivities of less than 500 ohm m. The rather extensive low resistivity zones are interspersed with the high resistivity zones, forming at least four sub-parallel continuous conductive trends. one possible exception, i.e. near the northeastern end of lines 41 through 53, the conductive units are generally non-magnetic. Most of the observed EM anomalies which have been attributed to bedrock sources are contained within specific zones which exhibit resistivities of less than 250 ohm m. Many of these low resistivity zones have been outlined on the EM maps, thereby facilitating identification of the major conductive trends which are probably related to similar geologic units.

#### Sheet 1

The magnetic map outlines several distinct magnetic anomalies which generally exhibit a northwest-southeast

orientation. One of these anomalies extends northwest from fiducial 300 on line 1 to line 9. A second more complex unit strikes northwest from the vicinity of fiducial 278 on line 1 to line 14. This unit is paralleled by a similar feature, about 1 km to the northeast. Northwest from line 11, the latter anomaly appears to converge with the former near line 15, continuing to the north-northwest as a single magnetic unit.

A third magnetic anomaly suggests a folded unit which strikes northwest from anomaly 11B\* to line 17, where it appears to swing to the northeast through fiducial 1690, and then southeast to fiducial 2028 on line 13. EM anomalies are associated with the southwest edges of this interesting magnetic unit.

A fourth magnetic anomaly is evident on the total field map where the western limit of sheet 1 abuts sheet 2, in the vicinity of anomaly 28A. The enhanced magnetic data suggest the causative source of this magnetic anomaly may strike east-west, differing from the northwest-southeast direction common to the other magnetic trends on sheet 1.

<sup>\*</sup> This refers to EM anomaly B on line 11.

The enhanced magnetic map not only provides better definition and resolution of the individual magnetic units which gives rise to positive magnetic anomalies, but also defines some of the more subtle trends which are not clearly evident on the total field magnetic map.

There are three major zones of low resistivity which exhibit values of less than 250 ohm-m. Resistivity contour patterns conform fairly well to the geologic strike inferred from the magnetics, suggesting that the conductive zones are due to bedrock features. Although there are a few weak EM anomalies which have been given an 'S' classification, conductive overburden in the area is sparse and does not have affected the resistivity appear to patterns The three major conductive rock units, the appreciably. approximate limits of which are defined by the 250 ohm-m contour, are outlined on the EM map as zones A, B and C. addition to these, there are two isolated lows associated with conductors 4000A-5F and 12D-14E.

With few exceptions, there appears to be an inverse relationship between the conductive and magnetic rock units, i.e. most conductors occur within the relatively non-magnetic rocks, while the magnetic units are generally associated with zones of higher resistivity. The former may be due to carbonaceous (graphitic) metasedimentary units and

the latter to metavolcanic (mafic) units. Most of the bedrock conductors on sheet 1 are contained within zones A, B and C.

Zone A

A major conductive unit, which extends in a general north-northwest/south-southeasterly direction over the entire 6 km length of sheet 1, has been outlined on the EM map as zone A. This unit contains several "formational" conductors which vary both conductance and thickness along strike. Anomalies comprising these conductors generally reflect moderate dips to the northeast. Several offsets and discontinuities in anomalous trends suggest the area covered by sheet 1 has been subjected to intensive structural deformation. At least four possible east/west faults indicated by lineaments which occur in the vicinity of anomalies 11D, 12C, 19B and 22D.  $^{\circ}$ 

difficult to assess is relative priorities of conductors within zone Α, but preference should probably be given isolated or satellitic features, anomalies which reflect thick (T) sources, conductors of attractive (limited) strike length, anomalies which appear to be related to obvious geologic contacts and/or structural deformities, and anomalies which exhibit positive negative) direct (or magnetic correlation. With the exception of anomalies 11B, 14C and 15D, none of the other anomalies yields positive magnetic association. However, may relative magnetic lows equally important in that they may reflect zones of alteration.

Anomalies in the northern portion of zone A appear to be less clearly defined. This may be due to flatter dips in the area north of anomaly 21D.

Within zone A there are several highly conductive areas which give rise to resistivities of less than 100 ohm m. These include the conductive segments associated with anomalies 1B-7xA', 5D-9D, 6B-10xA, 15D-18B, 19C-22E, and 28E-13C, Of these, anomalies 2B, 6B, 13C, 17B, 21D, and 29D reflect the most conductive areas. Conductor 13C-16A appears to be one of the more attractive targets because of location relative its to the assumed axial plane of a folded (magnetic) unit and its proximity possible east/west trending structural breaks.

The stronger conductors in zone A are not necessarily the higher priority targets, particularly if the type of mineralization being sought is considered to be relatively non-conductive.

Anomaly 4000A-5F

A weak conductor which occurs near the eastern boundary of the survey area may reflect a buried bedrock with conductor а probable north-south strike. The significance of this anomaly is enhanced by the weak magnetic resistivity correlation and low association. Additional work is required to delineate the strike this moderately length of priority target.

Anomalies 5xA', 5xB, 9xC, 13I, 12D-14E Anomalies 5xA' and 5xB are weak, x-type responses which may be due to aerodynamic noise. Both are considered to be of low priority flanking although the enhanced magnetic anomaly to the north of 5xA' and the direct 10 nT magnetic correlation with 5xB tend to suggest the possibility of deeply buried bedrock sources. Response 9xC is located on the southwest flank of a well defined magnetic anomaly and is attributed primarily

to magnetite, as evidenced by the negative in phase responses. interesting to note the negative magnetic anomaly this with associated weak EM This could be due to response. remanent magnetism or later phases of alteration.

Anomaly 13I reflects a weak isolated conductor which is associated with an east-west trending magnetic unit.

A thin, northeast dipping bedrock conductor with a strike length of about 500 m is indicated by anomaly The characteristics of 12D-14E. anomaly 12D typify a parallel or off-line source, suggesting that the southern limit of this conductor actually occurs to the 12D. north of anomaly The geophysical data indicate probable east-west trending fault which intersects or truncates this

conductor between anomalies 12D and 13G.

Anomalies 13I and 12D-14E are considered to be attractive targets which warrant additional work.

Zone B

Zone B reflects a conductive rock unit which hosts two or more highly conductive thin sources which dip the northeast. Changes conductance along strike, and the presence of multiple conductors makes line to line correlation of difficult. anomalous trends primary Although the strike direction appears to be northnorthwest/south-southeast, conductor 15F-22F exhibits an apparent change in strike from west to north. Resistivity patterns in the southern portion of zone A also suggest a north-south strike direction between anomalies 18D and 20G. Consequently, the true strike directions may be different from those shown on the EM map. The CPI/CXI ratio between anomalies 22F and 22G, for example, suggests a conductor which is parallel to the survey line. Strike directions cannot be confirmed from the magnetic data as the area encompassed by zone B is relatively non-magnetic.

Anomalies which are satellitic to the main conductive horizons or those which appear to be offset may prove to be prime areas for follow-up work. Such targets would include anomalies 19xB, 19F, 21F and 26F. None of the anomalies in zone B exhibits direct magnetic correlation.

Anomaly 24C-25xA

Anomalies 24C and 25xA are very weak responses which may be due to aerodynamic noise. Their association with a moderate resistivity low, and the sharp resistivity contrast between lines 23 and 24, however, suggest the

former anomaly, 24C, may be related to a bedrock source. These anomalies are considered to be of low priority.

Zone C

The main axis of a major low resistivity unit extends from anomaly 18A, northwest to the vicinity of anomaly 31B. Two closely-spaced parallel conductors are evident between lines 22 and 27, both of which reflect thin bedrock conductors which dip to the northeast. Thick sources are indicated by anomalies 26B, 27B and 30A which may enhance their signi-Anomalies 26A. ficance. 27xA', 27B and 22A are situated at the eastern limits of two weak enhanced magnetic anomalies which appear to trend east-west, abutting the south contact of the northwestsoutheast trending resistivity low. Anomaly 28A which is associated with the northerly magnetic trend occurs within east-west trending resistivity low which merges with the main axis of zone C near anomaly 27B. broad, poorly defined nature of anomaly 28A may be due to shallow angle of intersection with the survey line. A similar lobe of conductive material with resistivities of less than 200 ohm-m hosts anomaly 29B-31C, probably reflects which moderately broad flat-lying or conductive unit buried beneath a thin layer of resistive cover.

Most of the remaining anomlies on sheet 1 which have not described in the foregoing, attributed to broad or flat-lying zones of weak conductivity. of these may warrant follow-up on a moderate priority basis even though not yield significant they do responses on the DIFI/DIFO channels, because of their magnetic correlation (11B, 13A), proximity to apparent geologic contacts (11B-15A), or their association with known conductors or assumed faults.

#### Sheet 2

The 58000 nT total field magnetic contour outlines two major magnetic anomalies on sheet 2. The enhanced magnetic map, with its higher degree of resolution, suggests that these two major anomalies are actually comprised of several distinct magnetic units of variable intensity, which trend in a general northwest/southeasterly direction. There is weak evidence to suggest that these magnetic units have been subjected to faulting and/or folding, with lineaments aligned in a general east/west direction, similar to the trends indicated on sheet 1.

Approximately 60% of the area covered by sheet 2 exhibits resistivities of less than 500 ohm m. The more conductive rock units, which yield resistivity values of less than 150 ohm-m have been outlined on the EM map as zones D through G. These zones host most of the stronger, non-magnetic 'formational' conductors. The main conductive units generally parallel the northwest/southeast geologic strike indicated by the magnetic data. Although the magnetic units are usually associated with the more

resistive rocks, there are a few areas where magnetic trends and conductive zones are coincident. This would indicate that the conductive (sedimentary?) units either contain minor amounts of magnetic material, or have been intruded by (or are underlain/overlain by) the magnetic (volcanic?) units. There are six EM anomalies which differ from other anomalies on sheet 2 in that they exhibit direct magnetic correlation of more than 20 nT. These include anomalies 41C, 47A, 47E, 51A, 51xC and 59D, all of which may prove to be interesting targets.

Anomalies 29F-30G, 33F

east-west An trending low resistivity (which zone was observed at the western end of line 29 on sheet 1) hosts anomaly 29F-30G. an interesting bedrock conductor of limited strike length which appears to dip to the north. Magnetic and resistivity contour patterns suggest this conductor may be related to an east/west trending fault in an area of complex geology. The western end 29F-30G appears to be truncated by a dyke-like, high resistivity zone which strikes northeast/southwest

in the vicinity of line 31. Further work is warranted to check the source of this moderately high priority target.

Anomaly 33F is an isolated grade 3 associated with conductor the northern contact of the resistive/ magnetic dyke which terminates or intersects conductor 29F-30G, and may reflect an offset segment of the latter. This thin, dipping bedrock conductor, with its weak 10  $\mathbf{nT}$ magnetic correlation and well-defined isolated resistivity low, is also considered to be an interesting target which should be followed up.

Anomalies 32G, 34H, 34F, 35E, 36XB-39F

Anomaly 32G bedrock is a weak conductor which appears to be associated with the northern contact of the northeast/southwest trending high resistivity unit which occurs between anomlies 30G and 33F. Anomaly 34F, which is also located in close proximity to this same contact, reflects a thin grade 2 bedrock conductor with a probable dip to the northeast. Anomaly 35E is a weak conductor of probable bedrock origin which is contained within the same resistivity low which hosts anomaly 34F, suggesting these two anomalies, different although exhibiting characteristics, may be related to the same conductive unit.

A thin, northeast dipping bedrock conductor is indicated by anomaly 34H. This anomaly occurs near the periphery of the conductive unit outlined as zone D, along strike with the conductor axis defined by anomaly 36xB-39F and probably reflects a continuation of the latter. Conductor 36xB-39F comprises a series of moderately poorly defined anomalies. weak, The significance of this conductor (including 34H) is enhanced by its apparent relationship with northeastern flank of well defined magnetic anomaly and the southwestern (updip) edge of conductive unit outlined as zone The northern end of D. this conductor appears to be terminated by a probable fault which passes through anomalies 36F, 40C possibly through 43D and 45B to the This is supported by the west. abrupt change in magnetic signature between lines 38 and 39 and by the apparent conductor axis offsets which are related to this proposed lineament.

Ιt should be noted that the previously indicated east/west fault associated with anomaly 29F-30G occurs in close proximity a photo join, where severe scalar distortion gives rise location errors of up to 400 m, i.e. near fiducial 2447 on line 33. In such cases, EM anomalies are plotted as accurately as possible relative to known recovered points although contour distortion between poorly matched photo segments may be evident.

Zone D

major conductive unit which resistivities exhibits of less than 150 ohm m extends in a northnortheasterly direction from vicinity of anomaly 34I to line 69, sheet 3. continuing on The conductors contained numerous this unit consist within of moderately thick zones of variable conductance, which appear to have subjected been to extensive faulting and/or folding. The thinner conductors generally exhibit dips to the northeast, consistent with dips indicated by other conductors in sheet 2.

At the northeastern ends of lines 41 through 53, there is a strong magnetic unit which coincides with the conductive zone D. However, it is interesting to note that most conductors in this area (with the possible exception of anomaly 51xC) do not exhibit direct correlation, but are usually associated with relative magnetic depressions within, or near the periphery of, the magnetic unit.

Although most of the anomalies in zone are considered to be attractive geophysical targets which reflect bedrock conductors, the same criteria for assessing the relative merits of these conductors as described for zone A, sheet 1, are deemed to be equally applicable. More specifically, this would include anomalies which occur as or satellitic features isolated (46F, 47G and 49I), anomalies which exhibit either positive or negative magnetic correlation (35D, 46E, 47E, 51xC, 56F and 61J), all thick sources, those which appear to be related to possible geologic contacts or structural deformation, and those conductors which appear to be of limited strike length.

Of particular interest is conductor 44I-49H which probably reflects mineralization at the contact between magnetic and conductive units and the parallel conductor about 300 m to the southwest, 44H-47E, both of which exhibit satellitic anomalies 49I and 46F respec-Other tively. conductors associated with magnetic lows, such as 43I-44J, may also be important targets although they are clearly defined and poorly conductive.

Zone E

Zone E, as outlined by the 150 ohm m contour, depicts a moderately thin unit of conductive material which may be offset in the vicinity of anomalies 49F and 54xC, and terminated at its northern end

near line 60 by a well defined unit of high resistivity. The strongest anomaly in zone E is anomaly 49F, which indicates a thin bedrock conductor with a northeast dip. Anomalies 54xC and 55E both exhibit verv weak magnetic correlation which may enhance their significance slightly. At the northern end of zone E, anomalies 57E and 58H show also weak magnetic association although the EM characteristics indicate these anomalies are probably due to thick, weakly conductive overburden.

Zone F

Zone F is an irregularly shaped conductive unit which extends from line 29 to and beyond line 64, over the entire 7 km length of sheet 2. At the south end of this sheet, powerline effects are evident on the noise monitors for profiles 29 through 33, although this has not seriously affected the EM anomalies on these lines. (Anomalies 29A and

29xA. however, directly are attributed line to sources). Anomalies 29C-35B, 30C-32E, 30D-31C 31D-34E all reflect and thin bedrock conductors which dip to the northeast. Strong conductance values of grade 4 are associated with anomalies 30C, 31B and 32D. Anomaly 30E, which is partially influenced by conductive overburden, occurs within the limb of low resistivity material which hosts conductor 31D-34E, and is probably an eastward continuation of this conductor.

Anomaly 36A-43D reflects moderately broad or flat-dipping conductor of possible bedrock origin. The absence of anomalies on lines 38, 40 and 42 is probably due to excessive flying height in this area. The dashed line indicates this conductor axis is probably continuous between lines 36 and 43. Anomaly 39C is

isolated bedrock conductor which may warrant further work.

The main axis of zone F appears to offset in the vicinity anomaly 43D, continuing towards the northwest as conductor segments 43C-47B and 49D-52C. The latter segment is paralleled 250 m to the northeast by a strong conductor which also dips to the northeast, extending from 46B through continuing on to sheet 3. This conductor may be offset by possible fault which passes through 53xB.

with the exception of anomaly 41D and 59D, none of the anomalous responses within zone F yields magnetic correlation. Anomaly 59D is an interesting bedrock conductor which coincides with a northwest/southeast trending magnetic rock unit which appears to have intruded the northwestern portion of zone

A series of grade 1 anomalies forms the conductor axis 63E-59D, which probably continues to the south as 58B-57xA, as indicated by the resistivity contours. Anomaly 57B is an isolated feature of possible bedrock origin which appears to be related to the south contact of the magnetic Anomaly 58F is an isolated, weakly conductive anomaly which associated with a lobe of conductive material which merges with zone E, and may be related to an east/west fault.

Anomaly 48xB, in close proximity to strong thick conductor 48B, occurs at the south end of a small lake and may be partially influenced by overburden. location of this satellitic response, relative to the major conductor to the north, may enhance its significance as a possible exploration target.

The central portion of zone F, between lines 47 and 54, is flanked on the southwest by a highly resistive rock unit which contains about 1% to 2% magnetite.

The relative priorities of anomalies within zone F may be assessed by using the same criteria applied to other conductive zones, i.e. thickness, strike length, magnetic correlation, and association with geologic contacts and/or structural breaks.

Anomaly 51A-55C

Anomaly 51A-55C reflects a weak conductor which occurs near southwest periphery of zone F, and is probably associated with the northeast contact of a highly resistive rock unit which contains about 1%-2% magnetite. Anomaly its 51A, with 80 nT magnetic correlation is considered to be the most attractive portion of this conductor and should be subjected to further investigation.

Anomalies 29B-32A, 34A-35A, 44A-46A Anomalies in this group are generally weak and poorly defined, be to broad and may due flat-lying of zones poorly conductive material rather discrete bedrock conductors. Of. these, only anomaly 34A exhibits weak magnetic correlation. A11 three conductors, however, show good line to line correlation and all are associated with well defined low resistivity zones, indicating they could be due to wide bedrock features. Conductor 44A-46A is considered to be of moderately high priority because of its attractive strike length and its association with a resistivity low which is situated between two magnetic anomalies.

Anomalies 40xA-47A 41A-43A Anomaly 41A-43A and the parallel feature 40xA-44B both reflect thin bedrock conductors which are

contained within a well defined north/south striking low resistivity zone with values of less than 100 ohm-m. The northwestern segment of the latter conductor, from 46B to 47A, appears to be located in а magnetic trough between two strong enhanced anomalies. This magnetic reflects a zone of rather complex geology with the conductors showing a marked departure from magnetic trends. Some anomalies (40xA, 41C, 45B and 47A) exhibit direct magnetic correlation while others appear to be associated with the peripheral contact of the magnetic units. It is recommended that additional work be carried out in this area to define the causative source of these interesting conductors.

Zone G

Zone G is a conductive unit located at the extreme northwest corner of sheet 2 on the western flank of the magnetic/resistive unit which

separates zones F and G. This unit continues to the north (on sheet 3) and is open to the west, beyond the limits of sheet 2. Although data are incomplete at the ends of the survey lines, this zone appears to consist of two major axes which may merge in the vicinity of anomaly 53A. Both limbs of the 'Y'-shaped zone host moderate to strong conductors which vary in thickness, and dip to the northeast. The eastern limb is associated with a relative magnetic low while the western limb shows weak positive correlation in magnetic the vicinity of anomaly 61B. The actual location of anomalies which the occur beyond last line fiducials (60A-64A) may differ from the location indicated on the EM A check against the flight map. path film should be carried out prior to follow-up of anomalies in this area. All anomalies within zone G are of interest. The short conductors defined by 54B-55B and 61E-62xA may be of higher priority than the longer 'formational' conductors.

Anomaly 63C-64B

Anomaly 63C-64B reflects a weak bedrock conductor which is located between the two highly conductive limbs of zone G. This conductor is open to the north.

Anomalies 32B, 44E, 50xA', 51xB, 51G, 55F, 59C, 61C Anomalies in this group consist of isolated, weak, poorly defined responses which possibly reflect bedrock sources of limited extent. All are considered to be of low priority. Anomaly 55F is the only anomaly in this group with weak magnetic correlation although conductive overburden is considered to be a likely cause. Anomaly 59C perhaps the most attractive target because of its relationship with probable contact between a major conductive unit and the

magnetic (resistive) unit to the north.

#### Sheet 3

The enhanced magnetic data show a continuation of the major magnetic anomaly observed on sheet 2. This unit is evident on sheet 3 as a series of discontinuous segments which are aligned in a northwesterly direction from fiducial 2538 on line 65 towards the northwestern corner of the survey area. At least three of these segments form inverted 'v' shapes, suggesting that the magnetic anomalies may reflect a sequence of tightly folded individual units. Note the apparent divergence of enhanced magnetic trends south of fiducial 2342 on line 67, anomaly 78xA and fiducial 478 on line 82.

Although magnetic relief in the northeast portion of sheet 3 is relatively flat, strikes appear to be more east/west. This strike direction does not correlate well with the indicated conductor axis trends, suggesting that the magnetic patterns may be due to basement features which underlie the more surficial conductive units in this area.

The enhanced magnetic map also indicates several weak magnetic trends which are not clearly evident on the total

field map. Note, for example, the weak anomaly associated with the western limb of zone G, between anomalies 66B and 80xA.

Resistivities on sheet 3 range from a high of more than 8000 ohm-m to less than 2 ohm-m near the eastern end of line 85. In the south portion of the sheet, there are five distinct parallel conductive horizons. On line 75, these horizons are associated with anomalies 75A, 75C, 75D, 75H and 75K. In the northern portion, north of line 82, the resistivity patterns are much more complex. On line 89, highly conductive trends occur in the vicinity of 89A, 89C, 89E, 89F and the broad unit east of 89H although strike directions vary from northwest/southeast to north/south.

