

DIGHEM<sup>II</sup> SURVEY

IN

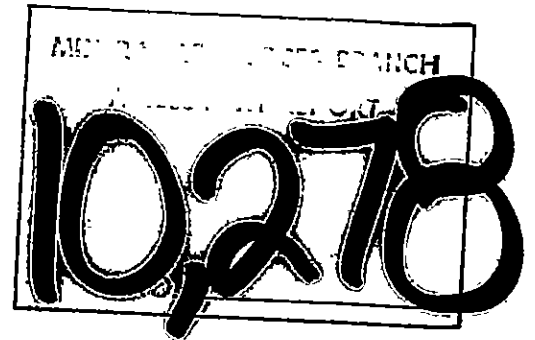
SURVEY MOUNTAIN AREA, BRITISH COLUMBIA

FOR

GULF MINERALS CANADA LIMITED

BY

DIGHEM LIMITED



TORONTO, ONTARIO  
JANUARY 26, 1982

S. VERGOS  
GEOPHYSICIST  
Z. DVORAK  
GEOPHYSICIST

CERTIFICATE

I, Spiros Vergos, of the City of Toronto, Ontario, Canada, do hereby certify that:

- 1) I am a geophysicist residing at 221 Humberside Ave., Toronto, Ontario.
- 2) I am a graduate of Windsor University with a Graduate degree in Geophysics (M.Sc) and of the University of Athens, Greece, with a Geology degree (B.Sc).
- 3) I have been practising my profession since June 1976.
- 4) The statements made in this report, represent my best opinion and judgement.



S. Vergos

March 22, 1982.



CERTIFICATE

I, Zbynek Dvorak, of the City of Toronto, Ontario, Canada, do hereby certify that:

- 1) I am a geophysicist residing at 146 Three Valleys Dr., Don Mills, Ontario.
- 2) I am a graduate of Charles University, Prague, Czechoslovakia with a Graduate Geophysicist degree (M.S.C.) (1961), and of the Czechoslovak Academy of Science with a C.Sc. (Ph.D.) degree (1967) in Geophysics.
- 3) I have been practising my profession since June 1967.
- 4) The statements made in this report, represent my best opinion and judgement.

*Z. Dvorak*

Z. Dvorak

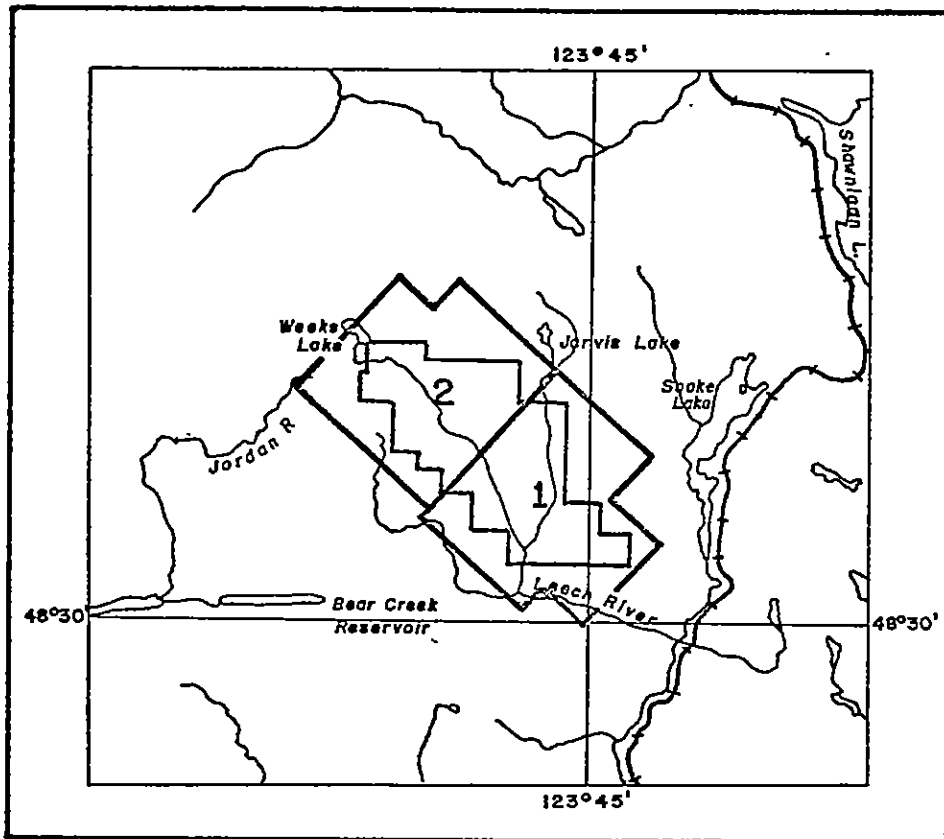
Date: *January 26, 1982*

SUMMARY

A DIGHEM<sup>II</sup> airborne electromagnetic/resistivity/magnetic survey of 249 line-km was flown in November, 1981 for Gulf Minerals Canada Limited in the Survey Mountain area, British Columbia.

The geologic environment in the survey area was generally highly conductive with numerous bedrock conductors. Some of the conductors detected appear to warrant ground follow-up exploration.

# LOCATION MAP



SCALE 1:250,000

FIGURE 1 THE SURVEY AREA

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## INTRODUCTION

A DIGHEM<sup>II</sup> survey of 249 line-km was flown with a 150 m line-spacing for Gulf Minerals Canada Limited, from November 4, to November 10, 1981 in the Survey Mountain area, British Columbia (Figure 1).

The Lama C-GDEM turbine helicopter flew with an average airspeed of 95 km/h and EM bird height of 36 m. Ancillary equipment consisted of a Sonotek PMH-5010 magnetometer with its bird at an average height of 51 m, a Sperry radio altimeter, Geocam sequence camera, Barringer 8-channel hot pen analog recorder, and a Sonotek SDS 1200 digital data acquisition system with a DigiData D 1130 9-track 800-bpi magnetic tape recorder. The analog equipment recorded four channels of EM data at approximately 900 Hz, two ambient EM noise channels (for the coaxial and coplanar receivers), and one channel each of magnetics and radio altitude. The digital equipment recorded the EM data with a sensitivity of 0.20 ppm/bit and the magnetic field to one gamma/bit.

Appendix A provides details on the data channels, their respective noise levels, and the data reduction procedure. The quoted noise levels are generally valid 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<sup>2</sup> 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.

### 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 100 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 interpreted 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.

Discrete conductor analysis

The EM anomalies appearing on the electromagnetic map are interpreted by computer to give the conductance (i.e., conductivity-thickness product) in mhos of a vertical sheet model. DIGHEM anomalies are divided into six grades of conductance, as shown in Table I. The conductance in mhos is the reciprocal of resistance in ohms.

Table I. EM Anomaly Grades

<u>Anomaly Grade</u>	<u>Mho Range</u>
6	> 100
5	50 - 99
4	20 - 49
3	10 - 19
2	5 - 9
1	< 5

The mho 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.<sup>1</sup> Small anomalies from deeply buried strong conductors are not confused with small anomalies from shallow weak conductors because the former will have larger mho values.

Conductive overburden generally produces broad EM responses which are not plotted on the EM maps. However, patchy conductive overburden in otherwise resistive areas can yield discrete-like anomalies with a conductance grade (cf. Table I) 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 1 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 surface conductors to be recognized, and these are indicated by the letter S on the map. The remaining anomalies in such areas could be bedrock

conductors. The higher grades indicate increasingly higher conductances. Examples: DIGHEM's New Inco copper discovery (Noranda, Quebec, Canada) yielded a grade 4 anomaly, as did the neighbouring copper-zinc Magusi River ore body; Mattabi (copper-zinc, Sturgeon Lake, Ontario, Canada) and Whistle (nickel, Sudbury, Ontario, Canada) gave grade 5; and DIGHEM's Montcalm nickel-copper discovery (Timmins, Ontario, 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 and 4) typically reflect sulfides of a less massive character or graphite, while weak bedrock conductors (grades 1 and 2) can signify poorly connected graphite or heavily disseminated sulfides. Grade 1 conductors may not respond to ground EM equipment using frequencies less than 2000 Hz.

The presence of sphalerite or gangue can result in ore deposits having weak to moderate conductances. As an example, the three million ton lead-zinc deposit of Restigouche Mining Corporation near Bathurst, New Brunswick,

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, the actual mho value and a letter are plotted beside the EM grade symbol. The letter is the anomaly identifier. The horizontal rows of dots, beside each anomaly symbol, indicate the anomaly amplitude on the flight record. The vertical column of dots gives the estimated depth. In areas where anomalies are crowded, the identifiers, dots and mho values 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 mho value and depth estimate will illustrate which of these possibilities fits the recorded data best.

Flight line deviations occasionally yield cases where two anomalies, having similar mho 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 on 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 mho values are plotted 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 direction, conductance, depth, thickness (see below), and dip. The accuracy is comparable to an interpretation from a high quality ground EM survey having the same line spacing.

An EM anomaly list attached to each survey report provides a tabulation of anomalies in ppm, and in mhos and estimated depth for the vertical sheet model. The EM anomaly list also shows the conductance in mhos and the 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 15 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<sup>II</sup> 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 a flight line, or aerodynamic noise. Those responses that have the appearance of valid bedrock anomalies on the flight profiles are mentioned in the report. The others should not be followed up unless their locations are of considerable geological interest.



### The thickness parameter

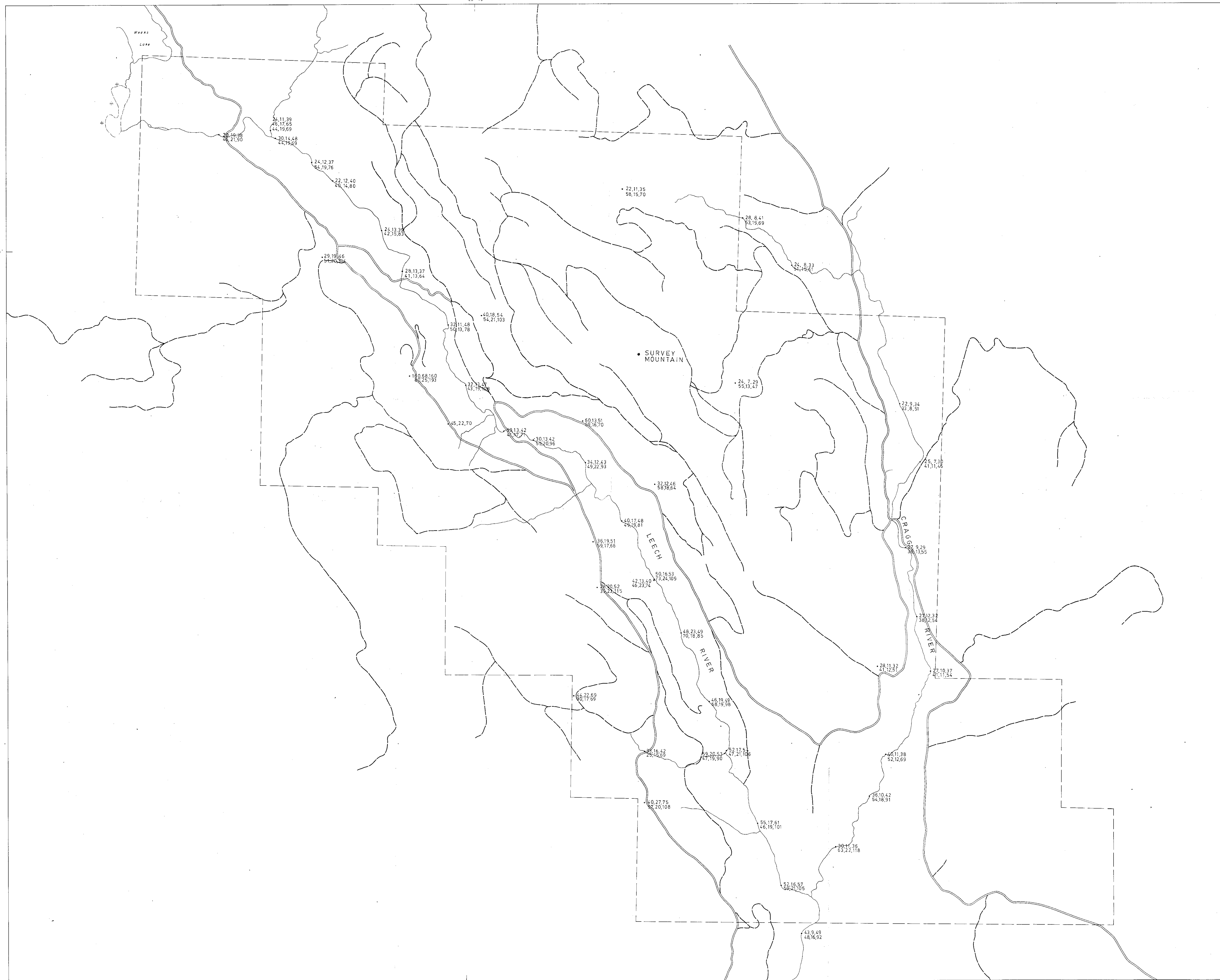
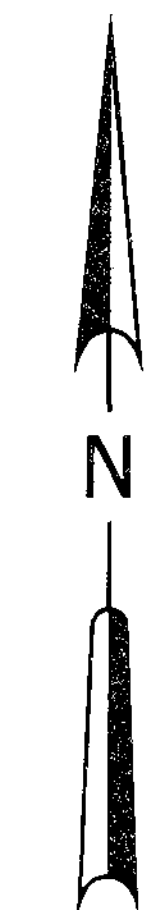
DIGHEM<sup>II</sup> can provide an indication of the thickness of a steeply dipping conductor. The ratio of the anomaly amplitude of channel 24/channel 22 generally increases as the apparent thickness increases, i.e., the thickness in the horizontal plane along the flight line. This thickness is equal 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. In base metal exploration applications, thick conductors can be high priority targets because most massive sulfide ore bodies are thick, whereas non-economic bedrock conductors are usually thin. An estimate of thickness cannot be obtained 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

29° 49'

48° 34'



LEGEND

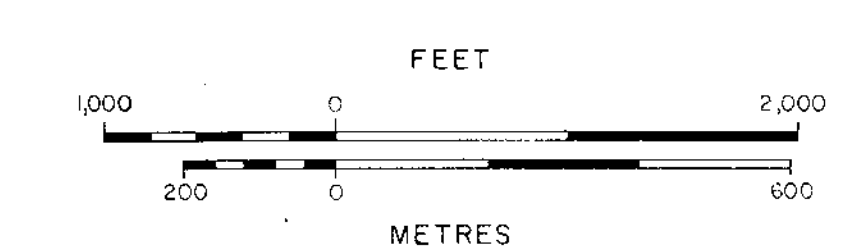
- Claim boundaries
- Stream
- Secondary logging road
- Primary logging road

• 40,11,38  
52,12,69

Dot indicates sample location. First line represents Cu, Pb, Zn values respectively for heavy mineral samples. Second and third lines represent corresponding values for regular samples. Values are in ppm.

