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Mining Lands Section **File No** 26953

Control Sheet

TYPE OF SURVEY

✓ GEOPHYSICAL
___ GEOLOGICAL
___ GEOCHEMICAL
___ EXPENDITURE

MINING LANDS COMMENTS:

200 meter $\frac{1}{8}$ mi line spacing
206 km flown → 128 miles, 203 claims ⇒ 26 days per survey
assessed as total geophysical 26 days x 3 surveys = 78 days.
approved as 80 days to account for approximations.

LD

Signature of Assessor

Date

REPORT NO. 201

DIGHEM^{III} SURVEY
OF THE
RENNIE LAKE AREA, ONTARIO

FOR

ROBERT J. McGOWAN

BY

DIGHEM LIMITED

RECEIVED
JUL 17 1984
MINING LANDS SECTION

63.2278 v1.

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Toronto, Ontario
May 31, 1984

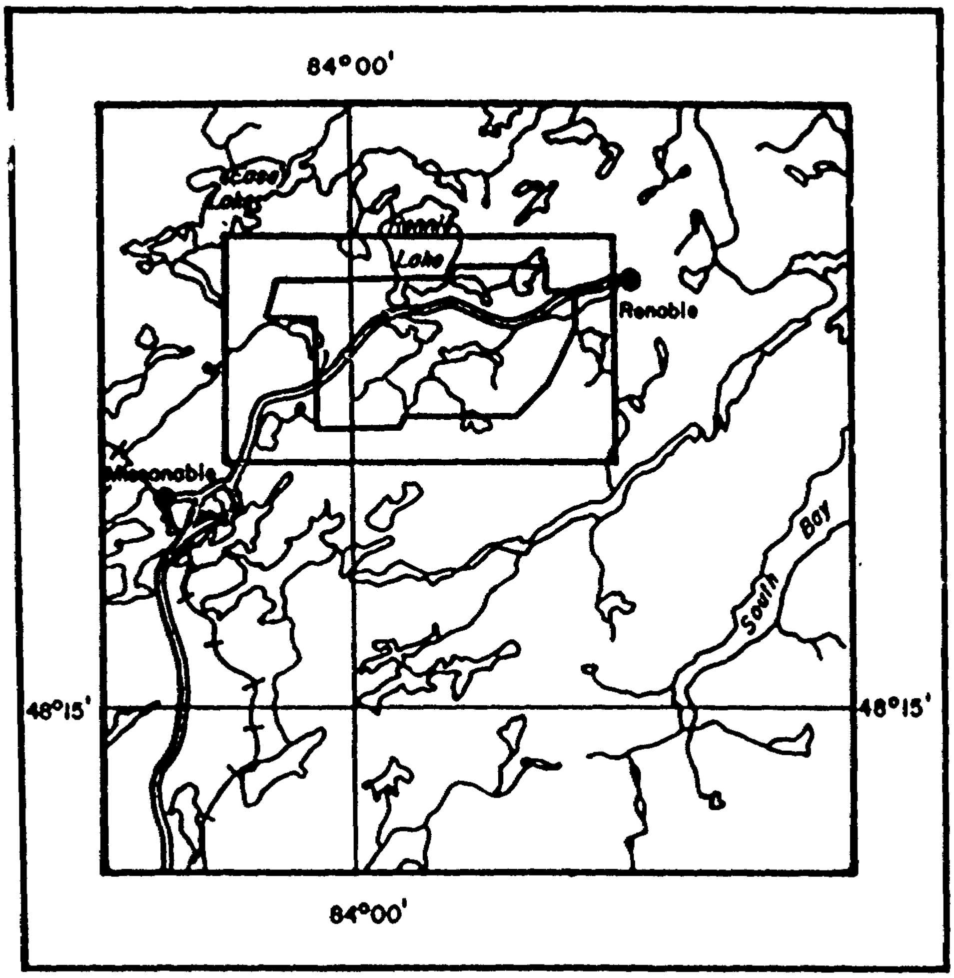
D.C. Fraser
President

SUMMARY AND RECOMMENDATIONS

A total of 206 km of survey was flown with the DIGHEM^{III} system in April 1984, over a property held by Robert J. McGowan near Rennie Lake, Ontario.

The survey outlined a number of 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 other information. The survey area has been explored a number of times by others. It had been surveyed earlier with the now obsolete DIGHEM^{II} system. A review of assesssment files will undoubtedly eliminate many conductors.

LOCATION MAP



SCALE 1:250,000

FIGURE 1
THE SURVEY AREA

1 INCH

CONTENTS

MAPS ACCOMPANYING THIS REPORT

APPENDICES

A. The Flight Record and Path Recovery

B. EM Anomaly List

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INTRODUCTION

A DIGHEM^{III} survey totalling 206 line-km was flown with a 200 m line-spacing for Robert J. McGowan, on April 13 and 14, 1984 in the Rennie Lake area of Ontario (Figure 1).

The NSM Astar turbine helicopter flew at an average airspeed of 100 km/h with an EM bird height of approximately 32 m. Ancillary equipment consisted of a Sonotek PMH 5010 magnetometer with its bird at an average height of 47 m, a Sperry radio altimeter, a Geocam sequence camera, an RMS GR33-1 analog recorder, a Sonotek SDS 1200 digital data acquisition system and a DigiData 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, an ambient EM noise channel (for the coaxial receiver), two channels of magnetics (coarse and fine count), two VLF-EM channels and a channel of radio altitude. The digital equipment recorded the EM data with a sensitivity of 0.2 ppm 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 bird swinging produces difficulties in flying the helicopter. The swinging results from the 5 m^2 of area which is presented by the bird to broadside gusts. The DIGHEM system nevertheless can be flown 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, half plane model. This model best reflects "discrete" 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 profiles. These may not appear on the electromagnetic 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.

In areas where magnetite causes the inphase components to become negative, the apparent conductance and depth of EM anomalies may be unreliable.

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 of magnetite. Most of these poorly-conductive magnetic features give rise to resistivity anomalies which are 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.

SECTION I: SURVEY RESULTS

CONDUCTORS IN THE SURVEY AREA

The survey covered a block of claims with 206 km of flying, the results of which are shown on one map sheet for each parameter. Table I-1 summarizes the EM responses with respect to conductance grade and interpretation.

The electromagnetic anomaly map shows the anomaly locations with the interpreted conductor shape, dip, conductance and depth being indicated by symbols. Direct 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. Some of the resistivity lows (i.e., conductive areas) coincide with bedrock conductors and others indicate lakes. The resistivity is generally greater than 300 ohm-m over the lakes, but can be below 10 ohm-m over bedrock conductors. The resistivity patterns may aid geologic mapping and in extending the length of known zones.

TABLE I-1

EM ANOMALY STATISTICS OF THE RENNIE LAKE AREA

CONDUCTOR GRADE	CONDUCTANCE RANGE	NUMBER OF RESPONSES
6	> 99 MHOS	2
5	50-99 MHOS	3
4	20-49 MHOS	14
3	10-19 MHOS	22
2	5- 9 MHOS	29
1	< 5 MHOS	132
X	INDETERMINATE	27
TOTAL		229

CONDUCTOR MODEL	MOST LIKELY SOURCE	NUMBER OF RESPONSES
B	DISCRETE BEDROCK CONDUCTOR	112
S	CONDUCTIVE COVER	113
(BLANK)		4
TOTAL		229

(SEE EM MAP LEGEND FOR EXPLANATIONS)

The magnetic map is extremely active, probably reflecting iron formation in places. The primary geologic trend is northwest-southeast. Magnetic dikes intersect this trend, and commonly strike N30°W.

The enhanced magnetic map shows the individual magnetic zones more distinctly than the total field magnetic map. For example, there is a magnetic correlation with 23I* which shows clearly on the enhanced map but which does not appear on the total field map.

The VLF-EM map contains a large number of northwest-southeast striking features. These reflect the geology to a large extent. Some distortion occurs due to lakes and, perhaps, due to cross-cutting faults. The VLF-EM map is unusually definitive, and may help in the exploration program.

The following description of EM anomalies focusses primarily on the probably bedrock conductors (interpretive symbol "B" or "B?"). Anomalies which have been interpreted as due to conductive overburden (interpretive symbol "S" or "S?") are generally ignored in this discussion.

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* EM anomaly I on line 23.

Anomaly	Length	Conductance Grade	Features
2xA-8I	4,600 ft.	1-4	The conductor occurs within a resistivity low, and this map suggests the conductor extends to 15M. The total field and enhanced magnetic maps, however, do not support this extension.
3D, 5B-9C 8G-9B	200 to 3,300 ft.	1-3, 6	The conductor occurs on the northeast flank of a very strong magnetic high having iron formation characteristics. The EM anomalies generally occur within a resistivity low apart from the grade 6 EM anomaly 3D. This highly conductive EM anomaly is suspicious because of the lack of an associated resistivity low. It probably reflects a very short, thin conductor without value economically.
8D	200 ft.	1	A small but distinct resistivity low coincides with this non-magnetic single-line EM anomaly.
10D, 11G-12H, 13E-15M, 10B-12F	200 to 1,700 ft.	1-3	The EM and resistivity maps suggest that the multi-line conductors of this grouping form the southeast extension of the two conductive groups described first above. The magnetic maps, however, do not support this association. Anomaly 10D is not particularly attractive although it is believed to reflect poorly conductive bedrock material. Anomalies 10D, 11G-12H and 13E-15M occur on the southwest flank on an enhanced magnetic high. Anomaly 10B-12F has a slight magnetic correlation which can only be seen on the enhanced map.

Anomaly	Length	Conductance Grade	Features
18D-20L, 22N, 23K	200, 2,000 ft.	1-4	A number of essentially single-line anomalies occur which probably reflect bedrock conductors. A questionable line-to-line correlation is shown. The correlation is supported by resistivity and VLF-EM, but poorly so by magnetics.
13D, 15L-18C, 21H-24J, 26I-27G, 31B-45A	200 - 10,000 ft.	1-4	A series of EM anomalies appears to occur along a single conductive horizon, as is also supported by the VLF-EM map. The conductors occasionally have a magnetic correlation; in particular note 22J-23I. Thick conductive sections may occur at 24J and 34C, the latter having a magnetic correlation. The resistivity map indicates that the conductor is part of a wide conductive zone which encompasses the EM grouping described immediately below.
22L-35C, 22M, 24L-26K, 32G, 33C, 37C-39D, 45B	200 - 10,000 ft.	1-6	The EM anomalies of this grouping occur within the large conductive zone described immediately above. A sporadic magnetic correlation exists; in particular note 24K-28G and 33E-35C on the enhanced magnetic map. The correlation is not evident on the total field map for 24K-28G. This illustrates the superior resolving power of the enhanced map.
16H, 20G, 22I-23H, 24I	200 - 1,300 ft.	1-3	Discontinuous bedrock conductors occur along the southwest flank of the above described large conductive zone. They may, in part, reflect conductive sections within iron

Anomaly	Length	Conductance Grade	Features
			formation, particularly 20G and 22I-23H. All the EM anomalies of this grouping, except 24I, lie within a VLF-EM high. This high also encompasses 19F, 21G, 24H and 25I which may reflect conductive overburden.
11A-16D, 19E, 22F, 25H-28D	200 - 4,400 ft.	1-4	A single magnetic horizon encompasses these bedrock conductors, and also 21E, 24E, 29A and 30A which probably reflect conductive cover. The VLF-EM map contains all these anomalies within a single high. The resistivity map contains some distortions due to conductive cover, but resistivity lows generally coincide with the bedrock anomalies.
11B	200 ft.	1	The EM anomaly occurs on a single line and has an interpretive symbol "S?", indicating conductive overburden. The resistivity map shows the anomaly extends to line 12. The VLF-EM map indicates the EM anomaly forms part of a trend that extends from line 7 to 16, and possibly longer in both directions. It encompasses EM anomaly 8C, which has an interpretive symbol "S". The zone is non-magnetic and could reflect a structural weakness rather than conductive cover.
13A, 15E, 15D-17C, 16B, 17D 19D	200 - 2,000 ft.	1-2	The anomalies of this grouping occur on the north flank of an enhanced magnetic high, apart from 16B which occurs close to the magnetic peak. The resistivity and VLF-EM maps suggest that 13A, 15D-17C and

Anomaly	Length	Conductance Grade	Features
			19D may occur along a single conductive horizon.
17A, 20D, 24A, 24B	200 ft.	1	These four single-line anomalies probably reflect short bedrock conductors. All are non-magnetic except for 20D. A weak magnetic correlation occurs with 20D that can only be seen on the profiles. A magnetic high occurs close to 24B.
26N	200 ft.	1	A weak magnetic correlation occurs with this weak single-line conductor. The resistivity map suggests that the conductor may extend east-southeast to line 28.
39K-47xB	6,600+ft.	1-5	A distinctive resistivity low and VLF-EM high encompass this long conductor. It has yielded some high conductances (e.g., 42G is of grade 6), and thick conductive sections appear to exist (40I, 42G). The magnetic maps, however, do not support this line-to-line correlation, suggesting, instead, that a series of short en echelon conductors may actually occur.

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 use of this model. A later section entitled Resistivity 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

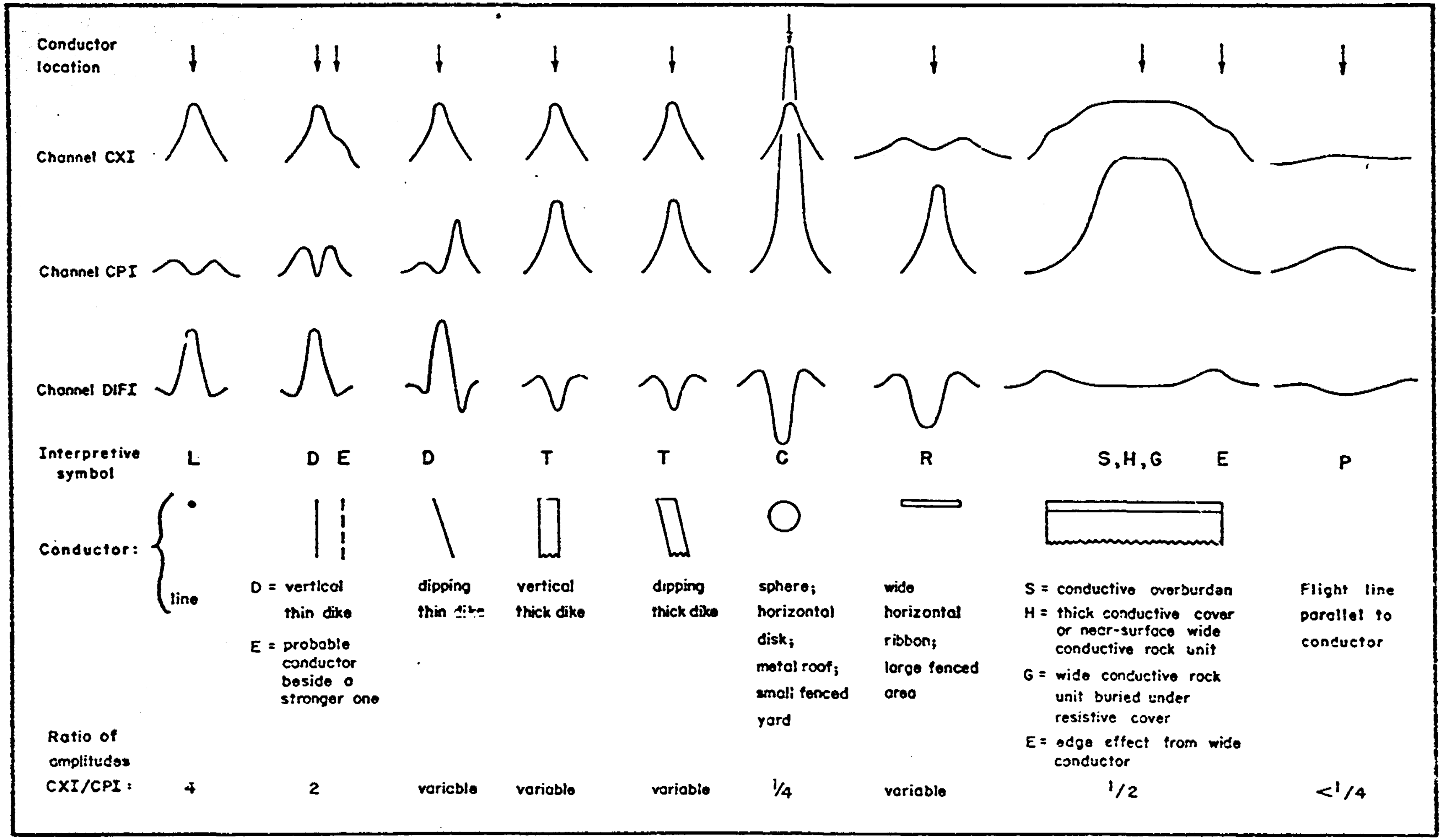

Figure II - 1 Typical DIGHEM anomaly shapes grades of conductance, as shown in Table II-1. The conductance in mhos is the reciprocal of resistance in ohms.