Continuations of conductive zones D and G, observed on sheet 2 have been outlined on the EM map for sheet 3.

Zone G

Zone G consists of two parallel limbs of low resistivity which host three or more narrow formational which conductors dip to the northeast. Α weak enhanced magnetic anomaly occurs between anomalies 69A-72A and 76A-80xA. The latter conductor, 76A-80xA, is located at the contact between the conductive zone G and a resistive unit to the southwest. The most attractive anomalies in zone G are considered to be the satellitic conductor 66XA-67XA, the thick source 70E, and 78A.

Anomalies 65xA'-70A, 65B, 81A, 81C, 82B 78D-81B, 77D-77xA Anomaly 65xA'-70A occurs beyond the last line fiducials and its location is therefore uncertain. This anomaly reflects a strong, thin bedrock conductor with a dip to the northeast. Anomaly 65B may be due to a spheric noise spike although it is on strike with conductor axis 67B-68B and appears to be a continuation of a conductor observed on sheet 2. Anomaly 81A is a broad response which may be due to the off-line response from two parallel conductors (80xA and 80A) at the northern end of zone G.

Anomalies 82B and 81C both reflect moderately strong, northeast dipping bedrock conductors. The former is open to the north and may warrant further work to check its actual strike length. The latter, 81C, is satellitic to conductor 78D-81B, and is considered to be an interesting target.

A zone of poorly conductive magnetite is the likely cause of anomaly 77D-78xA.

Anomalies 65D-66E 67D-69C, 65E-69xA, 74F, 77F, 81xB Anomaly 65D-66E is a continuation of a bedrock conductor observed on sheet 2. Conductor 67D-69C consists of poorly defined broad anomalies which form part of a wide conductive rock unit extending from 66D to 73E, where it continues as a limb of conductive material within zone D.

Anomalies 65E, 69xA, 77F and 81XB consist of isolated, weak responses of probable bedrock origin. With the exception of 77F, which appears to be related to a moderately broad conductive unit from 69D-7600C, all other anomalies in this group appear to be of very short strike length.

Anomaly 74F, although of low amplitude, reflects a strong narrow bedrock conductor which dips to the The short strike length northeast. isolated nature and of this conductor make it the most attractive target in this group.

Zone D

Zone D is an extensive area of low resistivity which covers approximately 25% of sheet 3. Most of the anomalies within this unit comprise strong non-magnetic 'formational' conductive horizons which probably reflect moderately thick, parallel, graphitic sheets which dip to the

northeast. The contour patterns and conductor trends suggest the area has been subject to intensive folding, faulting and precluding correlation of conductor trends between lines. This particularly evident in the highly conductive northeastern portion between lines 83-90, where values of less than 10 ohm-m appear to form a circular conductive unit with a diameter of about 1.5 km.

There are several highly conductive zones which exhibit well defined resistivity lows of fairly limited extent. These zones, which reflect the more conductive portions within the larger conductive unit D, may reflect the areas of higher priority. These include conductors conductor segments associated with anomalies 75I-7600F, 8000E and 8000F, 83B, 83E, 83F-85E, 83G, 87C and 87D, 89D (which has a weak 6 nT magnetic correlation), anomaly 91D-92F, 95D, and a strong thick conductor with a strike length of about 700 m which is defined by 88H-91E. Weaker isolated features, such as 84A and 86A, and all anomalies which may be related to structural deformities (i.e. 91E, 95D for example) should also be considered attractive targets.

Zone H

At the northeastern corner of sheet 3 is another low resistivity zone which hosts interesting three conductors which warrant follow-Anomaly 96H is a up. conductor of limited isolated strike length which is probably the attractive target in this most Anomalies 95G-9900G area. and 98I-9900H are two parallel conductors which reflect thin, northeast dipping sources on line 98, which flatten towards the thicken or southeast. A powerline located near the south boundary of zone H may have influenced the anomalous responses 96E and 97F.

Anomalies 86G, 86H

Anomaly 86G is due to a thin isolated bedrock conductor which is considered to be а moderately attractive target. The weaker response, 86Н, is probably by conductive influenced overburden.

All other anomalies on sheet 3 which are not contained within the conductive zones D, G or H, and have not been described in the foregoing, are attributed to broad weakly conductive rock units or conductive overburden. These are considered to be of very low priority.

# SECTION II: BACKGROUND INFORMATION

## **ELECTROMAGNETICS**

DIGHEM electromagnetic responses fall into two general classes, discrete and broad. The discrete class consists of sharp, well-defined anomalies from discrete conductors such as sulfide lenses and steeply dipping sheets of graphite and sulfides. The broad class consists of wide anomalies from conductors having a large horizontal surface such as flatly dipping graphite or sulfide sheets, saline water-saturated sedimentary formations, conductive overburden and rock, and geothermal zones. A vertical conductive slab with a width of 200 m would straddle these two classes.

The vertical sheet (half plane) is the most common model used for the analysis of discrete conductors. All anomalies plotted on the electromagnetic map are analyzed according to this model. The following section entitled Discrete conductor analysis describes this model in detail, including the effect of using it on anomalies caused by broad conductors such as conductive overburden.

The conductive earth (half space) model is suitable for broad conductors. Resistivity contour maps result from the

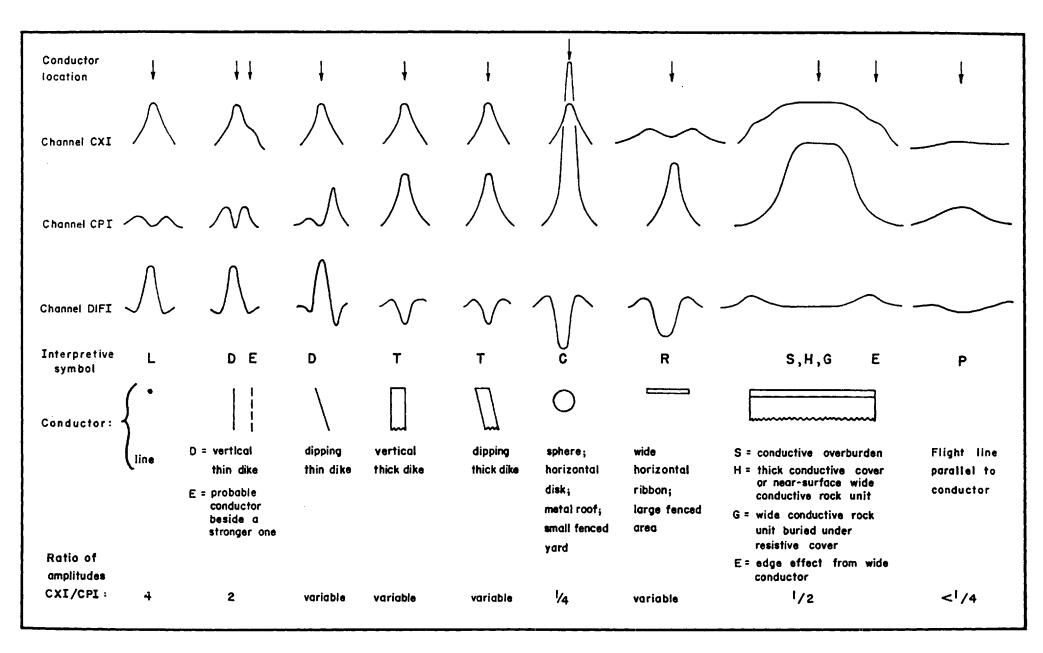
mapping describes the method further, including the effect of using it on anomalies caused by discrete conductors such as sulfide bodies.

## Geometric interpretation

The geophysical interpreter attempts to determine the geometric shape and dip of the conductor. This qualitative interpretation of anomalies is indicated on the map by means of interpretive symbols (see EM map legend). Figure II-1 shows typical DIGHEM anomaly shapes and the interpretive symbols for a variety of conductors. These classic curve shapes are used to guide the geometric interpretation.

#### Discrete conductor analysis

The EM anomalies appearing on the electromagnetic map are analyzed by computer to give the conductance (i.e., conductivity-thickness product) in mhos of a vertical sheet model. This is done regardless of the interpreted geometric shape of the conductor. This is not an unreasonable procedure, because the computed conductance increases as the electrical quality of the conductor increases, regardless of its true shape. DIGHEM anomalies are divided into six



Typical DIGHEM anomaly shapes

grades of conductance, as shown in Table II-1. The conductance in mhos is the reciprocal of resistance in ohms.

Table II-1. EM Anomaly Grades

Anomaly Grade	Mho Range
6	> 99
5	50 - 99
4	20 - 49
3	10 - 19
2	5 – 9
1	< 5

The conductance value is a geological parameter because it is a characteristic of the conductor alone; it generally is independent of frequency, and of flying height or depth of burial apart from the averaging over a greater portion of the conductor as height increases. 1 Small anomalies from deeply buried strong conductors are not confused with small anomalies from shallow weak conductors because the former will have larger conductance values.

Conductive overburden generally produces broad EM responses which are not plotted on the EM maps. However, patchy conductive overburden in otherwise resistive areas

This statement is an approximation. DIGHEM, with its short coil separation, tends to yield larger and more accurate conductance values than airborne systems having a larger coil separation.

can yield discrete anomalies with a conductance grade (cf. Table II-1) of 1, or even of 2 for conducting clays which have resistivities as low as 50 ohm-m. In areas where ground resistivities can be below 10 ohm-m, anomalies caused by weathering variations and similar causes can have any conductance grade. The anomaly shapes from the multiple coils often allow such conductors to be recognized, and these are indicated by the letters S, H, G and sometimes E on the map (see EM legend).

bedrock conductors, the higher anomaly grades For increasingly higher conductances. indicate Examples: Insco copper discovery (Noranda, DIGHEM's New yielded a grade 4 anomaly, as did the neighbouring copper-zinc Magusi River ore body; Mattabi (copper-zinc, Lake. Canada) and Whistle (nickel, Sudbury, Sturgeon Canada) gave grade 5; and DIGHEM's Montcalm nickel-copper discovery (Timmins, Canada) yielded a grade 6 anomaly. sulfides can span all grades but, in any Graphite and particular survey area, field work may show that the different grades indicate different types of conductors.

Strong conductors (i.e., grades 5 and 6) are characteristic of massive sulfides or graphite. Moderate conductors (grades 3 and 4) typically reflect sulfides of a less massive character or graphite, while weak bedrock conductors

(grades 1 and 2) can signify poorly connected graphite or heavily disseminated sulfides. Grade 1 conductors may not respond to ground EM equipment using frequencies less than 2000 Hz.

The presence of sphalerite or gangue can result in ore deposits having weak to moderate conductances. As an example, the three million ton lead-zinc deposit of Restigouche Mining Corporation near Bathurst, Canada, yielded a well defined grade 1 conductor. The 10 percent by volume of sphalerite occurs as a coating around the fine grained massive pyrite, thereby inhibiting electrical conduction.

Faults, fractures and shear zones may produce anomalies which typically have low conductances (e.g., grades 1 and 2). Conductive rock formations can yield anomalies of any conductance grade. The conductive materials in such rock formations can be salt water, weathered products such as clays, original depositional clays, and carbonaceous material.

On the electromagnetic map, a letter identifier and an interpretive symbol are plotted beside the EM grade symbol. The horizontal rows of dots, under the interpretive symbol, indicate the anomaly amplitude on the flight record. The

vertical column of dots, under the anomaly letter, gives the estimated depth. In areas where anomalies are crowded, the letter identifiers, interpretive symbols and dots may be obliterated. The EM grade symbols, however, will always be discernible, and the obliterated information can be obtained from the anomaly listing appended to this report.

The purpose of indicating the anomaly amplitude by dots is to provide an estimate of the reliability of the conductance calculation. Thus, a conductance value obtained from a large ppm anomaly (3 or 4 dots) will tend to be accurate whereas one obtained from a small ppm anomaly (no dots) could be quite inaccurate. The absence of amplitude dots indicates that the anomaly from the coaxial coil-pair is 5 ppm or less on both the inphase and quadrature channels. Such small anomalies could reflect a weak conductor at the surface or a stronger conductor at depth. The conductance estimate illustrates which of grade and depth these possibilities fits the recorded data best.

Flight line deviations occasionally yield cases where two anomalies, having similar conductance values but dramatically different depth estimates, occur close together on the same conductor. Such examples illustrate the reliability of the conductance measurement while showing that the depth estimate can be unreliable. There are a

number of factors which can produce an error in the depth estimate, including the averaging of topographic variations by the altimeter, overlying conductive overburden, and the location and attitude of the conductor relative to the flight line. Conductor location and attitude can provide an erroneous depth estimate because the stronger part of the conductor may be deeper or to one side of the flight line, or because it has a shallow dip. A heavy tree cover can also produce errors in depth estimates. This is because the depth estimate is computed as the distance of bird from conductor, minus the altimeter reading. The altimeter can lock onto the top of a dense forest canopy. This situation yields an erroneously large depth estimate but does not affect the conductance estimate.

Dip symbols are used to indicate the direction of dip of conductors. These symbols are used only when the anomaly shapes are unambiguous, which usually requires a fairly resistive environment.

A further interpretation is presented on the EM map by means of the line-to-line correlation of anomalies, which is based on a comparison of anomaly shapes on adjacent lines. This provides conductor axes which may define the geological structure over portions of the survey area. The absence of

conductor axes in an area implies that anomalies could not be correlated from line to line with reasonable confidence.

DIGHEM electromagnetic maps are designed to provide a correct impression of conductor quality by means of the The symbols can stand alone conductance grade symbols. with geology when planning a follow-up program. conductance values are printed in the attached anomaly list for those who wish quantitative data. The anomaly ppm and depth are indicated by inconspicuous dots which should not distract from the conductor patterns, while being helpful to those who wish this information. The map provides an interpretation of conductors in terms of length, strike and dip, geometric shape, conductance, depth, and thickness (see below). The accuracy is comparable to an interpretation from a high quality ground EM survey having the same line spacing.

The attached EM anomaly list provides a tabulation of anomalies in ppm, conductance, and depth for the vertical sheet model. The EM anomaly list also shows the conductance and depth for a thin horizontal sheet (whole plane) model, but only the vertical sheet parameters appear on the EM map. The horizontal sheet model is suitable for a flatly dipping thin bedrock conductor such as a sulfide sheet having a thickness less than 10 m. The list also shows the

resistivity and depth for a conductive earth (half space) model, which is suitable for thicker slabs such as thick conductive overburden. In the EM anomaly list, a depth value of zero for the conductive earth model, in an area of thick cover, warns that the anomaly may be caused by conductive overburden.

Since discrete bodies normally are the targets EM surveys, local base (or zero) levels are used to compute local anomaly amplitudes. This contrasts with the use of true zero levels which are used to compute true EM Local anomaly amplitudes are shown in the amplitudes. EM anomaly list and these are used to compute the vertical sheet parameters of conductance and depth. Not shown in the EM anomaly list are the true amplitudes which are used to conductive the horizontal sheet and compute earth parameters.

# X-type electromagnetic responses

DIGHEM maps contain x-type EM responses in addition to EM anomalies. An x-type response is below the noise threshold of 3 ppm, and reflects one of the following: a weak conductor near the surface, a strong conductor at depth (e.g., 100 to 120 m below surface) or to one side of the flight line, or aerodynamic noise. Those responses that

have the appearance of valid bedrock anomalies on the flight profiles are indicated by appropriate interpretive symbols (see EM map legend). The others probably do not warrant further investigation unless their locations are of considerable geological interest.

## The thickness parameter

DIGHEM can provide an indication of the thickness of a steeply dipping conductor. The amplitude of the coplanar increases relative to anomaly (e.g., CPI) the anomaly (e.g., CXI) as the apparent thickness increases, i.e., the thickness in the horizontal plane. (The thickness is equal to the conductor width if the conductor dips at 90 degrees and strikes at right angles to the flight line.) This report refers to a conductor as thin when the thickness is likely to be less than 3 m, and thick when in excess of Thin conductors are indicated on the EM map by the 10 m. interpretive symbol "D", and thick conductors by "T". base metal exploration in steeply dipping geology, thick conductors can be high priority targets because many massive sulfide ore bodies are thick, whereas non-economic bedrock conductors are often thin. The system cannot sense the thickness when the strike of the conductor is subparallel to the flight line, when the conductor has a shallow dip, when the anomaly amplitudes are small, or when the resistivity of the environment is below 100 ohm-m.

# Resistivity mapping

widespread conductivity are Areas of commonly encountered during surveys. In such areas, anomalies can be generated by decreases of only 5 m in survey altitude as well as by increases in conductivity. The typical flight record in conductive areas is characterized by inphase and quadrature channels which are continuously active. EM peaks reflect either increases in conductivity of the earth or decreases in survey altitude. For such conductive areas, apparent resistivity profiles and contour maps are necessary for the correct interpretation of the airborne The advantage of the resistivity parameter is data. that anomalies caused by altitude changes are virtually eliminated, so the resistivity data reflect only those anomalies caused by conductivity changes. The resistivity analysis also helps the interpreter to differentiate between conductive trends in the bedrock and those patterns typical of conductive overburden. For example, discrete conductors will generally appear as narrow lows on the contour map and broad conductors (e.g., overburden) will appear wide lows.

The resistivity profile (see table in Appendix A) and the resistivity contour map present the apparent resistivity using the so-called pseudo-layer (or buried) half space model defined in Fraser (1978)<sup>2</sup>. This model consists of a resistive layer overlying a conductive half space. depth channel (see Appendix A) gives the apparent depth below surface of the conductive material. The apparent depth is simply the apparent thickness of the overlying resistive layer. The apparent depth (or thickness) parameter will be positive when the upper layer is more resistive than the underlying material, in which case the apparent depth may be quite close to the true depth.

The apparent depth will be negative when the upper layer is more conductive than the underlying material, and will be zero when a homogeneous half space exists. The apparent depth parameter must be interpreted cautiously because it will contain any errors which may exist in the measured altitude of the EM bird (e.g., as caused by a dense tree cover). The inputs to the resistivity algorithm are the inphase and quadrature components of the coplanar coil-pair. The outputs are the apparent resistivity of the

Resistivity mapping with an airborne multicoil electromagnetic system: Geophysics, v. 43, p. 144-172.

conductive half space (the source) and the sensor-source distance. The flying height is not an input variable, and the output resistivity and sensor-source distance are independent of the flying height. The apparent depth, discussed above, is simply the sensor-source distance minus the measured altitude or flying height. Consequently, errors in the measured altitude will affect the apparent depth parameter but not the apparent resistivity parameter.

The apparent depth parameter is a useful indicator of simple layering in areas lacking a heavy tree cover. The DIGHEM system has been flown for purposes of permafrost mapping, where positive apparent depths were used as a measure of permafrost thickness. However, little quantitative use has been made of negative apparent depths because the absolute value of the negative depth is not a measure of the thickness of the conductive upper layer and, therefore, is not meaningful physically. Qualitatively, a negative apparent depth estimate usually shows that the EM anomaly is caused by conductive overburden. Consequently, the apparent depth channel can be of significant help in distinguishing between overburden and bedrock conductors.

The resistivity map often yields more useful information on conductivity distributions than the EM map. In

comparing the EM and resistivity maps, keep in mind the following:

- (a) The resistivity map portrays the absolute value
   of the earth's resistivity.
   (Resistivity = 1/conductivity.)
- (b) The EM map portrays anomalies in the earth's resistivity. An anomaly by definition is a change from the norm and so the EM map displays anomalies, (i) over narrow, conductive bodies and (ii) over the boundary zone between two wide formations of differing conductivity.

The resistivity map might be likened to a total field map and the EM map to a horizontal gradient in the direction of flight<sup>3</sup>. Because gradient maps are usually more sensitive than total field maps, the EM map therefore is to be preferred in resistive areas. However, in conductive areas, the absolute character of the resistivity map usually causes it to be more useful than the EM map.

<sup>&</sup>lt;sup>3</sup> The gradient analogy is only valid with regard to the identification of anomalous locations.

## Interpretation in conductive environments

Environments having background resistivities below 30 ohm-m cause all airborne EM systems to yield very large responses from the conductive ground. This usually prohibits the recognition of discrete bedrock conductors. The processing of DIGHEM data, however, produces six channels which contribute significantly to the recognition of bedrock conductors. These are the inphase and quadrature difference channels (DIFI and DIFQ), and the resistivity and depth channels (RES and DP) for each coplanar frequency; see table in Appendix A.

The EM difference channels (DIFI and DIFQ) eliminate up to 99% of the response of conductive ground, leaving responses from bedrock conductors, cultural features (e.g., telephone lines, fences, etc.) and edge effects. An edge effect arises when the conductivity of the ground suddenly changes, and this is a source of geologic noise. While edge effects yield anomalies on the EM difference channels, they do not produce resistivity anomalies. Consequently, the resistivity channel aids in eliminating anomalies due to edge effects. On the other hand, resistivity anomalies will coincide with the most highly conductive sections of conductive ground, and this is another source of geologic

noise. The recognition of a bedrock conductor in a conductive environment therefore is based on the anomalous responses of the two difference channels (DIFI and DIFQ) and the two resistivity channels (RES). The most favourable situation is where anomalies coincide on all four channels.