10,278

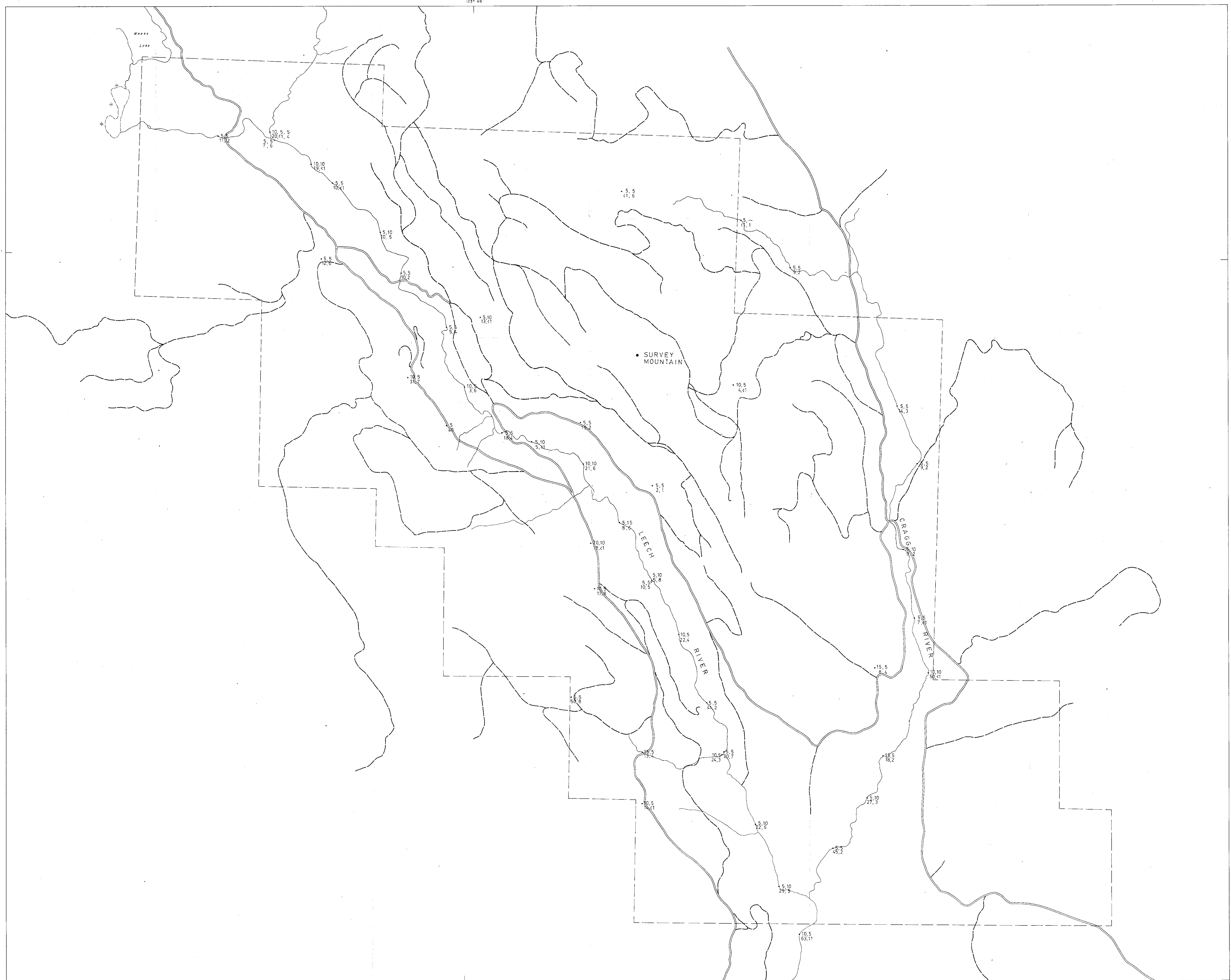
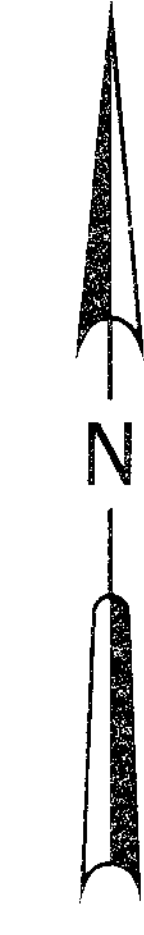
SCALE






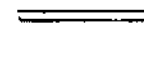
Gulf Minerals Canada Limited			
LEECH RIVER PROJECT			
STREAM SEDIMENT SURVEY			
CU, PB, ZN VALUES			
AREA 29			
BRITISH COLUMBIA			
DATE	SCALE	DRAWN BY	PLATE
NOVEMBER 1981	1:50,000	S. MORRIS	3

125° 48'

48° 34'



LEGEND

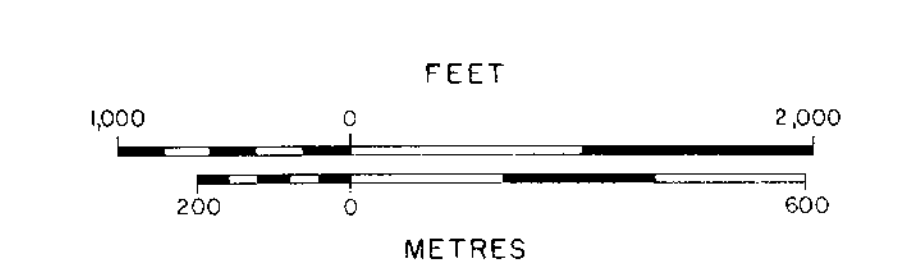
-  Claim boundaries
-  Stream
-  Secondary logging road
-  Primary logging road

• 15,5  
8,4

Dot indicates sample location. First number in each line refers to heavy mineral samples, second and third numbers refer to regular samples. First row gives Au values in ppb. Second row gives As values in ppm.

10,278

SCALE



LEECH RIVER PROJECT  
STREAM SEDIMENT SURVEY  
AU, AS VALUES

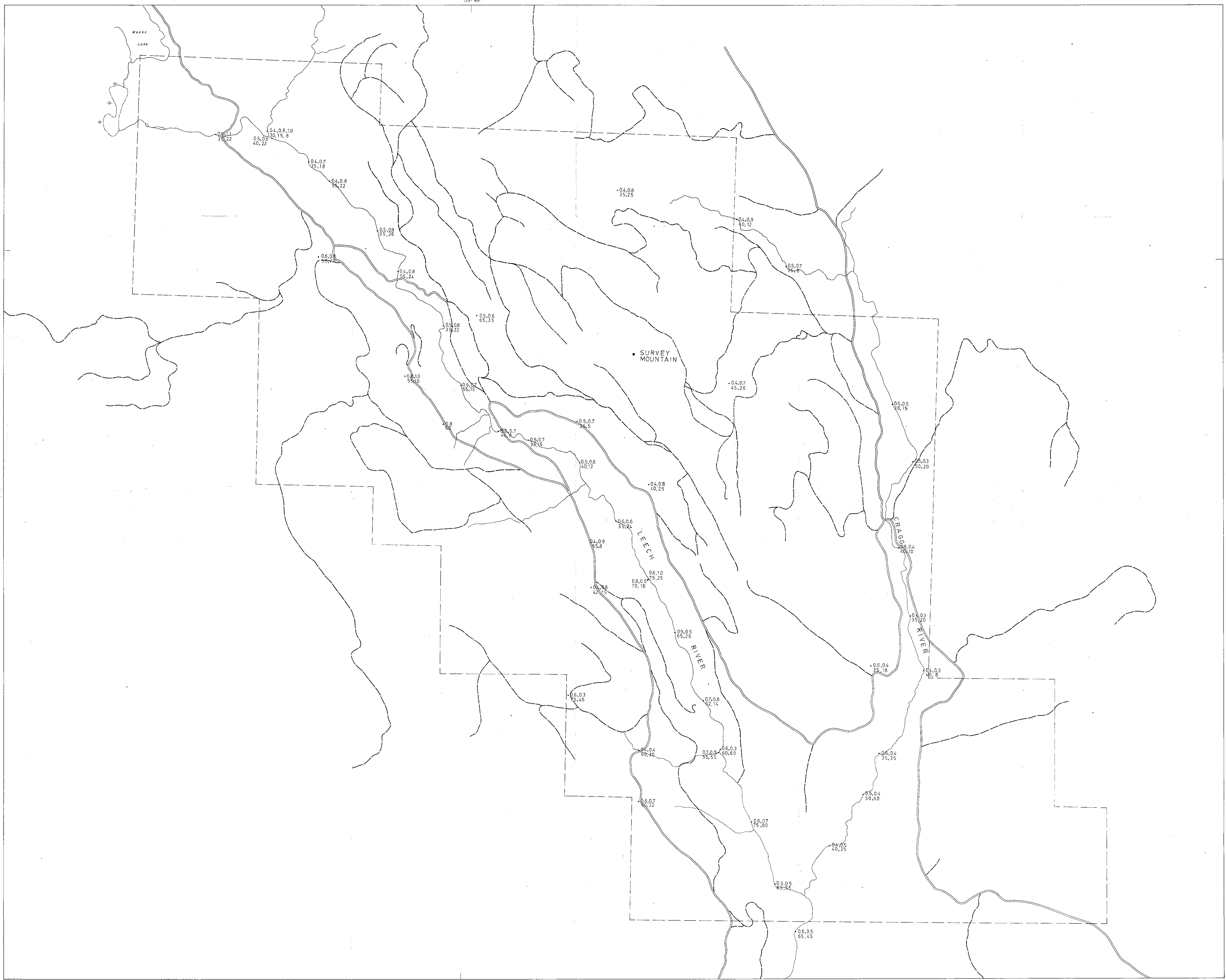
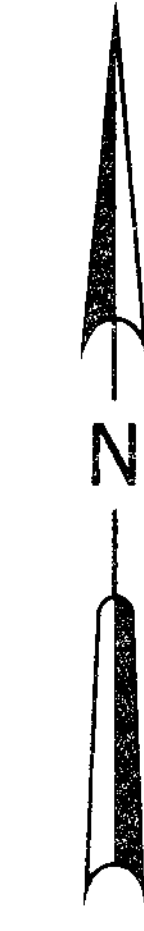
AREA 29  
BRITISH COLUMBIA

DATE	SCALE	DRAWN BY	PLATE
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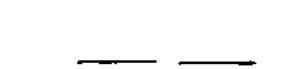


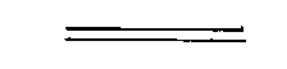
N.T.S. 928/12 PT

123° 49'

48° 34'



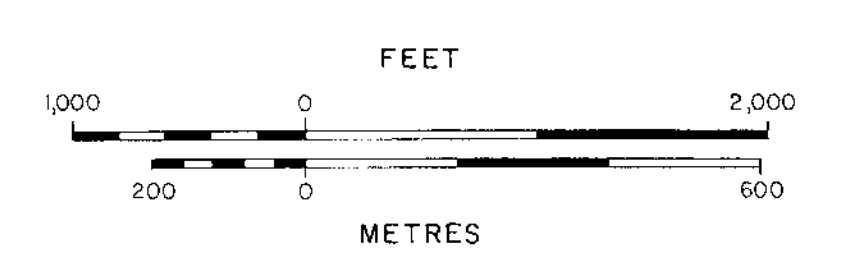
LEGEND

-  Claim boundaries
-  Stream
-  Secondary logging road
-  Primary logging road

• 04.03 35.20 Dot indicates sample location. First number in each line refers to heavy mineral samples, second and third numbers refer to regular samples. First row gives Ag values, second row gives Sb values. All values are in ppm.