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

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[1] 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).

For bedrock conductors, the higher anomaly grades indicate increasingly higher conductances. Examples: DIGHEM's New Insco copper discovery (Noranda, Canada) yielded a grade 4 anomaly, as did the neighbouring copper-zinc Magusi River ore body; Mattabi (copper-zinc, Sturgeon Lake, Canada) and Whistle (nickel, Sudbury, Canada) gave grade 5; and DIGHEM's Montcalm nickel-copper discovery (Timmins, Canada) yielded a grade 6 anomaly. Graphite and sulfides can span all grades but, in any 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 an 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 grade and depth estimate illustrates which of 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 conductance grade symbols. The symbols can stand alone with geology when planning a follow-up program. The actual 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 of 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 amplitudes. Local anomaly amplitudes are shown in the 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 compute the horizontal sheet and conductive 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 anomaly (e.g., CPI) increases relative to the coaxial 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 10 m. Thin conductors are indicated on the EM map by the interpretive symbol "D", and thick conductors by "T". For 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

Areas of widespread conductivity are 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. Local 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 data. The advantage of the resistivity parameter is 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 as 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)[2]. This model consists of a resistive layer overlying a conductive half space. The 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

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[2] 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[3]. 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.

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[3] 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 thickness. This can lead to difficulties in recognizing 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.

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[4] Refer to Fraser, 1981, Magnetite mapping with a multi-coil 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:

1. Channels CXS and CPS (see Appendix A) measure 50 and 60 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 is the vertically dipping thin dike. Such a body, however, yields an amplitude ratio of 2 rather than 4. 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

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[5] See Figure II-1 presented earlier.

small fenced yard.[4] 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.[4] 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.

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[4] 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).

The magnetometer data are digitally recorded in 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. The 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

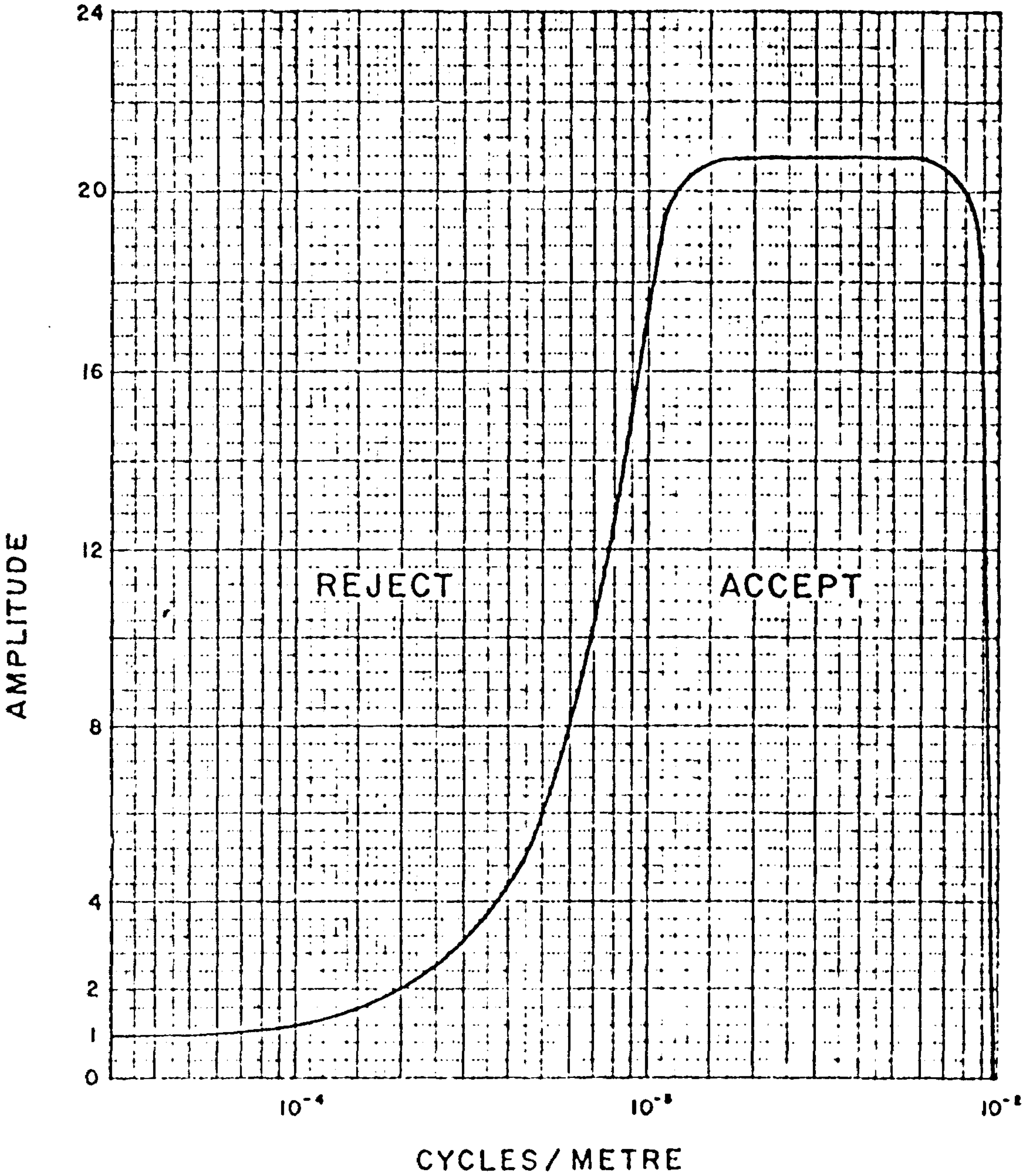

Figure II-2 Frequency response of magnetic enhancement operator.

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.

VLF-EM

VLF-EM anomalies are not EM anomalies in the conventional sense. EM anomalies primarily reflect eddy currents flowing in conductors which have been energized inductively by the primary field. In contrast, VLF-EM anomalies primarily reflect current gathering, which is a non-inductive phenomenon. The primary field sets up currents which flow weakly in rock and overburden, and these tend to collect in low resistivity zones. Such zones may be due to massive sulfides, shears, river valleys and even unconformities.

The Herz Industries Ltd Totem VLF-electromagnetometer measures the total field and vertical quadrature components. Both these components are digitally recorded in the aircraft with a sensitivity of 0.1 percent. The total field yields peaks over VLF-EM current concentrations

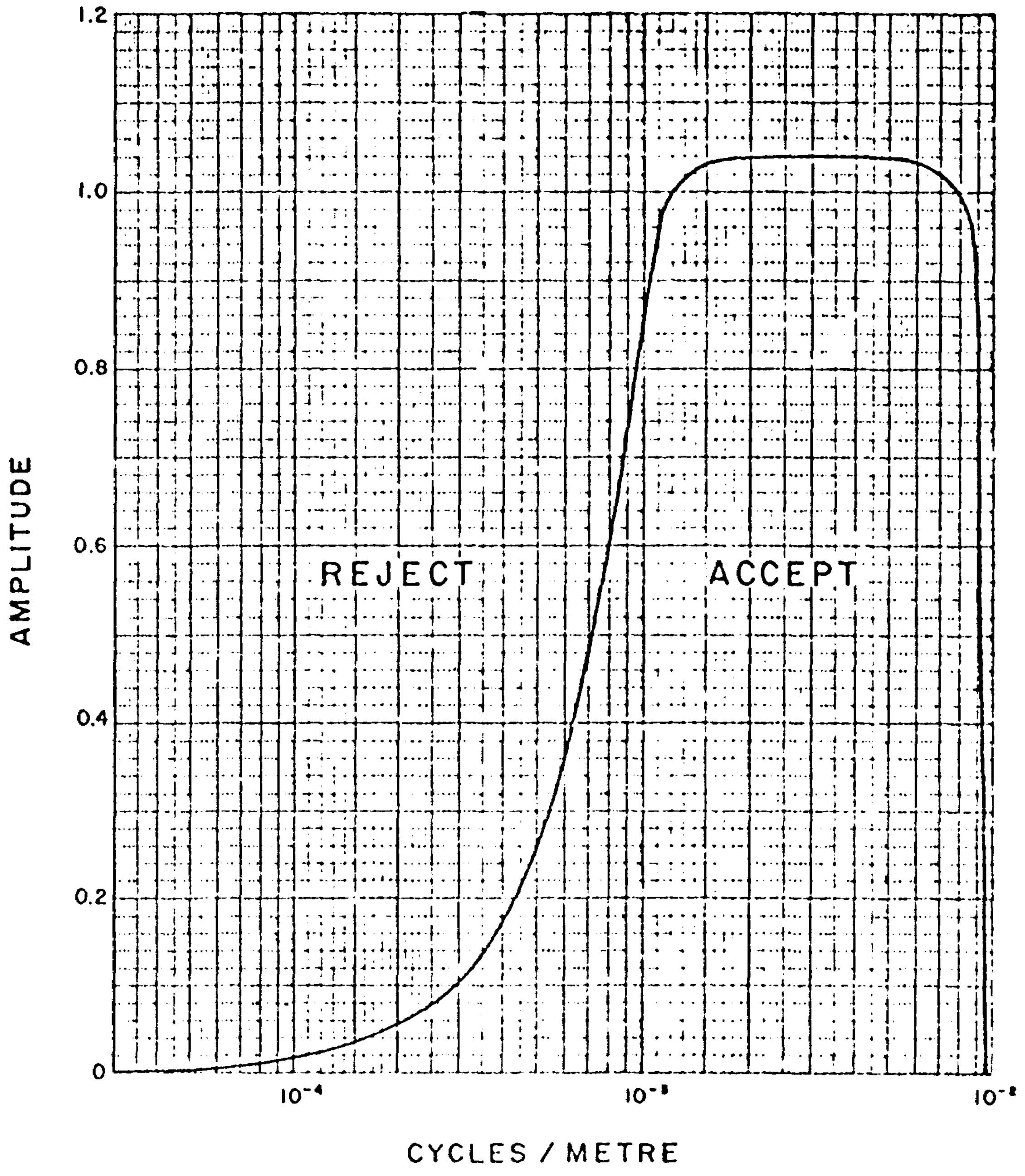

Figure II-3 Frequency response of VLF - EM operator.

whereas the quadrature component tends to yield crossovers. Both appear as traces on the profile records. The total field data also are filtered digitally and displayed on a contour map, to facilitate the recognition of trends in the rock strata and the interpretation of geologic structure.

The response of the VLF-EM total field filter operator in the frequency domain (Figure II-3) is basically similar to that used to produce the enhanced magnetic map (Figure II-2). The two filters are identical along the abscissa but different along the ordinant. The VLF-EM filter removes long wavelengths such as those which reflect regional and wave transmission variations. The filter sharpens short wavelength responses such as those which reflect local geological variations. The filtered total field VLF-EM contour map is produced with a contour interval of one percent.

MAPS ACCOMPANYING THIS REPORT

Five map sheets accompany this report:

Electromagnetic Anomalies	1 map sheet
Resistivity	1 map sheet
Total Field Magnetics	1 map sheet
Enhanced Magnetics	1 map sheet
Filtered total VLF-EM field	1 map sheet

Respectfully submitted,
DIGHEM LIMITED

D Fraser

D.C. Fraser
President

AA DCF-413/cs

APPENDIX A

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 1:15,840. 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

Channel Name	(Freq)	Observed parameters	Scale 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
CPI	(7200 Hz)	horizontal coplanar coil-pair inphase	1 ppm
CPQ	(7200 Hz)	horizontal coplanar coil-pair quadrature	1 ppm
VT1		VLF-EM total field	1 %
VQ2		VLF-EM vertical quadrature	1 %
		Computed Parameters	
DIFI	(900 Hz)	difference function inphase from CXI and CPI	1 ppm
DIFQ	(900 Hz)	difference function quadrature from CXQ and CPQ	1 ppm
REC1		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	(900 Hz)	log resistivity	.03 decade
RES	(7200 Hz)	log resistivity	.03 decade
DP	(900 Hz)	apparent depth	3 m
DP	(7200 Hz)	apparent depth	3 m
FEO%	(900 Hz)	apparent weight percent magnetite	0.25%

APPENDIX B

EM ANOMALY LIST

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	COAXIAL 900 HZ		COPLANAR 900 HZ		COPLANAR 7200 HZ		VERTICAL DIKE		HORIZONTAL SHEET		CONDUCTIVE EARTH	
ANOMALY/ FID/INTERP	REAL PPM	QUAD PPM	REAL PPM	QUAD PPM	REAL PPM	QUAD PPM	COND MHOS	DEPTH* M	COND MHOS	DEPTH M	RESIS OHM-M	DEPTH M
LINE 46	(FLIGHT 8)											
B 1961 B	16	6	14	7	28	12	33	19	2	112	31	80
LINE 45	(FLIGHT 8)											
A 1868 B	10	3	9	3	13	9	45	28	11	145	2	132
B 1870 B	9	3	9	3	13	8	38	29	1	167	673	39
E 1905 S	4	3	2	0	4	4	1	44	1	135	852	87
K 1925 B	5	4	6	4	18	22	11	43	1	160	151	104
LINE 44	(FLIGHT 8)											
B 1861 B	14	2	4	3	9	14	1	3	1	124	136	95
E 1828 S	0	1	0	1	0	11	1	10	1	58	5982	2
G 1817 S	0	2	0	5	0	41	1	0	1	0	2934	0
I 1809 B	0	5	2	4	4	31	1	0	1	7	2769	0
LINE 43	(FLIGHT 8)											
D 1779 S	0	0	0	3	0	21	1	0	1	187	1035	0
E 1784 B	9	11	12	14	43	33	8	22	1	101	229	49
F 1791 S	0	0	0	3	0	11	1	0	1	53	6414	0
LINE 42	(FLIGHT 8)											
A 1724 B?	4	0	2	1	3	7	1	0	1	183	386	138
B 1706 S	1	0	0	1	2	15	1	0	1	28	4137	0
E 1682 S	2	1	2	1	0	17	1	0	1	103	8280	0
G 1668 B	48	17	108	47	167	41	56	0	18	43	1	37
LINE 41	(FLIGHT 8)											
B 1603 B	53	14	72	20	94	16	95	16	3	104	14	80
C 1619 S?	1	2	1	3	13	11	1	22	1	95	227	66
E 1651 S	0	2	0	6	5	57	1	0	1	141	1035	0
F 1659 B	5	2	19	10	33	12	24	19	3	121	25	89
LINE 40	(FLIGHT 8)											
C 1583 B	8	6	10	10	25	18	11	20	2	101	34	69
D 1576 S	0	2	2	6	8	65	1	0	1	1	1547	0
E 1565 S	2	2	0	2	4	13	1	2	1	32	3691	0
I 1527 B	13	5	18	8	31	15	35	9	4	93	10	71
LINE 39	(FLIGHT 8)											
B 1427 S	2	2	0	9	5	78	1	0	1	0	1991	0
C 1434 B	6	3	5	3	18	8	15	42	1	127	69	86
D 1437 B	5	4	4	8	24	14	6	29	1	94	177	46

* ESTIMATED DEPTH MAY BE UNRELIABLE BECAUSE THE STRONGER PART OF THE CONDUCTOR MAY BE DEEPER OR TO ONE SIDE OF THE FLIGHT LINE, OR BECAUSE OF A SHALLOW DIP OR OVERBURDEN EFFECTS.