The DP channels, which give the apparent depth to the conductive material, also help to determine whether a conductive response arises from surficial material or from a conductive zone in the bedrock. When these channels ride above the zero level on the electrostatic chart paper (i.e., depth is negative), it implies that the EM and resistivity profiles are responding primarily to a conductive upper layer, i.e., conductive overburden. If both DP channels are below the zero level, it indicates that a resistive upper layer exists, and this usually implies the existence of a bedrock conductor. If the low frequency DP channel is below the zero level and the high frequency DP is above, this suggests that a bedrock conductor occurs beneath conductive cover.

Channels REC1, REC2, REC3 and REC4 are the anomaly recognition functions. They are used to trigger the conductance channel CDT which identifies discrete conductors. In highly conductive environments, channel REC2

is deactivated because it is subject to corruption by highly conductive earth signals. Similarly, in moderately conductive environments, REC4 is deactivated. Some of the automatically selected anomalies (channel CDT) are discarded by the geophysicist. The automatic selection algorithm is intentionally oversensitive to assure that no meaningful responses are missed. The interpreter then classifies the anomalies according to their source and eliminates those that are not substantiated by the data, such as those arising from geologic or aerodynamic noise.

## Reduction of geologic noise

Geologic noise refers to unwanted geophysical responses. For purposes of airborne EM surveying, geologic noise refers to EM responses caused by conductive overburden and magnetic permeability. It was mentioned above that the EM difference channels (i.e., channel DIFI for inphase and DIFQ for quadrature) tend to eliminate the response of conductive overburden. This marked a unique development in airborne EM technology, as DIGHEM is the only EM system which yields channels having an exceptionally high degree of immunity to conductive overburden.

Magnetite produces a form of geological noise on the inphase channels of all EM systems. Rocks containing less than 1% magnetite can yield negative inphase anomalies caused by magnetic permeability. When magnetite is widely distributed throughout a survey area, the inphase EM channels may continuously rise and fall reflecting variations in the magnetite percentage, flying height, and overburden This can lead to difficulties in recognizing thickness. deeply buried bedrock conductors, particularly if conductive overburden also exists. However, the response of broadly distributed magnetite generally vanishes on the inphase difference channel DIFI. This feature can be a significant aid in the recognition of conductors which occur in rocks containing accessory magnetite.

# EM magnetite mapping

The information content of DIGHEM data consists of a combination of conductive eddy current response and magnetic permeability response. The secondary field resulting from conductive eddy current flow is frequency-dependent and consists of both inphase and quadrature components, which are positive in sign. On the other hand, the secondary field resulting from magnetic permeability is independent of frequency and consists of only an inphase component which

is negative in sign. When magnetic permeability manifests itself by decreasing the measured amount of positive inphase, its presence may be difficult to recognize. However, when it manifests itself by yielding a negative inphase anomaly (e.g., in the absence of eddy current flow), its presence is assured. In this latter case, the negative component can be used to estimate the percent magnetite content.

A magnetite mapping technique was developed for the coplanar coil-pair of DIGHEM. The technique yields channel "FEO" (see Appendix A) which displays apparent weight percent magnetite according to a homogeneous half space  $model.^4$ The method can be complementary to magnetometer mapping in certain cases. Compared to magnetometry, it is far less sensitive but is more able to resolve closely spaced magnetite zones, as well as providing an estimate of the amount of magnetite in the rock. The method is sensitive to 1/4% magnetite by weight when the EM sensor is at a height of 30 m above a magnetitic half space. It can individually resolve steeply dipping narrow magnetite-rich bands which are separated by 60 m. Unlike magnetometry, the EM magnetite method is unaffected by remanent magnetism or magnetic latitude.

Refer to Fraser, 1981, Magnetite mapping with a multicoil airborne electromagnetic system: Geophysics, v. 46, p. 1579-1594.

The EM magnetite mapping technique provides estimates of magnetite content which are usually correct within a factor of 2 when the magnetite is fairly uniformly distributed. EM magnetite maps can be generated when magnetic permeability is evident as indicated by anomalies in the magnetite channel FEO.

Like magnetometry, the EM magnetite method maps only bedrock features, provided that the overburden is characterized by a general lack of magnetite. This contrasts with resistivity mapping which portrays the combined effect of bedrock and overburden.

### Recognition of culture

Cultural responses include all EM anomalies caused by man-made metallic objects. Such anomalies may be caused by inductive coupling or current gathering. The concern of the interpreter is to recognize when an EM response is due to culture. Points of consideration used by the interpreter, when coaxial and coplanar coil-pairs are operated at a common frequency, are as follows:

Channels CXS and CPS (see Appendix A) measure 50 and
 Hz radiation. An anomaly on these channels shows

that the conductor is radiating cultural power. Such an indication is normally a guarantee that the conductor is cultural. However, care must be taken to ensure that the conductor is not a geologic body which strikes across a power line, carrying leakage currents.

- 2. A flight which crosses a line (e.g., fence, telephone line, etc.) yields a center-peaked coaxial anomaly and an m-shaped coplanar anomaly. 5 When the flight crosses the cultural line at a high angle of intersection, the amplitude ratio of coaxial/coplanar (e.g., CXI/CPI) is 4. Such an EM anomaly can only be caused by a line. The geologic body which yields anomalies most closely resembling a line vertically dipping thin dike. Such a body, however, an amplitude ratio of 2 rather than yields Consequently, an m-shaped coplanar anomaly with a CXI/CPI amplitude ratio of 4 is virtually a guarantee that the source is a cultural line.
- 3. A flight which crosses a sphere or horizontal disk yields center-peaked coaxial and coplanar anomalies with a CXI/CPI amplitude ratio (i.e., coaxial/coplanar) of 1/4. In the absence of geologic bodies of this geometry, the most likely conductor is a metal roof or

<sup>5</sup> See Figure II-1 presented earlier.

small fenced yard.<sup>4</sup> Anomalies of this type are virtually certain to be cultural if they occur in an area of culture.

- 4. A flight which crosses a horizontal rectangular body or wide ribbon yields an m-shaped coaxial anomaly and a center-peaked coplanar anomaly. In the absence of geologic bodies of this geometry, the most likely conductor is a large fenced area. Anomalies of this type are virtually certain to be cultural if they occur in an area of culture.
- 5. EM anomalies which coincide with culture, as seen on the camera film, are usually caused by culture. However, care is taken with such coincidences because a geologic conductor could occur beneath a fence, for example. In this example, the fence would be expected to yield an m-shaped coplanar anomaly as in case #2 above. If, instead, a center-peaked coplanar anomaly occurred, there would be concern that a thick geologic conductor coincided with the cultural line.

<sup>&</sup>lt;sup>4</sup> It is a characteristic of EM that geometrically identical anomalies are obtained from: (1) a planar conductor, and (2) a wire which forms a loop having dimensions identical to the perimeter of the equivalent planar conductor.

6. The above description of anomaly shapes is valid when the culture is not conductively coupled to the environment. In this case, the anomalies arise from inductive coupling to the EM transmitter. However, when the environment is quite conductive (e.g., less than 100 ohm-m at 900 Hz), the cultural conductor may be conductively coupled to the environment. In this latter case, the anomaly shapes tend to be governed by current gathering. Current gathering can completely distort the anomaly shapes, thereby complicating the identification of cultural anomalies. In such circumstances, the interpreter can only rely on the radiation channels CXS and CPS, and on the camera film.

### TOTAL FIELD MAGNETICS

The existence of a magnetic correlation with an EM anomaly is indicated directly on the EM map. An EM anomaly with magnetic correlation has a greater likelihood of being produced by sulfides than one that is non-magnetic. However, sulfide ore bodies may be non-magnetic (e.g., the Kidd Creek deposit near Timmins, Canada) as well as magnetic (e.g., the Mattabi deposit near Sturgeon Lake, Canada).

data are digitally recorded The magnetometer the aircraft to an accuracy of one nT (i.e., one gamma). The digital tape is processed by computer to yield a total field magnetic contour map. When warranted, the magnetic data also may be treated mathematically to enhance the magnetic response of the near-surface geology, and an enhanced magnetic contour map is then produced. response of the enhancement operator in the frequency domain is illustrated in Figure II-2. This figure shows that the passband components of the airborne data are amplified 20 times by the enhancement operator. This means, for example, that a 100 nT anomaly on the enhanced map reflects a 5 nT anomaly for the passband components of the airborne data.

The enhanced map, which bears a resemblance to a downward continuation map, is produced by the digital bandpass filtering of the total field data. The enhancement is equivalent to continuing the field downward to a level (above the source) which is 1/20th of the actual sensor-source distance.

Because the enhanced magnetic map bears a resemblance to a ground magnetic map, it simplifies the recognition of trends in the rock strata and the interpretation of

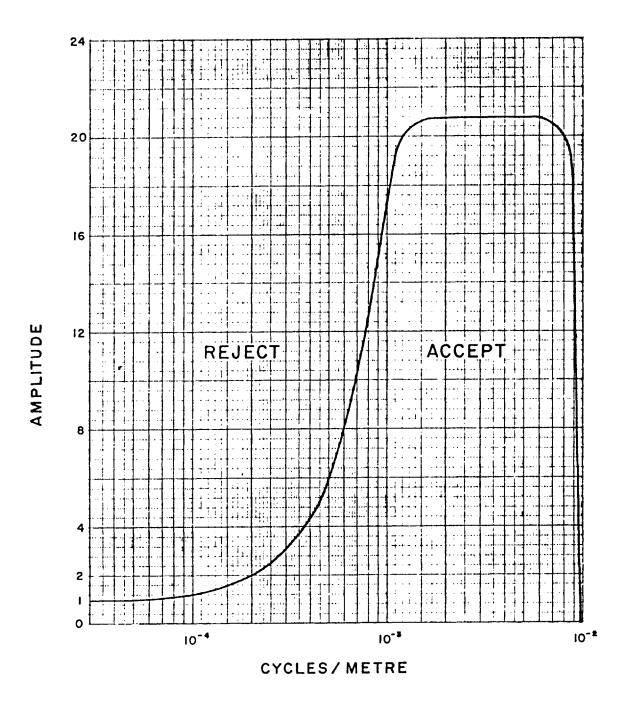


Figure  $\Pi$ -2 Frequency response of magnetic enhancement operator.

geological structure. It defines the near-surface local geology while de-emphasizing deep-seated regional features. It primarily has application when the magnetic rock units are steeply dipping and the earth's field dips in excess of 60 degrees.

## MAPS ACCOMPANYING THIS REPORT

12 map sheets accompany this report:

Electromagnetic Anomalies	3	map	sheets
Resistivity	3	map	sheets
Total Field Magnetics	3	map	sheets
Enhanced Magnetics	3	map	sheets

Respectfully submitted, DIGHEM LIMITED

Paul A. Smith Geophysical Interpreter

## APPENDIXA

#### THE FLIGHT RECORD AND PATH RECOVERY

Both analog and digital flight records were produced. The analog profiles were recorded on chart paper in the aircraft during the survey. The digital profiles were generated later by computer and plotted on electrostatic chart paper at a scale of 1:10,000. The digital profiles are listed in Table A-1.

In Table A-1, the log resistivity scale of 0.03 decade/mm means that the resistivity changes by an order of magnitude in 33 mm. The resistivities at 0, 33, 67, 100 and 133 mm up from the bottom of the digital flight record are respectively 1, 10, 100, 1,000 and 10,000 ohm-m.

The fiducial marks on the flight records represent points on the ground which were recovered from camera film. Continuous photographic coverage allowed accurate photo-path recovery locations for the fiducials, which were then plotted on the geophysical maps to provide the track of the aircraft.

The fiducial locations on both the flight records and flight path maps were examined by a computer for unusual helicopter speed changes. Such speed changes may denote

an error in flight path recovery. The resulting flight path locations therefore reflect a more stringent checking than is normally provided by manual flight path recovery techniques.

Table A-1. The Digital Profiles

Cha	annel		Scale
Name	(Freq)	Observed parameters	units/mm
MAG		magnetics	10 nT
ALT		bird height	3 m
CXI	( 900 Hz)	vertical coaxial coil-pair inphase	1 ppm
CXQ	( 900 Hz)	vertical coaxial coil-pair quadrature	1 ppm
CXS	( 900 Hz)	ambient noise monitor (coaxial receiver)	1 ppm
CPI	( 900 Hz)	horizontal coplanar coil-pair inphase	1 ppm
CPQ	( 900 Hz)	horizontal coplanar coil-pair quadrature	1 ppm
CPS	( 900 Hz)	ambient noise monitor (coplanar receiver)	1 ppm
CPI	(7200 Hz)	horizontal coplanar coil-pair inphase	1 ppm
CPQ	(7200 Hz)	horizontal coplanar coil-pair quadrature	1 ppm
CPS	(7200 Hz)	ambient noise monitor (coplanar receiver)	1 ppm
		Computed Parameters	
DIFI	( 900 Hz)	difference function inphase from CXI and CPI	1 ppm
DIFQ	( 900 Hz)	The state of the s	1 ppm
REC 1		first anomaly recognition function	1 ppm
REC2		second anomaly recognition function	1 ppm
REC3		third anomaly recognition function	1 ppm
REC4		fourth anomaly recognition function	1 ppm
CDT		conductance	1 grade
RES		log resistivity	.03 decad
RES		log resistivity	.03 decad
DP	( 900 Hz)		3 m
DP	(7200 Hz)	••	3 m
FEO%	( 900 Hz)	apparent weight percent magnetite	0.25%

L PAS-65 11/06/84

# APPENDIX B

EM ANOMALY LIST

204-SH.1 ADAMS LAKE

	COAXIAL 900 HZ			. VERTICAL . DIKE .		CONDUCTIVE EARTH
ANOMALY/ R	EAL OUAD	REAL OUAD	REAL OUAD	. COND DEPTH*.	COND DEPTH	RESIS DEPTH
FID/INTERP			· <del>-</del>	. MHOS M .		ОНМ-М М
LINE 1				•		
A 330 B					1 48	96 28
B 319 D	16 9	26 17	62 20	. 22 11.	3 71	14 49
LINE 2	(FLIGHT	r 6)		•		
В 359 Т			54 12	. 23 0.	4 58	12 36
LINE 3	(FLIGHT	г 6)				
A 518 B	5 10	7 12	48 31	. 4 0.	1 57	69 21
	(51.200			•		
LINE 4 A 548 B?	(FLIGHT	•	13 21	. 1 0.	1 20	206 11
B 558 B					1 38 1 44	306 11 196 1
C 580 S					1 22	529 0
	, -		.,			323
LINE 4000	(FLIGHT	r 6)				
A 680 B?	1 1	1 3	11 6	. 3 0.	1 66	120 40
	/nr raw			•		
LINE 5 A 2666 D	(FLIGHT		21 37	. 1 0.	1 20	214 15
C 2677 B	6 10	1 5 4 12			1 39 1 58	
	7 18	6 18				119 14
	1 1	•				
F 2743 B	1 2					73 36
LINE 6	(FLIGHT	•				
	2 6					
	18 17					
D 2636 B	5 7	7 15	59 18	. 9 8.	1 41	54 26
LINE 7	(FLIGHT	r 7)				
	1 7	0 5			1 52	578 0
B 2524 B	34 28	54 45	153 28	. 19 0.	3 39	14 18
LINE 8	(FLIGHT	· •				
B 2486 D C 2479 T	5 8 19 17	1 4 25 22	32 19 77 12		1 47 3 42	
D 2476 B	9 14	13 17			3 42 1 27	23 17 34 13
D 2470 B	J 178	15 17	,, 59	. 4	1 47	24 13
LINE 9	(FLIGHT	r 7)				
A 2359 B	3 8	1 4			1 54	
B 2367 D	11 23	11 22	62 75	. 5 0.	1 38	92 5

<sup>.\*</sup> ESTIMATED DEPTH MAY BE UNRELIABLE BECAUSE THE STRONGER PART .

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<sup>.</sup> LINE, OR BECAUSE OF A SHALLOW DIP OR OVERBURDEN EFFECTS. .

		XIAL 00 HZ		ANAR 0 HZ				VERT	rical .		ZONTAL EET	CONDUC	
ANOMALY/ FFID/INTERP										COND MHOS		RESIS OHM-M	DEPTH M
LINE 9	(F	LIGHT	7)						•				
C 2369 D	10	23	11	22	62	74	•	4	0.	2	61	57	27
D 2371 B?	10	5	11	15	48	37	•	2	0.	1	63	47	46
LINE 10	/15	LIGHT	7)				•		•				
A 2328 B			1		10	19	•	1	0.	1	33	242	8
B 2322 B?	6		3	3	17	11		2	1.		27		8
							•		•				
LINE 11	-	LIGHT			4.0	0.0	•				20	070	
B 2185 S? C 2190 B	1	3 4	0 2	4 4	12 17	28 21		1	0. 0.		29 32	270 143	4 11
D 2199 B	3		1	2	10	8		6	41.		81	186	32
	•	_	•	-	. •	Ū		Ū	•	•	•		
LINE 12	(F	LIGHT	7)				•						
A 2161 S	0	3	0	5	16	42		1	0.		16	275	0
B 2156 D	5		2	7	33	31		6	20 .		41	234	0
C 2147 B	2	2	1	3	10	17		1	0.		25	183	1
D 2123 P	2	3	5	6	24	11		5	5.	2	94	44	57
LINE 13	(F	LIGHT	7)				•		•				
A 2014 S	1	2	0	4	23	30		1	0.	1	31	230	8
B 2017 S	1	2	0	3	11	37		1	0.		13	251	0
C 2024 D	6	2	10	5	19	16	•	25	28 .	1	105	67	65
E 2035 B	2	2	1	2	11	20		1	4.		51	171	28
F 2042 D	0	5	2	7	23	23		1	0.		37	131	16
G 2067 B	1	3	1	3	11	16		1	4.		53	297	24
I 2074 B?	0	2	0	2	12	11	•	1	15 .	1	61	245	33
LINE 14	(F	LIGHT	7)				•		•				
A 2003 S	1	2	0		13	30		1	0.	1	14	483	0
B 1997 D	3	2	3	3	15	21		1	0.	1	22	145	0
C 1986 D	5	12	5	15	56	51		3	0.	1	42	177	1
D 1981 S?	1	3	0	4	14	38		1	0.	1	21	259	0
E 1960 D	8	6	11	9	32	13	•	13	7.	2	97	44	61
LINE 15	<i>(</i> F	LIGHT	7)				•		•				
A 1841 S?	2	3	0	6	15	48		1	0.	1	12	465	0
B 1850 D	4	3	7	5	23	28		1	0.	1	22	127	1
D 1862 D	7	22	8	28	96	122		3	0.	1	32	177	0
E 1869 B?	2	4	1	6	28	50		1	0.	1	25	175	5
F 1897 D	3	5	3	5	20	16		4	29 .	1	105	224	51
G 1904 B	2	6	4	10	34	31	•	2	1.	1	77	142	32

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				AXIAL 00 HZ		LANAR 00 HZ		ANAR 00 HZ			CICAL .		ZONTAL EET	CONDUC	
Αì	NOMAL:	Y/ 1	REAL	OUAD	REAL	OUAD	REAL	OUAD	•	COND	DEPTH*.	COND	DEPTH	RESIS	DEPTH
		•		PPM		PPM						MHOS		OHM-M	М
									•		•				
	INE 1825	16	( i	FLIGHT 2	7 7 2	) 1	6	11	•	1	0.	1	64	219	35
	1814		18	28	22		144	75		7	0.		33	51	6
	1809		2	5	2	5	27	37		2	10.		57	303	8
	1783		5	4			29	8		9	0.		41	48	25
E	1782	G	3	4	6	7	29	8		6	5.	2	69	37	37
									•		•				
		17	-	LIGHT			0.4	20	•		•		26	0.46	•
	1683		0	2	1		21	32		1	0.		26	246	2
	1706 1714		28 2	28 2	39 0	41 3	134 14	85 13		13 1	8.		40 53	49 177	1 2 28
	1719		2	4	1	5	25	24		1	0.		39	151	17
	1742		10	11	16	18	64	35		8	6.	1	62	69	28
											•				
L	INE	18	( I	FLIGHT					•		•				
	1677		1	1	2	3	12	5		3	0.		40	100	17
	1654		11	20	14		70	66		6	0.	-	49	171	9
	1642		2	3	1		11	15		1	0.		22	241	0
	1623		18	14	45	24	75	21		22	0.	3	60	21	34
	1616		7	10	12	14	51	22	•	5	0.	1	47	27	34
		19	( F	LIGHT	7	١			•		•				
	1521		1	3	5		24	25		1	0.	1	49	88	28
В	1546	D	5	6	2		18	28		5	22 .	1	77	626	2
С	1560	D	3	7	5	11	40	19	•	3	0.	1	55	167	11
D	1578	D	7	6	12	9	37	19		12	16.	1	84	89	44
E	1582	D	10	10	17	15	60	22		11	10 .	3	75	22	49
	1583		10	9	17	15	60	22		11	8.		61	15	39
G	1586	D	12	10	17	17	59	21	•	11	7.	2	70	26	43
T. 7	INE	20	/1	LIGHT	7	١			•		•				
	1509		1	6	3	10	49	44	•	2	0.	1	16	102	0
	1488		1	3	2	5	14	22		1	3.	1	30	460	3
	1484		0	4	2	6	22	55		1	0.	1	19	284	0
	1476		6	7	8	9	30	14		6	2.	1	74	122	30
F	1457	В	1	3	3	5	23	20		2	2.	1	50	139	28
G	1450	D	14	7	17	11	37	7	•	22	0.	3	64	15	40
									•		•				
	INE			FLIGHT					•	_	•		<b>.</b> .		٠
	1365		5	13	6		45	85		3	0.	1	28	166	0
	1370 1403		2 11	21 14	4 22	29 27	127 80	127 29		1 8	0 . 0 .	1	2 34	436	0
υ	1403	ט	1 1	14	44	21	00	29	•	đ	υ.	ı	34	59	3