10278

SCALE



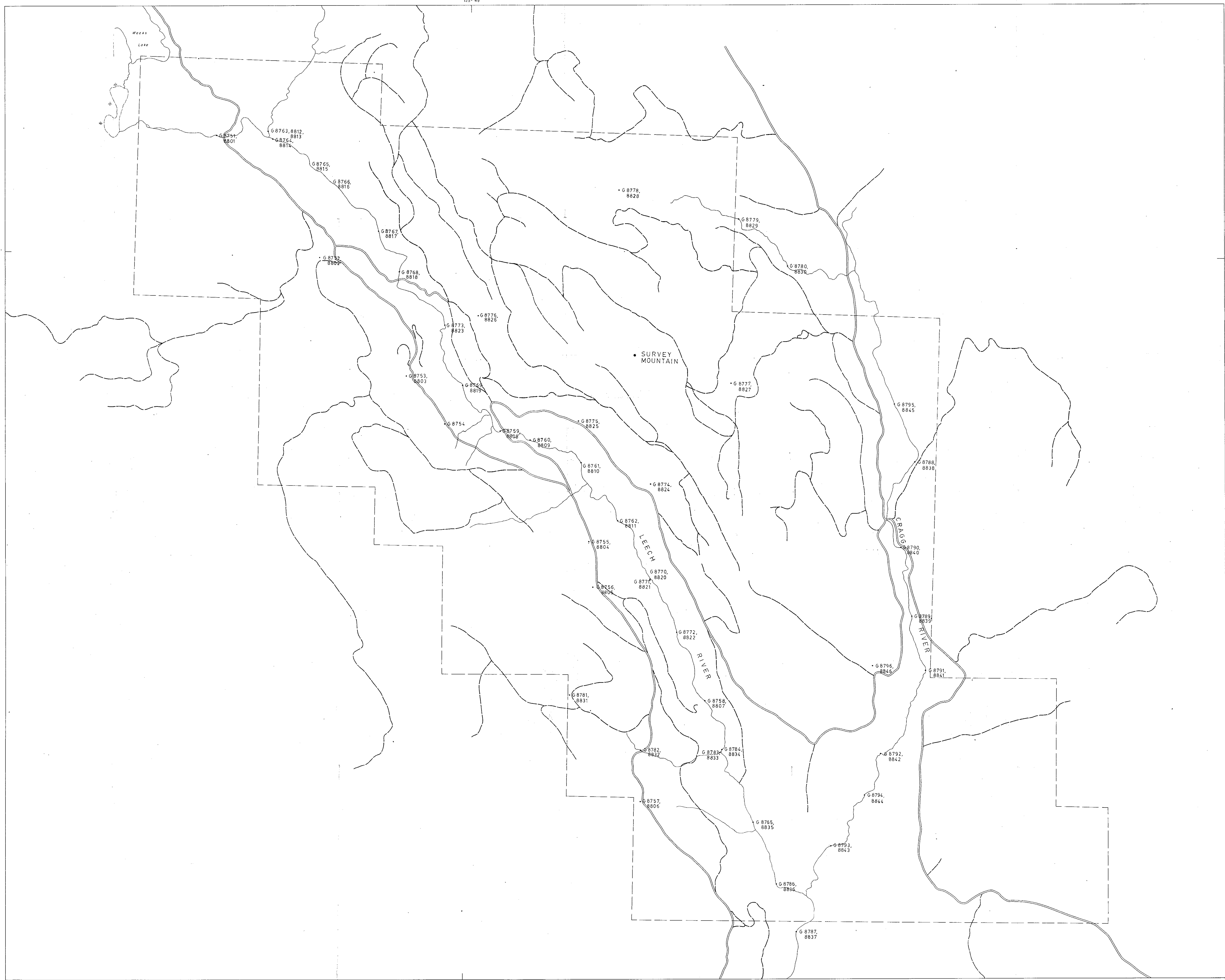
Gold Minerals Canada Limited

LEECH RIVER PROJECT  
 STREAM SEDIMENT SURVEY  
 AG, SB VALUES

AREA 29  
 BRITISH COLUMBIA

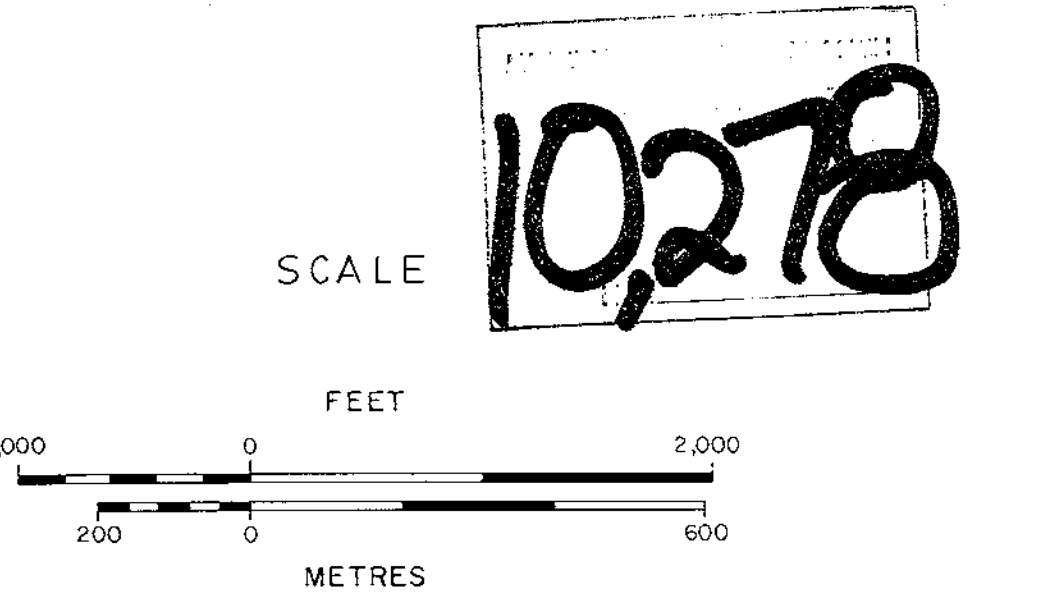
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N.T.S. 928/16 PT

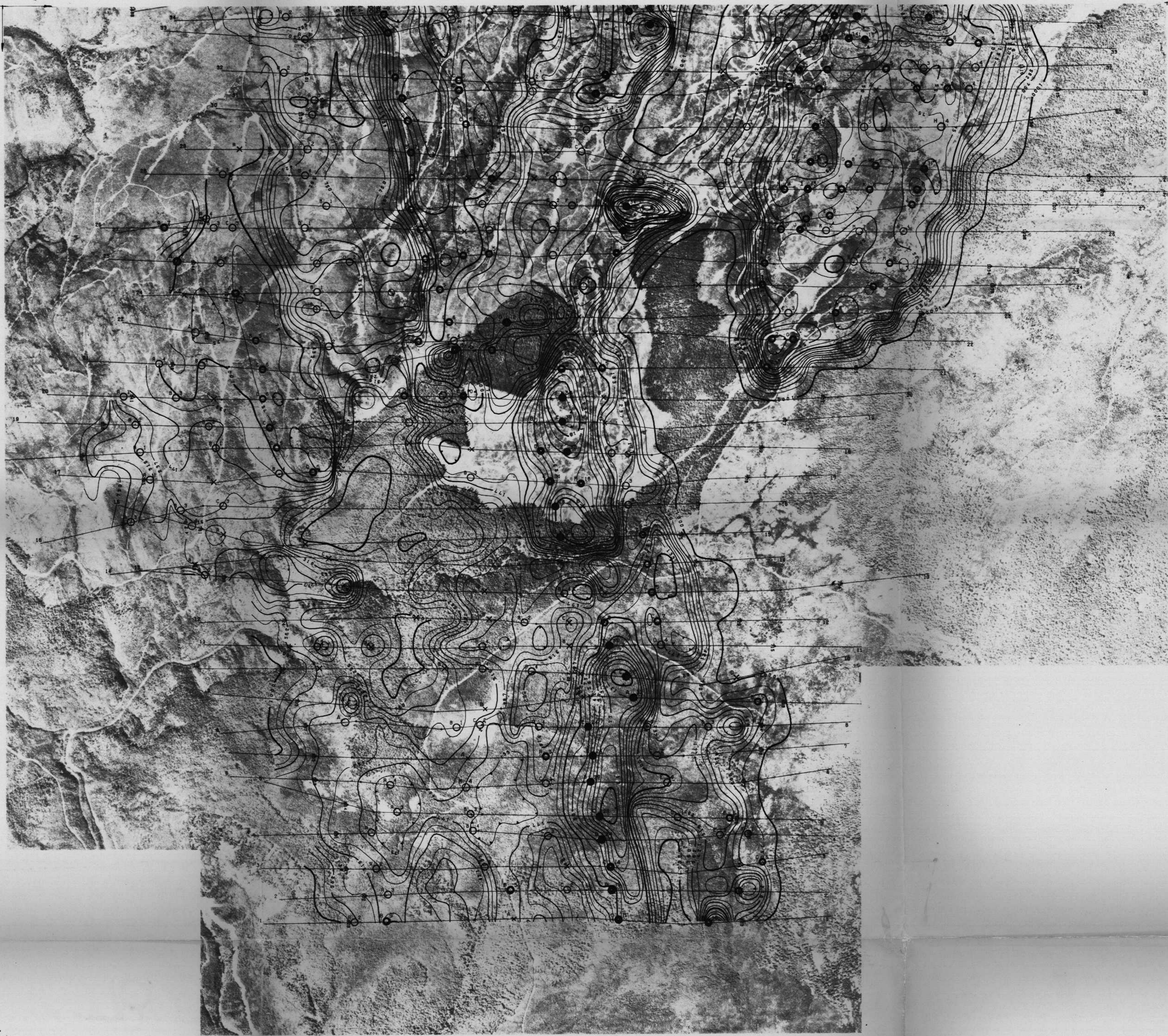


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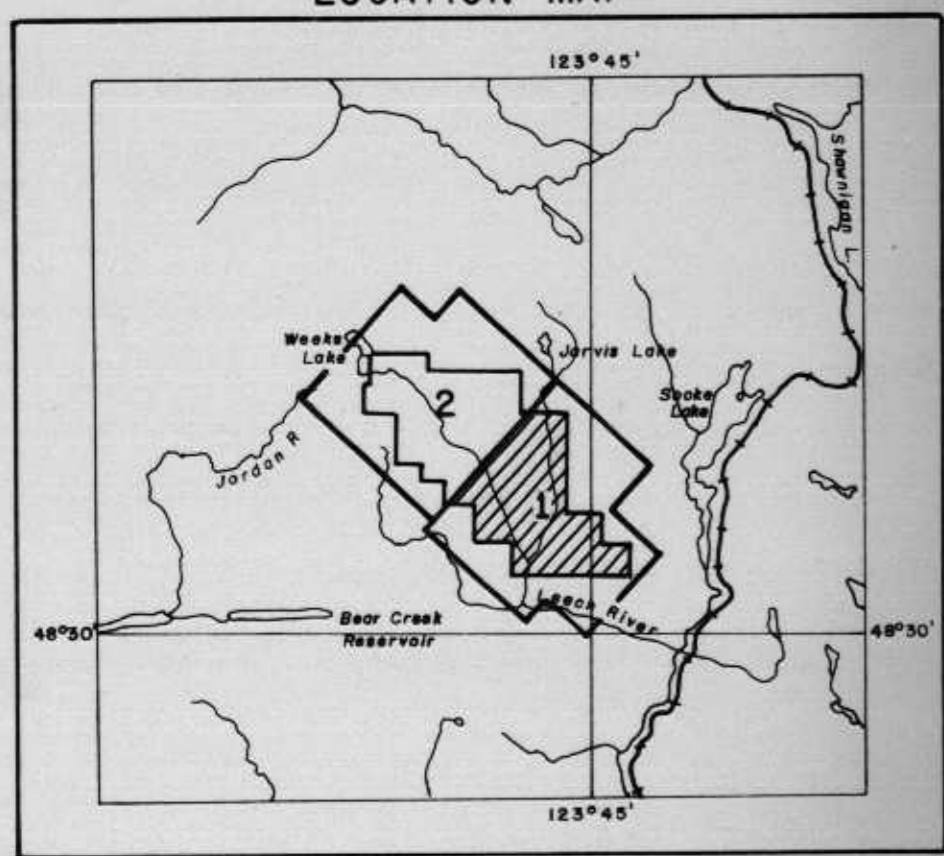
- G 8780, 8830 Sample location and number
- ~ Stream
- Secondary logging road
- == Primary logging road
- - - Property boundary



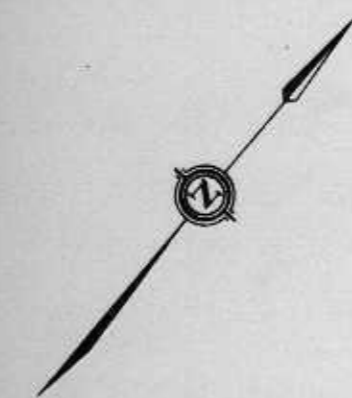
LEECH RIVER PROJECT STREAM SEDIMENT SURVEY SAMPLE LOCATION MAP			
AREA 29 BRITISH COLUMBIA			
DATE	SCALE	DRAWN BY	PLATE 2
NOVEMBER 1981	1:10,000	S. MORRIS	N.T.S. 928/12 97



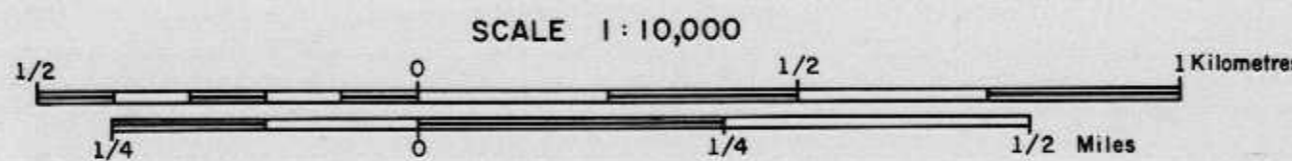
LOCATION MAP



SCALE 1:250,000



**DIGHEM<sup>II</sup> SURVEY**  
 SURVEY MOUNTAIN AREA, BRITISH COLUMBIA  
**RESISTIVITY**  
 FOR  
 GULF MINERALS CANADA LTD.