	COAXIAL 900 HZ		COPLANAR 900 HZ		COPLANAR 7200 HZ		VERTICAL DIKE		HORIZONTAL SHEET		CONDUCTIVE EARTH	
ANOMALY/ FID/INTERP	REAL PPM	QUAD PPM	REAL PPM	QUAD PPM	REAL PPM	QUAD PPM	COND MHOS	DEPTH* M	COND MHOS	DEPTH M	RESIS OHM-M	DEPTH M
LINE 39	(FLIGHT	8)										
G 1476 S	0	1	0	1	0	18	1	0	1	25	5075	0
K 1496 B	31	12	69	30	115	31	46	0	3	69	18	45
LINE 38	(FLIGHT	8)										
B 1415 S	0	2	1	3	11	51	1	0	1	10	1003	0
C 1408 B	5	5	3	5	21	13	6	33	1	93	954	0
D 1404 B	25	6	22	10	38	40	62	16	6	101	5	84
F 1383 S	2	4	0	6	8	67	1	0	1	6	1399	0
G 1371 S	0	1	0	1	1	13	1	3	1	39	5602	0
LINE 37	(FLIGHT	8)										
A 1222 S	0	1	0	1	3	4	1	38	1	95	2293	39
B 1232 B	0	5	2	4	9	12	1	24	1	104	144	78
C 1235 B	6	4	5	4	19	18	12	22	1	123	182	67
E 1257 S	0	0	0	2	2	21	1	0	1	14	4334	0
H 1295 S	0	8	0	25	31	180	1	0	1	12	494	0
I 1296 S?	0	10	0	35	64	31	1	12	1	20	431	0
LINE 36	(FLIGHT	8)										
B 1198 B?	2	1	0	1	8	5	2	34	1	148	21	135
G 1138 S	1	2	0	4	12	68	1	0	1	42	704	10
LINE 35	(FLIGHT	8)										
B 1064 B	0	1	0	1	19	6	6	40	2	124	8	116
C 1068 B	5	7	9	10	31	30	6	17	2	109	40	75
F 1098 S	0	1	0	1	0	10	1	0	1	43	6169	0
H 1126 S?	0	9	0	31	40	231	1	0	1	8	453	0
LINE 34	(FLIGHT	8)										
C 1020 B	26	8	21	9	42	11	48	21	7	100	4	84
D 1016 B	3	7	7	4	26	21	5	13	2	127	33	92
E 1011 S	6	0	0	1	4	13	1	3	1	169	393	127
LINE 33	(FLIGHT	8)										
B 890 B	4	9	5	9	21	26	9	36	1	61	758	4
C 892 B	4	9	7	9	25	26	4	27	2	118	62	80
E 896 B	12	8	21	12	33	30	19	24	2	101	55	66
F 907 S	0	2	0	3	2	46	1	0	1	0	2796	0
H 931 S	0	1	0	2	3	28	1	0	1	3	3606	0
LINE 32	(FLIGHT	8)										
E 840 B	2	6	7	4	24	3	6	25	1	94	985	0

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	COAXIAL 900 HZ		COPLANAR 900 HZ		COPLANAR 7200 HZ		VERTICAL DIKE		HORIZONTAL SHEET		CONDUCTIVE EARTH	
ANOMALY/ FID/INTERP	REAL PPM	QUAD PPM	REAL PPM	QUAD PPM	REAL PPM	QUAD PPM	COND MHOS	DEPTH* M	COND MHOS	DEPTH M	RESIS OHM-M	DEPTH M
LINE 32 (FLIGHT 8)												
G 838 B	10	2	13	2	16	6	106	38	4	122	13	97
H 835 B	6	5	9	4	14	6	14	37	1	119	188	66
I 831 S	0	4	0	12	17	87	1	0	1	7	808	0
J 803 S?	0	28	0	84	326	552	1	0	1	0	260	0
LINE 31 (FLIGHT 8)												
A 723 S?	0	1	0	0	0	6	1	0	1	48	6495	0
B 725 S?	0	1	2	3	5	4	1	55	1	66	4838	4
C 730 B	6	6	5	6	10	39	6	17	1	90	218	38
D 737 S	1	1	0	2	0	14	1	0	1	14	4705	0
LINE 30 (FLIGHT 8)												
A 689 S	2	1	1	3	2	13	1	0	1	51	3796	0
B 659 B	21	19	16	25	47	111	11	2	2	55	47	25
D 626 S	3	2	0	11	31	70	1	0	1	8	350	0
LINE 29 (FLIGHT 8)												
A 509 S	2	1	0	1	9	5	2	32	1	118	210	87
D 480 B	15	9	11	16	41	41	13	7	2	77	37	46
E 462 S	0	2	0	3	6	31	1	0	1	21	1841	0
G 446 S	2	2	0	4	12	50	1	0	1	15	854	0
LINE 28 (FLIGHT 7)												
D 2027 S?	0	3	0	7	5	66	1	0	1	0	2148	0
E 2032 S	0	1	0	2	2	7	1	18	1	35	5658	0
G 2056 B	25	20	22	35	89	59	12	9	2	81	38	51
H 2070 S	1	1	0	1	4	6	4	70	1	164	1035	0
I 2095 S	4	19	0	56	206	361	1	0	1	0	327	0
LINE 27 (FLIGHT 7)												
C 1983 S?	0	3	0	5	10	19	1	3	1	48	721	14
G 1962 B	2	4	0	2	13	2	2	25	1	136	1035	0
H 1958 B	17	11	12	19	55	39	12	7	1	63	60	30
J 1952 S?	2	9	0	15	33	143	1	0	1	7	425	0
K 1949 S	0	3	0	6	11	62	1	0	1	13	1023	0
N 1926 S	0	10	0	17	36	154	1	0	1	7	414	0
LINE 26 (FLIGHT 7)												
E 1822 S	0	1	0	1	6	22	1	0	1	41	1312	1
F 1829 S?	2	2	0	2	4	19	1	0	1	18	4762	0
I 1852 B	11	14	15	14	48	38	9	15	2	87	31	58

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	COAXIAL 900 HZ		COPLANAR 900 HZ		COPLANAR 7200 HZ		VERTICAL DIKE		HORIZONTAL SHEET		CONDUCTIVE EARTH	
ANOMALY/ FID/INTERP	REAL PPM	QUAD PPM	REAL PPM	QUAD PPM	REAL PPM	QUAD PPM	COND MHOS	DEPTH* M	COND MHOS	DEPTH M	RESIS OHM-M	DEPTH M
LINE 26 (FLIGHT 7)												
J 1857 B	34	28	20	41	128	102	12	5	1	39	63	12
K 1860 B?	0	11	20	31	81	318	1	0	1	8	131	0
L 1862 S	0	15	0	34	76	274	1	4	1	13	425	0
N 1892 B	0	2	3	10	33	35	1	20	1	68	341	22
LINE 25 (FLIGHT 7)												
E 1788 S	0	2	0	3	8	12	1	0	1	138	1035	0
H 1781 B	4	15	0	12	24	35	2	0	1	46	773	0
I 1767 S	0	1	0	1	0	19	1	0	1	9	4663	0
K 1756 B	10	17	9	35	98	31	4	0	1	63	99	26
L 1754 B?	2	9	6	30	110	202	1	0	1	9	113	0
LINE 24 (FLIGHT 7)												
A 1629 B	0	2	2	10	21	25	1	1	1	57	348	8
B 1632 B?	0	1	0	1	6	9	1	29	1	101	769	59
E 1645 S?	1	4	0	5	12	10	2	23	1	92	972	0
H 1664 S?	0	3	0	3	15	8	1	0	1	99	966	4
I 1668 B	12	9	7	8	31	11	12	31	1	111	132	64
J 1672 B	28	17	31	35	120	72	17	21	2	69	25	45
K 1679 B	18	19	8	58	46	186	5	1	1	63	114	26
L 1682 B	11	46	7	106	348	708	2	0	1	5	297	0
LINE 23 (FLIGHT 7)												
D 1564 S	0	1	0	3	6	33	1	0	1	123	1035	0
E 1560 S	0	0	0	1	5	9	1	11	1	47	4246	0
H 1552 B	0	2	0	3	10	3	4	37	1	120	164	90
I 1545 B	47	26	39	41	136	66	24	0	3	56	15	34
J 1540 B	18	10	13	10	49	52	19	9	2	73	46	41
K 1530 B?	4	1	3	1	8	6	41	64	1	200	1035	0
L 1517 S	0	2	0	6	18	45	1	0	1	21	512	0
LINE 22 (FLIGHT 7)												
A 1435 S?	0	1	0	1	4	5	1	35	1	53	6339	0
D 1441 S	0	3	0	6	8	35	1	0	1	73	867	0
F 1449 B	1	17	3	17	29	33	6	10	1	27	652	0
I 1468 B	0	6	0	8	7	13	8	39	1	80	846	6
J 1474 B	20	17	9	17	31	39	11	16	1	62	156	22
K 1477 S	0	12	6	29	60	230	1	0	1	9	252	0
L 1482 B	0	4	0	1	8	21	1	1	1	65	297	37
M 1484 B?	0	4	0	3	11	21	1	4	1	93	152	66
N 1489 B	9	4	2	7	17	35	11	35	1	80	345	28

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ANOMALY/ FID/INTERP	COAXIAL 900 HZ REAL PPM	COAXIAL 900 HZ QUAD PPM	COPLANAR 900 HZ REAL PPM	COPLANAR 900 HZ QUAD PPM	COPLANAR 7200 HZ REAL PPM	COPLANAR 7200 HZ QUAD PPM	VERTICAL DIKE COND MHOS	VERTICAL DIKE DEPTH* M	HORIZONTAL SHEET COND MHOS	HORIZONTAL SHEET DEPTH M	CONDUCTIVE EARTH RESIS OHM-M	CONDUCTIVE EARTH DEPTH M
LINE 22	(FLIGHT	7)										
O 1504 S	0	3	0	8	38	69	1	0	1	19	234	0
LINE 21	(FLIGHT	7)										
C 1383 S	0	2	0	2	0	24	1	0	1	1	3714	0
E 1379 S	0	0	0	1	3	10	1	0	1	24	2723	0
F 1375 S	0	1	0	2	3	18	1	0	1	3	3879	0
G 1363 S?	0	1	0	1	5	3	2	41	1	127	399	88
H 1357 B	7	7	0	8	22	14	5	27	1	95	949	3
J 1354 S	0	4	0	10	31	62	1	0	1	12	331	0
LINE 2100	(FLIGHT	7)										
A 1196 S	2	2	2	6	29	54	1	0	1	17	299	0
LINE 20	(FLIGHT	7)										
C 1131 S	0	0	0	1	0	15	1	0	1	22	4649	0
D 1141 B?	0	2	0	6	3	63	1	0	1	0	2260	0
E 1146 S	0	2	0	6	2	61	1	0	1	0	2219	0
G 1150 B?	0	7	2	7	17	13	8	22	1	107	1035	0
J 1158 S	0	15	2	36	111	339	1	0	1	10	126	0
L 1170 B	5	6	9	14	40	39	6	33	1	100	62	64
N 1184 S	4	6	2	15	62	112	1	0	1	22	121	5
LINE 19	(FLIGHT	7)										
D 1070 B?	0	2	2	1	9	14	5	56	1	173	1035	0
E 1061 B?	0	5	0	3	6	11	7	33	1	128	1035	0
F 1045 S?	0	0	0	0	5	11	1	10	1	202	1035	0
G 1037 S	0	2	0	15	15	41	1	0	1	18	669	0
J 1023 B?	2	3	0	12	31	104	1	0	1	9	437	0
L 1011 S	3	3	0	9	32	71	1	0	1	21	157	0
LINE 18	(FLIGHT	7)										
A 958 S	0	1	0	3	0	45	1	0	1	0	2774	0
C 975 B	4	12	2	2	10	17	2	12	1	197	98	143
D 991 B?	0	4	0	17	41	116	1	0	1	12	318	0
F 998 S	0	3	0	9	34	71	1	0	1	15	332	0
LINE 17	(FLIGHT	7)										
A 856 B?	0	0	0	2	2	3	1	53	1	43	6065	0
C 844 B?	0	2	3	7	26	20	7	33	1	136	1035	0
D 842 B	1	6	12	9	28	29	4	23	1	104	91	63
E 834 S	5	15	0	31	44	117	1	0	1	10	439	0

* ESTIMATED DEPTH MAY BE UNRELIABLE BECAUSE THE STRONGER PART OF THE CONDUCTOR MAY BE DEEPER OR TO ONE SIDE OF THE FLIGHT LINE, OR BECAUSE OF A SHALLOW DIP OR OVERBURDEN EFFECTS.

201 RENNIE LAKE

	COAXIAL 900 HZ		COPLANAR 900 HZ		COPLANAR 7200 HZ		VERTICAL DIKE		HORIZONTAL SHEET		CONDUCTIVE EARTH	
ANOMALY/ FID/INTERP	REAL PPM	QUAD PPM	REAL PPM	QUAD PPM	REAL PPM	QUAD PPM	COND MHOS	DEPTH* M	COND MHOS	DEPTH M	RESIS OHM-M	DEPTH M
LINE 17 (FLIGHT 7)												
F 812 B?	2	2	1	3	10	8	2	13	1	93	230	62
LINE 16 (FLIGHT 7)												
A 706 S	1	1	0	3	5	21	1	0	1	19	1982	0
B 717 B?	0	1	1	8	21	35	1	0	1	144	986	17
C 721 B	0	6	2	14	39	17	2	5	1	55	806	0
D 729 B?	0	7	0	10	21	94	1	0	1	12	649	0
E 731 S?	0	7	0	11	24	6	1	0	1	33	706	0
H 754 B?	0	1	0	5	0	10	1	3	1	47	5858	0
J 760 B	0	6	2	4	18	9	6	25	1	104	288	45
K 766 S	1	3	0	2	10	12	1	26	1	94	418	60
LINE 15 (FLIGHT 7)												
A 685 S	0	3	0	0	4	12	1	0	1	21	5383	0
D 679 B?	0	3	4	8	20	15	7	26	1	84	949	0
E 677 B	0	4	4	8	25	23	2	4	1	60	221	14
G 670 B?	0	4	5	4	18	48	2	21	1	40	733	0
L 645 B	9	4	2	4	13	8	17	26	1	95	772	0
M 637 B	4	4	0	2	14	11	5	32	1	121	1035	0
N 631 S?	0	6	0	17	32	139	1	0	1	5	486	0
LINE 14 (FLIGHT 7)												
B 542 S	0	1	0	5	11	28	1	0	1	21	828	0
H 557 S	2	2	0	7	11	51	1	0	1	8	866	0
I 563 B	9	5	1	11	23	95	7	19	1	40	756	0
J 588 S	0	1	0	2	0	29	1	0	1	2	3532	0
K 596 S?	3	0	0	3	7	13	1	16	1	89	657	50
L 603 B	12	6	3	8	22	4	13	29	1	103	281	47
LINE 13 (FLIGHT 7)												
A 520 B?	0	1	0	6	7	5	1	36	1	75	827	35
B 511 B	9	4	0	7	21	33	10	27	1	58	837	0
D 485 B	0	1	5	3	14	2	6	56	2	155	32	118
E 475 B	2	2	2	2	15	7	3	12	1	86	101	62
LINE 12 (FLIGHT 7)												
B 376 S?	0	2	1	3	5	13	1	0	1	20	4374	0
F 412 B	0	4	3	2	10	12	1	17	1	82	269	52
H 419 B	13	18	7	13	37	57	7	9	1	41	513	0
LINE 11 (FLIGHT 7)												
A 364 B	7	2	5	2	13	3	28	37	1	196	795	45

* ESTIMATED DEPTH MAY BE UNRELIABLE BECAUSE THE STRONGER PART OF THE CONDUCTOR MAY BE DEEPER OR TO ONE SIDE OF THE FLIGHT LINE, OR BECAUSE OF A SHALLOW DIP OR OVERBURDEN EFFECTS.