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				COA	XIAL	COPI	LANAR	COPI	LANAR		VER	rical .	HORIZ	CONTAL	CONDUC	CTIVE
					00 HZ		00 HZ		00 HZ				SHI		EAR	
				, ,	70 112	,	70 112	, 2	30 112	•	υ.		Din		ши.	
	7. 7.	JOMAT.	v /	סביא ד.	OIIAD	DEAT.	OLIVD	DEAT.	OIIAD	•	COND	DEPTH*.	COND	חדיםים	DECTO	DEDTH
			23500													
	r I I	D/INT	ERP	PPM	PPM	PPM	PPM	PPM	PPM	•	MHUS	м.	MHOS	M	OHM-M	M
										•		•				
		INE	21		LIGHT					•	17	•		140000		
		1429		1		4	6		18		2	0.		35	104	
	F	1435	В	8	5	11	7	20	16	•	18	7.	3	90	18	63
										•		•				
	L	INE	22	(F	LIGHT	7)				•						
	A	1353	D	15	21	33	38	123	63		9	0.	2	42	39	13
	В	1348	В	4	7	11	10	39	51		1	0.	1	18	82	2
\	C	1344	В	3	12	4	13	63	65		2	0.	1	22	458	0
	<b>V</b> 1	1321		1		1	6	23	31		1	0.		30	232	7
	-	1315		2		5	7				3	0 .		80	57	40
		1289		0	4	3	5		28		1	0.		34	245	9
		1281		4	8	2	7	50000	25		3	0.		89	104	43
	-	1201		4	0	2	,	21	23	•	3	0.		09	104	43
	T 1	INE	23	/ 15	LIGHT	71	8			•		•				
				na reconside				1.11	<b>C</b> 0	•	11		2	20	2.1	4.2
		1202		20	23	38	43	141	68		11	0.		39	31	13
		1204		12	12	38	43	141	69		11	0.		40	21	17
		1207		3	3	11	9	32	41		1	0.		18	79	2
1	1.1	1211		1	10	4	12	63	51		2	0.		17	66	0
		1234		3		1	9		41	•	1	0.	1	28	218	5
	F	1243	В	1	7	5	8	32	35	•	1	0.	1	27	151	5
	G	1272	D	6	10	8	11	43	33		5	0.	1	69	73	31
	L	INE	24	( F	LIGHT	7)	Ü									
	Α	1182	D	6	8	8	1	53	30		9	27 .	1	64	152	22
		1180		7	9	11	13	43	27		7	6.		53	74	19
		1163		2	1	0	2	9	9		1	13 .		74	328	42
	1.	1151		2	3	1	3	16	18	8	1			51	219	26
		1143	Later and	0		3	4	16	12		2	10 .		64	82	44
		1113		5	7	6	9	29	23		5	1.		76	58	
	r	1113	עו	3	,	. 0	9	29	23	•	5	١.	2	70	56	40
		INE	25	/1	T T CTIM	. 7	. 14			•					155	
					LIGHT				0.5	•	_	•	_			
		1036		5	8	12	18	53			5	4.		64	54	32
		1039		8		14	16	45	14		8			51	32	23
		1076		2		2	2	9	5		2	33 .		60	70	41
		1082		1	5	3	4	23	16		2	12 .	1	67	136	44
	E	1104	В	1	3	8	7	19	9		5	0.	2	57	36	24
	L	INE	26	(F	LIGHT	7)	6									
		1007		7	10	22	26	79	37		7	0.	1	80	128	36
	В	1005	$\mathbf{T}$	24	14	43	34	110	37		22	0.		51	16	30
		973			3	2	4	17	14					56	143	34
		968		2		2	3				6			57	119	34
	_	_ 00	_	-		~	3	5		•	0	٥, .		37	119	24

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204-SH.1 ADAMS LAKE

				AXIAL 00 HZ		LANAR 00 HZ		LANAR 00 HZ		rical . ike .		ZONTAL EET	CONDUC	
		•			REAL PPM				. COND . MHOS	DEPTH*.	COND MHOS		RESIS OHM-M	DEPTH M
LI	NE	26	( F	LIGHT	7)	)			•	•				
E	965	в?	3	4	3	6	18	13	. 2	6.	1	55	134	32
F	942		11	8			49	12		0.		88	33	56
G	939	D	14	6	22	12	48	14	. 26	12.	4	79	13	56
T.T	NE	27	( F	LIGHT	7	١			•	•				
В	858		9	7	15		53	24	. 10	5.	2	68	30	40
č	863		2	4	7	5	24	15		2.		32	170	10
D	889		1	4	2	5	27	27	. 1	4.	1	41	157	20
E	897	G	1	2	3	3	10	4	. 3	30 .		55	107	34
F	929	D	5	4	3	4	18	16	. 9	13 .	2	101	54	62
	NE	20	/ 17		. 77				•	•				
A	NE 834	28 G	2	LIGHT	' 7) 6	8	34	38	. 1	0.	1	36	114	16
В	825		5	12	4	16	72	61		0.		46	157	8
D	800		1	2	1	3	10	14		8.		48	140	26
E	795		4	4	2	6	23	6		19 .		71	122	29
F	771	В	4	4	7	9	33	29	. 2	0.	1	46	70	27
			,-						•	•				
	NE 542	29 D	(F 8	LIGHT 9	4 ) 9		73	35	. 5	0.	1	38	101	1
A B	533		0	3	0	3	15			5.		54	129	31
C	516		0	2	1	2	12	7		9.		42	114	21
D	510		3	3	2	3	18	5		13.		48	69	30
Е	505		1	3	1	4	16	14		9.		51	213	26
F	484	B?	1	1	0	3	12	3	. 6	1.	1	71	104	47
									•	•				
	NE	30		LIGHT					•		_			
A	683		16	15	24		111	46		0.			28	14
B D	692 710		3	5 2	2	5 3	24 14	14 14		12 <b>.</b> 8 <b>.</b>		71	342 100	16 26
E	716		1	4	3	3 7	22	15	-	0.		46 33	78	14
F	722		0	3	2	4	17			7.		47	212	23
G	743		3	4	3	5	26	13		7.			107	32
									•					
LI	NE			FLIGHT					•					
A	446		2	5	6		50							11
В	442		8	12	7	16	64			0.		43	75	10
C	435 425		3	4	5 0	10	33	3 17		10 .		63	110	22
D E	404		0 4	3 3	6	4 4	17 16	3		0 . 33 .		7 98	366 67	0 59
F	389		1	2	0	1	9	9		2.		41	264	13
-	200	~•	•	•	•	•	,		•	~ •	•		201	, ,

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				AXIAL 00 HZ		CANAR 00 HZ			. VER	TICAL .			CONDUC	
AN	IOMAL	₹/ 1	REAL	QUAD	REAL	QUAD	REAL	QUAD	. COND	DEPTH*.	COND	DEPTH	RESIS	DEPTH
		•							. MHOS				OHM-M	M
 v 1	NE	20	/1	LIGHT	. 4)				•	•				
У.	•		5	1 1 July 1	0		6	2	. 26	0.	1	85	1035	0
В			1				26	31					154	13
С			2	2	0	3	14	10					135	18
D	604	G	3	3	4	5	18	21	. 1	0.	. 1			10
E					0		12	22					367	
F	553	D	16	13	21	23	73	27	. 12	0 .	. 1	47	63	15
T.1	NE	30	/1	LIGHT	. 7	1			•	•				
A	573		1	4	2		10	11	. 1	0 .	1	38	216	12
В	595		1	3	3		29	14				39	62	20
С	599	D	18	6	25	15	48	13	. 32	8.	. 3	66	17	42
D	603	D	8	8	11	11	36	17	. 9	0.	2	74	35	42
E	616	s?	2	2	1	4	14	12	. 1	7.	. 1	51	135	29
F			1		1		8	12	. 1			43	571	10
G	674	В	6	5	4	4	15	7	. 10	29 .	. 1	100	108	56
T.1	NE	31	(1	LIGHT	. 7)				•	•	•			
A			1	4	2		27	17	. 2	2	. 1	53	72	34
В			17				38		. 34				25	52
	497		4		6		18	17		1.	. 1		121	24
D	491	D	6	5	3	7	26	18	. 6	5.	. 1	78	169	28
									•	•	•			
	NE 2510		•	FLIGHT			10	47	•	^	•		200	26
	2518		4	_	2 2		19	17					200	
	2530 2546		1 9				34 18	40 8					137 58	17 60
	2552		5				51		. 5				52	29
	2558		5		5		35		. 5				79	43
	2576		2	3	1		19	17					225	21
									•	•	•			_
	NE	33	(1	FLIGHT	. 8	)			•	,	•			
	2496		0	3	0		23	30				36	167	
	2487		1	1	1	2	15	10				57	106	36
	2476		5	5	10	10	41	24				73	24	45
	2458		0	2	1	3	11	5				84	181	56
	2451		1	2	0	1	10	4				39	151	14
	2434		15	9	27	20	69	32	. 19	2.	. 2	64	28	36
	NE		(1	FLIGHT	. 8	١			•	•	•			
	2346		2		. 3		25	31	. 1	1 .	. 1	56	167	33
	2361		1		2		12	12				50	215	

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				AXIAL OO HZ		LANAR 00 HZ	-	LANAR 00 HZ			TICAL .		CONTAL EET	CONDUC EAR	
AN	OMAL	<b>7</b> / 1	REAL	QUAD	REAL	QUAD	REAL	QUAD	•	COND	DEPTH*.	COND	DEPTH	RESIS	DEPTH
FII	O/INT	ERP	PPM	PPM	PPM	PPM	PPM	PPM	•	MHOS	м.	MHOS	M	OHM-M	M
L	INE	34	<b>(</b> I	LIGHT	. 8	)			•		•				
С	2368	В	5	5	10	8	30	12	•	4	9.	1	52	50	36
E	2377	В	4	3	6	7	28	20		2	0.	•	52	106	30
	2386		5	8	4	7	19	9	_	5	8.		104	272	45
	2400		2	7	2	8	43	76		1	0.			252	0
	2405		13	6	31		45	26		33	0.	-	36	14	14
J 	2411		2	4	8	10	38	16	•	4	13 .	1	56	72	22
L	INE	35	(1	FLIGHT	r 8	)					•				
A	2327	B?	3	1	2	1	6	3	•	2	0.	1	90	117	61
	2291		4	_	9	5	16			1	3.		47	66	29
	2285		2	3	8	4	12	12		1	7.		51	68	32
_	2273		1	2	2	_	10	4		4	17.		84	93	61
	2261 2249		24 4	20 4	46 5	29 7	97	12 16		20 6	0 . 22 .	-	33 65	106	15 26
	2249 		4	4	3	,	35	10	•	0	22 .	'	03	106	20
L	INE	36	(1	FLIGHT	r 8	)			•		•				
	2187		3	_	4		18	19		1	3.	1	55	76	36
В	2208	В	9	10	23	17	63	22		7	0.	1	30	23	18
С	2212	T	18	12	33	27	99	11	•	18	2.	3	50	14	29
D	2217	В?	1	3	6	3	23	17	•	2	13 .	1	41	73	24
	2225		1		5	6	22	0		4	25 .		86	65	49
F	2232		2	2	2	3	10	12	•	1	0.	1	51	49	33
T.1	INE	 37	(1	FLIGHT	r 8	١			•		•				
	2084		3		5	-	16	4	•	7	14.	1	60	33	44
	2078		2		4		15	16		1	0.		63	76	43
С	2063	B?	1	4	2	7	29	28		2	0.	1	43	215	18
E	2055	T	19	12	34	23	83	23	•	20	0.	4	54	11	34
F	2050	В?	2	3	2	4	14	8	•	2	18.	1	69	81	48
	INE	 38	/1	et t <i>e</i> un	r Ω	`			•		•				
	1973		1	FLIGHT 4	r 8 2		24	18	•	2	3.	1	48	164	24
	1981		19		38	21	78	12			7.		61	10	41
	1998		1	1	0	2	8			1	0.			240	18
									•		•				
	INE		(1	FLIGHT	r 8	-			•		•				
	1890		0	1	1		9			2	17.		68	102	
	1859		1	2	3	6	21	8		5	11 .	_	57	44	40
	1850		2	2	2	2	10	14		1	6.		50	115	29
	1844 1834		1	3	2 2	6 2	29 10	21 8		2 1	0 . 23 .		43	72	25 53
Ŀ	1034	מ	3	3	2	2	10	ð	•	1	43 .	1	75	93	53

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			AXIAL 00 HZ		LANAR 00 HZ		LANAR 00 HZ		rical . ike .			CONDUC	
ANOMAL	Y/ 1	REAL	QUAD	REAL	QUAD	REAL	QUAD	. COND	DEPTH*.	COND	DEPTH	RESIS	DEPTH
FID/INT	ERP	PPM	PPM	PPM	PPM	PPM	PPM	. MHOS	м.	MHOS	M	OHM-M	М
LINE	39	( I	LIGHT	. 8)	)			•	•				
F 1829		3		1		21	12	. 2	8.	1	55	59	37
G 1822	В	5	4	11	8	30	6	. 14	6.	1	43	32	29
Н 1820		6		9	5	13	4				71	24	43
I 1806	H	2	3	1	5	22	39	. 1	2.	1	46	176	24
LINE	40	(I	LIGHT	. 8	)			•	•				
A 1730		1	1	3		14	7	. 2	9.	1	62	96	40
в 1759	H	1	2	1	4	23	15	. 2	4.		53	65	34
C 1766	T	8	4	14	7	32	16		19.		88	17	62
D 1778				8	7	4			24 .		• -	63	35
E 1783		9				9			25.		77	19	51
G 1795		3	2	1	3	12	23	. 1	0.	1	44	178	20
LINE	41	(1	FLIGHT	. 8	)				·				
A 1698		9		10	6	23	8	. 25	5.	1	92	111	45
C 1694	В	3	6	9	7	26	18	. 5	2.	1	94	103	49
D 1648	B?			2	4	15	12	. 1			65	100	43
G 1626	T	5			13	55	28			2	66	36	36
н 1616				9	7	27	14					49	33
I 1610		5	3	8	5	29	13		19 .	2	63	30	34
LINE		(1	FLIGHT	. 8	1			•	•				
A 1519		4		. 6		24	11	. 6	11 .	1	91	210	37
B 1522		2		4	5	23	15				71	55	52
C 1548	H	0	2	0	2	13	10			1	58	114	35
D 1557	В	5	6	12	10	25	19	. 8	13 .	2	76	32	47
E 1567	в?	5	3	10	6	17	3	. 12	21 .	1	62	31	47
F 1573	В	5	6	10	12	47	26	. 7	13 .	2	63	30	36
LINE	43	C	FLIGHT	. 8	)				•				
A 1484		6	7	6	10	33	16	. 6	9.	1	68	248	18
B 1480		5	9	9	14	47	25		0.	1	65	114	24
C 1458	D	2	2	3	7	23	9	. 4	0.	1	74	44	56
D 1449		3	3	2	5	19	7		5.	1	60	34	44
E 1432		2	2	2	3	11	7		3 .	. 1	62	108	38
F 1421		5	4	10	8	30	7		8.	2	85	41	51
н 1405		2		3	3	23	14			. 1	41	38	25
I 1398	В? 	1	2	3	2	15	6	. 3	5 .	. 1	54	74	33
LINE	44	<b>(</b> 1	FLIGHT	. 8	)			•	•	•			
A 1302				0		7	8	. 1	21	1	53	619	19

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				AXIAL		LANAR		LANAR				ZONTAL		
			90	00 HZ	90	00 HZ	720	00 HZ	. D	IKE .	SHI	EET	EAR'	ГН
ΑN	IOMAL'	Y/ I	REAL	QUAD	REAL	QUAD	REAL	QUAD	. COND	DEPTH*.	COND	DEPTH	RESIS	DEPTH
FII	)/INT	ERP	PPM	PPM	PPM	PPM	PPM	PPM	. MHOS	м.	MHOS	M	OHM-M	M
 T.1	NE	44	/1	FLIGHT	. 8	`			•	•				
	1311		3	6	. 6		31	13	. 4	6.	1	91	196	39
	1321		3	5	10	13	40	13				78	37	45
E	1329	B?	1	2	3	2	9	6	. 2	4.	1	63	151	37
	1336		1	5	3	7	36	31		0.		36	117	16
	1348		3	5	4	7	25	11		7.		93	83	52
	1357		4	8	9	15	60	21				50	54	17
	1363		3	5	4	6	34	27		0.		48	44	32
J 	1373	B?	0	1	2	2	10	4	. 3	10 .	1	58	103	35
LI	NE	45	(1	FLIGHT	. 8	)			•	•				
	1275		2		0	3	17	12		4.		45	310	16
	1265		1	2	1	_	8	15				56	779	17
	1244		2	5	4	9	38	16		3.		83	134	37
	1228		2	5	4		25	24		8.		82	323	26
	1216 1202		2 31	3 19	2 59	2 36	10 118	9 7		15 <b>.</b> 0 <b>.</b>		58 <b>4</b> 1	111	36
	1197		5	6	6	10	40	14				73	6 38	25 42
<del>-</del> -			3	·	J	, 0	40	, ,		•	. <b>-</b>	,,	30	72
L	NE	46	(1	FLIGHT	. 8	)			•		•			
	1114		1	0	0		6			20 .		59	894	18
	1143		2	2	3	3	12	12		11.		76	180	49
	1153		1	2	1	_	18	11				45	248	18
	1164		2	2	2	2	9	-	. 2	29 .		51	178	27
	1174 1175		14 16	13 13	33 33	24 24	73 73	7 7		0.		44 46	12 13	23 24
			10	13	"	24	73	,	• 17	•		40	13	24
LI	NE	47	(1	FLIGHT	. 8	)			•					
A	1083	В	1	2	0		2	9	. 1	0.	. 1	8	6185	0
	1047		1	5	5	7	23	16	. 2	0.	. 1	46	248	18
	1043		9	6	15	13	43	7		6.	. 3	82	16	56
	1030		3	5	3	9	34	17		1.		60	496	0
	1008		1	3	2		12	11		5.		61	138	37
	1003		5 2	2	3	3 6	12	6	. 14	0 <b>.</b> 5 <b>.</b>	. 2	97	48	57
	993		Z	4	3	ס	22	О	• /	Э.	. 1	60	32	44
	NE		(1	FLIGHT	r 8	)			•	•	•			
В	908	T	14	13	27	20	76	11	. 15	5.	. 4	68	11	46
С	918		2	5	1	7	24	9		0.	. 1	109	1035	0
D	930		0	1	0	1	5	9		7.	. 1	30	1542	0
E	939		0	2	0	2	14	13		0.		47	317	17
F	944	T	9	7	13	14	48	16	. 11	0.	. 2	55	38	25

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				AXIAL OO HZ		CANAR 00 HZ		LANAR 00 HZ			rical .		ZONTAL EET	CONDUC	
ANG	OMALY	/ I	REAL	QUAD	REAL	QUAD	REAL	QUAD		COND	DEPTH*.	COND	DEPTH	RESIS	DEPTH
				PPM				PPM				MHOS		OHM-M	M
LI	 NE	49	(1	LIGHT	. 8	,			•		•				
A	860		1	1	3		7	12	•	1	0.	1	67	264	35
С	836		0	1	0	3	5	25		1	0.	1	3	1909	0
D	816	D	10	7	11	12	45	19	•	11	3.	1	60	153	16
E	812		20	12	26	21	72	28		20	0.	_	52	21	27
F	801		5	5	3	7	26	11		5	7.		66	320	12
G	789		3	1	0	1	6	8		1	12.		50	715	13
H I	770 766		16 6	17 9	25 13	29 19	90 75	30 37		11 6	0.		39 50	21 35	15 23
			0	9	13	19	73	37	•	U	' •	2	30	33	23
LI	NE	50	(I	LIGHT	. 8	)									
В	712		6	7	8	12	37	18		7	0.		51	360	0
D	717		9	4	12	7	29	11		20	24 .		99	29	68
E	728		0	3	0	5	18	13		2	2.		51	247	24
F	733 740		0	2 1	0 0	2 1	10	27		1 1	0.		26 53	795	0
G H	753		3	1	2	3	6 15	5 15		1	29 <b>.</b> 9 <b>.</b>		53 65	1233 100	13 44
I	756		4	1	1	2	13	12		i	0.		60	26	45
			_	•	·	_				-					•3
LI		51	( I	LIGHT	. 8	)			•		•				
Α	634		0	3	0	4	22	40		1	0.		21	424	0
В	627		5	7	8	12	42	13		6	0.		25	250	0
D	624		8	10	12	13	45	19		7	13 .		81	46	48
E F	612 608		0	3 1	0 0	2	12 18	16 28		1	0.		31	479	1
G G	601		2	1	0	2	10	11		1	0 . 12 .		32 43	437 591	4 11
				•	Ŭ		10	• • •	•	•	12.	•	43	331	• • •
LI	NE	52	( I	LIGHT	. 8	)									
Α	487		5	2	9		14	8		22	5.		86	13	61
В	518		0	2	0	4	18	21		1	0.		23	374	0
C	524		6	7	10	11	41	20		7	2.		63	108	22
E	528		5	2	9	4	13	18		27	25.		75	40	43
F G	531 534		1	1 6	9 1	5 4	18 23	18 15		1 4	0. 19.		38	100	18
I	539		0	3	0	3	13	12		1	0.		82 33	600 308	<b>4</b> 5
J	559		1	1	0	2	15	15		1	0.	_	42	132	20
K	565		9	5	14	9	20	20		18	0.	_	66	22	38
L	571		4	6	7	14	52	30		3	0.		32	27	19
			,-	31 T.C.	,				•		•	•			
LII A	NE 456		(1 7	LIGHT 5	: 3) 17		35	13	•	5	,		4.0	20	22
В	507		1		2	7 3	15	14		1	0 . 2 .		46 41	28 154	32 18
	201	••	·	3	2.5	,	, ,	1-3	•	•	٠.		72 (	134	10