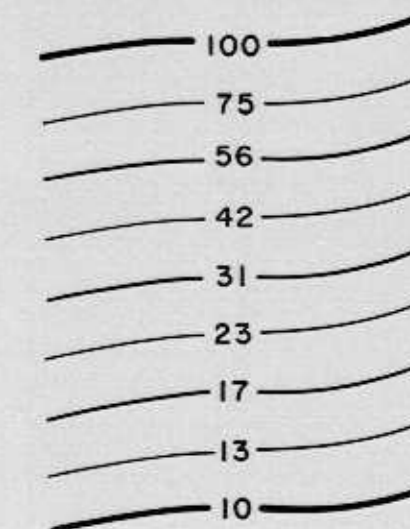


SHEET I

MINERAL RESOURCES BRANCH  
 INVESTMENT REPORT  
**10,278**

**LEGEND**

Contours in ohm-m  
 at eight intervals per decade



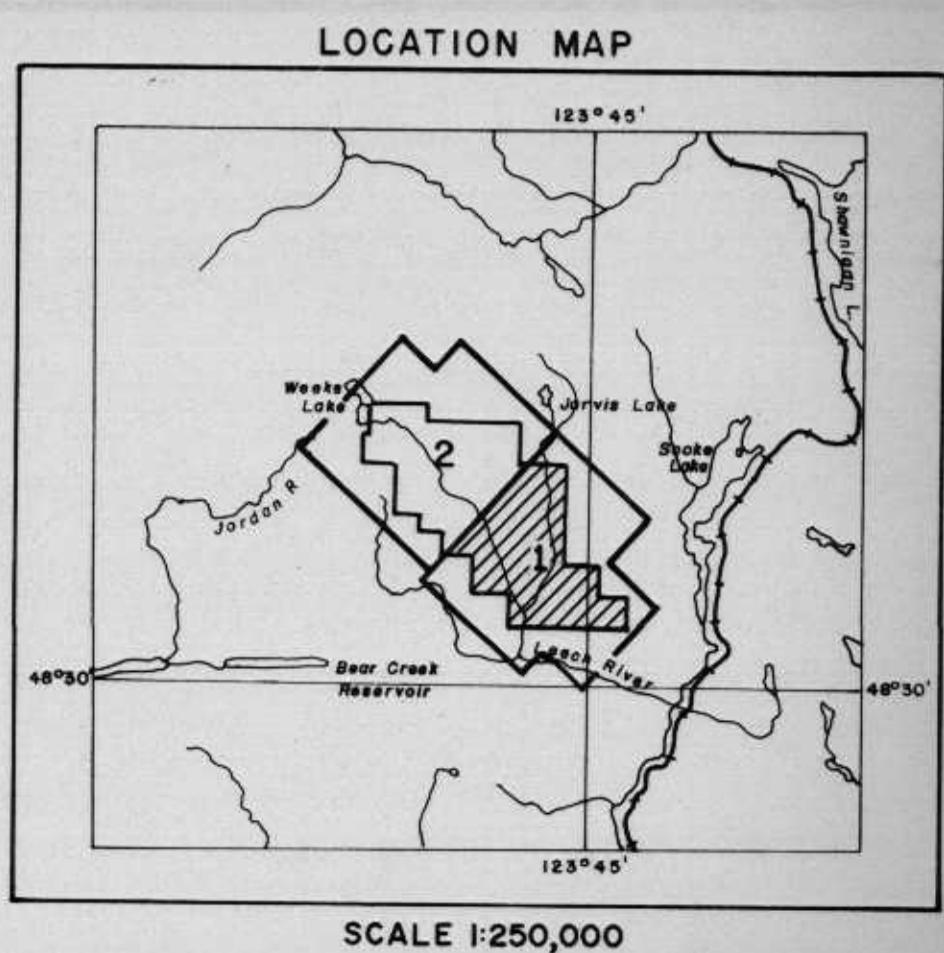
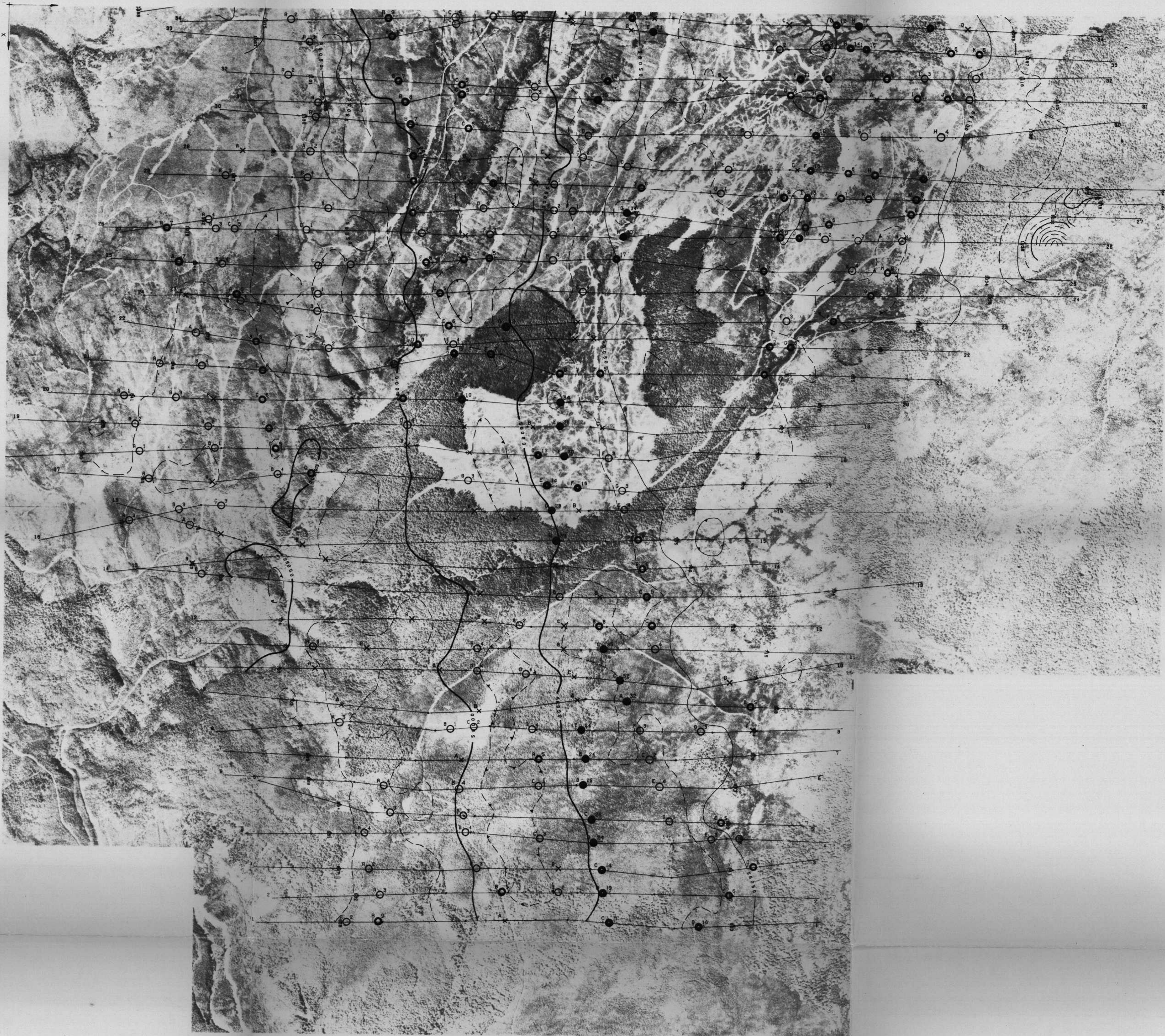
**Note**

The numbers face in the  
 direction of increasing value.