201 RENNIE LAKE

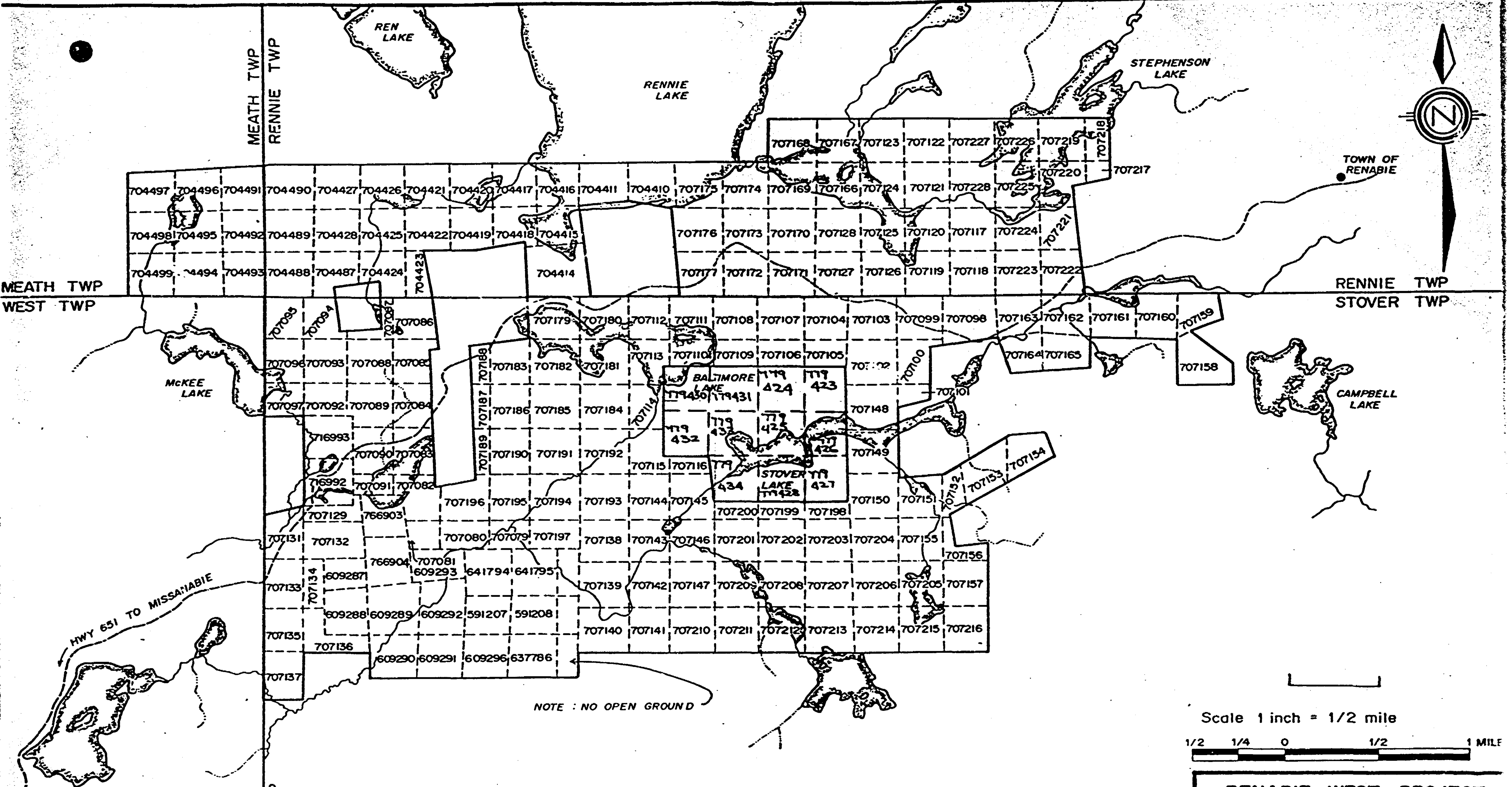
	COAXIAL 900 HZ		COPLANAR 900 HZ		COPLANAR 7200 HZ		VERTICAL DIKE		HORIZONTAL SHEET		CONDUCTIVE EARTH	
ANOMALY/ FID/INTERP	REAL PPM	QUAD PPM	REAL PPM	QUAD PPM	REAL PPM	QUAD PPM	COND MHOS	DEPTH* M	COND MHOS	DEPTH M	RESIS OHM-M	DEPTH M
LINE 11 (FLIGHT 7)												
B 347 S?	1	1	0	1	5	4	4	77	1	205	1035	0
F 332 B	3	4	5	7	30	25	5	22	1	84	135	39
G 328 B	2	1	3	2	10	29	1	0	1	22	855	0
LINE 10 (FLIGHT 7)												
A 281 S	0	3	0	5	4	52	1	0	1	0	2217	0
B 308 B	0	3	2	3	14	10	6	41	1	117	317	50
D 315 B	4	2	0	3	12	6	8	62	1	161	1035	0
LINE 9 (FLIGHT 4)												
A 724 S	3	2	0	6	15	49	1	0	1	6	708	0
B 705 B	6	2	2	2	10	4	18	24	1	181	1035	0
C 704 B	6	2	2	2	8	3	3	25	1	103	53	83
LINE 8 (FLIGHT 4)												
C 592 S	3	1	0	1	0	10	1	0	1	73	7305	0
D 598 B?	3	0	1	2	4	2	2	48	1	105	867	59
G 606 B	11	10	9	9	18	21	1	2	1	51	315	23
H 608 B	11	10	9	9	24	21	10	8	2	101	59	63
I 613 B	23	9	18	18	53	32	25	10	2	74	35	44
LINE 7 (FLIGHT 4)												
A 561 S	0	2	0	6	6	48	1	0	1	0	1889	0
B 543 B	9	4	3	4	11	8	16	15	1	103	1035	0
C 539 B	19	4	10	7	13	5	48	6	3	127	26	94
LINE 6 (FLIGHT 4)												
A 494 S	0	3	0	5	5	55	1	0	1	0	1943	0
D 518 B	2	7	9	13	30	20	3	4	1	62	863	0
E 523 B	6	7	5	7	19	17	7	27	1	109	150	60
LINE 5 (FLIGHT 4)												
A 471 S	3	1	0	2	4	16	1	0	1	23	1861	0
B 451 B?	0	2	0	3	3	5	1	30	1	58	3106	8
C 445 B	3	1	1	1	1	3	25	51	1	182	1035	0
LINE 4 (FLIGHT 4)												
A 427 B	0	1	1	2	4	8	1	2	1	50	1700	4
LINE 3 (FLIGHT 4)												
D 361 B	10	1	1	1	0	5	207	15	1	173	1035	0

* ESTIMATED DEPTH MAY BE UNRELIABLE BECAUSE THE STRONGER PART OF THE CONDUCTOR MAY BE DEEPER OR TO ONE SIDE OF THE FLIGHT LINE, OR BECAUSE OF A SHALLOW DIP OR OVERBURDEN EFFECTS.

```
  201 RENNIE LAKE

            COAXIAL  COPLANAR  COPLANAR .  VERTICAL  . HORIZONTAL CONDUCTIVE
             900 HZ    900 HZ   7200 HZ .    DIKE    .   SHEET      EARTH
                                        .            .
 ANOMALY/ REAL QUAD REAL QUAD REAL QUAD . COND DEPTH*. COND DEPTH RESIS DEPTH
FID/INTERP PPM  PPM  PPM  PPM  PPM  PPM . MHOS     M . MHOS     M OHM-M     M
 ---------                              .            .
 LINE     3  (FLIGHT   4)               .            .
 E  356 B    2    1    2    1    6    7 .   20    42 .    1   163   888     8


     .                                                               .
     .* ESTIMATED DEPTH MAY BE UNRELIABLE BECAUSE THE STRONGER PART .
     .  OF THE CONDUCTOR MAY BE DEEPER OR TO ONE SIDE OF THE FLIGHT .
     .  LINE, OR BECAUSE OF A SHALLOW DIP OR OVERBURDEN EFFECTS.     .
```



Scale 1 inch = 1/2 mile

1/2 1/4 0 1/2 1 MILE

Stover Twp. M-1141
Rennie Twp. M-1076
Heath Twp. M-3475
West Twp. M-1581
Sault Ste Marie M.D.

2.6953

RENABIE WEST PROJECT

WABIKOBA INVESTMENTS LTD
CLAIM MAP

SCALE	DATE	FIGURE
1 inch = 1/2 mile	Feb. 27, 1984	

42C08SE0004 0026 STOVER

900

File

Ontario

Ministry of Natural Resources

GEOPHYSICAL – GEOLOGICAL – GEOCHEMICAL TECHNICAL DATA STATEMENT

TO BE ATTACHED AS AN APPENDIX TO TECHNICAL REPORT
FACTS SHOWN HERE NEED NOT BE REPEATED IN REPORT
TECHNICAL REPORT MUST CONTAIN INTERPRETATION, CONCLUSIONS ETC.

Type of Survey(s) AIRBORNE EM, VLF-EM, MAG
Township or Area STOVER, RENNIE, MEATH
Claim Holder(s) R.J. McGOWAN

Survey Company DIGHEM LTD
Author of Report D. C. FRASER
Address of Author 7010 - 1st CANADIAN PLACE, TORONTO
Covering Dates of Survey 13-04-84 – 14-04-84 (linecutting to office)
Total Miles of Line Cut —

SPECIAL PROVISIONS CREDITS REQUESTED

ENTER 40 days (includes line cutting) for first survey.

ENTER 20 days for each additional survey using same grid.

	DAYS per claim
Geophysical	
–Electromagnetic	
–Magnetometer	
–Radiometric	
–Other	
Geological	
Geochemical	

AIRBORNE CREDITS (Special provision credits do not apply to airborne surveys)

Magnetometer 30 Electromagnetic 30 VLF-EM ~~Radiometric~~ 20
(enter days per claim)

DATE: 27 JULY 84 SIGNATURE:
Author of Report or Agent

Res. Geol. Qualifications 63.2278 V1

Previous Surveys

File No.	Type	Date	Claim Holder

MINING CLAIMS TRAVERSED
List numerically

(prefix) (number)

AS PER ATTACHMENT

If space insufficient, attach list

TOTAL CLAIMS

RECEIVED
JUL 31 1984
MINING LANDS SECTION

837 (5/79)

SELF POTENTIAL

Instrument Range

Survey Method

Corrections made

RADIOMETRIC

Instrument

Values measured

Energy windows (levels)

Height of instrument Background Count

Size of detector

Overburden

(type, depth – include outcrop map)

OTHERS (SEISMIC, DRILL WELL LOGGING ETC.)

Type of survey

Instrument

Accuracy

Parameters measured

Additional information (for understanding results)

AIRBORNE SURVEYS

Type of survey(s) MAG, EM, VLF-EM

Instrument(s) DIGHEM LTD.

(specify for each type of survey)

Accuracy

(specify for each type of survey)

Aircraft used

Sensor altitude

Navigation and flight path recovery method

Aircraft altitude Line Spacing

Miles flown over total area Over claims only

Ontario

Ministry of Natural Resources

File ________

GEOPHYSICAL – GEOLOGICAL – GEOCHEMICAL TECHNICAL DATA STATEMENT

TO BE ATTACHED AS AN APPENDIX TO TECHNICAL REPORT
FACTS SHOWN HERE NEED NOT BE REPEATED IN REPORT
TECHNICAL REPORT MUST CONTAIN INTERPRETATION, CONCLUSIONS ETC.

Type of Survey(s) AIRBORNE EM, VLF-EM, MAG

Township or Area STOVER, RENNIE MEATH

Claim Holder(s) R.J. McGOWAN

Survey Company DIGHEM LTD

Author of Report D.C. FRASER

Address of Author 7010 - 1st CANADIAN PLACE, TORONTO

Covering Dates of Survey 13-04-84 to 14-04-84
(linecutting to office)

Total Miles of Line Cut ________

MINING CLAIMS TRAVERSED
List numerically

(prefix) (number)

AS PER ATTACHMENT

If space insufficient, attach list

TOTAL CLAIMS ________

RECEIVED
JUL 31 1984
MINING LANDS SECTION

SPECIAL PROVISIONS CREDITS REQUESTED

ENTER 40 days (includes line cutting) for first survey.

ENTER 20 days for each additional survey using same grid.

	DAYS per claim
Geophysical	
–Electromagnetic	
–Magnetometer	
–Radiometric	
–Other	
Geological	
Geochemical	

AIRBORNE CREDITS (Special provision credits do not apply to airborne surveys)

Magnetometer 30 Electromagnetic 30 VLF-EM ~~Radiometric~~ 20
(enter days per claim)

DATE: 27-JULY 84 SIGNATURE: ________
Author of Report or Agent

Res. Geol. ________ Qualifications ________

Previous Surveys

File No.	Type	Date	Claim Holder

837 (5/79)

SELF POTENTIAL

Instrument ____________________ Range ____________

Survey Method ____________________

____

Corrections made ____________________

____

RADIOMETRIC

Instrument ____________________

Values measured ____________________

Energy windows (levels) ____________________

Height of instrument ____________________ Background Count ____________

Size of detector ____________________

Overburden ____________________
(type, depth – include outcrop map)

OTHERS (SEISMIC, DRILL WELL LOGGING ETC.)

Type of survey ____________________

Instrument ____________________

Accuracy ____________________

Parameters measured ____________________

____

Additional information (for understanding results) ____________________

____

____

AIRBORNE SURVEYS

Type of survey(s) VLF-EM, EM, MAG

Instrument(s) DIGHEM LTD.
(specify for each type of survey)

Accuracy ____________________
(specify for each type of survey)

Aircraft used ____________________

Sensor altitude ____________________

Navigation and flight path recovery method ____________________

____

Aircraft altitude ____________________ Line Spacing ____________

Miles flown over total area ____________________ Over claims only ____________

CC

Ontario

File__________

Ministry of Natural Resources

GEOPHYSICAL – GEOLOGICAL – GEOCHEMICAL TECHNICAL DATA STATEMENT

TO BE ATTACHED AS AN APPENDIX TO TECHNICAL REPORT
FACTS SHOWN HERE NEED NOT BE REPEATED IN REPORT
TECHNICAL REPORT MUST CONTAIN INTERPRETATION, CONCLUSIONS ETC.

Type of Survey(s) DIGHEM MAG & [illegible] EM
Township or Area STOVER, RENNIE, MEATH
Claim Holder(s) R.J. MCGOWAN
G. PAQUETTE
Survey Company DIGHEM LTD
Author of Report D.C. FRASER
Address of Author 7010 - 1st Canadian Place, Toronto
Covering Dates of Survey 13 - 14 APRIL 1984 (linecutting to office)
Total Miles of Line Cut —

SPECIAL PROVISIONS CREDITS REQUESTED

ENTER 40 days (includes line cutting) for first survey.

ENTER 20 days for each additional survey using same grid.

	DAYS per claim
Geophysical	
–Electromagnetic	
–Magnetometer	
–Radiometric	
–Other	
Geological	
Geochemical	

AIRBORNE CREDITS (Special provision credits do not apply to airborne surveys)
Magnetometer 25 Electromagnetic 25 Radiometric ____
(enter days per claim)

DATE: 13 JULY 84 SIGNATURE: __________
Author of Report or Agent

Res. Geol. ________ Qualifications ________

Previous Surveys

File No.	Type	Date	Claim Holder

MINING CLAIMS TRAVERSED
List numerically

(prefix) (number)

SEE ATTACHED LIST
205 claims
Claim map in pocket

If space insufficient, attach list

TOTAL CLAIMS 205

837 (6/79)

SELF POTENTIAL

Instrument ______ Range ______

Survey Method ______

Corrections made ______

RADIOMETRIC

Instrument ______

Values measured ______

Energy windows (levels) ______

Height of instrument ______ Background Count ______

Size of detector ______

Overburden ______

(type, depth – include outcrop map)

OTHERS (SEISMIC, DRILL WELL LOGGING ETC.)

Type of survey ______

Instrument ______

Accuracy ______

Parameters measured ______

Additional information (for understanding results) ______

AIRBORNE SURVEYS

Type of survey(s) ~~VLF~~ EM, MAG

Instrument(s) DIGHEM

(specify for each type of survey)

Accuracy ______

(specify for each type of survey)

Aircraft used HELICOPTER

Sensor altitude ______

Navigation and flight path recovery method PHOTOGRAPHIC

Aircraft altitude ______ Line Spacing ______

Miles flown over total area 206KM ______ Over claims only 206 km.

STOVER TWP

SSM ✓ 707092
707093
707094
707095
707096
707097

✓ 707129
707131
707132
707133
707134
707135
707136
707137

~~SSM~~ [illegible]
SSM ✓ 707081
707082
707083
707084
707085
707086
707087
707088
707089
707090
707091

~~SSM~~ [illegible]
SSM 707079
707080

SSM 641794
641795

SSM ✓ 766903
766904

SSM ✓ 609287
609288
609289
609290
609291
609292
609293

[illegible]
SSM ✓ 707158
707159
707160
707161
707162
707163
707164
707165

SSM ✓ 707098
707099
707100
707101
707102
707103
707104
707105
707106
707107
707108
707109
707110

TOTALS

page 1	59
2	60
3	21
4	9
5	56
	[illegible]
	205

29 claims + 30 claims = 59 claims

STOVER TOWNSHIP (CONT.)