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				AXIAL 00 HZ		LANAR 00 HZ		LANAR 00 HZ			rical .		ZONTAL EET	CONDUC EAR	
A N	IOMAT S	, , t	י אים	מעווט	DEAT.	ממווס	DFAI.	חמוזה	•	COND	DEPTH*.	COND	שיים את	PESIS	חדסידו
	)/INT	•		~	PPM	PPM	PPM			MHOS		MHOS		OHM-M	М
											•				
LI	NE	53	( I	LIGHT	3)	)			•						
С	510		3	8	2	4	21	6		3	11 .	1	84	451	17
D	516		0	3	0	3	14	10		2	0.		29	324	1
E	525		0	1	0	1	6	15		1	0.		23	1163	0
F	538 547		0 4	1 4	0 5	2 6	11 35	15 30		1 6	0. 15.		43 80	251 52	16 45
G 	54/	 B	4	4	Э	0	33	30	•	О	15 .	2	80	52	45
T. T	NE	54	(1	LIGHT	. 3	<b>)</b>			•		•				
A	446		4	4	11		5	19	•	12	6.	5	93	7	72
В	443		6	5	12	8	35	19		3	0.	1	56	57	38
С	403	В	1	3	2	5	15	7		3	13 .		62	166	37
D	396		3	2	6	5	22	5		9	23 .		78	78	38
E	387		3	3	1	5	20	22		1	4.		42	155	20
F	365		3	9	11	15	60	40		4	1.	•	61	64	27
G	350 344		3 0	2 4	6 10	<b>4</b> 5	19	9 35		11	18 . 0 .		81 44	34 59	48 27
H	344		U	4	10	3	26	35	•	ı	٠.	•	44	39	21
T. T	NE	55	(1	LIGHT	. 3	1			•		•				
A	229		9	7	15		41	10		14	0.	5	68	9	47
В	233		9	7	12	9	41	10		13	12 .	2	89	35	57
С	274	В	2	2	3	3	13	10	•	2	0.	1	49	234	20
D	283	В	3	2	4	5	22	9	•	6	12.		76	64	38
E	293		3	2	1	_	15	19		1	3.		45	149	23
F	299		1	3	2	4	17	20		1	0.		22	277	0
G	317		5	6	9	12	48	19		6	11 .		68	72	32
H	326		0	1	1 3	2 2	13	8 7		2	0.		45	140	20
I	332	В	3	3	3	Z	7	,	•	1	15 .	1	64	71	44
T. T	NE	56	(1	FLIGHT	r 3	)			•		•				
A	215		1	3	4		18	14		2	0.	1	44	121	21
В	173		2		5		11	6		3	13.	1	73	33	
С	162	В	2	4	4	9	41	35	•	3	4.	1	65	113	24
D	149		0	4	3	6	29	<b>2</b> 5		2	0.	1	31	120	
E	135		5	7	9	11	26	26		6	11 .	1	66	195	
F	133		3	7	9	12	26	26		4	10 .		75	64	
G	119		3	4	4	6	24	9		5	0.		48	47	
Ι	110		7	9	12	17	58	30	•	6	0.	2	53	27	26
T.1	NE		(1	FLIGHT	r 2	١			•		•				
	3329		4	4	5		20	9	•	8	13 .	2	104	64	63
	3286		2	3	5		28	13		4			82		
	3277		3		5		42	35		4			69	93	

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				XIAL		LANAR		LANAR				ZONTAL		
			90	00 HZ	90	00 HZ	720	00 HZ	. D	IKE .	SHI	EET	EAR'	rh
AN	OMAL	Y/ 1	REAL	OUAD	REAL	QUAD	REAL	QUAD	. COND	DEPTH*.	COND	DEPTH	RESIS	DEPTH
	D/INT	•			PPM	PPM	PPM		. MHOS		MHOS		OHM-M	M
			,,	1. <i>T.C</i> 111M	2.				•	•				
	INE 3265	57 B2	( E	FLIGHT 2	2) 0	3	19	13	. 2	0 .	. 1	27	96	7
	3262		2	4	1	6	30	40				29	176	8
	3249		5	12	10	18	77					59	67	
G	3240	D	7	9	6	9	37	16	. 6	4.	. 1	76	82	37
H	3235	D	4	9	9	12	45	24	. 4	0.	. 2	37	54	6
I	3234	В	3	7	9	11	45	3	. 4	0 .	. 2	47	39	17
T.1	 INE	58	()	LIGHT	2)	1			•	•	,			
	3147		8	9	11	10	38	17	. 9	10 .	. 3	94	19	67
	3177		2	5	3	5	29	19				53	107	31
D	3185	D	5	4	7	10	38	18	. 8	0.	. 2	79	52	43
F	3190	В?	2	1	2	3	17	17	. 1	2 .	. 1	54	41	38
G	3195	H	1	5	2	9	42	50	. 1	0.	. 1	22	76	5
H	3200	H	1	4	2	7	39		. 2	0 .		19	111	1
	3213		3	6	5	6	29	15		8.		83	60	46
	3219		6	3	0	2	7	12				107	73	64
	3224		6	3	6	5	22	2		12 .		47	38	32
L	3226	P	1	2	7	4	24	18	. 6	28 .	. 2	76	26	47
L	NE	59	( E	LIGHT	2)	)			•	•	•			
	3128		6	8	4	10	42	23	. 5	5 .	. 1	83	63	46
С	3119	в?	1	2	1	2	12	8	. 2	11 .	. 1	93	171	64
D	3090	D	3	4	6	5	19	12	. 2	13 .	. 1	75	59	56
E	3085	В	4	5	6	9	42	24				47	62	12
	3076		1	7	1	14	57	93		0.		11	103	
	3069		1	3	1	4	25	20				39	124	
	3058		2	4	4	3	10		. 4			99	60	
	3051		4	4	2	1	4					107	65	
	3045		7	10	12	2	53		. 11	18 .		66	46	
	3042		10	5 5	6 7	7 7	29 29	30 26				58	20	
 L	3040		7	5	′	,	29	20	• ''	13 .	. 4	62	13	39
L	(NE	60	<b>(</b> I	LIGHT	2)	)			•		•			
	2947		9	12	26	24	73	22	. 10	0 .	. 3	46	17	23
С	2957	D	9	9	9	11	22	27	. 8	16.	. 1	84	65	48
	2989		3	5	6	11	34	28				49	107	
	2993		5	11	10	21	86	73		0 .		38	67	
	2999		2	1	1	4	21	24		8 .		48	139	
	3015		1	3	1	6	20	51		0 .		9	164	
	3019		4	6	5	4	25	23				95	75	
J	3023	ט	2	6	4	4	9	15	. 3	23 .	. 1	89	69	51

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<sup>.</sup> LINE, OR BECAUSE OF A SHALLOW DIP OR OVERBURDEN EFFECTS.

				AXIAL 00 HZ		LANAR 00 HZ		LANAR 00 HZ			rical .		ZONTAL EET	CONDUC	
	OMAL!				REAL PPM		REAL PPM			COND MHOS	DEPTH*.	COND MHOS		RESIS OHM-M	DEPTH M
 t 1	 INE	60	/1	FLIGHT	2	١			٠		•				
	3031		7	7	8		73	42	:	4	0.	1	32	33	18
	3035		16	11	34	27	85	38		17	0.	3		13	24
M	3039	B?1	571	1564	10	1570	26	1569	•	1	0.	2	33	6	26
 • •	 [NE	61	/1	FLIGHT	2	`			•		•				
	2936		5	2	9		14	11	•	35	0.	5	88	9	64
	2931		1	2	Ó	3	12	21		1	0.		50	257	24
	2926		8	4	9	6	21	9		19	24 .		98	48	63
E	2921	в?	0	2	3	4	19	20		1	0.	1	44	305	16
F	2898	B?	3	9	4	17	69	45	•	2	0.		2	452	0
	2896		2	8	6	17	69	43		2	0.		26	153	0
	2878		0	2	0	4	11	18		1	3.		54	567	20
	2868		2	6	5	8	16	24		1	4.		49	116	28
	2855		6	11	13	19	70	29		5	16.		59	90	25
	2852 2848		26 14	16 10	37 16	32 15	105 53	40 23		20 5	0 . 0 .		39 40	15 10	19 31
	2040		1-2	10	10	1.5	7.5	23	•	3	•	2	40	10	31
L	INE	62	(1	FLIGHT	2	)					•				
В	2759	В	13	20	17		29	15		9	0.	15	<b>7</b> 5	1	66
С	2764	Н	3	3	0	2	11	19	•	1	4.	1	43	291	17
	2769		11	7	12	13	48	15		8	3.		50	31	35
	2797		1	6	2	9	41	37		2	0.		12	137	0
	2799		2	4	2	8	31	19		2	0.		79	275	23
	2830		3	_	4	9 7	37	2 14	•	4	6.		63	183	17
1	2843	B -	9	5	13	,	38	14	•	20	2.	4	60	11	38
Τ.1	INE	63	(1	FLIGHT	. 2	)			•						
	2750		4			1553	0	1559		1	0.	1	126	1035	0
	2744		2		0	3	8	19		1	0.	1	35	590	3
D	2737	D	9	5	13	9	36	16		19	18.	1	74	98	34
	2716		0	3	0	4	11	21		1	0.	1	12	1155	0
	2711		2	4	2		20	10		3	4.	•	54	202	28
	2679		10	6	16	8	41	15		22	0.		101	23	70
	2675		1	2	12	5	26	27		1	0.		41	107	21
 T	2664	т	9	9	16	13	45	32	•	11	10 .	2	58	37	30
τ.	INE	64	t i	FLIGHT	. 2	,			•		•				
	2569		9	6	22		45	19		19	2.	3	74	24	46
	2576		2	3	0	5	20				14.		39	219	15
	2583		7	6	10	9	34	8			16.		71	108	30
E	2614	В?	2	3	2	5	22	12	•	3	0.	1	56	147	32

<sup>.\*</sup> ESTIMATED DEPTH MAY BE UNRELIABLE BECAUSE THE STRONGER PART .

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<sup>.</sup> LINE, OR BECAUSE OF A SHALLOW DIP OR OVERBURDEN EFFECTS. .

#### 204-SH.2 ADAMS LAKE

	COAXIAL	COPLANA	R COP	LANAR	•	VERT	CICAL .	HORI	ZONTAL	CONDUC	CTIVE
	900 HZ	900 H	72	00 HZ	•	DI	KE .	SH	EET	EAR	rh
					•		•				
ANOMALY/	REAL QUAD	REAL QUAI	REAL	QUAD	•	COND	DEPTH*.	COND	DEPTH	RESIS	DEPTH
FID/INTERP	PPM PPM	PPM PPI	MAG N	PPM		MHOS	м.	MHOS	M	OHM-M	M
							•				
LINE 64	(FLIGH	r 2)									
F 2632 H	0 3	0	5 23	25		1	0.	1	41	298	14
G 2644 D	13 5	27 1	52	15	_	40	1 .	6	71	5	54

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<sup>.</sup> LINE, OR BECAUSE OF A SHALLOW DIP OR OVERBURDEN EFFECTS.

ANOMALY/ REAL QUAD REAL QUAD REAL QUAD . COND DEPTH*. COND DEPTH RESIS DEPTH FID/INTERP PPM PPM PPM PPM PPM PPM PPM . MHOS M . MHOS M OHM-M PPM OHM-M PPM PPM . MHOS M . MHOS M OHM-M PPM PPM PPM PPM PPM . MHOS M . MHOS M OHM-M PPM PPM PPM PPM PPM . MHOS M . MHOS M OHM-M PPM PPM PPM PPM PPM PPM PPM PPM PPM
B 2557 B? 6 3 1 3 17 25 . 1 0 . 1 33 379 C 2549 D 13 7 20 15 53 17 . 19 4 . 3 72 22 6 D 2527 B 2 4 2 6 27 10 . 5 7 . 1 53 110 3 E 2520 B? 2 3 0 3 12 21 . 1 8 . 1 40 768
B 2557 B? 6 3 1 3 17 25 . 1 0 . 1 33 379 C 2549 D 13 7 20 15 53 17 . 19 4 . 3 72 22 6 D 2527 B 2 4 2 6 27 10 . 5 7 . 1 53 110 3 E 2520 B? 2 3 0 3 12 21 . 1 8 . 1 40 768
C 2549 D 13 7 20 15 53 17 . 19 4 . 3 72 22 4 D 2527 B 2 4 2 6 27 10 . 5 7 . 1 53 110 3 E 2520 B? 2 3 0 3 12 21 . 1 8 . 1 40 768
E 2520 B? 2 3 0 3 12 21 . 1 8 . 1 40 768
F 2501 H 2 2 0 3 15 21 . 1 6 . 1 39 328 1
G 2498 D 11 3 18 6 24 15 . 45 11 . 4 84 11
H 2493 G 2 2 5 2 13 15. 1 9. 1 44 165 2 I 2486 G 5 5 9 14 50 21. 5 7. 1 50 48
I 2486 G 5 5 9 14 50 21 . 5 7 . 1 50 48 3
LINE 66 (FLIGHT 2)
A 2377 B 4 3 8 5 12 14 . 10 16 . 4 108 15 8
В 2382 Н 1 4 0 5 24 36. 1 0. 1 37 196
C 2390 D 9 8 22 15 58 23 . 14 11 . 2 79 26 5
D 2421 H 0 3 0 4 20 26 . 1 0 . 1 44 327
E 2425 B? 2 4 2 6 26 23 . 2 0 . 1 45 197 2
F 2461 T 13 5 17 9 40 3. 27 8. 3 77 16 5 G 2476 B 4 3 1 3 12 9. 2 0. 1 47 40 3
G 24/6 B 4 3 1 3 12 9 . 2 0 . 1 4/ 40 .
LINE 67 (FLIGHT 2)
B 2360 B? 1 4 2 9 34 26 . 2 7 . 1 54 110
C 2354 D 6 4 12 12 42 23 . 12 21 . 2 79 31 5
D 2334 B? 1 2 1 2 13 15 . 1 13 . 1 61 369
F 2305 H 1 2 1 3 12 26 . 1 0 . 1 37 361
G 2296 T 25 11 46 22 94 23 . 36 4 . 5 62 6
H 2291 B 8 4 15 5 25 11 . 31 22 . 2 76 38
LINE 68 (FLIGHT 2)
A 2172 D 6 3 10 3 15 4 27 0 4 97 13
B 2182 B 4 7 7 8 19 26 . 5 0 . 1 57 71 2
C 2186 B 7 9 11 11 41 6 . 8 1 . 2 71 34
D 2221 B? 2 4 2 5 28 25. 2 0. 1 46 103 2
E 2245 H 1 3 1 3 15 22 . 1 0 . 1 39 604
F 2249 H 0 1 0 2 10 16. 1 0. 1 36 360
G 2258 T 26 11 58 19 98 6 49 0 10 49 2
H 2260 B 12 9 33 3 34 19 40 14 3 72 14 !
I 2269 G 1 4 4 6 20 11 . 2 4 . 1 41 65 :
J 2273 B? 4 4 2 3 15 14 . 7 5 . 2 69 32 3
LINE 69 (FLIGHT 2)
A 2159 D 3 6 4 8 28 22 . 3 0 . 1 91 92
B 2153 B 7 8 12 14 53 16 . 8 4 . 3 69 24

<sup>.\*</sup> ESTIMATED DEPTH MAY BE UNRELIABLE BECAUSE THE STRONGER PART .

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204-SH.3 ADAMS LAKE

				AXIAL 00 HZ		LANAR 00 HZ		LANAR 00 HZ			rical .	HORI 2	ZONTAL EET	CONDUC	
ΑN	IOMALY	7/ F	REAL	QUAD	REAL	QUAD	REAL	QUAD	. c	OND	DEPTH*.	COND	DEPTH	RESIS	DEPTH
				PPM		PPM		PPM				MHOS		OHM-M	M
L1	NE	69	(I	LIGHT	. 2	1			•		•				
С	2127		1	3	0	3	14	13	•	1	4.	1	68	169	42
D	2117	H	0	1	0	1	6	6		1	17 .		53	906	14
	2095		34	9	70	21	97			83	0.		57	5	40
	2078		4	8	8	15	56			5	0.		30	44	16
J	2074	G	3	6	6	9	16	12	•	5	4.	2	50	27	24
L	NE	70	( E	LIGHT	2	)					•				
A	1943	$\boldsymbol{D}$	4	4	8	6	20	10	•	3	2.	1	61	84	39
С	1951	В	3	2	3	5	19	15	•	6	24 .	1	78	445	8
E	1959	T	9	7	17	16	55	17	•	11	3.	3	65	22	39
	2021		1	1	0	2	6	6		1	0.		63	391	28
	2031		. 0	2	0	2	9			1	0.		32	751	0
	2049		15	4	36	8	52	14		80	4.		77	7	57
	2050		14	4	36	7	50	12		85	9.		69	2	56
	2062		1	4	4	7	26	20		2	0.	1	40	85	20
	2068		3	2	6	6	25	14		9	5.	2	69	29	38
N 	2070	 R	3	0	6	4	16	6	•	4	0.	1	42	20	29
LJ	NE	71	( F	LIGHT	. 2	)			•		•				
A	1926	В	4	5	3	5	25	20	•	5	15 .	1	84	128	39
В	1921	D	3	6	6	6	23	11	•	4	3.	1	99	91	55
С	1919	В	4	4	6	6	23	11	•	7	18 .	2	109	50	71
	1893		3	2	2	5	25	10		4	0.	1	43	119	22
	1882		0	3	0	3	15	33		1	0.		7	541	0
	1863		23	8	45	16	83	31		50	0.	_	57	3	43
G	1845	В	15	17	27	26	92	66	•	3	0.	1	32	18	21
T.1	NE	72	(1	LIGHT	. 2	)			•		•				
	1747		4	4	3		22	21		1	9.	1	48	128	27
	1753	_	6		10	8	30	8		10	25 .	1	82	86	43
С	1757	D	13	11	12	14	55	34	•	11	0.	2	5 <b>7</b>	47	24
E	1791	Н	2	3	2	5	22	11	•	3	5.	1	56	154	32
F	1804	H	0	2	0	3	21	26	•	1	0.	1	32	386	6
G	1820	T	38	14	64	25	121	11	•	54	1.	8	54	2	41
	1836		5	3	10	8	30	20	•	12	0.	3	63	17	37
	NE		<b>(</b> F	LIGHT	. 2	)			•		•				
	1723		2	3	. <u> </u>		24	16	•	2	0.	1	48	120	26
	1717		7	8	12	13	52	24		7	14.		77	60	42
	1714		9	6	12	11	38	7		13	7.	2	86	28	57
E	1686	H	2	4	4	8	29	13	•	3	0.	1	69	162	21

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204-SH.3 ADAMS LAKE

				AXIAL OO HZ		LANAR 00 HZ		LANAR 00 HZ		TICAL .		ZONTAL EET	CONDUC EAR'	
Al	NOMAL!	Y/ 1	REAL	QUAD	REAL	QUAD	REAL	QUAD	. COND	DEPTH*.	COND	DEPTH	RESIS	DEPTH
FI	D/INTI	ERP	PPM	PPM	PPM	PPM	PPM	PPM	. MHOS	М.	. MHOS	M	OHM-M	M
L	INE	73	(I	FLIGHT	. 2	<b>)</b>			•	•	•			
	1676		o o	1	0	2	6	7	. 1	21	. 1	74	734	35
G	1664	Н	0	3	0	5	22	35	. 1	0.	. 1	33	350	7
Н	1655	T	47	17	86	28	154	19	. 68	0 .	. 11	46	1	35
J	1636	G	7	5	13	9	36	22	. 13	0 .	. 4	75	9	53
T.:	INE	74	(1	FLIGHT	. 2	)			•	•				
	1534		3	6	5		49	46	. 3	2	. 1	73	107	32
В	1540	В?	4	4	7	6	28	16				33	64	
С	1542	В?	4	4	7	7	28	8	. 8	21 .	. 2	89	45	55
D	1559	H	1	2	0	4	12	11	. 1	6.	. 1	53	355	23
E	1578	В	4	7	7	13	42	27	. 4	0.	. 1	54	112	15
F	1584	D	4	3	4	1	10	1	. 11	36 .	. 1	136	107	86
G	1588	H	1	2	1	3	12	5	. 4			75	230	47
Н	1602	S	0	3	0	5	22	33	. 1	0.	. 1	29	349	3
I	1611	T	56	28	104	42	211	37	. 49			43	1	33
J	1623	G	3	3	3	4	17	23	. 1	0.	. 1	48	114	26
T.:	INE	75	/1	FLIGHT	. 2	١			•	•	•			
	1462		1	4	. 2	•	36	6	. 16	0 .	. 1	28	80	10
	1457		4	4	8		33					57	86	
	1455		4	5	8	10	34	24				78	40	46
	1423		5	8	8		52					34	95	0
	1414		0	1	0	2	9					46	348	16
F	1402	H	0	3	0	3	14	26	. 1			43	331	16
G	1396	H	1	3	3	3	12	18	. 1	1.	. 1	39	195	16
Н	1391	T	25	4	44	9	61	16	. 132	0 .	. 7	62	4	47
I	1385	В	6	9	12	18	53	13	. 6	0.	. 2	49	46	19
K	1373	G	3	1	5	2	15	16	. 18	16 .	. 3	96	20	65
	 two		,,	nr r <i>aua</i>	, ,				•	•	•			
	INE 1251	76		FLIGHT			41	27	•	0	,	ΕO	100	20
	1254		2	5 4	4	11 7	41 21	37 39				50 25	100 96	29
	1260		9	7	13	10	36	25				74	90 77	
	1272		1	1	1	2	10	11				32	468	
_			•	•	•	_		• • •				72	400	3
L	INE 7	600	(1	FLIGHT	. 2	)			•		•			
	1322		4	6	4		41	20	. 3	6 .	. 1	53	197	10
С	1330	H	2	1	1	3	11	8			. 1	53	246	
	1347		1	3	3	4	17	23				34	200	
E	1352	T	33	7	64	15	88	14	. 105	0.	. 10	50	2	
F	1357	В	7	8	8	14	48	11	. 12	0 .	. 1	32	12	22