Flight line



Fiducials  
 and  
 numbers



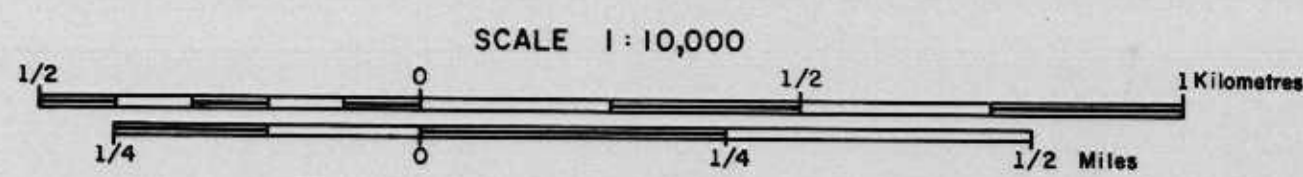
# DIGHEM<sup>II</sup> SURVEY

SURVEY MOUNTAIN AREA, BRITISH COLUMBIA

## MAGNETICS

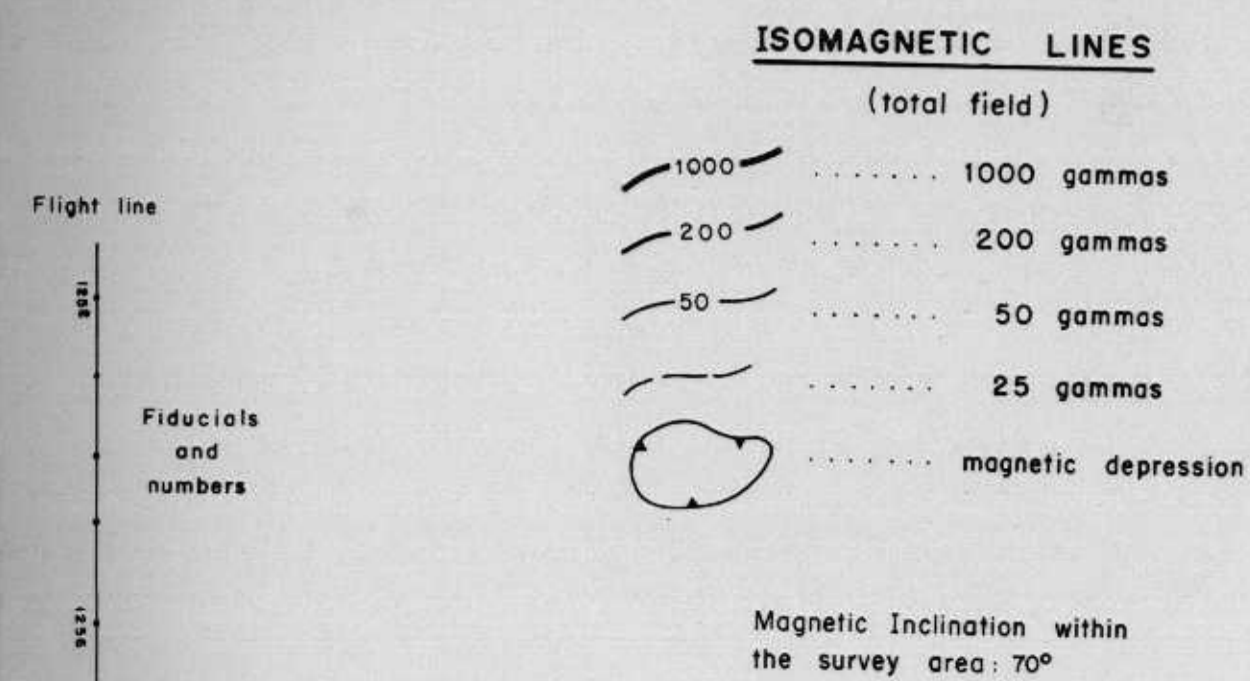
FOR

### GULF MINERALS CANADA LTD.

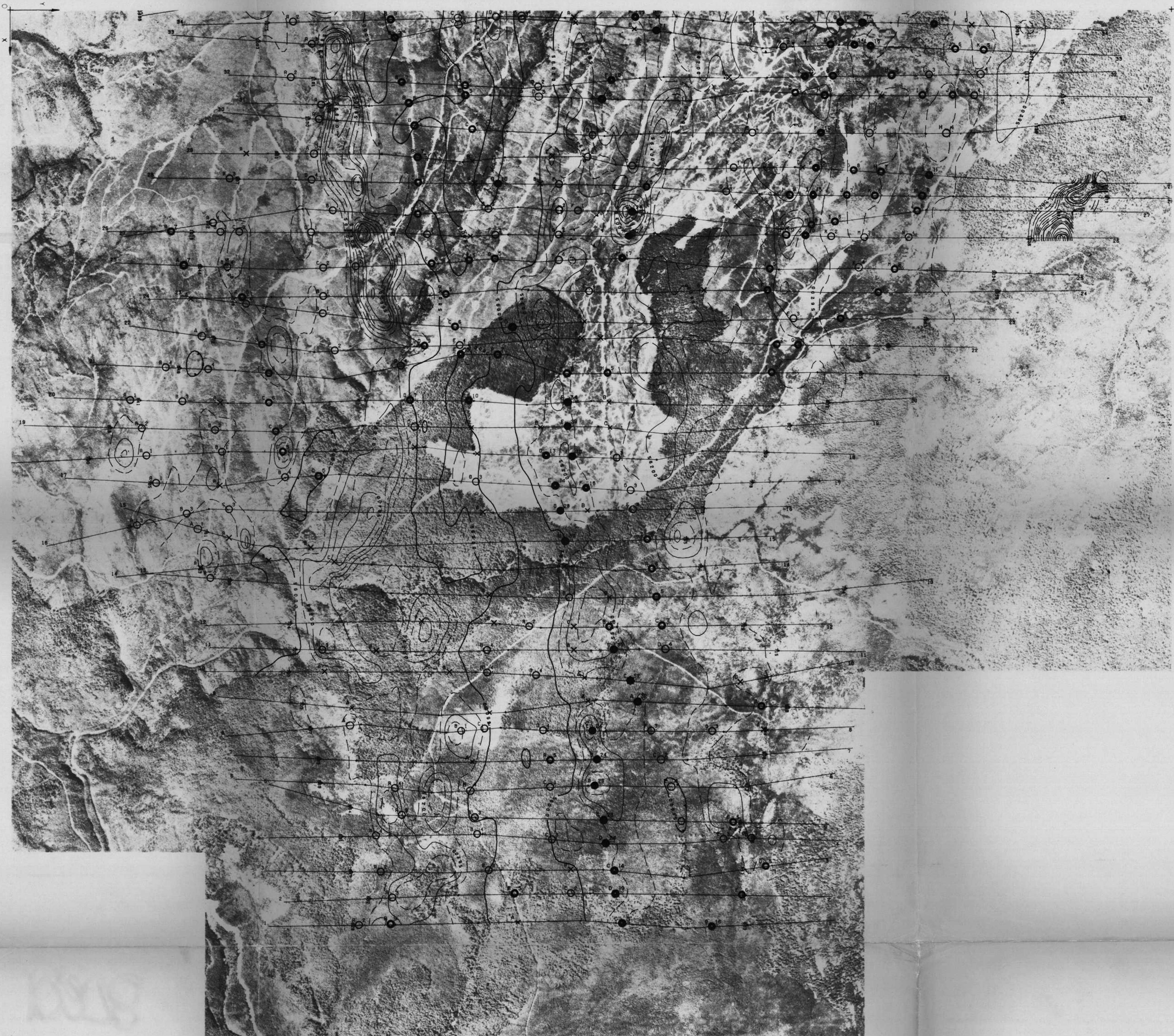


SHEET 1

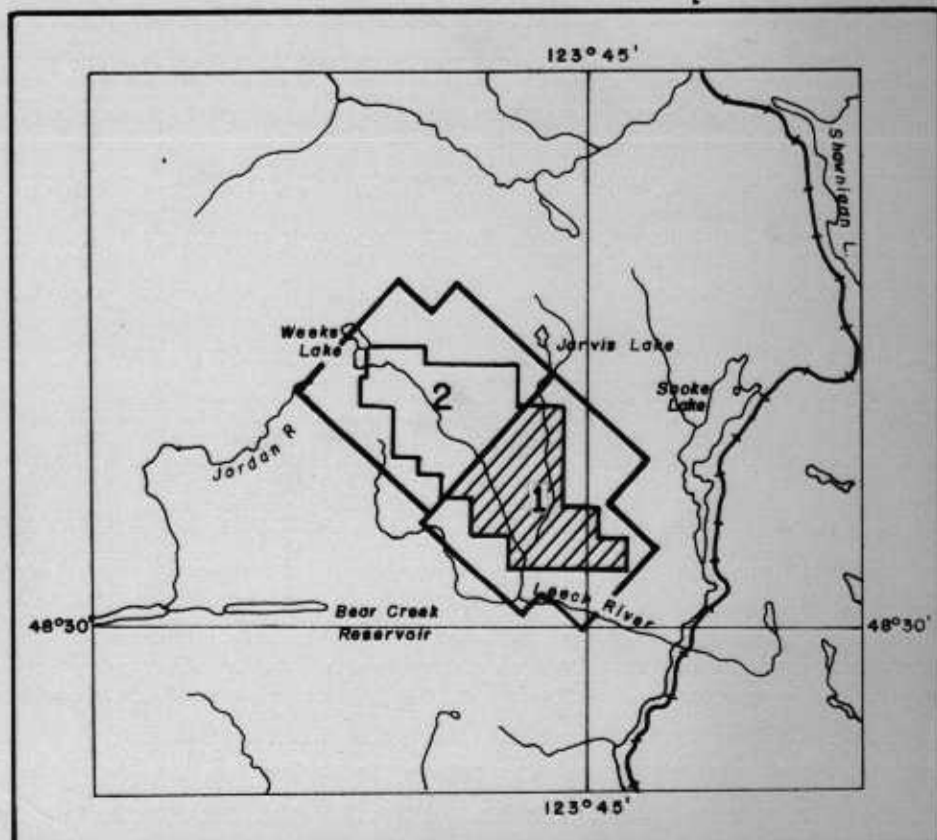
MINERAL RESOURCES BRANCH  
ASSESSMENT REPORT  
**10,278**



JOB 157	DATE JANUARY 1982	DRAWN BY <i>Jm</i>	CHECKED BY <i>z.z.</i>
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LOCATION MAP



SCALE 1:250,000

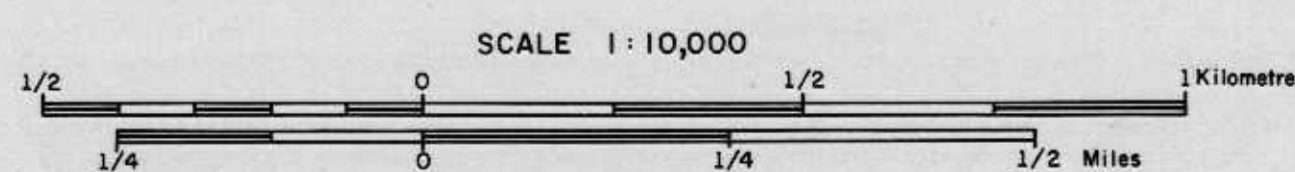
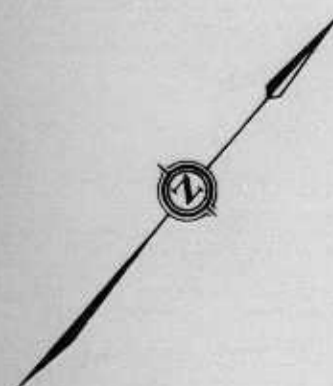
# DIGHEM<sup>II</sup> SURVEY

SURVEY MOUNTAIN AREA, BRITISH COLUMBIA

ENHANCED MAGNETICS

FOR

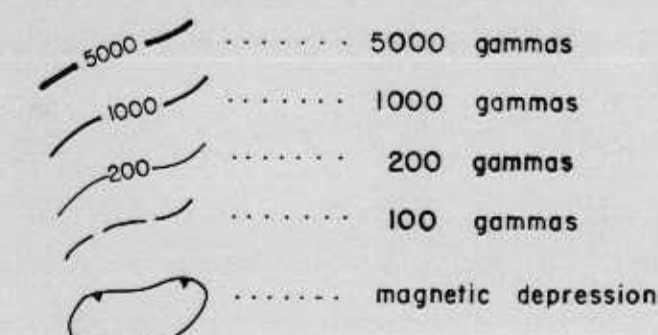
GULF MINERALS CANADA LTD.



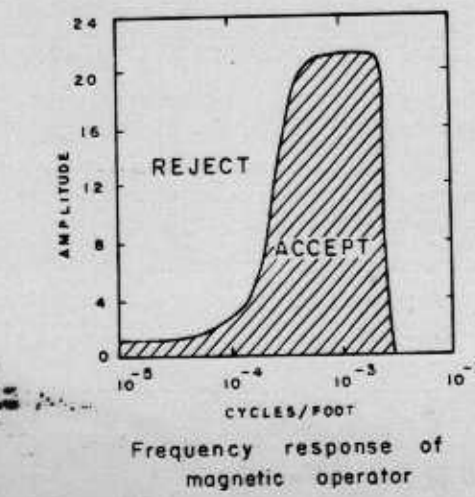
SHEET 1

MINERAL RESOURCES BRANCH  
**10278**

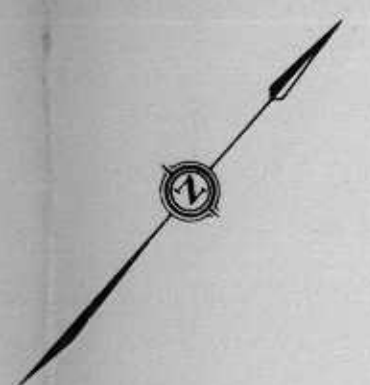
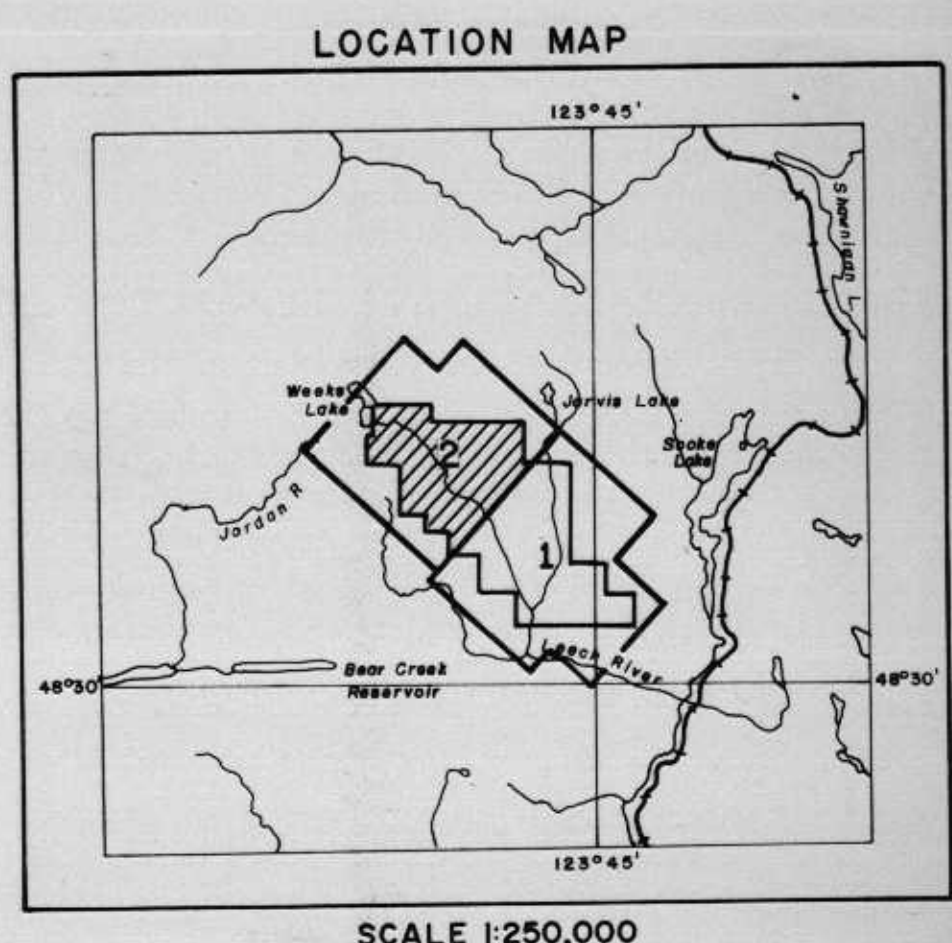
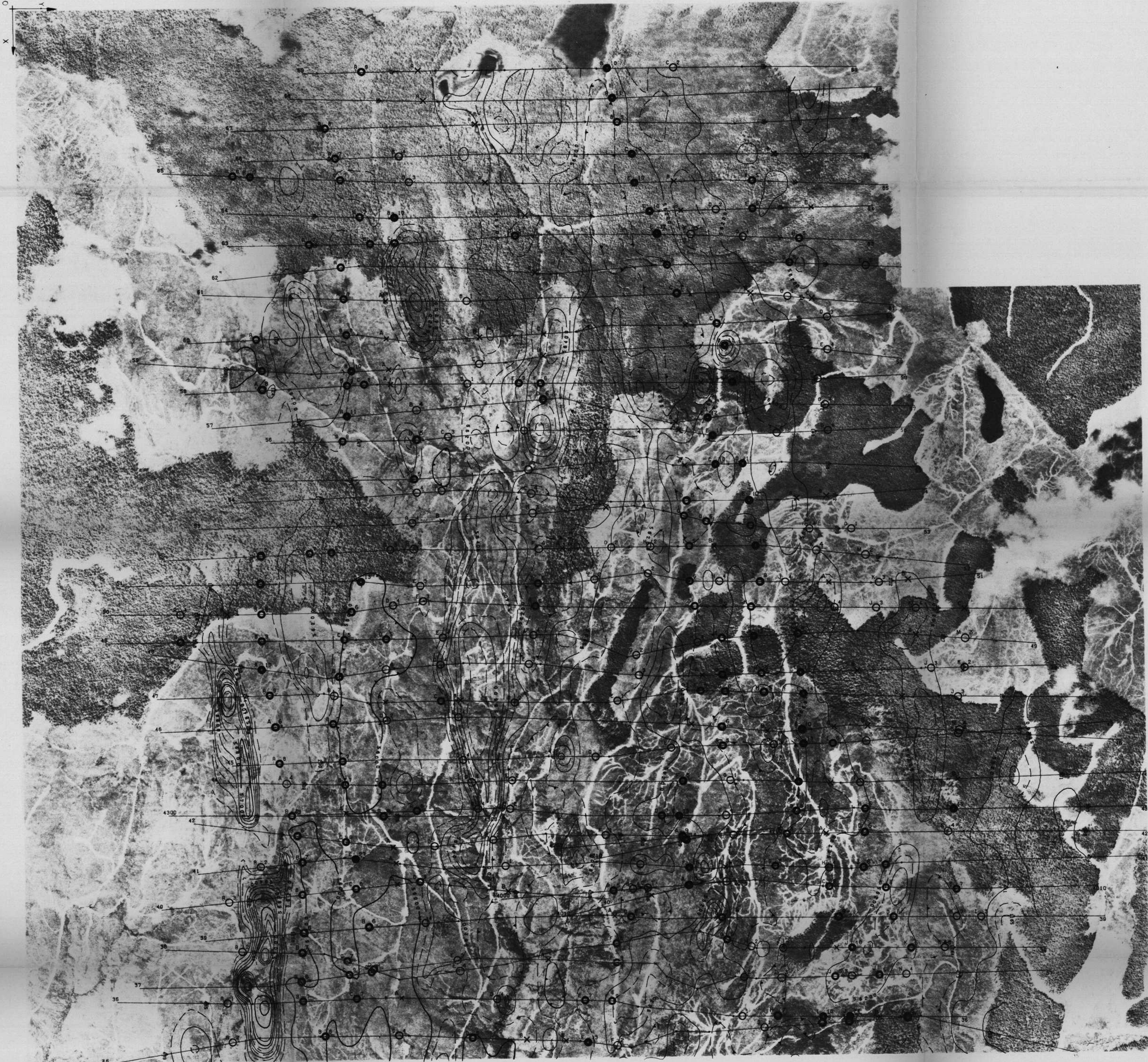
ISOMAGNETIC LINES  
(enhanced field)