SSM 707111
✓ 707112
707113
707114
707115
707116

SSM 707179
✓ 707180
707181
707182
707183
707184
707185
707186
707187
707188
707189

SSM 707190
✓ 707191
707192
707193
707194
707195
707196

SSM 707211
✓ 707212
707213
707214
707215
707216

SSM 707197

31 claims

~~SSM~~ [illegible]
[illegible]
SSM 591207
✓ 591208

SSM ✓ 609296
SSM ✓ 687786

SSM 716993
716992

SSM ✓ 707138
707139
707140
707141
707142
707143
707144
707145
707146
707147

SSM ✓ 707198
707199
707200
707201
707202
707203
707204
707205
707206
707207
707208
707209
707210

31 claims + 29 = 59 claims

STOVER TOWNSHIP (CONT)

SSM 707 148
✓ 707 149
707 150
707 151
707 152
707 153
707 154
707 155
707 156
707 157

MR. G. PAQUETTE'S CLAIMS ✓

SSM 779 423
✓ 779 424
779 425
779 426
779 427
779 428

SSM 779 430
✓ 779 431
779 432
779 433
779 434.

---

21 claims

MEATH TWP.

SSM 704491
704492
704493
704494
704495
704496
704497
704498
704499

---

9 claims

[illegible]ENNIE TWP

SSM 407218
407219
407220
407221
407222
407223
407224
407225
407226
407227
407228

SSM 407117
407118
407119
407120
407121
407122
407123
407124
407125
407126
407127
407128

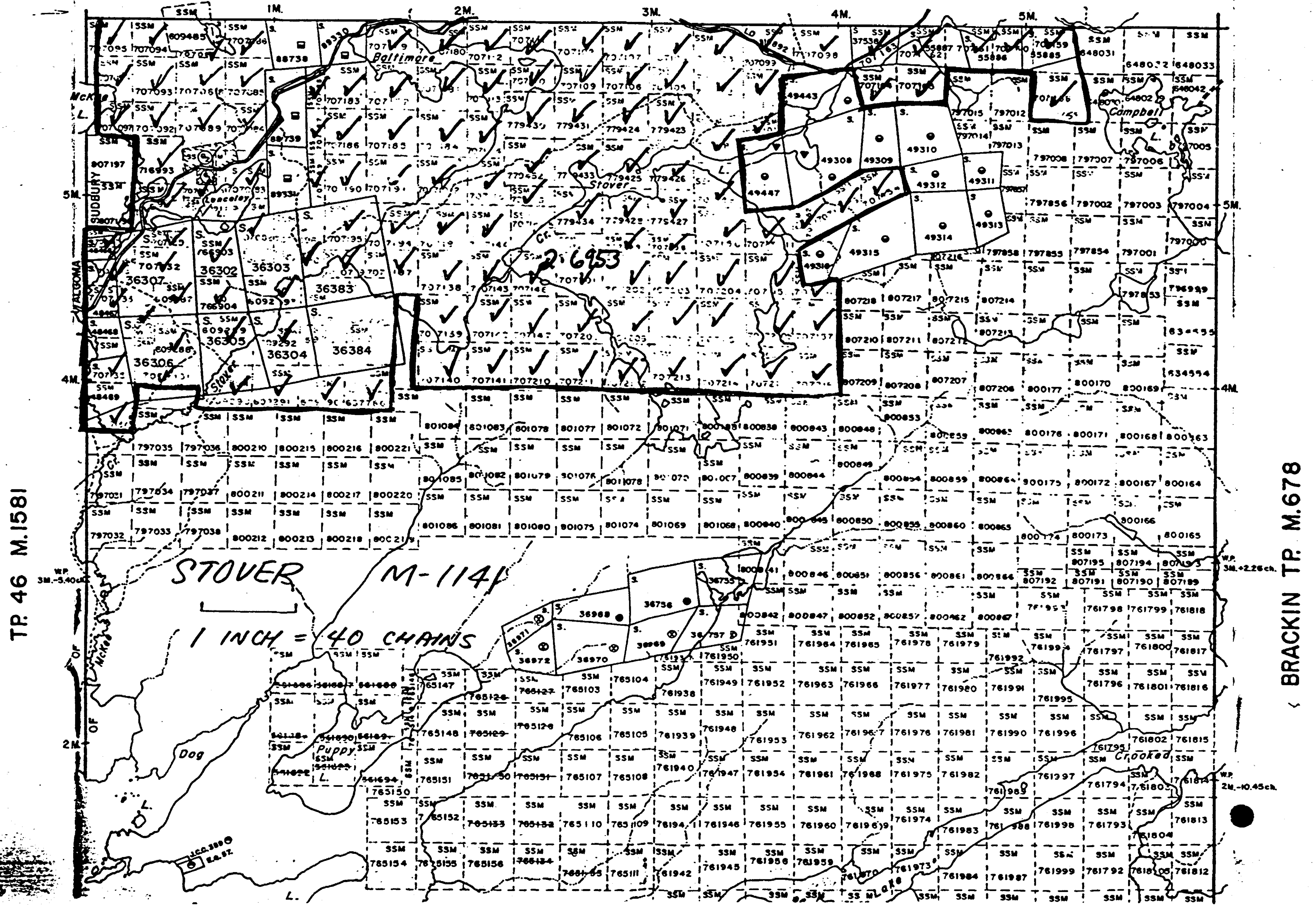
SSM 404487
404488
404489
404490

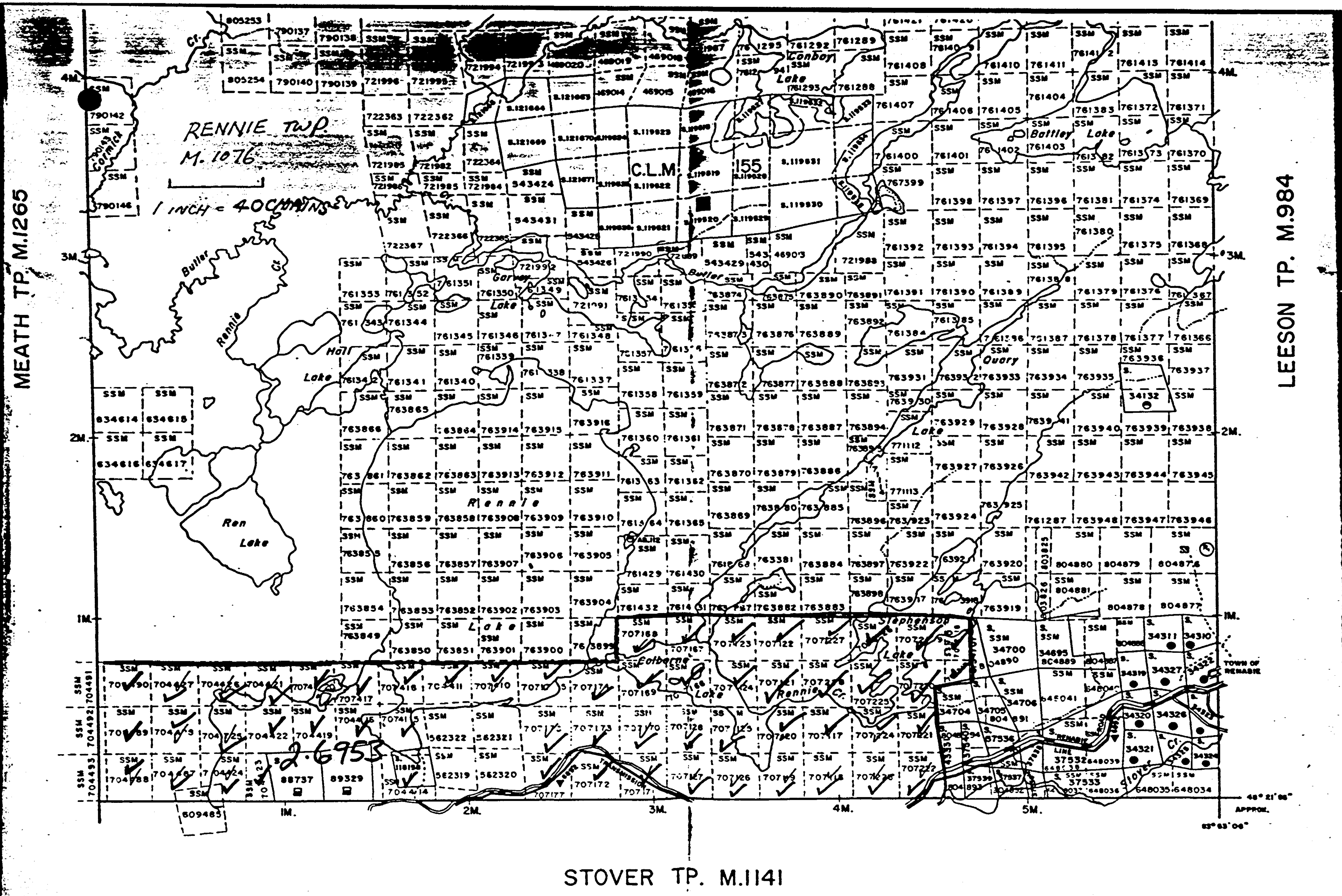
SSM 407166
407167
407168
407169
407170
407171
407172
407173
407174
407175
407176
407177

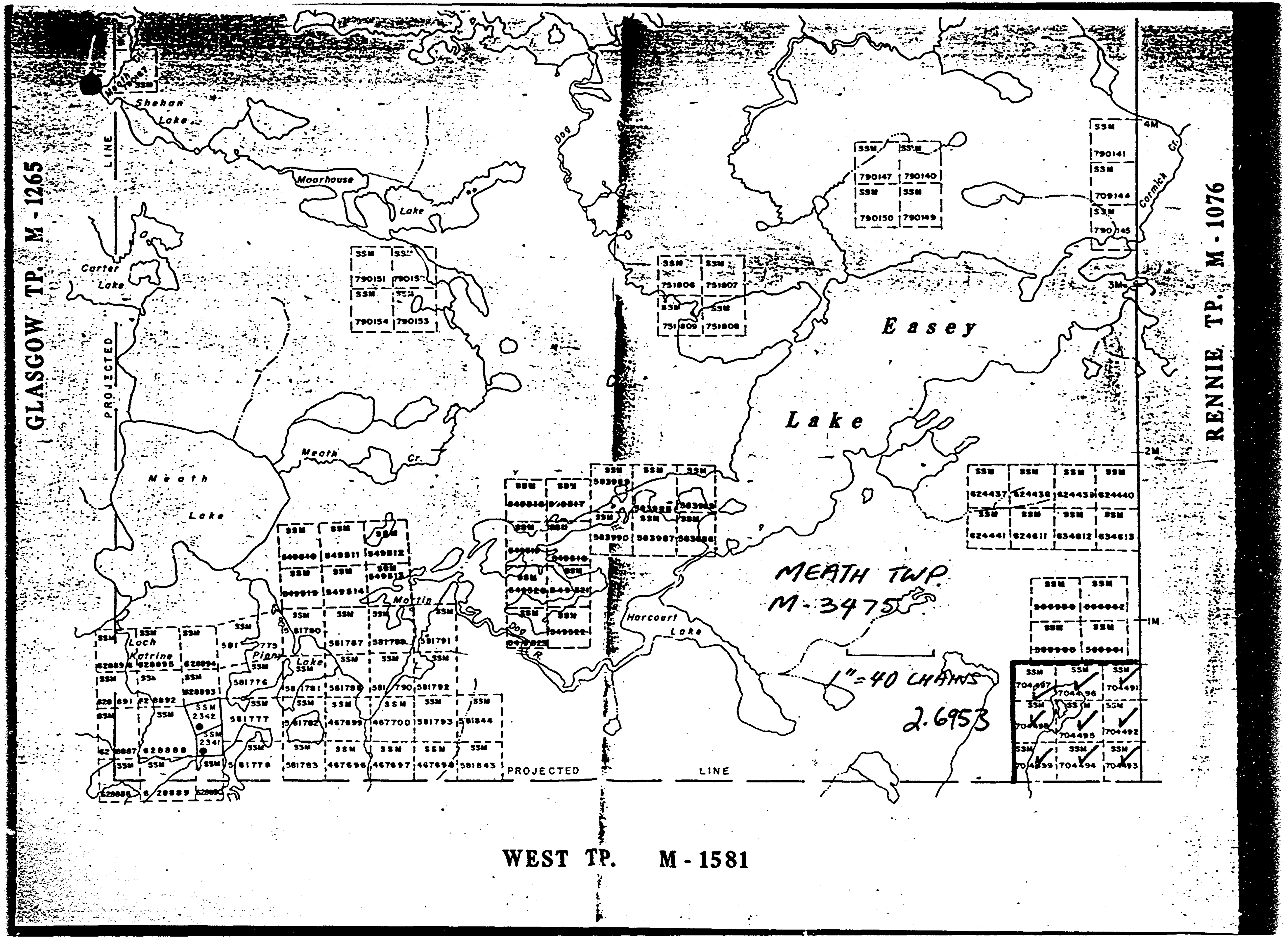
SSM 404410
404411
404414
404415
404416
404417
404418
404419
404420
404421
404422
404423
404424
404425
404426
404427.
404428
~~4042~~

27claims + 29claims = 56claim

RENNIE TP. M.1076




RENNIE TWP
M. 1076
1 INCH = 40 CHAINS
MEATH TP. M.1265
LEESON TP. M.984
STOVER TP. M.1141
C.L.M. 155
Conboy Lake
Battley Lake
Butler Cr.
Rennie Cr.
Hall Lake
Ren Lake
Garvey Lake
Quarry Lake
Rennie Lake
Colborne Lake
Stephenson Lake
Cormick Cr.
TOWN OF RENABIE
RENABIE LINE
2.6953
4M.
3M.
2M.
1M.
48° 21' 00"
83° 53' 00"
APPROX.



MEATH TWP.
M-3475

1" = 40 CHAINS

2.6953

Ministry of Natural Resources
Ontario

Report of Work
(Geophysical, Geological, Geochemical and Expenditures)

2.6953
2.6953

The Mining Act

Instructions: – Please type or print.
– If number of mining claims traversed exceeds space on this form, attach a list.
Note: – Only days credits calculated in the "Expenditures" section may be entered in the "Expend. Days Cr." columns.
– Do not use shaded areas below.

Type of Survey(s): AIRBORNE EM, MAG, V.L.F.-EM
Township or Area: STOVER
Claim Holder(s): DOUGLAS BELANGER (FOR R.J. McGOWAN)
Prospector's Licence No.: D 18430
Address: 370-625 HOWE ST, VANCOUVER BC
Survey Company: DIGHEM LTD.
Date of Survey (from & to): 13 04 84 | 14 04 84 (Day | Mo. | Yr. | Day | Mo. | Yr.)
Total Miles of line Cut:
Name and Address of Author (of Geo-Technical report): D.C. FRASER, 4010-1st Canadian Place, Toronto Ont. M5X 1C7

Credits Requested per Each Claim in Columns at right

		Days per Claim
Special Provisions	Geophysical	
For first survey: Enter 40 days. (This includes line cutting)	· Electromagnetic	
	· Magnetometer	
For each additional survey: using the same grid: Enter 20 days (for each)	· Radiometric	
	· Other	
	Geological	
	Geochemical	
Man Days	Geophysical	
Complete reverse side and enter total(s) here	· Electromagnetic	
	· Magnetometer	
	· Radiometric	
	· Other	
	Geological	
	Geochemical	
Airborne Credits	Electromagnetic	30
Note: Special provisions credits do not apply to Airborne Surveys.	Magnetometer	30
	~~Radiometric~~ VLF-EM	20

Expenditures (excludes power stripping)

Type of Work Performed:
Performed on Claim(s):

Calculation of Expenditure Days Credits
Total Expenditures $ + 15 = Total Days Credits

Instructions
Total Days Credits may be apportioned at the claim holder's choice. Enter number of days credits per claim selected in columns at right.

Date: 27 JULY 1984
Recorded Holder or Agent (Signature):

Mining Claims Traversed (List in numerical sequence)

Prefix	Number	Expend. Days Cr.	Prefix	Number	Expend. Days Cr.
SSM	416992				
	416993				

Total number of mining claims covered by this report of work: 2

AMENDED

RECEIVED
JUL 31 1984
MINING LANDS SECTION

For Office Use Only

Total Days Cr. Recorded	Date Recorded	Mining Recorder
	Date Approved as Recorded	Branch Director

Certification Verifying Report of Work

I hereby certify that I have a personal and intimate knowledge of the facts set forth in the Report of Work annexed hereto, having performed the work or witnessed same during and/or after its completion and the annexed report is true.