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				AXIAL OO HZ		LANAR 00 HZ		LANAR 00 HZ			rical . ike .		ZONTAL EET	CONDUC	
ΑN	OMAL	// F	REAL	OUAD	REAL	OUAD	REAL	OUAD	•	COND	DEPTH*.	COND	DEPTH	RESIS	DEPTH
				PPM								MHOS		OHM-M	M
									•		•				
	INE	77		FLIGHT					•		•				_
	1238		3	8	5		36	25		3	0.		90	668	0
	1234		1	4 2	3 2		33 10	38 12		1 1	0.		31 40	93 248	13 14
	1226 1208		0	1	0		4	15		1	0.		9	2445	0
	1191		2	5	1	7	33	19	-	3	0.	•	36	91	16
	1180		0	2	0		8	14		1	4.		45	453	15
	1156		17	4	28	6	42	9			13 .		85	2	74
	1151		4	4	8	4	21	8		4	14 .	1	50	44	33
I	1138	G	4	4	3	6	25	27	•	1	0.	1	46	65	28
J	1136	B?	4	4	4	6	25	20	•	6	0.	. 1	100	88	53
T.1		78	(1	FLIGHT	. 2	<b>\</b>			•		•				
	1020		4		10	-	49	26	•	5	0.	. 1	74	106	32
	1023		3		10		46	26		3	0.		35	80	17
	1033		2		1	5	21	32		1	0.	. 1		245	3
E	1080	В	2	3	5	8	28	10		6	0.	. 1	41	104	19
F	1083	в?	3	2	5	6	16	5		6	1.	1	70	92	27
G	1115	T	14	3	24	5	36	8	•	11	3.	. 1	47	28	33
	1117		1	2	11	3	19	11	•	2	14.	1	47	51	31
	INE	79	(1	FLIGHT	. 2	)			•		•	•			
	1004		8		13		61	62	-	8	0.	2	67	55	32
	1003		8		13		61	52			0.			81	10
C	993		2		1		9	14			0.		34	272	8
D	953	D	2	4	5		23	10		4	0.	. 1	64	159	15
E	951	B?	2	4	5	7	23	7		4	0.	. 1	75	80	32
F	916	T	14	4	28	10	32	14		49	8.	. 9	77	2	63
G	906	H	1	2	0	1	10	17	•	1	0.	. 1	53	170	27
T.1	INE	80	(1	FLIGHT	ւ 2	١			•		•	•			
A.			3		3	8	14	10	•	2	12 .	. 1	48	130	26
C	721		2		3		22	25		1	2 .		39	205	
									•		•				
L	INE 80			FLIGHT					•		•	•			
Α			2		7		18	4		7		_			
В			1	2	1		10	15		1		•			9
E	853		18	4	53		11	7		187	6.		59	1	53
F 	855 		21	5	53	6	60	18	•	9	0.	. 5	39	1	36
L	INE	81	(1	FLIGHT	r 2	)			•		•				
	678		0		3		13	19		1	0.	. 1	44	155	21

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				XIAL		LANAR		LANAR 00 HZ		rical .		ZONTAL		
			90	00 HZ	90	00 HZ	120	ЈО ПД	• <i>D</i> .	IKE .	Sni	EET	EAR	LH
AN	OMAL	7/	REAL	QUAD	REAL	QUAD	REAL	QUAD	. COND	DEPTH*.	COND	DEPTH	RESIS	DEPTH
FIL	/INTI	ERP	PPM	PPM	PPM	PPM	PPM	PPM	. MHOS	м.	MHOS	M	OHM-M	M
	NE	81	/1	LIGHT	. 2)				•	•				
B	668		5	6 6	2	7	12	8	. 4	14.	1	83	100	42
C	664		8	10	11	15	51	11		0 .	2	69	53	35
D	614	D	7	8	15	16	44	17	. 9	0.	2	61	26	34
E	598	D	6	3	7	6	22	13	. 12	2.	3	111	17	82
F	572		2	3	2	2	8	15		0.	1	53	101	31
G	568		4	2	2	6	26	19		26.		122	69	80
H	564	 B	1	8	3	8	30	48	. 1	0.	1	21	101	3
LI	NE	82	(H	LIGHT	. 2)	)			•					
В	459	D	3	3	2	2	9	7	. 7	23 .	1	80	280	23
С	506		3	2	5	2	12	13		0.		75	22	45
E	519		7	5	11	9	29	16		0.	2	85	28	54
F	547	D	9	8	8	12	44	48	. 8	0.	2	65	39	33
LI	NE	83	( E	LIGHT	. 1	1				•				
	2599		4	2	7	3	14	12	. 14	0.	2	56	28	25
В	2610	D	28	17	49	27	103	25		6.		60	9	41
С	2620	В	11	6	23	16	58	12	. 18	20 .	4	76	9	56
	2623		26	7	56	14	84	24	. 82	7.	8	50	3	37
	2624		7	9	59	14	83	29		0.		30	2	26
	2626		34	9	77	3	114	13		0.	15	36	1	29
	2636		7	4	34	9	44	21		0.	_	41	7	22
	2649 2657		20 13	14 13	31 15	26 21	101 65	41 25		0.		50 <b>49</b>	11 11	29 29
	2662		23	13	19	16	62	22		6.	2	58	33	31
	2666		23	9	35	20	62	8		5.	5	59	8	41
									•	•				
	NE	84	( I	LIGHT	1	)			•	•				
	2560		4	10	7		68	51		0.	1	36	55	20
	2555		4	4	9	7	20	14		14.	2	62	36	33
	2544		12	4	17	11	36	9		12.		70	28	42
	<ul><li>2538</li><li>2529</li></ul>		3 46	2 16	8 93	5 36	16 170	12 31		38 <b>.</b> 0 <b>.</b>		96 <b>4</b> 1	7 1	76 32
	2518		3	3	9	4	23	11		3.	1	57	40	41
	2502		48	22	80	42	169	36		0.	7	41	4	27
	2497		23	12	39	25	84	18		0.	7	30	4	16
K	2485	T	39	15	70	21	95	10		1.	10	43	1	32
L	2482	T	74	54	116	83	246	63	. 28	0.	8	29	2	18
			,-	3T T/757	n 4	,			•	•				
	NE 2398	85 T	(1	FLIGHT 4	ָר ז 8		13	10	. 8	18.	2	70	40	20
D	2370	T	J	**	o	4	13	10	. 0	10.	2	70	40	38

<sup>.\*</sup> ESTIMATED DEPTH MAY BE UNRELIABLE BECAUSE THE STRONGER PART .

<sup>.</sup> OF THE CONDUCTOR MAY BE DEEPER OR TO ONE SIDE OF THE FLIGHT .

<sup>.</sup> LINE, OR BECAUSE OF A SHALLOW DIP OR OVERBURDEN EFFECTS. .

				AXIAL OO HZ		LANAR 00 HZ		LANAR 00 HZ			rical .	HORI?	ZONTAL EET	CONDUC	
	NOMAL)	•			REAL PPM	QUAD PPM		QUAD PPM			DEPTH*.	COND MHOS		RESIS OHM-M	DEPTH M
L:	INE	85	( F	LIGHT	. 1	)			•		•				
D	2410	D	9	6	13	12	42	16	•	13	10 .	2	68	41	37
E	2427	D	32	12	54	26	112	22	•	44	0.	8	48	3	35
	2454		36	27	125	33	136	38		13	0.	_	20	3	15
	2456		35	27	70	33	85	38		28	0.		27	2	17
	2459		29	2	57	12	83	22		215	7.		38	1	29
	2463		15	11	21	18	25	22		15	11.		50	3	37
	2465		19 29	0 9	36 55	11 17	48 95	12 13		49	7. 0.		41	1	34
	2468		29	9	33	17	95	13		64	0.	12	33	·	24
	INE	86	( F	LIGHT	1	)			•		•				
	2356		4	5	8		36	23		3	0.	1	33	71	15
В	2353	В	4	4	8	8	36	19	•	7	10 .	1	73	62	37
С	2350	G	3	4	6	6	24	9	•	4	0.	1	38	68	19
D	2340	D	11	4	17	11	38	12	•	24	12 .	2	71	44	39
	2335		5	4	10	7	29	11		5	2.		48	62	30
	2325		4	3	2	3	14	10		7	14.		111	119	61
	2305		1	3	0	3	14	11		1	0.		49	168	24
	2298		29	12	46	28	108	384		33	0.		41	6	24
	2297		0	11	27	14	35	15		7	0.	_	31	9	12
	2294		14	5	33	14	37	15		38	7.		42	2	30
	2288		28	10	35	18	47	16		40	4.	14	45	1	37
	INE	87	(1	LIGHT	. 1	١			•		•				
	2127		4	5	6		26	10		6	7.	1	87	73	47
	2140		25	10	56	22	96	11		46	7.		60	3	46
	2142		16	8	56	12	94	5		60	3.		57	2	45
E	2146	D	8	4	5	5	32	9		15	26.	2	93	26	63
F	2183	T	35	19	55	36	136	49	•	29	0.	5	43	5	27
G	2187	T	22	5	47	23	84	21	•	49	7.	7	38	3	25
H	2189	В	18	1	8	17	13	12	•	30	16.	7	41	3	28
					. 1				•		•				
	INE		(1 5	FLIGHT 5			26	15	•	c	12	•	0.0	0.5	40
	2071 2064		15	8	6 23		36 42	15		6 26	12 . 8 .		89 95	85 89	48 53
	2061		13	4	24	9	47	14		44	5.		86	10	64
	2053		5	5	7	8	36	13		8	15.	2	98	34	65
	2039		1	2	1	3	12	21		1	0.	1	25	703	0
	2032		19	11	22	17	58	34		20	0.	4	69	9	48
	2022		11	1	78	32	146	37		49	0.	4	46	12	26
J	2019	T	56	24	111	49	189	38	•	52	0.	10	32	2	21
L	2013	В	22	4	45	12	69	6	•	58	0.	4	35	2	31

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<sup>.</sup> LINE, OR BECAUSE OF A SHALLOW DIP OR OVERBURDEN EFFECTS. .

				AXIAL OO HZ		LANAR 00 HZ		CANAR OO HZ			CICAL .		ZONTAL EET	CONDUC	
AN	OMAL	Y/ 1	REAL	OUAD	REAL	OUAD	REAL	OUAD	:	COND	DEPTH*.	COND	DEPTH	RESIS	DEPTH
	/INTI	•		_	PPM	PPM	PPM			MHOS		MHOS		OHM-M	M
									•		•				
LI	NE	89	( F	LIGHT	: 1)	)			•		•				
	1936		4	5	8	13	44	19		5	7.	1	67	80	29
	1944		22	11	27	18	56	22		25	8.		83	54	49
	1946		22	11	27	18	56	22		25	8.		75	8	56
	1950		26	12	45	19	84	15		38	10.		67	4	52 69
	1958 1979		5 36	3 12	7 65	8 29	32 115	24 27		8 51	28 . 0 .		102 35	37 4	20
	1986		30 9	9	5	10	31	31		7	11 .		48	64	17
	1993		47	7	78	21	97	6		143	0.		34	1	24
	1995		17	7	71	2	17	11		181	0.		37	1	29
	1998		18	9	18	2	37	24		38	11 .		50	2	37
											•				
LI	NE	90	(1	FLIGHT	1)	)			•		•				
A	1873	D	5	5	8	9	39	16		5	2.	1	58	79	38
	1871		6	2	8	7	10	16		16	21 .	1	81	65	43
	1865		10	3	23	12	31	23		2	0.		49	23	36
	1862		14	3	18	9	28	11		48	11 .			4	63
	1861		14	3	18	6	28	20		58	16.		92	5	74
	1853		6	3	7	6	22	12		15	26.			31	89
	1829 1822		33 1	15 3	58 1	29 5	115 19	8 14	-	37 2	0.		43 28	5 86	28 10
	1811		12	3	21	6	32	5		59	6.		61	1	52
	1808		7	1	15	6	17	5		39	15.		64	2	53
	1804		35	9	60	20	104	17		78	0.		39	1	29
			-		-			, ,		. •	•	. –		·	
LI	NE	91	(1	LIGHT	. 1)	)					•				
	1727		4	5	9	7	21	20		9	15 .	2	89	37	57
	1728		3	4	8	6	21	19		1	3.		49	63	31
	1737		10	4	12	10	30	20		19	15 .			10	77
	1748		7	8	13	18	62	24		7	0.			32	34
	1766		7	5	13	12	42	10		12	4.			22	42
	1775		1	3	0	4	17	19		1	9.		31	308	6
	1793		2	1	11	3	8	5	•	37	43.	14	122	1	113
	NE		(1	LIGHT	. 1	`			•		•				
	1688		1	2	0		10	8	•	1	13.	1	77	177	50
	1663		4	3	11	9	27	2		11	22 .			34	55
	1653		10	5	13	10	4	20		19	14.			8	83
	1643		10	11	20	30	99	37		8	7.		59	57	28
	1641		12	12	20	30	99	37		8	3.	2	61	31	34
	1638		8	10	19	22	60	24		6	4.	1	48	31	34
H	1626	G	0	2	2	3	16	19	•	1	0.	1	37	195	13

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204-SH.3 ADAMS LAKE

				AXIAL 00 HZ		CANAR 00 HZ		CANAR 00 HZ		rical .		ZONTAL EET	CONDUC	
Aì	OMAL	Y/ I	REAL	QUAD	REAL	QUAD	REAL	QUAD	. COND	DEPTH*.	COND	DEPTH	RESIS	DEPTH
		•		PPM		PPM			. MHOS		MHOS		OHM-M	M
	INE	92	/1	LIGHT	1)				•	•				
	1622		2		3		10	13	. 1	2.	1	37	191	13
									•					
	INE	93		FLIGHT			7	-	•	, .	4	0.6	240	50
	1494 1524		0	1 5	1 8	2 7	7 29			2. 13.		96 85	349 33	59 54
	1537		5 5	6		10	39			13.			42	61
	1545		5	12	18	20	62	26		7.			23	45
	1549		7	7	3	5	20	22		23 .		101	92	59
	1558		1	2	0	2	10	23	. 1	0.		42	213	19
			/-	3.T. T.C.1100					•	•				
	1450	94 n	5	FLIGHT 7	1) 12	14	49	21	. 6	0.	2	65	50	32
	1435		8	6	8	8	30	6		12.		85	54	49
	1426		1	4	2	3	13	8		26 .			149	41
	1422		4	3		Ō	4			42.		87	356	
	1416		1	2	1	3	19	22	. 1	7.		43	122	
F	1391	G	1	3	5	5	28	39	. 1	0.	1	21	129	2
			,-						•	•				
	INE	95	-	LIGHT	-		10	1.4		15	2	0.3	4.0	40
	1302 1311		3 1	4 2	8 2	8 2	18 13	14 9		15 . 19 .		83 60	46 106	
	1315		8	7	21	15	48	6		3.		72	33	
	1319		9	5	9	10	33	15		15.		60	14	
	1323		6	7	14	13	52	15				71	20	
	1335		1	4	1	7	36	29		2.	1	47	76	
G	1358	в?	3	5	5	8	32	58	. 1	0.	1	14	147	0
H	1373	G	3	4	9	7	25	27	. 8	22 .	3	76	14	52
_									•	•				
	INE	96	•	FLIGHT			2.1	24		,		<b>53</b>	0.7	2.0
	1222		4	3	7	_		21		0.		53	87	
	1204 1195		2 5	1	4 9	2	8 12	3 6		28 . 18 .		73 76	19 47	61 50
	1185		2	2	0	3	17	15		12 .		60	116	
	1168		3	1	5	1	7	6		8.		48	150	
	1162		4	3	6	4	18	11		13 .		63	55	
	1161		4	3	6	4	18	10		18 .		96	16	69
	1150		14	9	26	17	27	29		0 .		52	5	
									•	•				
	INE		•	FLIGHT			A 1	25	10	20		0.3	4.0	
	1059 1065		4	5 3	16 6	10 8	41 30	25 11		20 .			19	
В	כמטו	ט	4	د	O	ð	30	1 1	. 7	14.	2	72	28	43

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204-SH.3 ADAMS LAKE

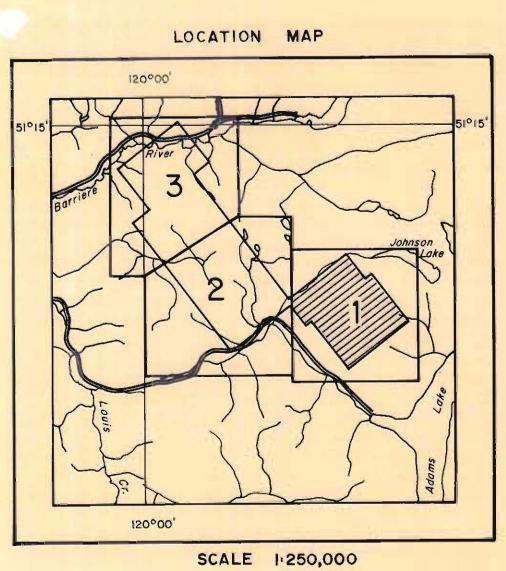
				AXIAL OO HZ	_	CANAR 00 HZ		CANAR 00 HZ			TICAL .	HORI:	CONTAL EET	CONDUC	
ΔN	ι τα Μοι	v /	REAL.	OIIAD	REAL.	OLIAD	REAL.	OHAD	•	COND	DEPTH*.	COND	рертн	RESTS	рертн
	O/INTI				PPM		PPM			MHOS		MHOS		OHM-M	M
											•				
L	INE	97	(F	LIGHT	1 1)	)									
С	1068	D	3	3	6	8	28	11		6	22 .	3	113	20	84
D	1082	D	4	6	7	7	32	27	•	6	17.	2	94	43	60
E	1089	G	0	2	0	4	25	34	•	1	0.	1	35	220	12
F	1110	В?	5	4	5	6	21	25	•	8	16.	2	108	28	76
G	1123	в?	4	4	5	5	17	19		1	0.	1	61	94	39
	1125		4	4	5	4	17	19		7	16.		125	17	96
I	1133	G	1	3	1	4	20	16	•	2	2.	1	51	99	30
									•		•				
	INE	98	(E	FLIGHT		)			•		•				
Α	1008		1	2	3	4	15	12		2	0.		52	182	26
В	1001		5	2	7	2	12	7		34	12.		87	20	58
С	995		4	2	9	5	13	12		14	12 .		81	11	58
D	993		5	5	9	5	13	12		9	11 .		99	24	69
E	975		2	2	3	3	11	5		3	30 .		81	113	58
F	960		1	3	0	4	17	11		2	0.		35	167	12
G	950		3	3	2	5	15	37		1	0.		19	252	0
H	940		8	6	11	8	30	10		13	7.		93	27	63
I	937		7	3	16	8	27	7	-	23	5.	6	75	6	56
J	929	G	1	3	2	3	14	9	•	2	0.	1	45	80	24
_									•		•				
	INE 9		•	LIGHT					•	_					
Α	793		1	4	2	7	25	35		1	0.		39	182	15
В	800		0	4	1	6	34	35		2	0.		39	156	18
С	818		3	3	4	6	23	21		2	0.		26	82	5
D	823		3	3	4	5	14	7		6	12 .		86	52	49
E	833		7	4	12	9	31	5		14	19 .		89	17	63
F	859		0	3	1	4	16	17		1	0.		32	140	10
G	893		3	4	2	2	7	3		5	17 .		146	1022	3
H	895		3	3	2	2	7	4		2	22 .		71	159	45
I	906		1	2	0	3	10	8		1	20 .		73	242	44
J	915	G	10	6	19	15	45	5	•	15	0.	. 3	53	16	29

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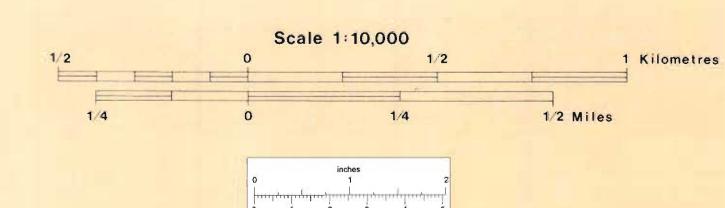
<sup>.</sup> LINE, OR BECAUSE OF A SHALLOW DIP OR OVERBURDEN EFFECTS.