Flight line  
1000  
500  
100  
50  
20  
10  
5  
2  
1  
0  
1  
2  
5  
10  
20  
50  
100  
500  
1000

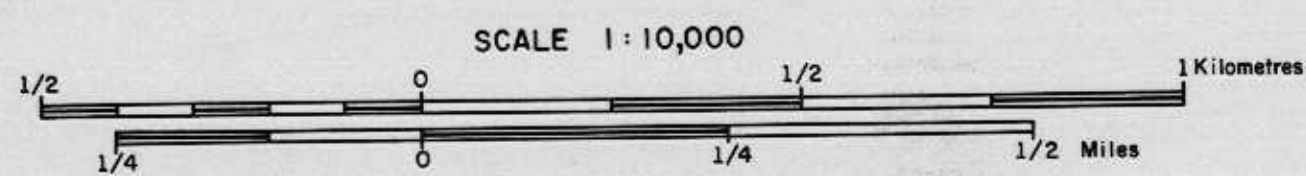






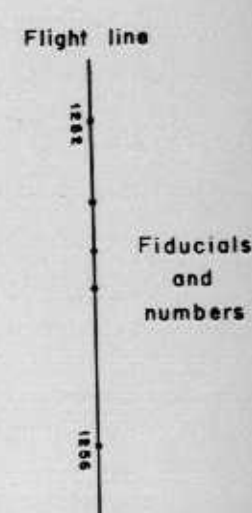
# DIGHEM<sup>II</sup> SURVEY

SURVEY MOUNTAIN AREA, BRITISH COLUMBIA  
 ENHANCED MAGNETICS  
 FOR  
 GULF MINERALS CANADA LTD.



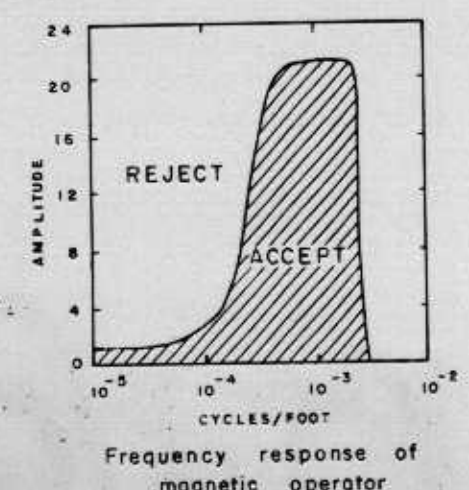
SHEET 2

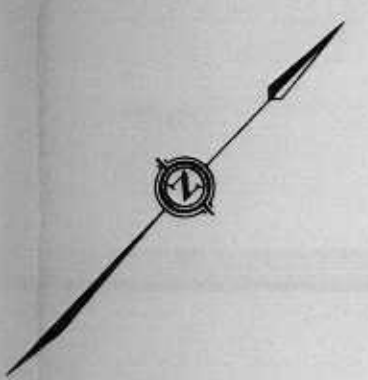
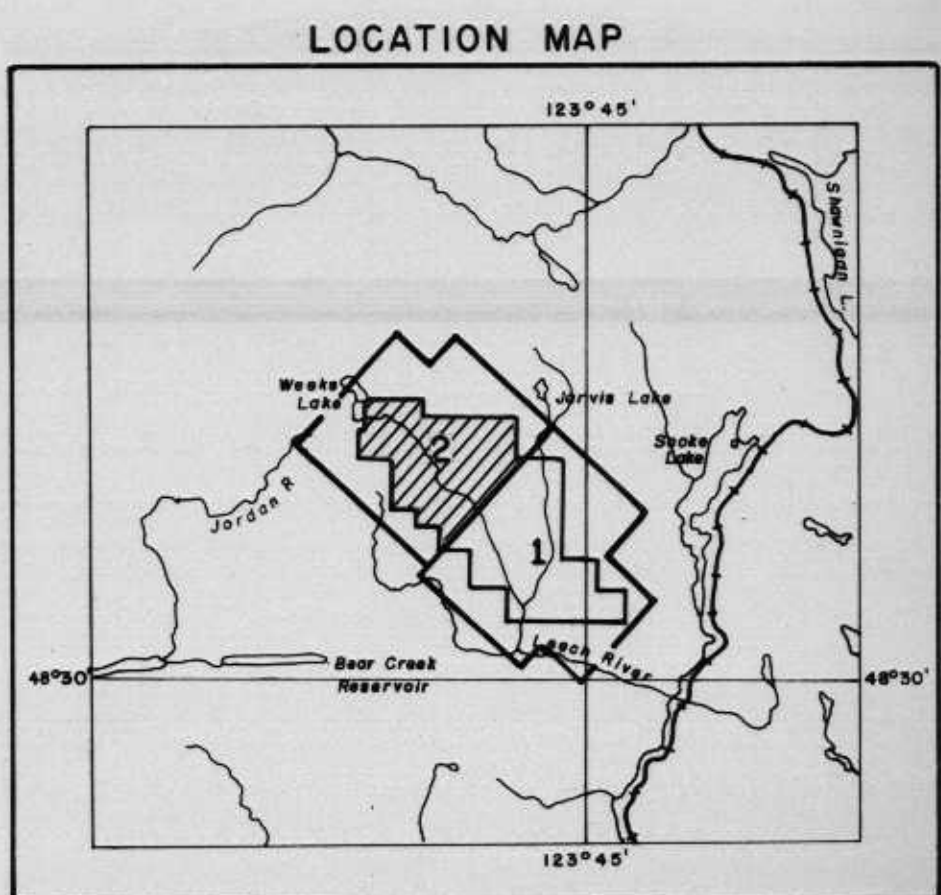
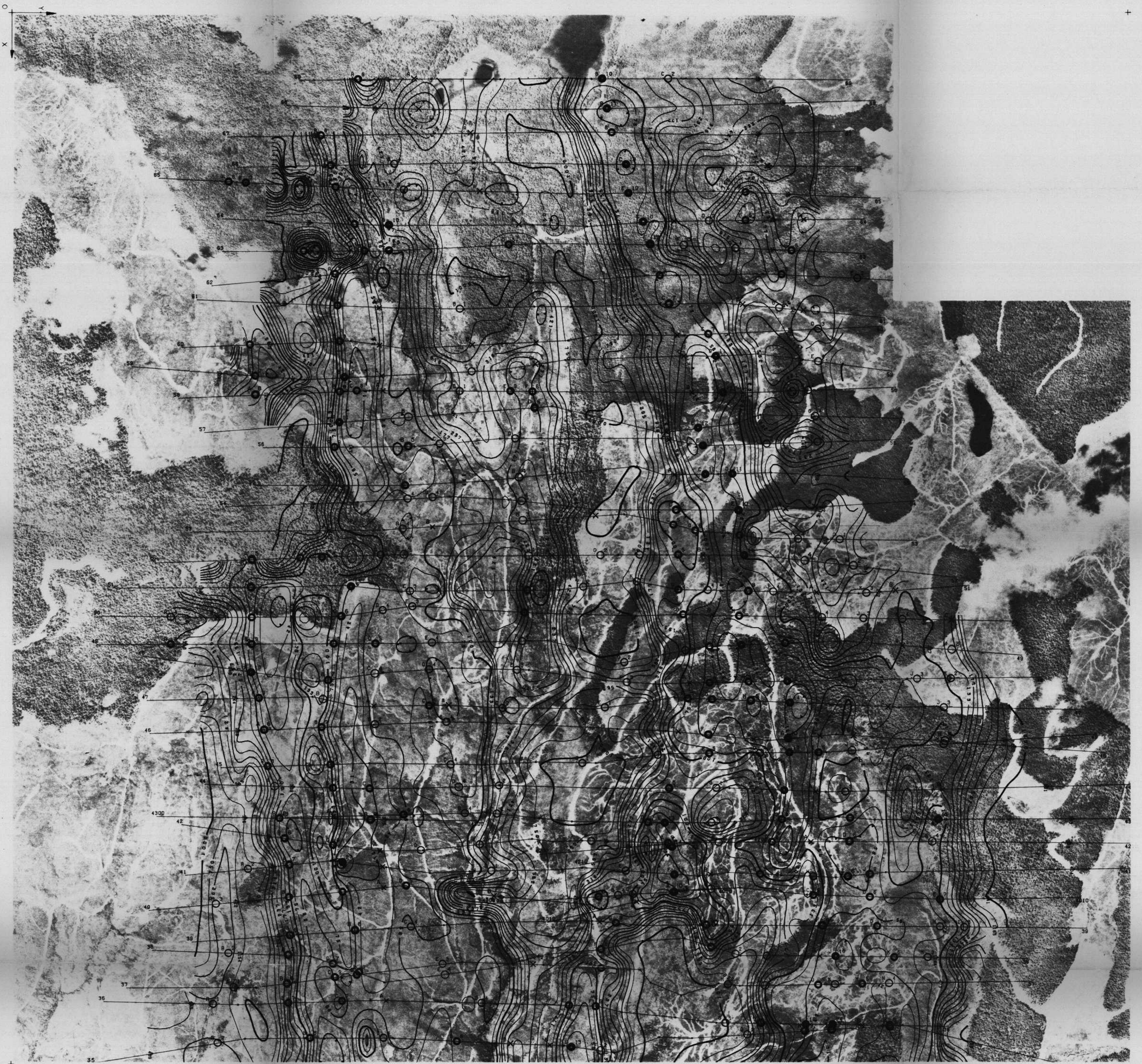
MINERAL RESOURCES BRANCH  
 REPORT NO. 10,278



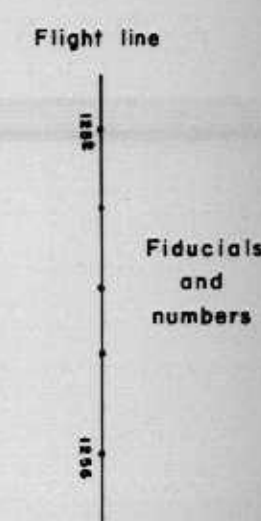
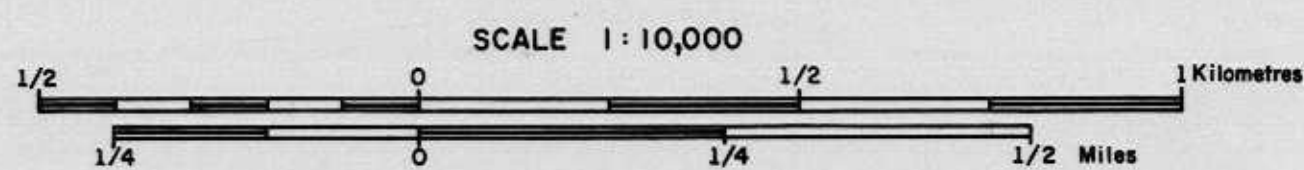
ISOMAGNETIC LINES  
 (enhanced field)

- 5000 ..... 5000 gammas
- 1000 ..... 1000 gammas
- 200 ..... 200 gammas
- 100 ..... 100 gammas
- ..... magnetic depression

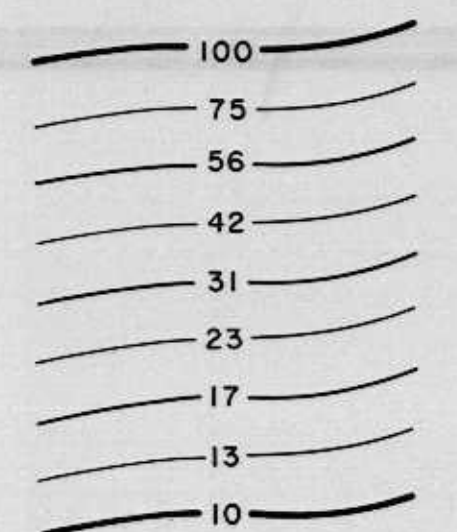




**DIGHEM<sup>II</sup> SURVEY**  
 SURVEY MOUNTAIN AREA, BRITISH COLUMBIA  
**RESISTIVITY**  
 FOR  
 GULF MINERALS CANADA LTD.