2.6953 a·01~~

2.6953

Ministry of Natural Resources
Ontario

Report of Work
(Geophysical, Geological, Geochemical and Expenditures)

The Mining Act

Instructions: – Please type or print
– If number of mining claims traversed exceeds space on this form, attach a list.
Note: – Only days credits calculated in the "Expenditures" section may be entered in the "Expend. Days Cr." columns.
– Do not use shaded areas below.

Type of Survey(s): AIRBORNE EM, MAG, VLF-EM
Township or Area: STOVER TSP
Claim Holder(s): DANIEL ST. PIERRE & RICHARD LAVOIE /FOR G. PAQUETTE
Prospector's Licence No.: M21144 | M21092
Address: BOX 2028, WAWA, ONT P0S 1K0
Survey Company: DIGHEM LTD
Date of Survey (from & to): 13 04 84 | 14 04 84 (Day | Mo. | Yr. | Day | Mo. | Yr.)
Total Miles of line Cut:
Name and Address of Author (of Geo-Technical report): D.C. FRASER, 4010 - 1st CANADIAN PLACE, TORONTO ONT M5X 1C7

Credits Requested per Each Claim in Columns at right

Special Provisions	Geophysical	Days per Claim
For first survey: Enter 40 days. (This includes line cutting)	- Electromagnetic	
	- Magnetometer	
For each additional survey: using the same grid: Enter 20 days (for each)	- Radiometric	
	- Other	
	Geological	
	Geochemical	

Man Days	Geophysical	Days per Claim
Complete reverse side and enter total(s) here	- Electromagnetic	
	- Magnetometer	
	- Radiometric	
	- Other	
	Geological	
	Geochemical	

Airborne Credits		Days per Claim
Note: Special provisions credits do not apply to Airborne Surveys.	Electromagnetic	30
	Magnetometer	30
	VLF-EM ~~Radiometric~~	20

Expenditures (excludes power stripping)

Type of Work Performed:

Performed on Claim(s):

Calculation of Expenditure Days Credits

Total Expenditures $ ÷ 15 = Total Days Credits

Instructions
Total Days Credits may be apportioned at the claim holder's choice. Enter number of days credits per claim selected in columns at right.

Date: 27 JULY 84
Recorded Holder or Agent (Signature):

Mining Claims Traversed (List in numerical sequence)

Mining Claim Prefix	Mining Claim Number	Expend. Days Cr.	Mining Claim Prefix	Mining Claim Number	Expend. Days Cr.
SSM	779423				
	779424				
	779425				
	779426				
	779427				
	779428				
	779430				
	779431				
	779432				
	779433				
	779434				

[illegible]

RECEIVED
JUL 31 1984
MINING LANDS SECTION

Total number of mining claims covered by this report of work.

For Office Use Only

Total Days Cr. Recorded	Date Recorded	Mining Recorder
	Date Approved as Recorded	Branch Director

Certification Verifying Report of Work

I hereby certify that I have a personal and intimate knowledge of the facts set forth in the Report of Work annexed hereto, having performed the work or witnessed same during and/or after its completion and the annexed report is true.

Ministry of Natural Resources
Ontario

Report of Work
(Geophysical, Geological, Geochemical and Expenditures)

#191-84 2.6953
(REVISED)
(AMENDED)

The Mining Act

Instructions: – Please type or print.
– If number of mining claims traversed exceeds space on this form, attach a list.
Note: – Only days credits calculated in the "Expenditures" section may be entered in the "Expend. Days Cr." columns.
– Do not use shaded areas below.

Type of Survey(s): AIRBORNE EM, ~~AND~~ MAG, V.L.F.-EM
Township or Area: STOVER
Claim Holder(s): DOUGLAS BELANGER (FOR R.J. McGOWAN)
Prospector's Licence No.: D 18430
Address: 370-625 HOWE ST. VANCOUVER BC
Survey Company: DIGHEM LTD.
Date of Survey (from & to): 13 04 84 (Day, Mo., Yr.) 14 04 84 (Day, Mo., Yr.)
Total Miles of line Cut:
Name and Address of Author (of Geo-Technical report): D.C. FRASER, 4010-1st Canadian Place, Toronto Ont. M5X 1C7

Credits Requested per Each Claim in Columns at right

Special Provisions	Geophysical	Days per Claim
For first survey: Enter 40 days. (This includes line cutting)	· Electromagnetic	
	· Magnetometer	
For each additional survey: using the same grid: Enter 20 days (for each)	· Radiometric	
	· Other	
	Geological	
	Geochemical	
Man Days	**Geophysical**	**Days per Claim**
Complete reverse side and enter total(s) here	· Electromagnetic	
	· Magnetometer	
	· Radiometric	
	· Other	
	Geological	
	Geochemical	
Airborne Credits		**Days per Claim**
Note: Special provisions credits do not apply to Airborne Surveys.	Electromagnetic	30
	Magnetometer	30
	~~Radiometric~~ VLF-EM	20*

Expenditures (excludes power stripping)
Type of Work Performed:
Performed on Claim(s):
Calculation of Expenditure Days Credits
Total Expenditures $ ÷ 15 = Total Days Credits
Instructions: Total Days Credits may be apportioned at the claim holder's choice. Enter number of days credits per claim selected in columns at right.

Mining Claims Traversed (List in numerical sequence)

Mining Claim Prefix	Mining Claim Number	Expend. Days Cr.
SSM	416992	
	416993	

RECEIVED
AUG 02 1984
MINING LANDS SECTION

Total number of mining claims covered by this report of work: 2

Date: 27 JULY 1984
Recorded Holder or Agent (Signature):

For Office Use Only
Total Days Cr. Recorded: 160
Date Recorded: July 30/84
Mining Recorder: E. G. Kuuylo
Date Approved as Recorded: Sept 4/84
Branch Director:

Certification Verifying Report of Work
I hereby certify that I have a personal and intimate knowledge of the facts set forth in the Report of Work annexed hereto, having performed the work or witnessed same during and/or after its completion and the annexed report is true.

Name and Postal Address of Person Certifying: M.J. de Quadros, P.O. Box 2028, Wawa, Ontario, P0S 1K0
Date Certified: 27 July 1984
Certified by (Signature):

1362 (81/9)

file on SSM 71699

Ministry of Natural Resources
Ontario

Report of Work
(Geophysical, Geological, Geochemical and Expenditures)

#192-84

2.6953

(AMENDED)

The Mining Act

Instructions: – Please type or print.
– If number of mining claims traversed exceeds space on this form, attach a list.
Note: – Only days credits calculated in the "Expenditures" section may be entered in the "Expend. Days Cr." columns.
– Do not use shaded areas below.

Type of Survey(s): AIRBORNE EM, MAG, VLF-EM

Township or Area: STOVER TSP

Claim Holder(s): DANIEL ST. PIERRE & RICHARD LAVOIE /FOR G. PAQUETTE

Prospector's Licence No.: M21144 | M21092

Address: BOX 2028, WAWA, ONT P0S 1K0

Survey Company: DIGHEM LTD

Date of Survey (from & to): 13 04 84 (Day Mo. Yr.) 14 04 84 (Day Mo. Yr.)

Total Miles of line Cut:

Name and Address of Author (of Geo-Technical report): D.C. FRASER, 4010 - 1st CANADIAN PLACE, TORONTO ONT. M5X 1C7

Credits Requested per Each Claim in Columns at right

Special Provisions	Geophysical	Days per Claim
For first survey: Enter 40 days. (This includes line cutting)	· Electromagnetic	
	· Magnetometer	
For each additional survey: using the same grid: Enter 20 days (for each)	· Radiometric	
	· Other	
	Geological	
	Geochemical	

Man Days	Geophysical	Days per Claim
Complete reverse side and enter total(s) here	· Electromagnetic	
	· Magnetometer	
	· Radiometric	
	· Other	
	Geological	
	Geochemical	

Airborne Credits		Days per Claim
Note: Special provisions credits do not apply to Airborne Surveys.	Electromagnetic	30
	Magnetometer	30
	~~Radiometric~~ VLF-EM	20*

Expenditures (excludes power stripping)

Type of Work Performed:

Performed on Claim(s):

Calculation of Expenditure Days Credits

Total Expenditures $ ÷ 15 = Total Days Credits

Instructions
Total Days Credits may be apportioned at the claim holder's choice. Enter number of days credits per claim selected in columns at right.

Date: 27 JULY 84

Recorded Holder or Agent (Signature):

Mining Claims Traversed (List in numerical sequence)

Mining Claim Prefix	Mining Claim Number	Expend. Days Cr.	Mining Claim Prefix	Mining Claim Number	Expend. Days Cr.
SSM	779423				
	779424				
	779425				
	779426				
	779427				
	779428				
	779430				
	779431				
	779432				
	779433				
	779434				

RECEIVED
AUG 02 1984
MINING LANDS SECTION

Total number of mining claims covered by this report of work: 11

For Office Use Only

Total Days Cr. Recorded: 880

Date Recorded: July 30/84

ACTING Mining Recorder

Date Approved as Recorded: Sept 4/84

Branch Director

Certification Verifying Report of Work

I hereby certify that I have a personal and intimate knowledge of the facts set forth in the Report of Work annexed hereto, having performed the work or witnessed same during and/or after its completion and the annexed report is true.

Name and Postal Address of Person Certifying: Mel de Quadros Box 2028 Wawa Ont P0S 1K0

Date Certified: 27 JULY 84

Certified by (Signature):

1362 (81/9)

file on SSM 77942

Ministry of Natural Resources
Ontario

Report of Work
(Geophysical, Geological, Geochemical and Expenditures)

#194-84

2.6953

The Mining Act

Instructions: – Please type or print.
– If number of mining claims traversed exceeds space on this form, attach a list.
Note: – Only days credits calculated in the "Expenditures" section may be entered in the "Expend. Days Cr." columns.
– Do not use shaded areas below.

Type of Survey(s): Airborne Mag, EM and VLF
Township or Area: STOVER | RONNIE | MEATH
Claim Holder(s): R.J. McGOWAN
Prospector's Licence No.: E ~~[illegible]~~ 31969
Address: BOX 4, 370-625 HOWE ST, VANCOUVER BC V6C 2T6
Survey Company: DIGHEM LTD.
Date of Survey (from & to): 13 04 84 | 14 04 84 (Day Mo. Yr. | Day Mo. Yr.)
Total Miles of line Cut:
Name and Address of Author (of Geo-Technical report): D.C. Fraser 4010- 1st Canadian Place, Toronto Ont M5X 1C7

Credits Requested per Each Claim in Columns at right

Special Provisions	Geophysical	Days per Claim
For first survey: Enter 40 days. (This includes line cutting)	- Electromagnetic	
	- Magnetometer	
For each additional survey: using the same grid: Enter 20 days (for each)	- Radiometric	
	- Other	
	Geological	
	Geochemical	

Man Days	Geophysical	Days per Claim
Complete reverse side and enter total(s) here	- Electromagnetic	
	- Magnetometer	
	- Radiometric	
	- Other	
	Geological	
	Geochemical	

Airborne Credits		Days per Claim
Note: Special provisions credits do not apply to Airborne Surveys.	Electromagnetic	30
	Magnetometer	30
	VLF-EM ~~Radiometric~~	20

Expenditures (excludes power stripping)

Type of Work Performed:
Performed on Claim(s):

Calculation of Expenditure Days Credits
Total Expenditures $ + 15 = Total Days Credits

Instructions
Total Days Credits may be apportioned at the claim holder's choice. Enter number of days credits per claim selected in columns at right.

Date: 01 August 84
Recorded Holder or Agent (Signature):

Mining Claims Traversed (List in numerical sequence)

Mining Claim Prefix	Mining Claim Number	Expend. Days Cr.	Mining Claim Prefix	Mining Claim Number	Expend. Days Cr.
	"SEE ATTACHED SCHEDULE"				
	(4 PAGES)				
	SEE ATTACHED MAP.				

RECEIVED
AUG 15 1984
MINING LANDS SECTION

RECEIVED
AUG 10 1984
A.M. 7 8 9 10 11 12 1 2 3 4 5 6 P.M.

Total number of mining claims covered by this report of work. 190

190

For Office Use Only
Total Days Cr. Recorded: 15,200
Date Recorded: August 10/84
Mining Recorder: M.L. St. Jules
Date Approved as Recorded: Sept 4/84
Branch Director:

Certification Verifying Report of Work

I hereby certify that I have a personal and intimate knowledge of the facts set forth in the Report of Work annexed hereto, having performed the work or witnessed same during and/or after its completion and the annexed report is true.

Name and Postal Address of Person Certifying: Mel de Quadros, Box 2028 Dawson Ontario P0S 1K0
Date Certified: 01 August 84
Certified by (Signature):

1362 (81/9)

File on 609287
FILE ON →

page 1

MANWA EXPLORATION SERVICES LTD.

'SCHEDULE'

A. MEATH TWP.

SSM 704491
704492
704493
704494
704495
704496
704497
704498
704499 X

B. RENNIE TWP

SSM 704487
SSM 704488
704489
704490 X

704410
704411 X
704414
704415
704416
704417
704418
704419
704420
704421
704422
704423
704424
704425
704426
704427
704428 X

SSM 707166
707167
707168
707169
707170
707171
707172
707173
707174
707175
707176
707177 X

707117
707118
707119
707120
707121
707122
707123
707124
707125 X

P.O. Box 4, #370 - 625 Howe Street, Vancouver, B.C. V6C 2T6 Telephone: (604) 683-0417

MANWA EXPLORATION SERVICES LTD.

SCHEDULE

B. RENNIE TWP (CONT)

SSM 707126
707127
707128

707217 ← 707217
707218
707219
707220
707221
707222
707223
707224
707225
707226
707227
707228.

C. STOVER TWP.

SSM 707098
707099

SSM 707158
707159
707160
707161
707162
707163
707164
707165

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MANWA EXPLORATION SERVICES LTD.

C. STOVER TWP

SSM 707092
707093
707094
707095
707096
707097

SSM ~~707129~~
~~707130~~ RkQ.
707131
707132
707133
707134
707135
707136
707137

SSM 707081
707082
707083
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707088
707089
707090
707091

SSM 766903
766904

SSM 609287
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609292
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609296
637786
~~591207~~ RkQ
~~591208~~
~~641794~~
~~641795~~-RkQ

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P.O. Box 4, #370 · 625 Howe Street, Vancouver, B.C. V6C 2T6 Telephone: (604) 683-0417

C. STOVER TWP (cont)

SSM 707190
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SSM 707100
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MANWA EXPLORATION SERVICES LTD.

Field Office,
Box 2028,
Wawa, Ontario P0S 1K0
13th July 1984.

The Mining Recorder,
Sault Ste Marie Mining Division,
Box 669, 875 Queen St. East,
Sault Ste. Marie, Ont. P6A 5N2

Dear Mrs. St. Jules,

Enclosed are two reports of work for claims in Stover Township. These claims belong to Mr. G. Paquette and Mr. R.S. McGowan, though they may not yet have been transferred.

The airborne work, which I am sending today to Toronto, forms a part of the large block of claims in the Stover, Meath and Rennie Townships which belong to Mr. McGowan and which are presently under extension.

Yours sincerely,

Mel de Quadros.

P.O. Box 4, #370 - 625 Howe Street, Vancouver, B.C. V6C 2T6 Telephone: (604) 683-0417

MANWA EXPLORATION SERVICES LTD.

RECEIVED
Land Management Branch ☐
COMMENTS PLEASE ☐

Field Office,
Box 2028
Wawa, Ontario POS1KO
13th July 1984.

The Director,
Land Management Branch,
Whitney Block, Room 6450
Queen's Park, Toronto
Ontario M7A 1W3

Dear Sir,

Enclosed are two copies of the report on the airborne survey carried out on the claims of R.S. McGowan in the Stover, Meath and West Townships. These claims are presently under extension.

I am also applying for this work to be applied for an additional 13 claims covered by the survey. I enclose copies of the reports of work just filed with the Sault Ste. Marie Mining Division.