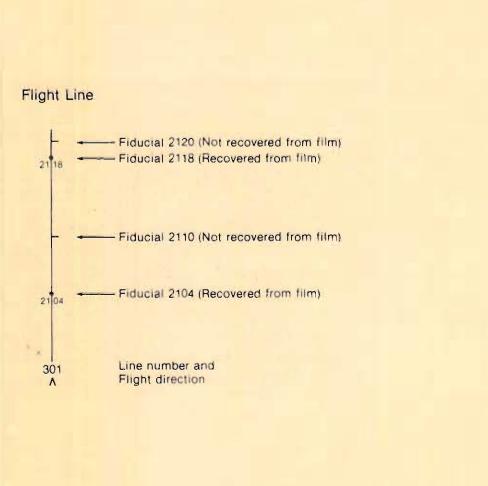


ADAMS LAKE AREA, B.C. ELECTROMAGNETIC ANOMALIES FOR CORPORATION FALCONBRIDGE COPPER



SHEET 1

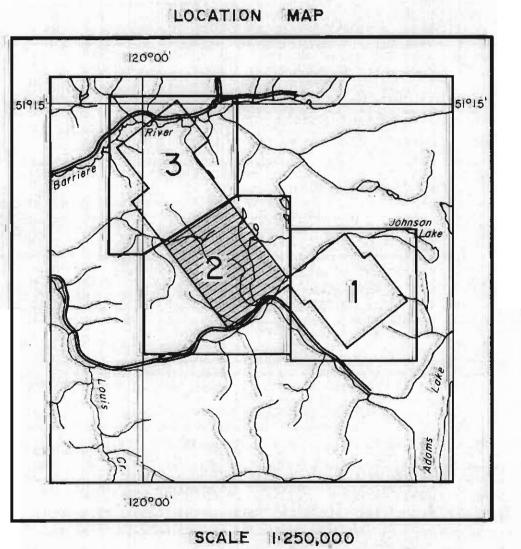
0	1/2	1 Kilometre
0	1/4	1/2 Miles
0	inches 1 2	
0 1	2 3 4 5	



ANOM GRAI		ONDUCTANCE IANGE (MHOS)				
6		> 99				
5		50-99	DICHEM AND			TANCON.
4		2049	thickness pro	oduc	les are divided into six grades of condu- t. This product in mhos is the reciproca	l of
3	0	10-19	is a geologic		ns. The mho is a measure of conductan ameter.	ce, and
2	0	5-9				
10	0	.< 5				
-	X	indeterminate				
Fleter t	r than	nd for the	iegend below The horizont the flight recestimated do the stronger one side of t	ord ord opth par he	in is shown by the interpretive symbol is the left letter is the anomaly identifier, lows of dots indicate anomaly amplitude, and the vertical column gives the. This depth may be unreliable because tof the conductor may be deeper or to light line, or because of a shallow dip or burden effects.	on
		etars				
a de la companya de l	GEOPHYSICAL MODE	The second second	CONDUCTOR	Ør.	NON-BEDROCK CONDUCTOR	MOST
a de la companya de l		The second second		or or		
YMBOL	GEOPHYSICAL MODE	BEDROCK C	planer with thickness		NON-BEDROCK CONDUCTOR  metal culture which contacts conductive ground	LIKELY
D.	GEOPHYSICAL MODE steeply-dipping thin dike thick dike indeterminate	steeply dipping conductor thick conductor greater than 10 bedrock conduct	planer with thickness in.	or	metal culture which contacts conductive ground	LIKELY
D.	GEOPHYSICAL MODE steeply-dipping thin dike	steeply disping conductor thick benductor greater than 10 bedrock conduct light line passe end or side of c	with thickness th.	or or	metal culture which contacts conductive	discrete bedrock
D. T. B.	GEOPHYSICAL MODE steeply dipping thin dike thick dike indeterminare conductor to one side	steeply-disping conductor thick conductor greater than 10 bedrock conduct flight line passe	with thickness in.  ctor ed off the conductor ctor close to a	or or	metal culture which contacts conductive ground	discrete bedrock
D. T. B.	GEOPHYSICAL MODE steeply-dipping thin dike thick dike indeterminate conductor to one side of flight line	steepty dipping conductor thick penductor thick penductor greater than 10 bedrock conduct light line passe end or side of cidscrete conductions.	with thickness its.  ctor ed off the conductor ctor close to a conductor	or or or	metal culture which contacts conductive ground flight line passed off the end or side of culture	discrete bedrock conductor or conductive
D.  T.  B.  P.	GEOPHYSICAL MODE steepty-dipping thin dike. Indeed indeed indeed indeed indeed indeed indeed in the line indeed in	BEDROCK C steeply disping conductor thick penductor greater than 10 bestrock conduc- flight line passe end or side of c discrete conduc- much stronger	with thickness the conductor conduct	or or or	metal culture which contacts conductive ground flight line passed off the end or side of culture edge of large conductive zone deep conductive weathering or thick	discrete bedrock conductor
D. T. B. P. E.	GEOPHYSICAL MODE steeply-dipping thin dike thick dike indeterminate conductor to one side of flight line indeterminate half space iclose to surface)	steeply-digger conductor thick conductor greater than 10 bedrock conductor thight line passe end or side of c discrete conductivity of conductive rock under non-cond	with thickness its.  ctor ed off the conductor ctor close to a conductor (unit k unit buried buctive cover or forest canopy conductor	or or or or	metal culture which contacts conductive ground  flight line passed off the end or side of culture edge of large conductive zone deep conductive weathering or thick conductive cover deep conductive weathering or thick conductive cover bursed under a dense	discrete bedrock conductor or conductive took or cover conductive
D. T. B. P. E. H.	GEOPHYSICAL MODE steeply-dipping thin dike thick dike indeterminate conductor to one side of flight line indeterminate half space (close to surface) buried half space	steeply dipping conductor thick penductor thick penductor greater than 10 bedrock conduct light line passe end or side of cidiscrete conductive lock conductive lock conductive rock under an annicond under a dense weak bedrock conductive to conductive rock under a dense weak bedrock conductive to conductive rock under a dense weak bedrock conductive to conductive rock under a dense weak bedrock conductive to conductive rock under a dense weak bedrock conductive to conductive rock under the conductive rock un	with thickness the conductor conductor cunit buffed ductive cover or forest canopy conductor ductive cover arrow conductor	or or or or	metal culture which contacts conductive ground  flight line passed off the end or side of culture edge of large conductive zone deep conductive weathering or thick conductive cover deep conductive weathering or thick conductive cover. buried under a dense forest canopy thin conductive cover or occasionally.	discrete bedrock conductor or conductive rock or cover
P. E. H. G. S.	GEOPHYSICAL MODE steeply dipping thin dike. Thick dike indeterminate conductor to one side of flight line indeterminate half space (close to surface). burled half space horizontal sheet.	steeply-dipping to a steeply-d	with thickness in the conductor of conductor	or or or or or or or or	metal culture which contacts conductive ground  flight line passed off the end or side of culture edge of large conductive zone deep conductive weathering or thick conductive cover deep conductive weathering or thick conductive cover, buried under a dense forest canopy thin conductive cover or occasionally, culture which contacts conductive cover narrow surface conductor, e.g., stream	discrete bedrock conductor or conductive took or cover conductive
P. E. H. G. R.	GEOPHYSICAL MODE steepty-dipping thin dike. Indeterminate conductor to one side of flight line. Indeterminate half space iclose to surface). buried half space horizontal sheet horizontal ribbon.	steeply dipping conductor thick penductor thick penductor greater than 10 bedrock conduct light line passe end or side of cidiscrete conductive lock conductive lock conductive lock conductive lock under an ensure weak bedrock omasked by control lightly dipping in a linet computer propuler propulations and propulation of the propul	with thickness in.  with thickness in.  ctor  ed off the conductor  ctor close to a conductor  (unit  k unit, buried sucrive cover or conductor ductive cover arrow conductor ductive cover arrow conductor occeded)  g compact	or or or or or or	metal culture which contacts conductive ground  flight line passed off the end or side of culture edge of large conductive zone deep conductive weathering or thick conductive cover deep conductive weathering or thick conductive cover in under a dense forest canopy thin conductive cover or occasionally, culture which contacts conductive cover narrow surface conductor, e.g., stream sediments; or large ferced area.	discrete bedrock conductor or conductive or conductive conductive cover cover cover
D. T. B. P. E. H. G. C.	GEOPHYSICAL MODE steepty-dipping thin dike thick dike indeterminate conductor to one side of tight line indeterminate half space iclose to surface) buried half space horizontal sheet horizontal ribbon sphere, horizontal disa line "a is one of the above a reasonable possibili	steeply-dipping conductor thick penductor thick penductor greater than 10 bedrock conduct light line passe end or side of conductive lock under an encount of the following the followin	with thickness the conductor close to a conductor cunit with buried luctive cover or lorest canopy conductor ductive cover arrow conductor ductive cover arrow conductor cover arrow	or or or or or or or or	metal culture which contacts conductive ground  flight line passed off the end or side of culture edge of large conductive zone deep conductive weathering or thick conductive cover conductive cover. buried under a dense forest canopy thin conductive cover or occasionally culture which conductive cover or occasionally culture which conductive cover narrow surface conductor, e.g., stream sediments; or large fenced area metal roof or fenced yard fence, pipeline, power line t identification of the geophysical model is	discrete bedrock conductor or conductive took or cover conductive cover

JOB DATE DRAWN BY D. CHECKED BY JUNE, 84





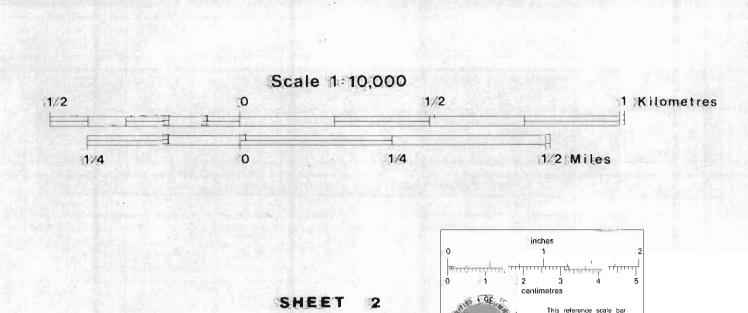


ADAMS LAKE AREA, B.C.

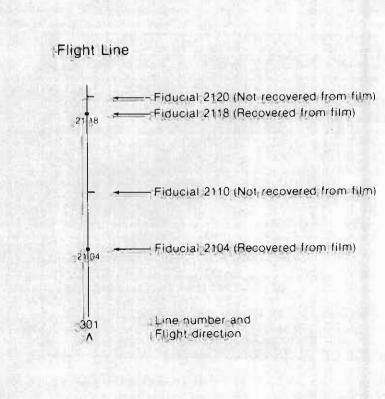
RESISTIVITY

FOR

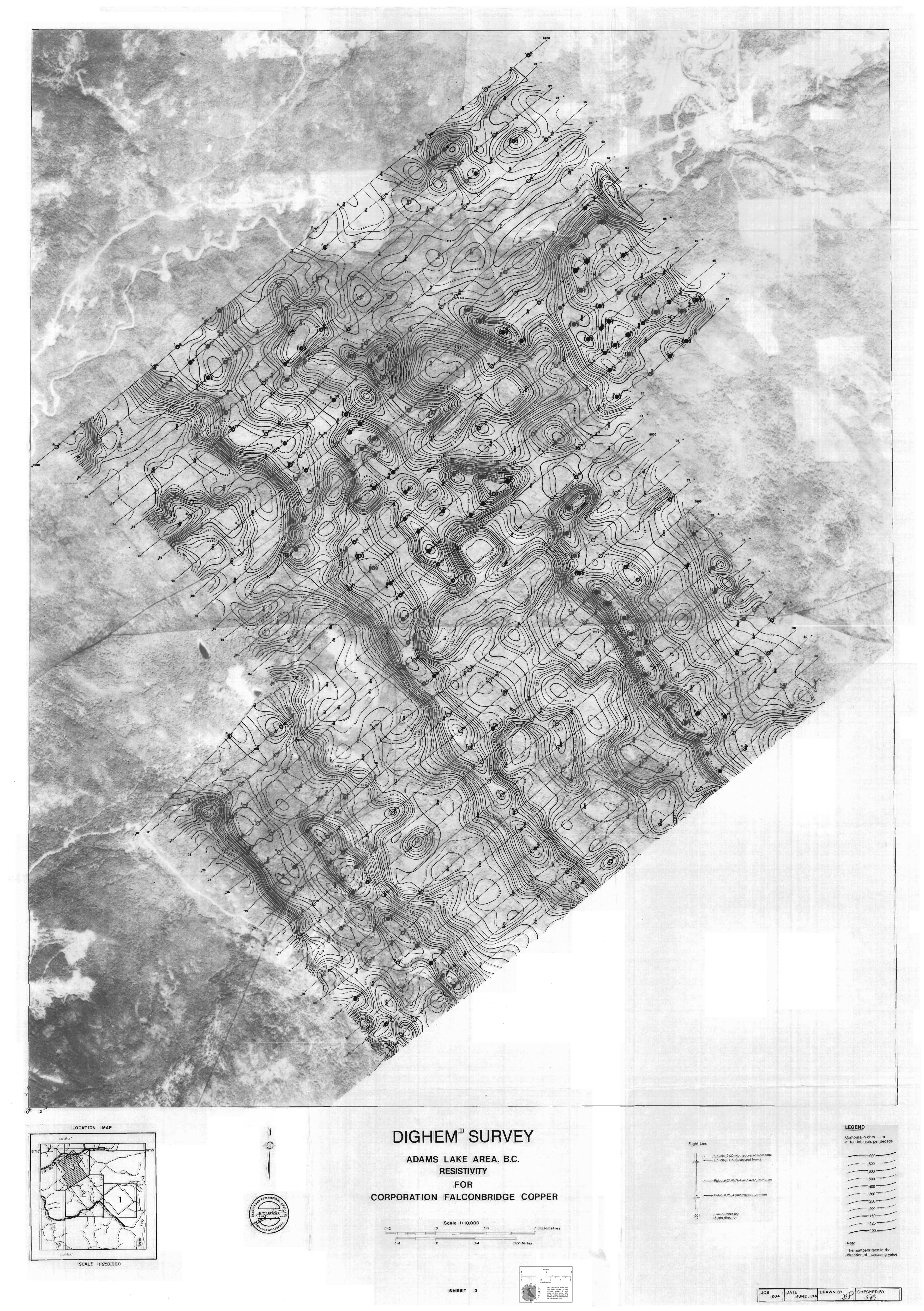
CORPORATION FALCONBRIDGE COPPER

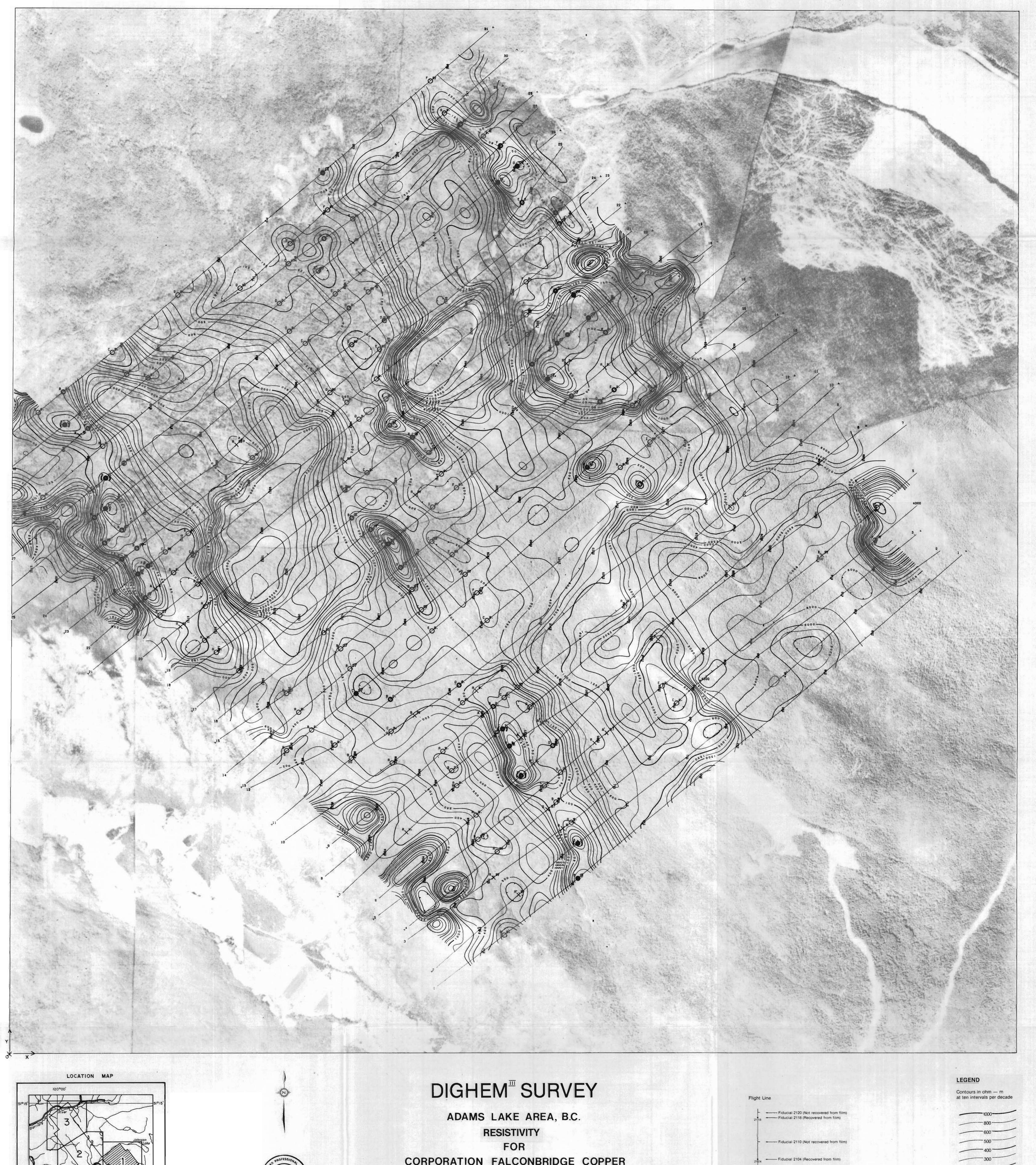


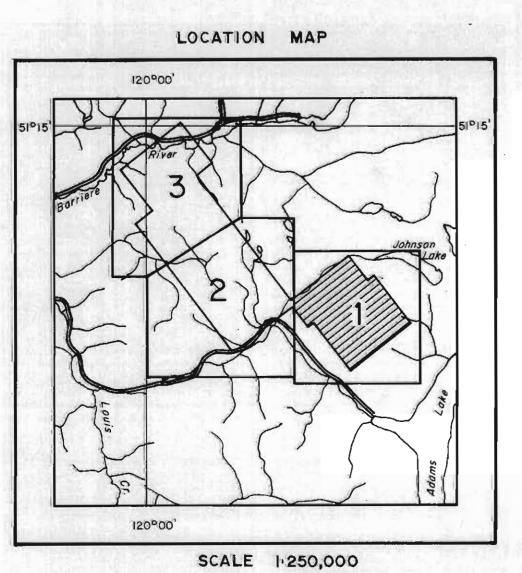
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JOB DATE JUNE, 84 DRAWN BY CHECKED BY





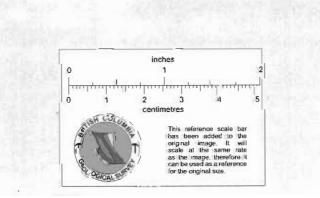


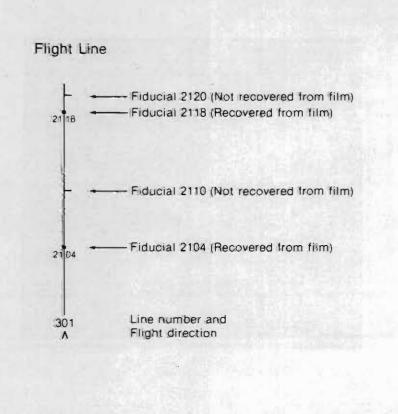


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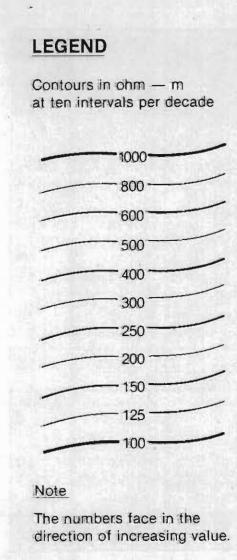
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SHEET 1