**LEGEND**  
 Contours in ohm-m  
 at eight intervals per decade



**Note**  
 The numbers face in the  
 direction of increasing value.

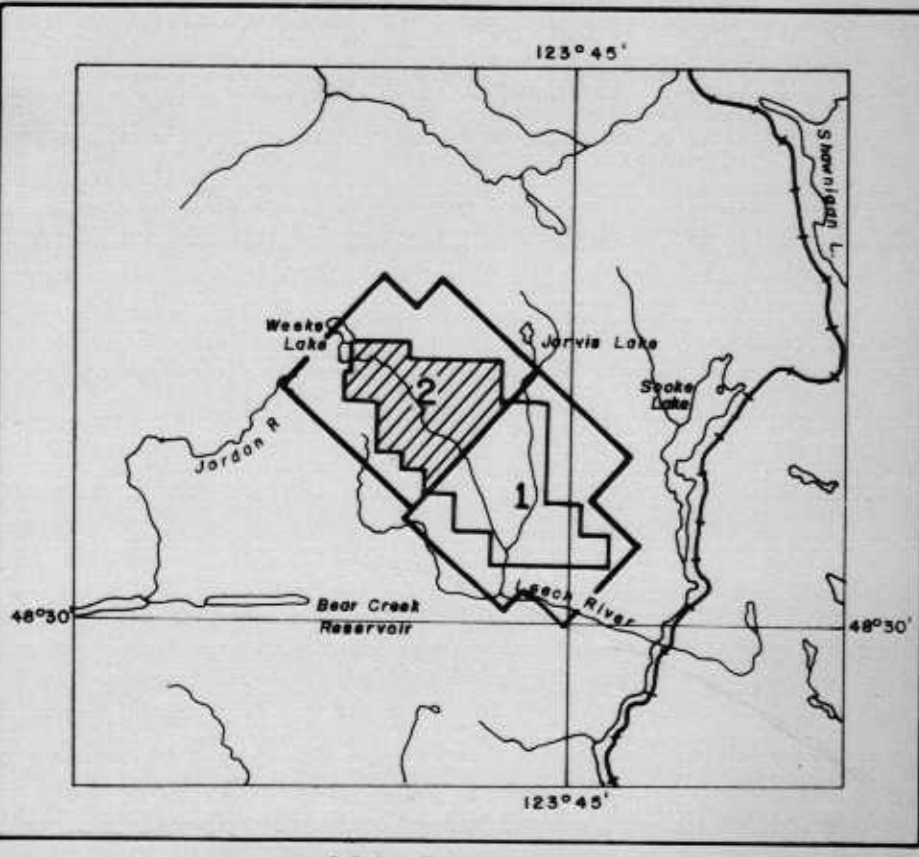
SHEET 2

MINERAL RESOURCES BRANCH  
 ASSESSMENT REPORT  
**10,278**

JOB 157	DATE JANUARY 1982	DRAWN BY <i>[Signature]</i>	CHECKED BY <i>[Signature]</i>
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LOCATION MAP



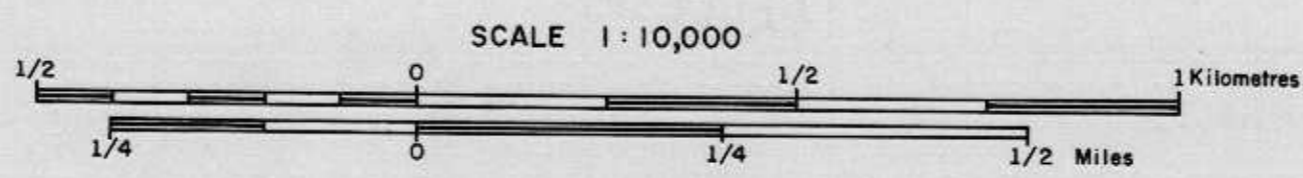
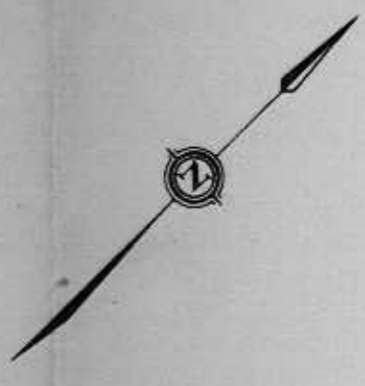
SCALE 1:250,000

# DIGHEM<sup>II</sup> SURVEY

## SURVEY MOUNTAIN AREA, BRITISH COLUMBIA

### ELECTROMAGNETICS

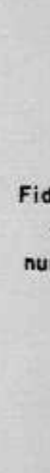
#### FOR GULF MINERALS CANADA LTD.



SHEET 2

MINERAL RESOURCES BRANCH  
**10,278**

Flight line



Fiducials and numbers

ANOMALY GRADE	EM GRADE SYMBOL	MHO RANGE
6	●	≥ 100
5	●	50 - 99
4	●	20 - 49
3	●	10 - 19
2	●	5 - 9
1	○	≤ 4
	×	Possible conductor

DIGHEM anomalies are divided into six grades of conductivity-thickness product. This product in mhos is the reciprocal of resistance in ohms. The mho is a measure of conductivity, and is a geologic parameter. Most swamps yield Grade 1 anomalies but highly conducting clays can give Grade 2 anomalies. The multi-coal anomaly shapes often allow surface conductors to be recognized, and these are indicated by the letter S on this map. The remaining Grade 1 and 2 anomalies could be weak bedrock conductors. The higher grades indicate increasingly higher conductances. Examples: The ore bodies of the Mogus River camp yield Grade 4 anomalies, while Mamobi and Whistle give Grade 5. Graphite and sulphides can span all grades but, in this survey area, field work may show that the different grades indicate different types of conductors.

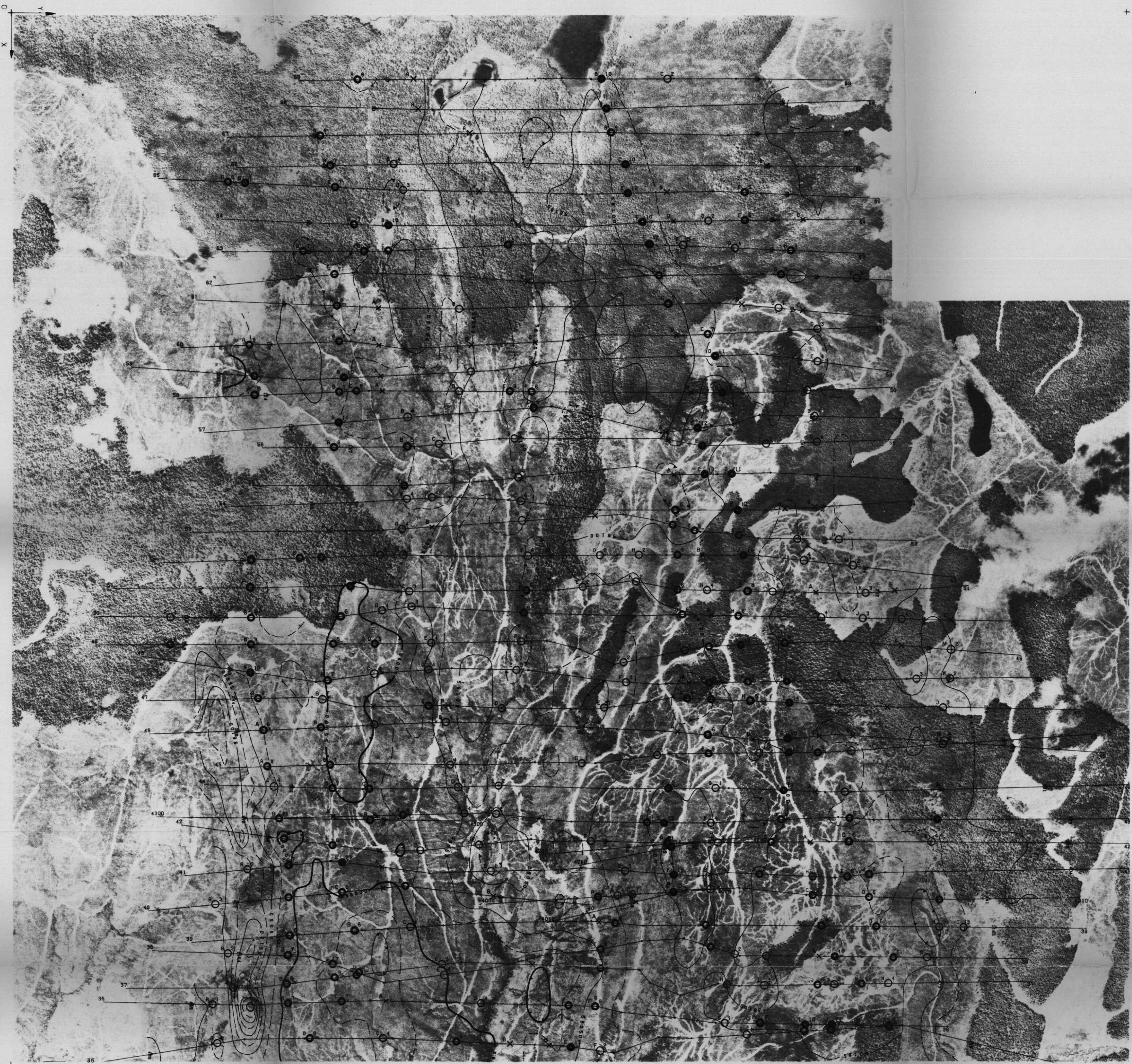
The actual mho value is plotted beside the EM grade symbol. The letter is the anomaly identifier. The horizontal rows of dots indicate anomaly amplitude on the flight record, and the vertical column gives the estimated depth. This depth may be unreliable because the stronger part of the conductor may be deeper or to one side of the flight line, or because of a shallow dip or conductive overburden effects.

DIGHEM 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 mho values are plotted 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 all conductors in terms of length, strike direction, conductance and depth. The accuracy is comparable to an interpretation from a ground EM survey having the same line spacing.

Refer to list of anomalies in survey report for the actual ppm values for silt cells, and for conductor depths.

1004 Direct magnetic correction of 100 gamma

JOB	DATE	DRAWN BY	CHECKED BY
157	JANUARY 1982		



# DIGHEM<sup>II</sup> SURVEY

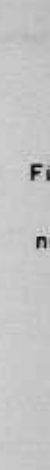
SURVEY MOUNTAIN AREA, BRITISH COLUMBIA  
MAGNETICS

FOR  
GULF MINERALS CANADA LTD.

**ISOMAGNETIC LINES**  
(total field)

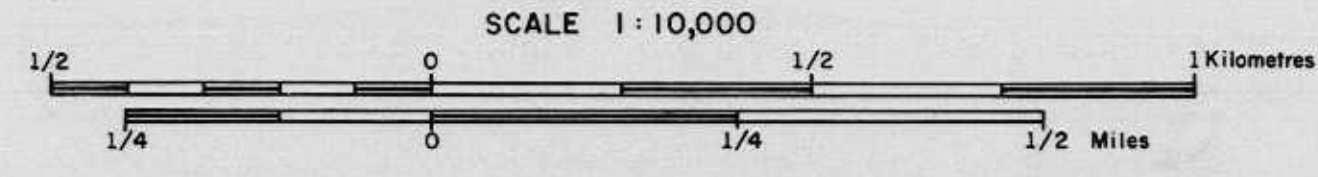
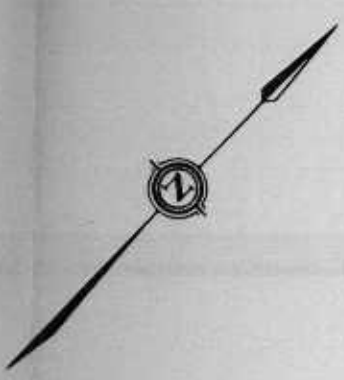
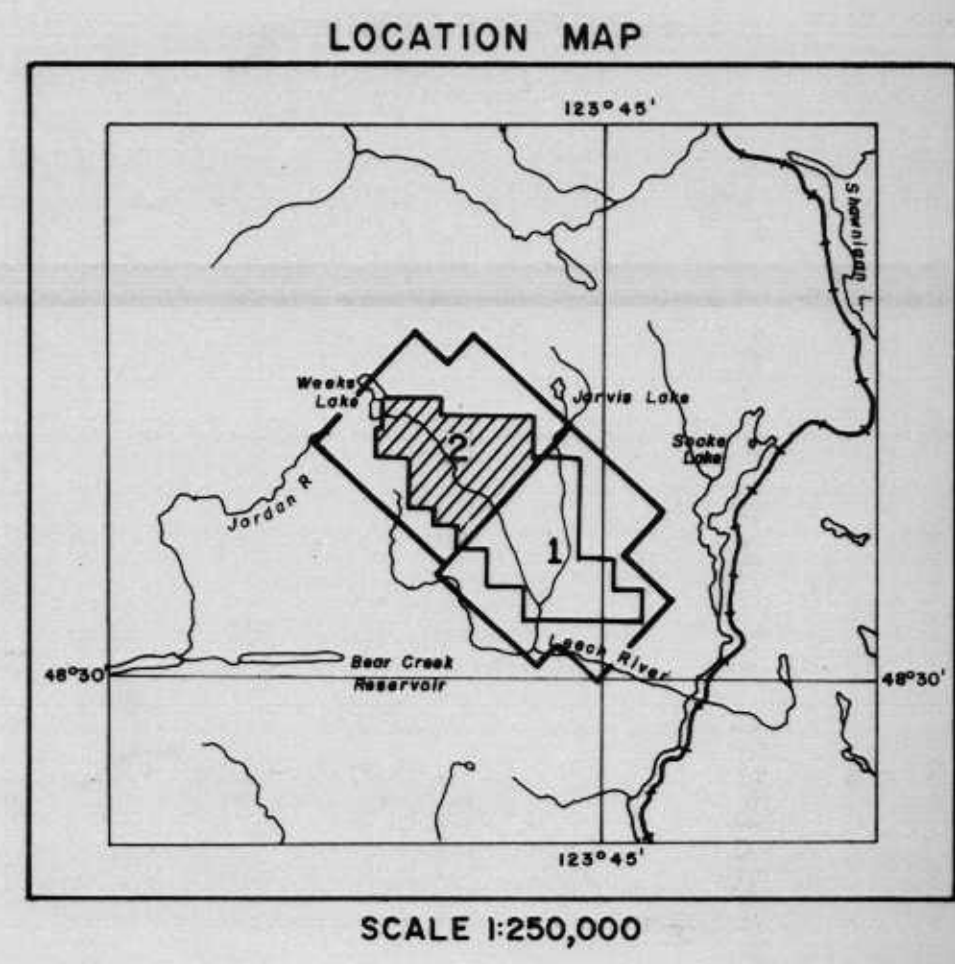
- 1000 ..... 1000 gammas
- 200 ..... 200 gammas
- 50 ..... 50 gammas
- ..... 25 gammas
- ..... magnetic depression