Yours Sincerely,

RECEIVED
JUL 17 1984
MINING LANDS SECTION

P.O. Box 4, #370 - 625 Howe Street, Vancouver, B.C. V6C 2T6 Telephone: (604) 683-0417

1984 07 24

Your File:
Our File: 2.6953

Mrs. M.V. St. Jules
Mining Recorder
Ministry of Natural Resources
875 Queen Street East
P.O. Box 669
Sault Ste. Marie, Ontario
P6A 5N2

Dear Madam:

We have received reports and maps for an Airborne Geophysical (Electromagnetic & Magnetometer) Survey submitted on Mining Claims SSM 707092 et al in the Townships of Stover, Rennie and Meath.

This material will be examined and assessed and a statement of assessment work credits will be issued.

We do not have a copy of the report of work which is normally filed with you prior to the submission of this technical data. Please forward a copy as soon as possible.

Yours sincerely,

S.E. Yundt
Director
Land Management Branch

Whitney Block, Room 6643
Queen's Park
Toronto, Ontario
M7A 1W3
Phone: (416)965-6918

S. Hurst:sc

cc: R.J. McGowan/G. Paquette
370 - 625 Howe Street
Vancouver, B.c.
V6C 2T6

cc: Dighem Limited
29 Silverton Avenue
Downsview, Ontario

MANWA EXPLORATION SERVICES LTD.

RECEIVED
Land Management Branch
CIRCULATE ☐
COMMENTS PLEASE ☐
JUL 31 1984
W. L. GOOD

FIELD OFFICE,
Box 2028,
Wawa, Ontario P0S 1K0
24 JULY 1984

The Director,
Land Management Branch,
Whitney Block, Room 6450,
Queen's Park, Toronto M7A 1W3

Dear Sir,

<u>Attention</u> Mr. Denis Kinwig,

Further to our conversation today regarding my error in filing for airborne credits for Airborne work on the claims of R.J. McGowan in the Stover, Rennie and Meath Townships, please find enclosed new technical data statements to replace the two sent with the survey to you approximately two weeks ago.

I am also enclosing the amended reports of claims for 12 additional claims added to the survey and the earlier reports of work, which bear file numbers from the Sault Ste Marie Division in hope these will help you trace the reports.

Also enclosed are two copies of the GM Survey that should form the third survey and should have been included in the reports I sent you.

Yours Sincerely,

Mel de Quadros.

RECEIVED
JUL 31 1984
MINING LANDS SECTION

P.O. Box 4, #370 - 625 Howe Street, Vancouver, B.C. V6C 2T6 Telephone: (604) 683-0417

MANWA EXPLORATION SERVICES LTD.

Field Office,
Box 2028,
Wawa, Ontario POS 1K0
27th July 1984

Mrs. M.V. St. Jules,
The Mining Recorder,
P.O. Box 669 - 875 Queen Street East,
Sault Ste. Marie Ontario P6A 2B3

Dear Mrs. St. Jules,

I regret to inform you that yet again I have erred in filing a report of work, and I am enclosing two reports of work forms (amended) to replace previously sent ones (copies of which are also attached.

The reason for the amendments is that we actually flew three surveys - mag, EM and VLF-EM and not just the two that I claimed for. I am also informing Mr. Denis Kinwig at Lands [illegible] Management regarding the error.

Yours Sincerely,

Mel de Quadros.

RECEIVED
JUL 31 1984
MINING LANDS SECTION

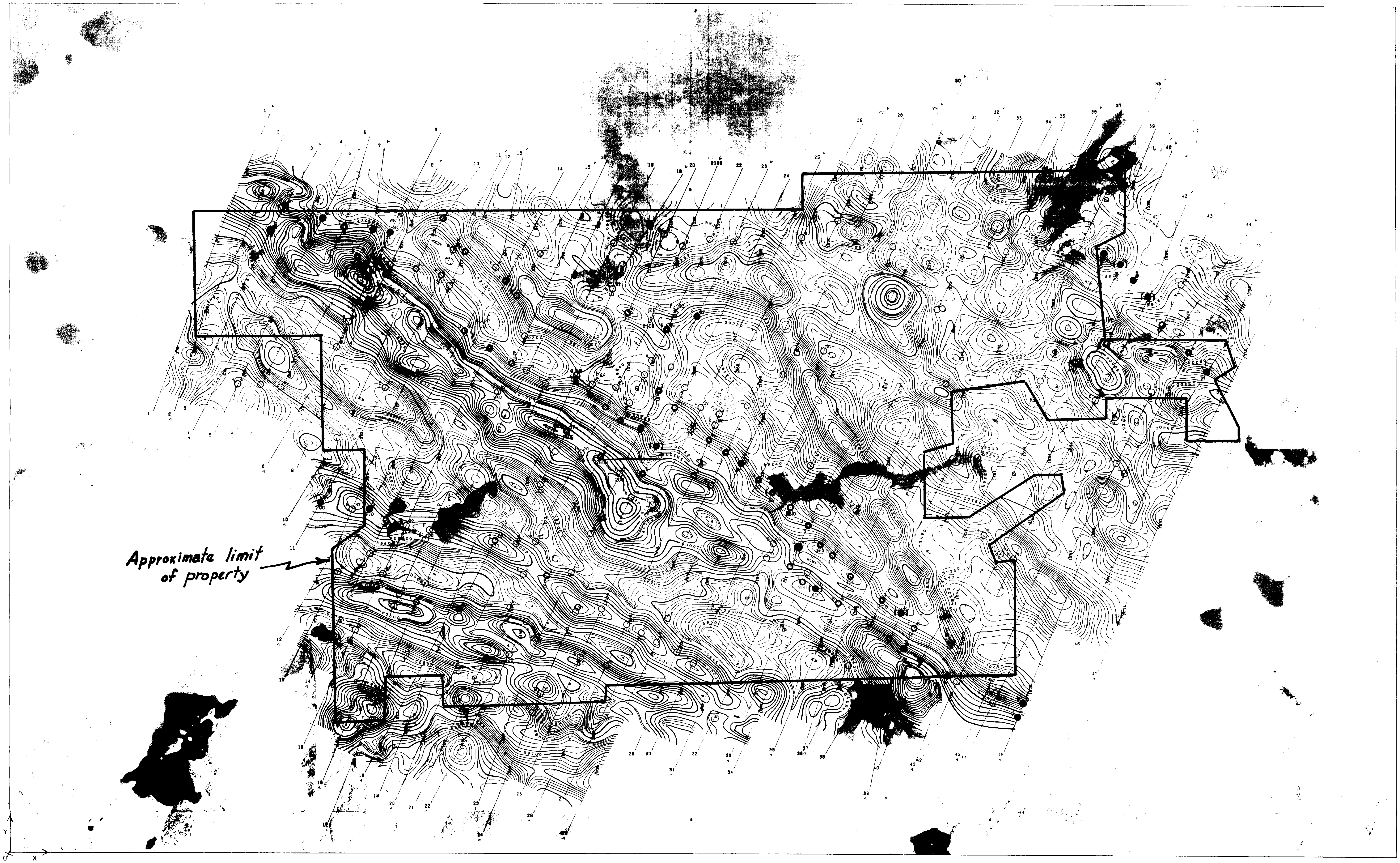
P.O. Box 4, #370 - 625 Howe Street, Vancouver, B.C. V6C 2T6 Telephone: (604) 683-0417

FOR ADDITIONAL

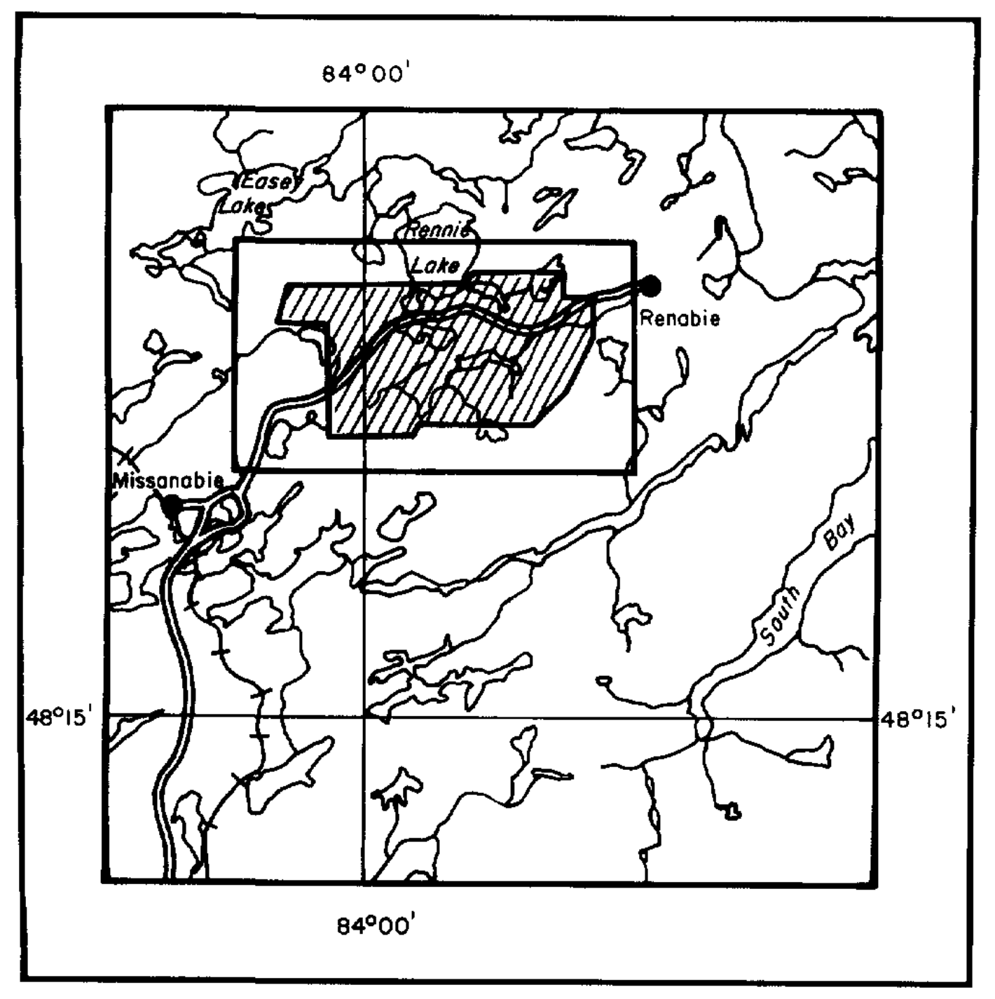
INFORMATION

SEE MAPS:

STOVER-0026 #1-3



Approximate limit of property



LOCATION MAP

SCALE 1:250,000

DIGHEM^{III} SURVEY

RENNIE LAKE AREA, ONTARIO

TOTAL FIELD MAGNETICS

FOR

ROBERT J. McGOWAN

D. C. FRASER
REGISTERED PROFESSIONAL ENGINEER
PROVINCE OF ONTARIO

Scale 1:15,840

1/2 0 1/2 1 Miles

Flight Line

2118	Fiducial 2120 (Not recovered from film)
	Fiducial 2118 (Recovered from film)
	Fiducial 2110 (Not recovered from film)
2104	Fiducial 2104 (Recovered from film)
301 ^	Line number and Flight direction

ISOMAGNETIC LINES
(total field)

500	500 nT
100	100 nT
20	20 nT
10	10 nT
⬭	magnetic depression

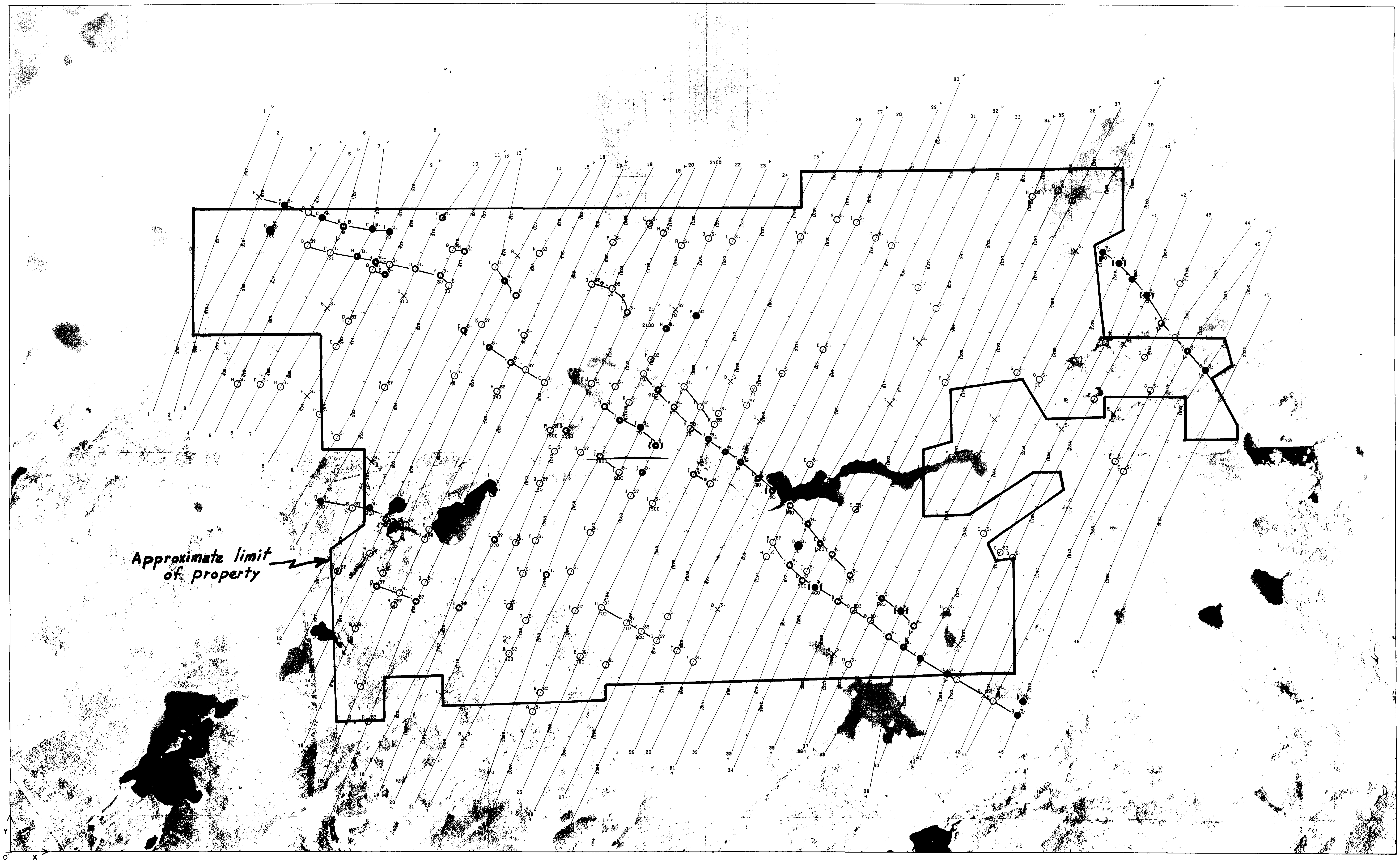
Magnetic Inclination within the survey area: 76°

STOVER-0026, #1

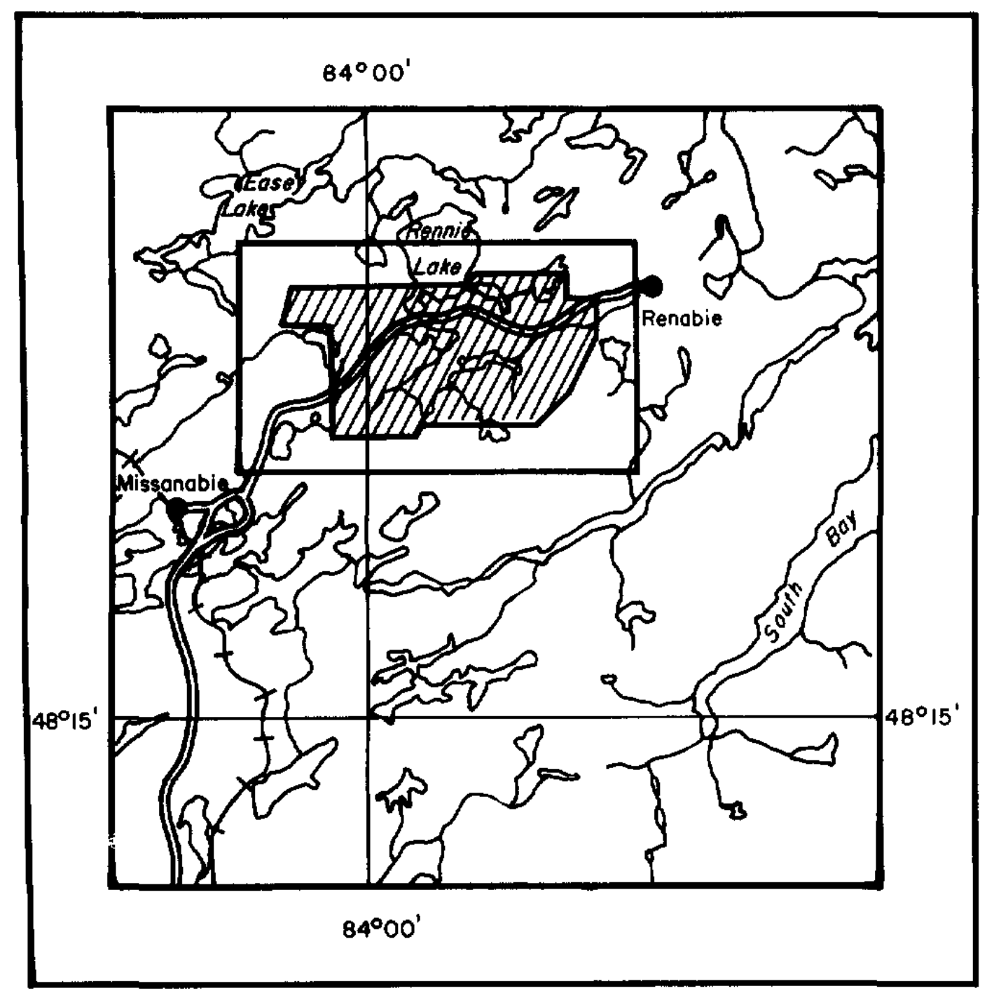
JOB	DATE	DRAWN BY	CHECKED BY
201	MAY, 84	B.P.	