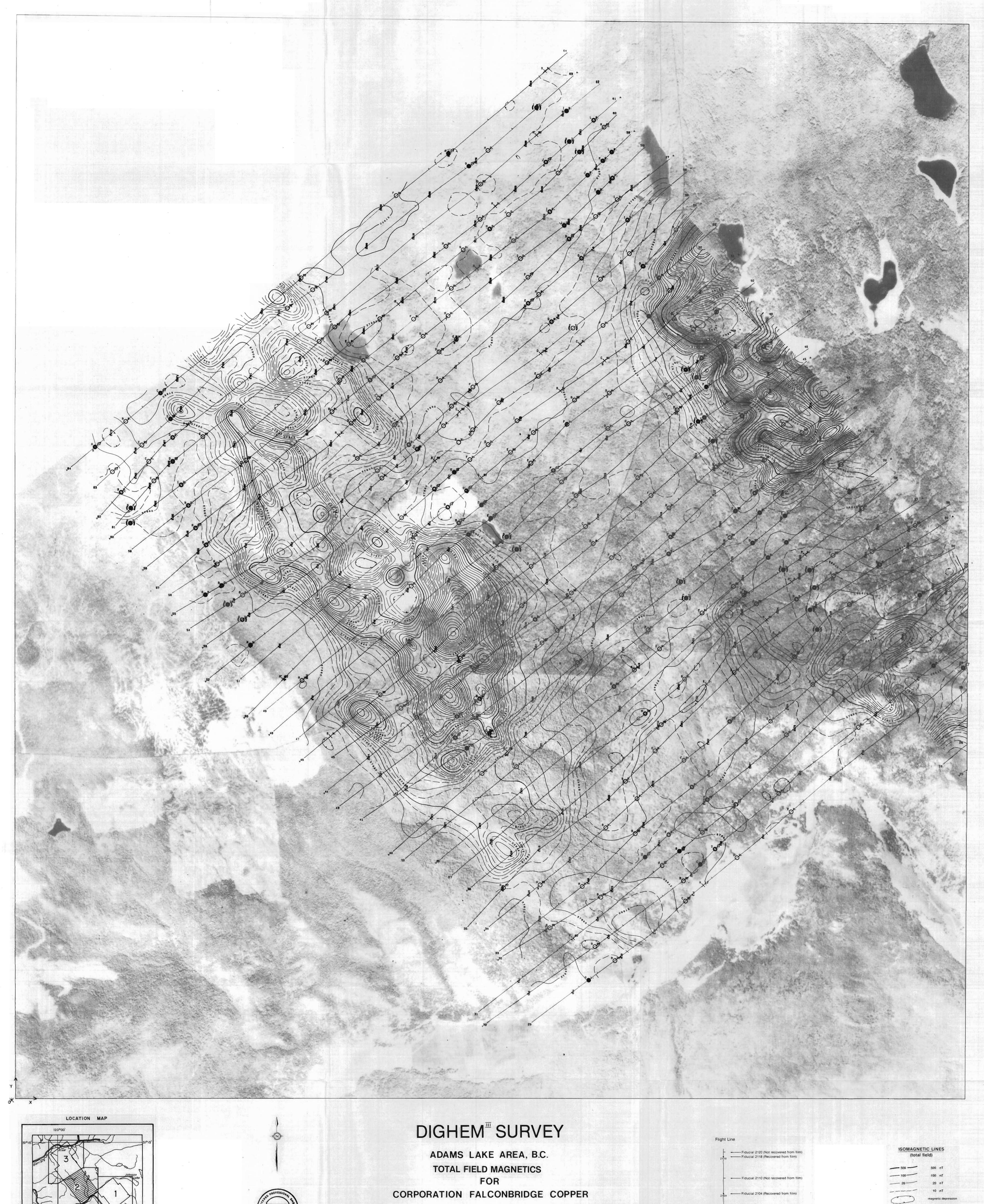


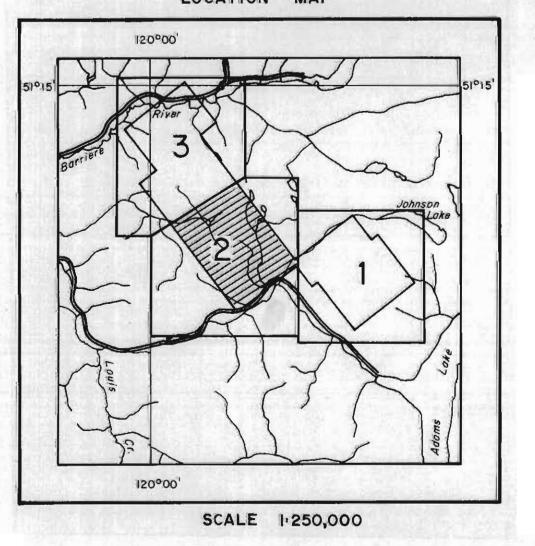


JOB DATE
204 JUNE, 84

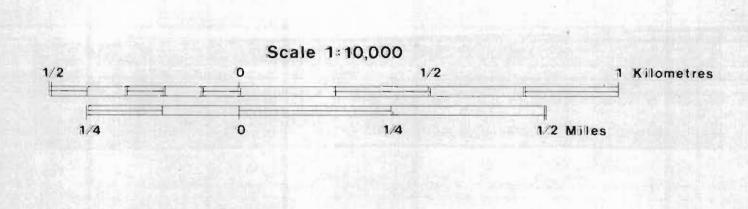


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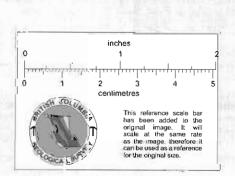


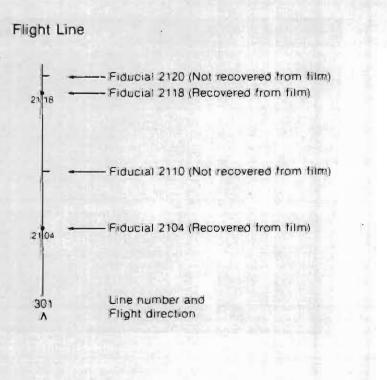


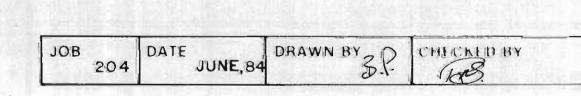


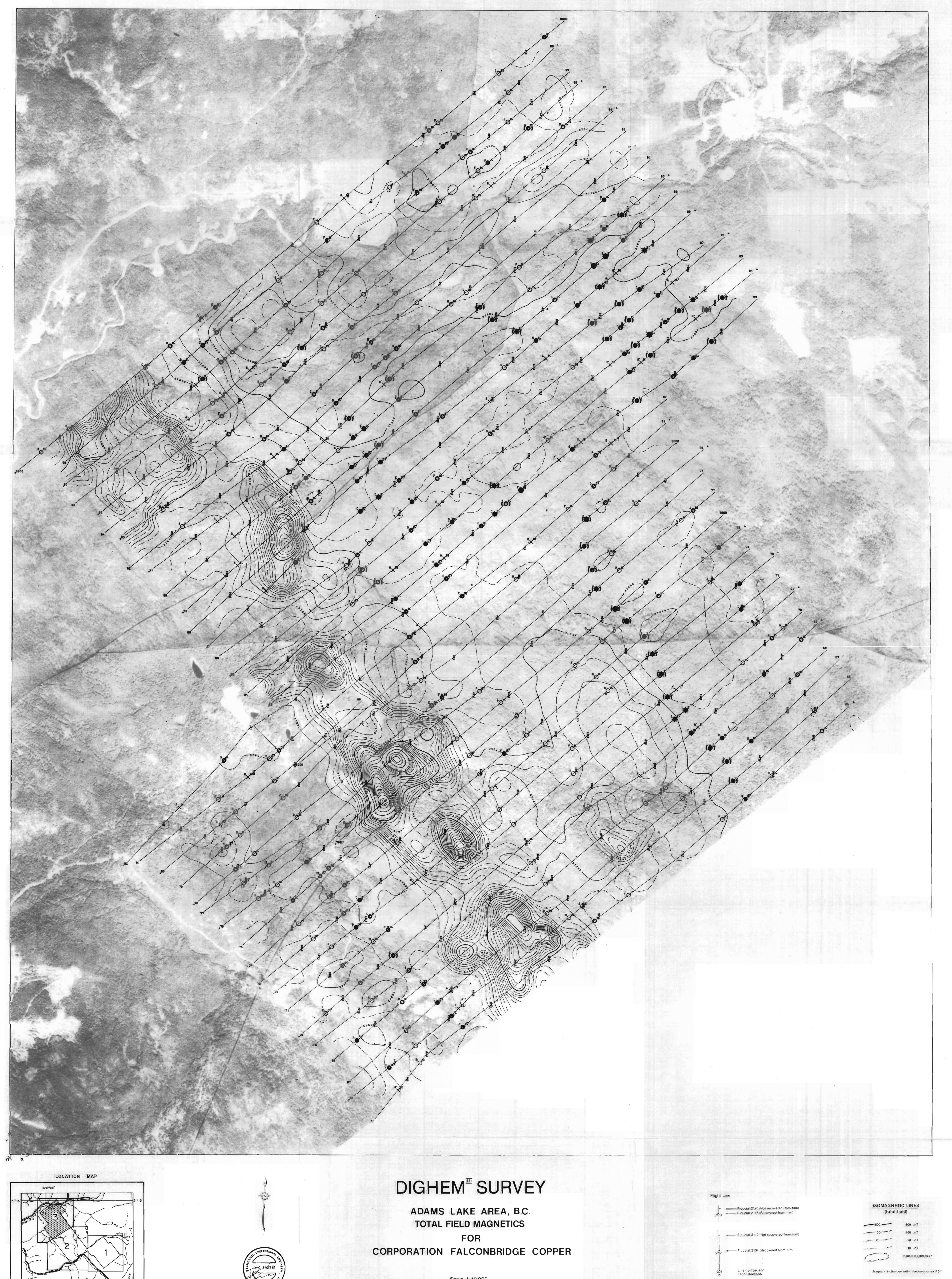


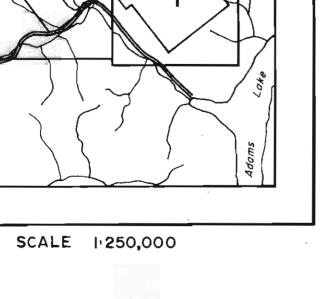
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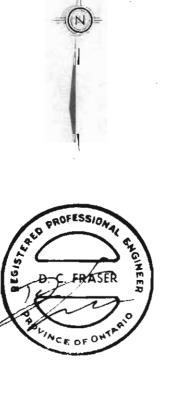


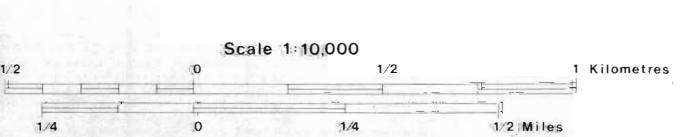




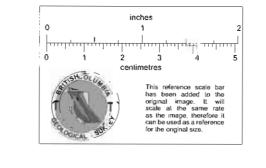


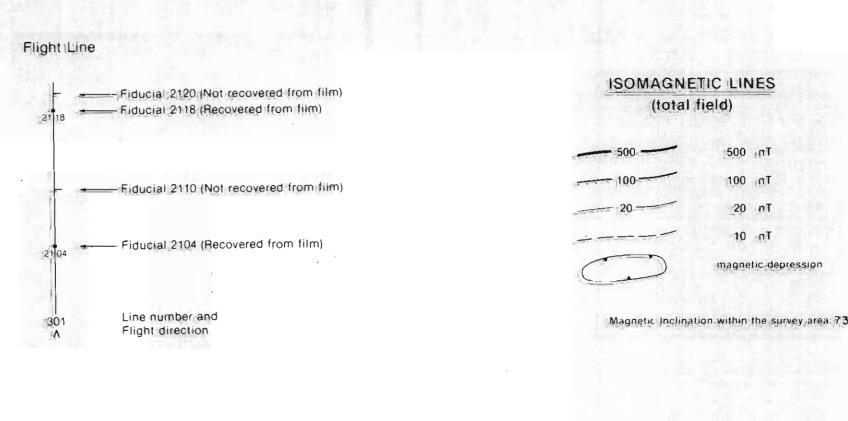


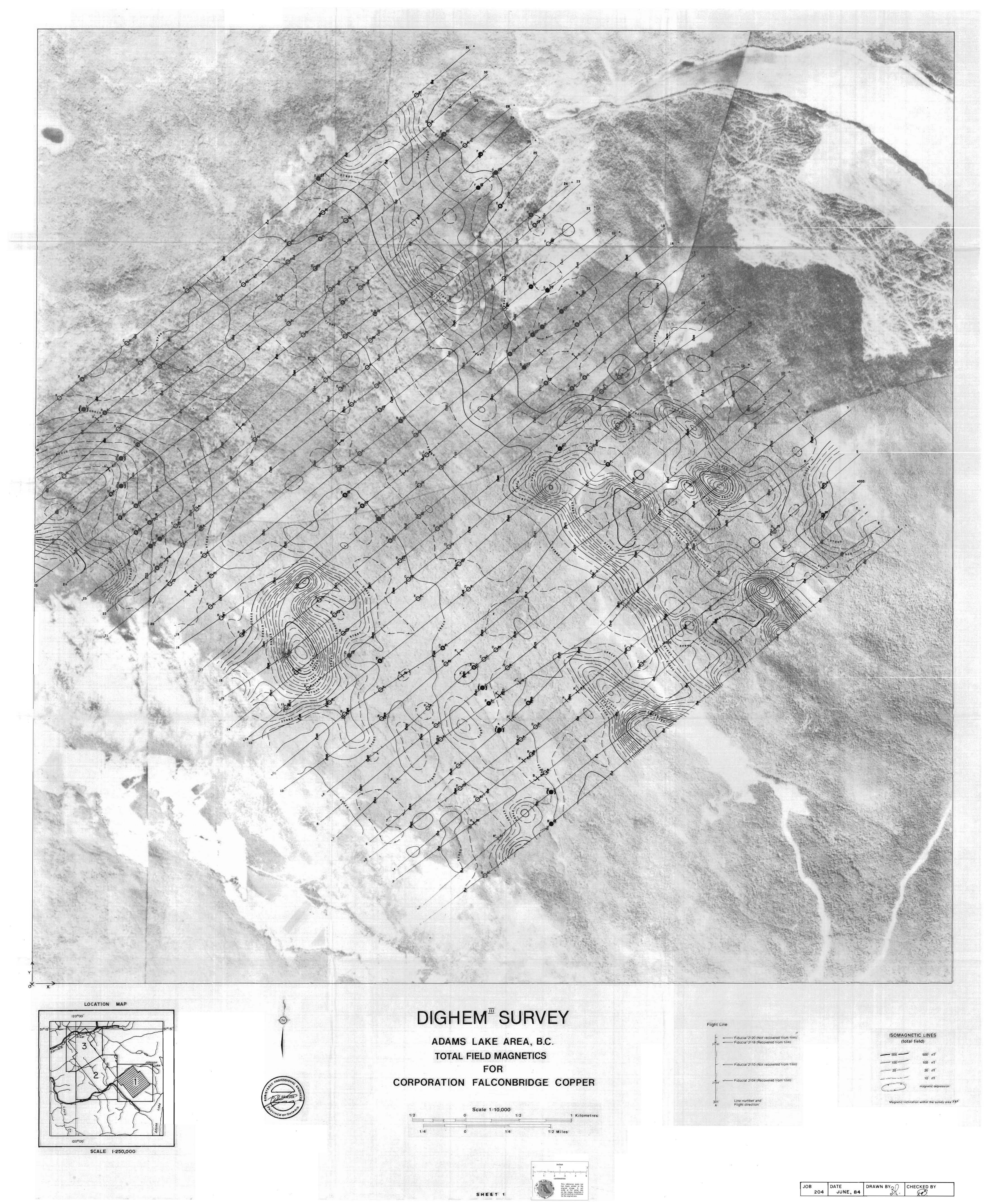




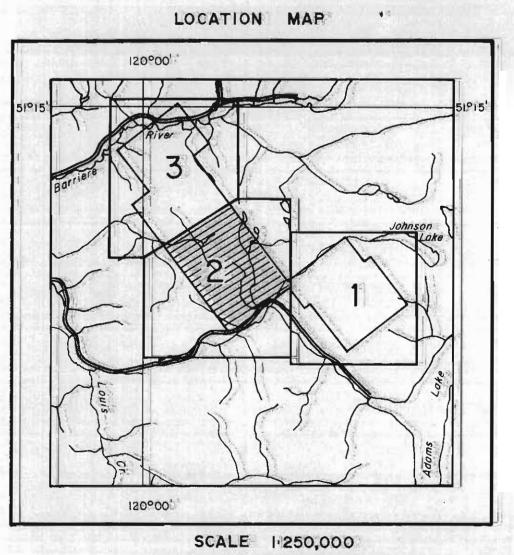
SHEET 3





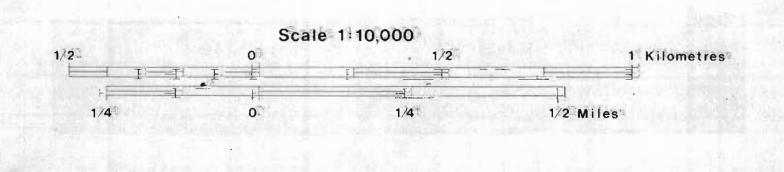




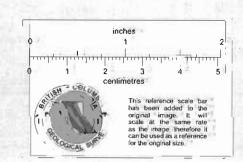


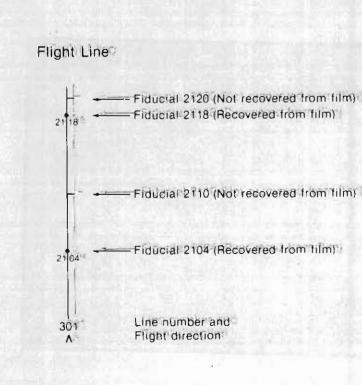


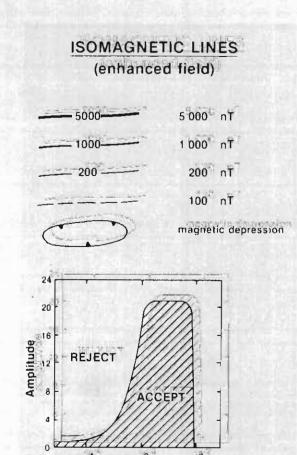
CORPORATION FALCONBRIDGE COPPER



SHEET 2

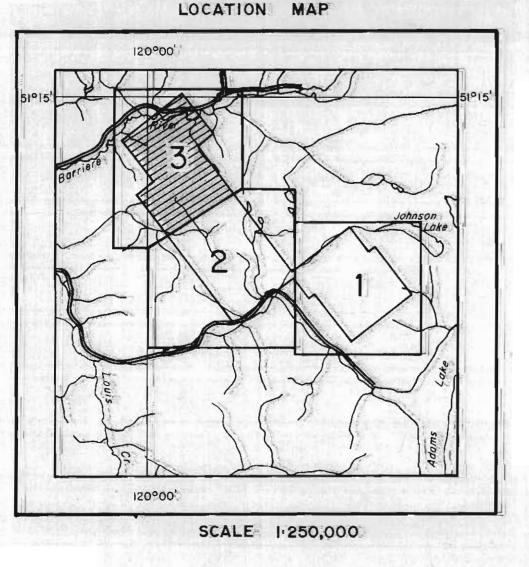




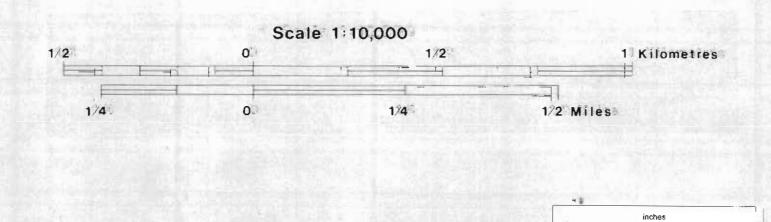


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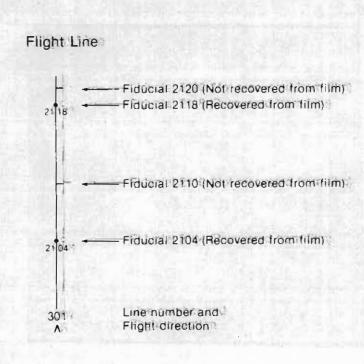


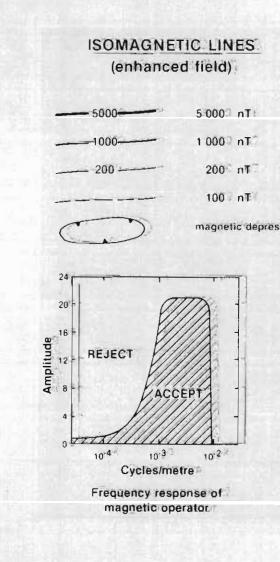






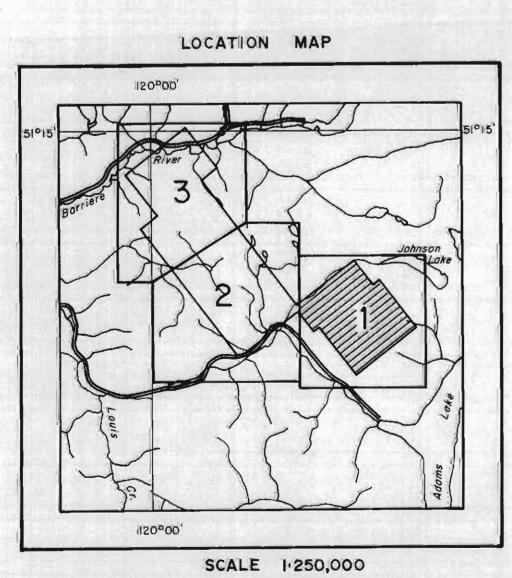
SHEET 3





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ENHANCED MAGNETICS
FOR
CORPORATION FALCONBRIDGE COPPER

Scale 1:10,000

1/2

0
1/2

1 Kilometres

1/4

0
1/4

1/2 Miles

SHEET 1