200

2.695 3



LOCATION MAP



SCALE 1:250,000

DIGHEM^{III} SURVEY

RENNIE LAKE AREA, ONTARIO

ELECTROMAGNETIC ANOMALIES

FOR

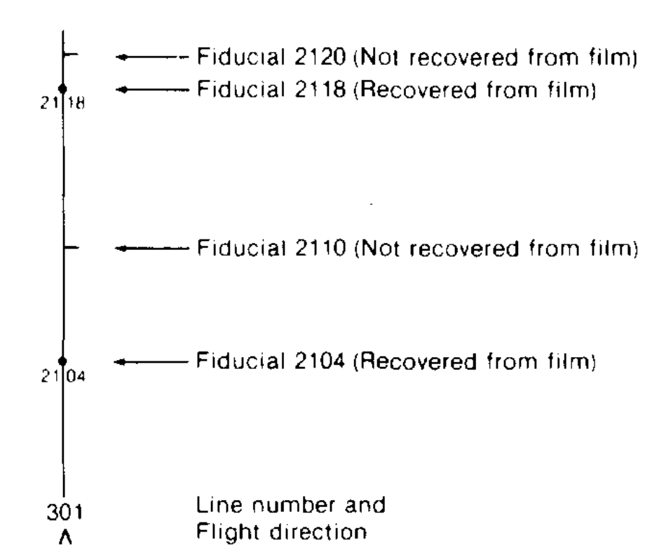
ROBERT J. McGOWAN

REGISTERED PROFESSIONAL ENGINEER
D. C. FRASER
PROVINCE OF ONTARIO

Scale 1: 15,840

1/2 0 1/2 1 Miles

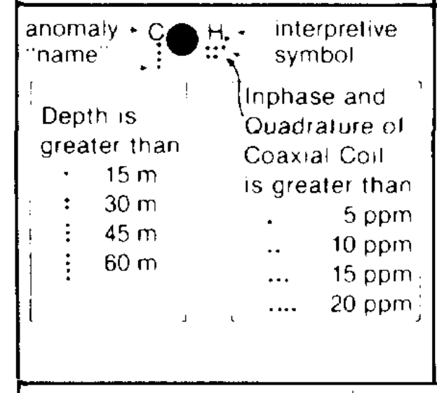
Flight Line



Fiducial 2120 (Not recovered from film)
Fiducial 2118 (Recovered from film)
Fiducial 2110 (Not recovered from film)
Fiducial 2104 (Recovered from film)
Line number and Flight direction

ANOMALY GRADE	EM GRADE SYMBOL	CONDUCTANCE RANGE (MHOS)
6	●	· 99
5	●	50—99
4	●	20—49
3	◉	10—19
2	○	5— 9
1	○	· 5
—	×	Indeterminate

DIGHEM anomalies are divided into six grades of conductivity-thickness product. This product in mhos is a measure of conductance.

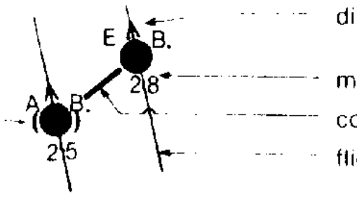


anomaly "name"
interpretive symbol

Depth is greater than
· 15 m
: 30 m
⋮ 45 m
⋮ 60 m

Inphase and Quadrature of Coaxial Coil is greater than
. 5 ppm
.. 10 ppm
... 15 ppm
.... 20 ppm

Interpretive symbol	Conductor ("model")
B.	Bedrock conductor
S.	Conductive cover ("horizontal thin sheet")
H.	Broad conductive rock unit, deep conductive weathering, thick conductive cover ("half space")
E.	Edge of broad conductor ("edge of half space")
L.	Culture, e.g. power line, building, fence



arcs indicate the conductor has a thickness › 10 m
dip direction
magnetic correlation in nT (gammas)
conductor axis
flight line

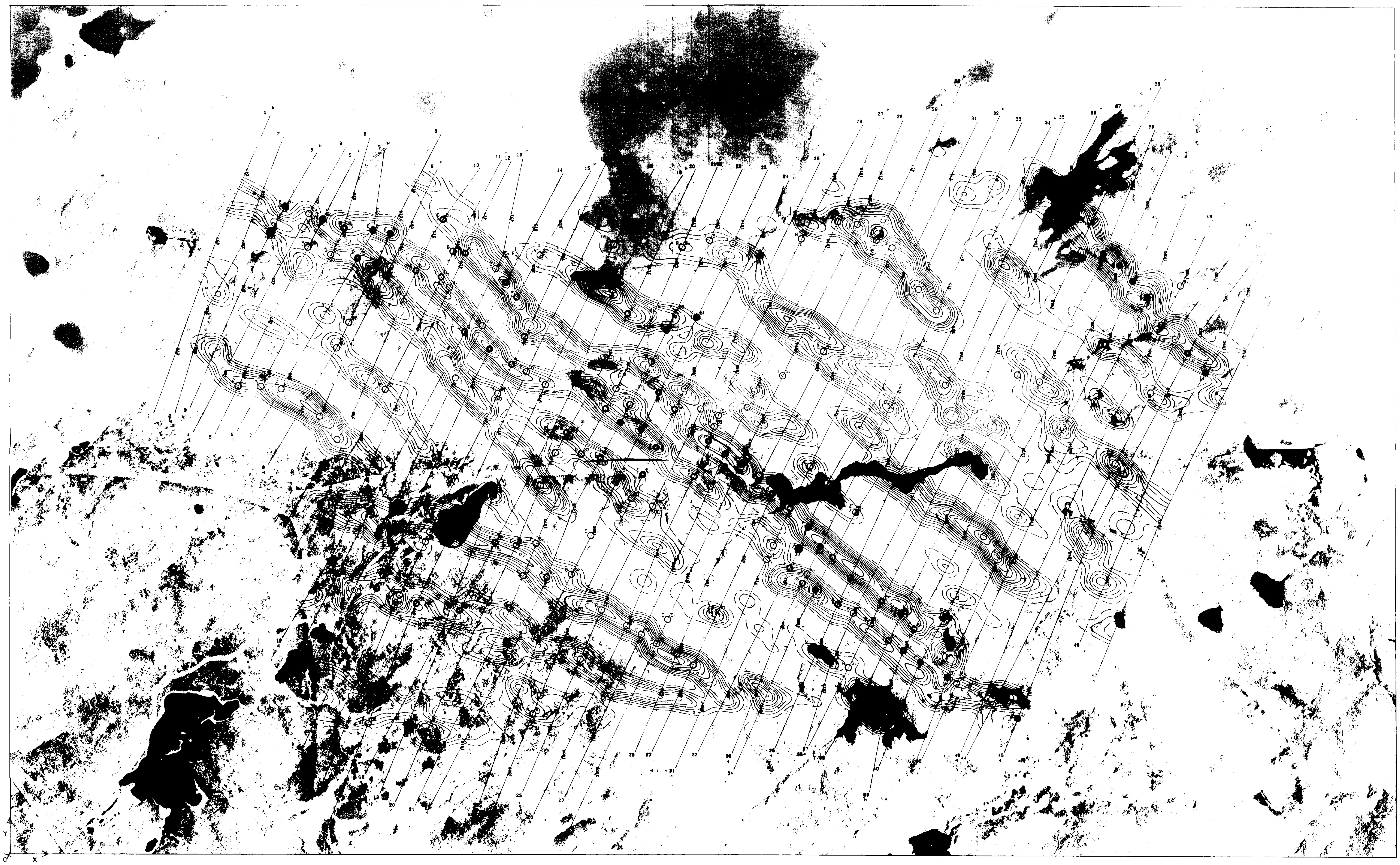
STOVER-0026,#2

2.6953 dup

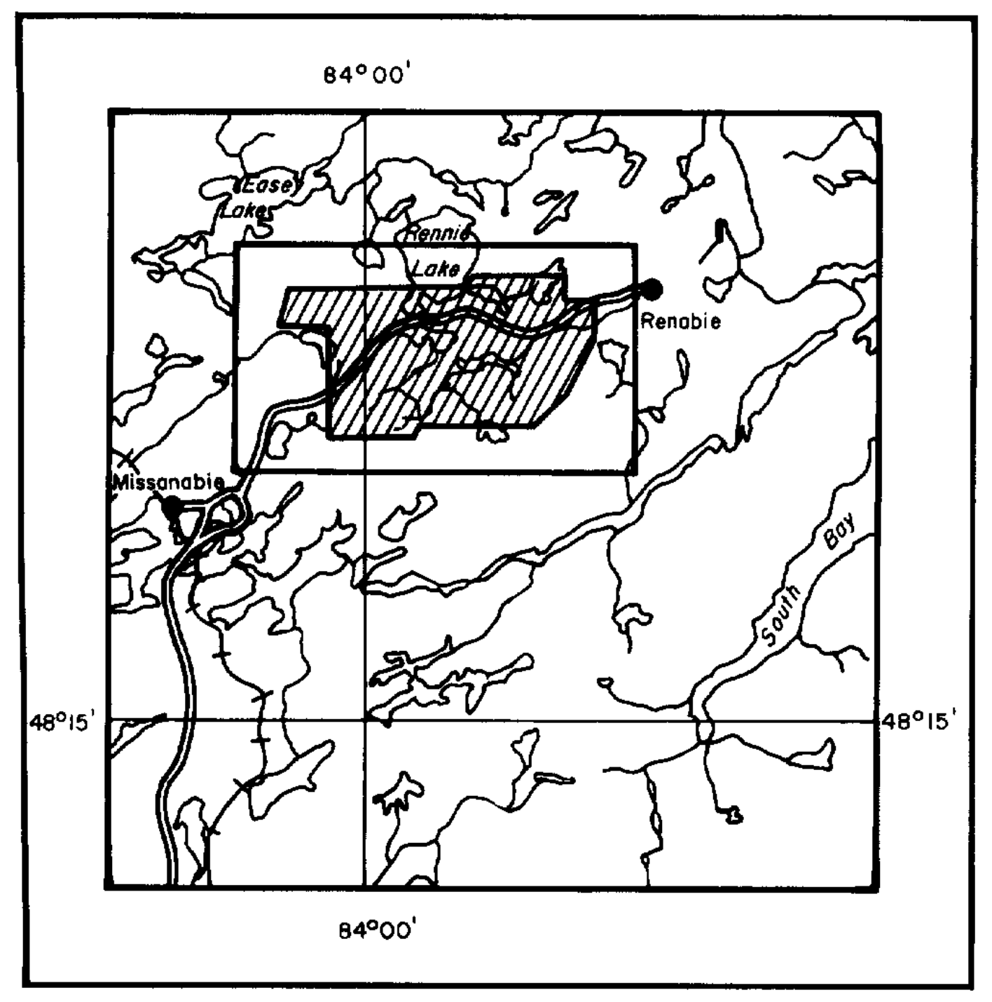
2.6953 dup.

JOB	DATE	DRAWN BY	CHECKED BY
201	MAY, 84	B.P.	

210



LOCATION MAP



SCALE 1:250,000

DIGHEM^{III} SURVEY

RENNIE LAKE AREA, ONTARIO

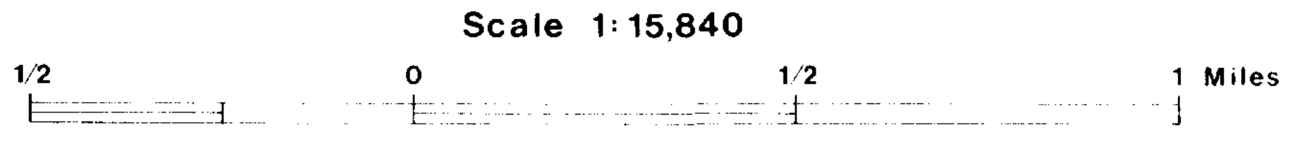
FILTERED TOTAL VLF EM FIELD

FOR

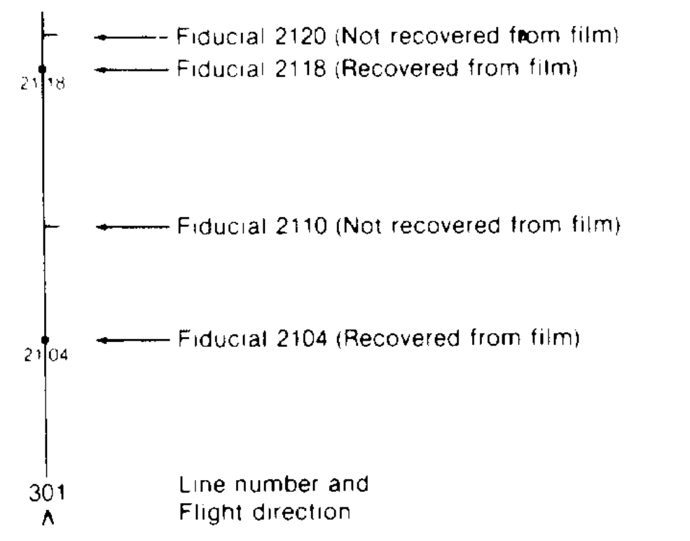
ROBERT J. McGOWAN

D. C. FRASER

Scale 1:15,840

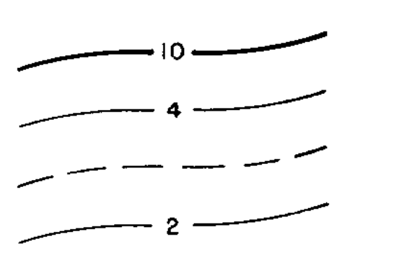


Flight Line

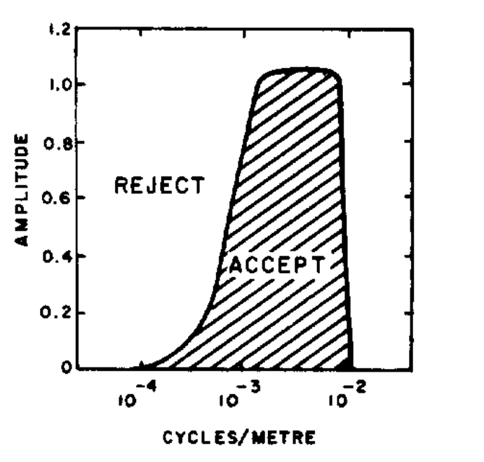


LEGEND

Contours in percent.



The numbers face in the direction of increasing value.



Frequency response of VLF — EM filter

Tx: NSS ANNAPOLIS, Md.
f = 21.4 kHz

STOVER-0026, #3.

42C08SE0004 0026 STOVER

220

2.6953 Dup.

JOB	DATE	DRAWN BY	CHECKED BY
201	MAY, 84		