Flight line



Fiducials and numbers

Magnetic Inclination within the survey area: 70°

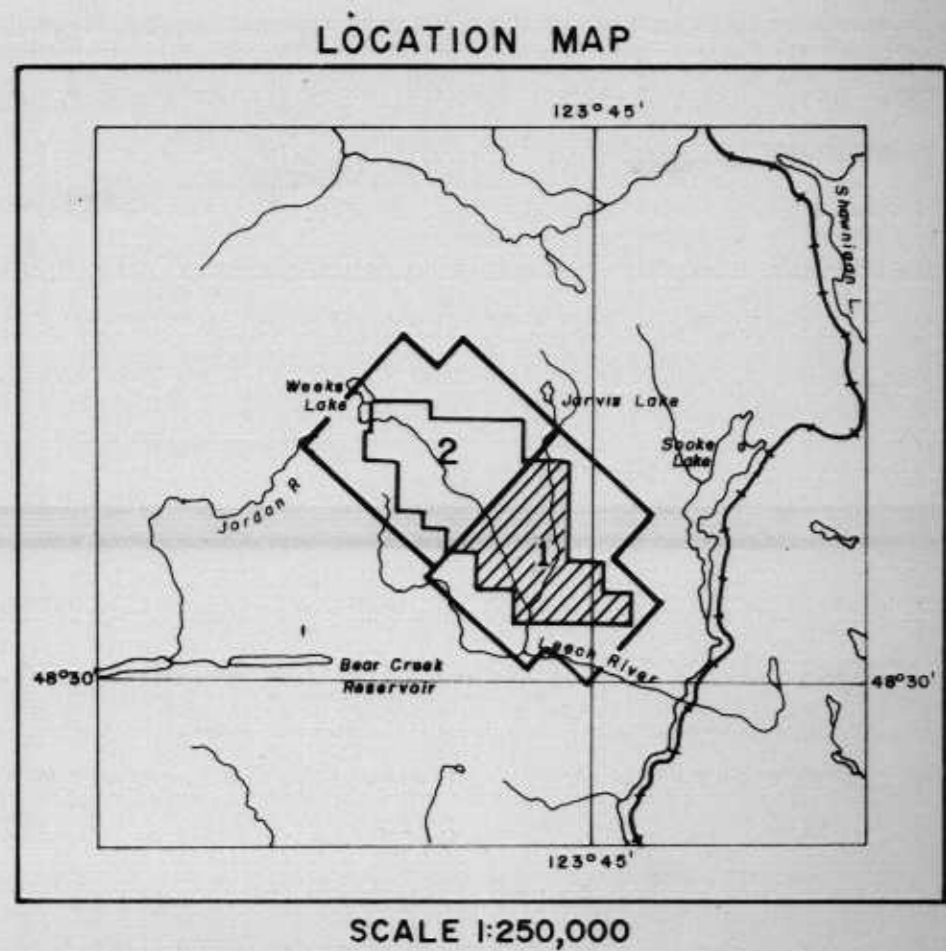
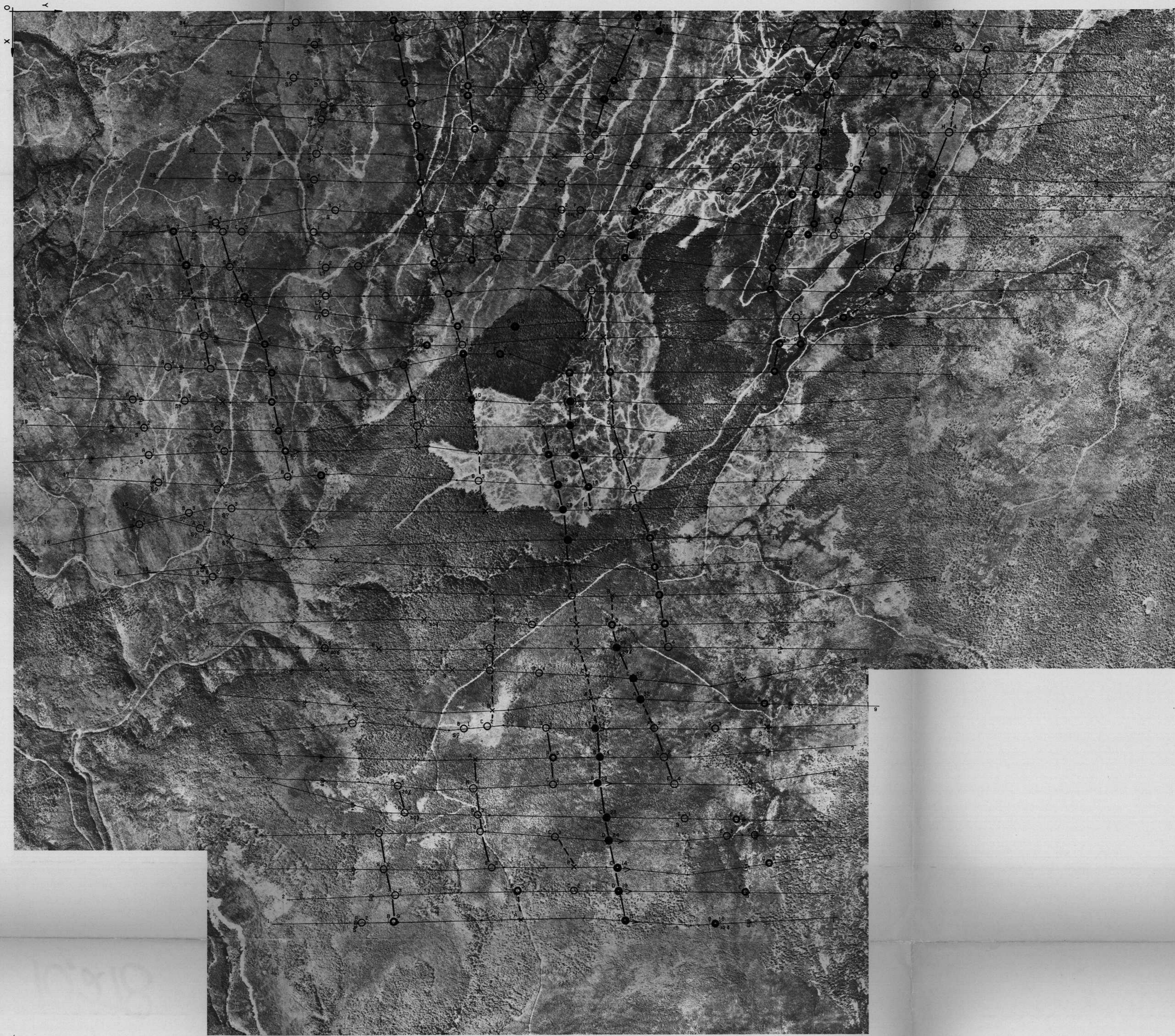


MINERAL RESOURCES BRANCH  
TECHNICAL REPORT

**10,278**

SHEET 2

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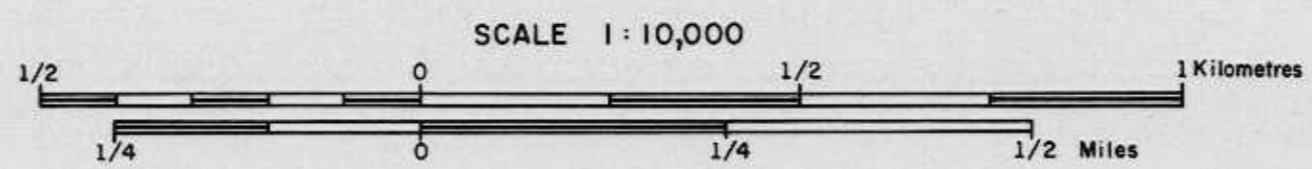
# DIGHEM<sup>II</sup> SURVEY

## SURVEY MOUNTAIN AREA, BRITISH COLUMBIA

### ELECTROMAGNETICS

#### FOR

#### GULF MINERALS CANADA LTD.



SHEET 1

MINERAL RESOURCES BRANCH  
10,278

Flight line

Fiducials and numbers

ANOMALY GRADE	EM GRADE SYMBOL	MHO RANGE	DIGHEM anomalies are divided into six grades of conductivity - thickness product. This product is what is the reciprocal of resistance in ohms. The mho is a measure of conductance, and is a geologic parameter. Most swamps yield Grade 1 anomalies but highly conducting clays can give Grade 2 anomalies. The multi-coil anomaly shapes often allow surface conductors to be recognized, and these are indicated by the letter S on this map. The remaining Grade 1 and 2 anomalies could be weak bedrock conductors. The higher grades indicate increasingly higher conductors. Examples: The ore bodies of the Maples River complex yield Grade 4 anomalies, while Metahol and Whistler give Grade 5 Graphite and sulphides can span all grades but, in this survey area, field work may show that the different grades indicate different types of conductors.
6	●	≥ 100	The actual mho value is plotted beside the EM grade symbol. The letter is the anomaly identifier. The horizontal rows of dots indicate anomaly amplitude on the flight record, and the vertical column gives the estimated depth. This 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 conductive overburden effects.
5	●	50-99	
4	●	20-49	
3	●	10-19	
2	○	5-9	
1	○	≤ 4	
	X	Possible conductor	
	Identify	mho value	
	Depth is greater than	Structure of conductor is greater than	
	50 feet	5 ppm	
	100 feet	10 ppm	
	150 feet	15 ppm	
	200 feet	20 ppm	
	Refer to list of anomalies in survey report for the actual ppm values for all cells, and for conductor depths.		
S	Conductor area		DIGHEM 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 mho values are plotted for those who wish quantitative data. The anomaly ppm and depth are indicated by inconspicuous data which should not distract from the conductor patterns, while being helpful to those who wish this information. The map provides an interpretation of all conductors in terms of length, strike direction, conductance and depth. The accuracy is comparable to an interpretation from a ground EM survey having the same line spacing.
SP	Possible surface response		
L	Possible line (power, telephone, pipe, or fence)		
LP	Possible line		
?	Questionable anomaly		
Apparent thickness > 10m			
Dip			
100% Direct magnetic correction of 100 ppm			

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 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 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. This helps the interpreter to differentiate between conductive trends in the bedrock and those patterns typical of conductive overburden. Discrete conductors will generally appear as narrow lows on the contour map and broad conductors will appear as wide lows.

Channel 40 (see Appendix) and the resistivity contour map present the apparent resistivity using the so-called pseudo-layer (or buried) half space model defined in Fraser (1978)<sup>2</sup>. This model consists of a resistive layer overlying a conductive half space. Channel 41 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 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<sup>II</sup> system has been flown for the purpose 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 41 can be of significant help in distinguishing between overburden and bedrock conductors.

#### 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 bedrock conductors. The processing of DIGHEM<sup>II</sup> data, however, produces six channels which contribute significantly to the recognition of bedrock conductors. These are the inphase and quadrature difference channels (#33 and 34), the resistivity and depth channels (#40 and 41), the conductivity contrast channel (#42), and the product of the conductivity contrast and depth contrast channels (#44).



The EM difference channels (33 and 34) 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 highly conductive environment therefore is based on the anomalous responses of the two difference channels (33 and 34) and the resistivity channel (40). The most favourable situation is where anomalies coincide on all three channels.

Channel 41, which is the apparent depth to the conductive material, also helps determine whether a conductive response arises from surficial material or from a conductive zone in the bedrock. When this channel rides above the zero level on the electrostatic chart paper (i.e., it is negative), it implies that the EM and resistivity profiles are responding primarily to a conductive upper layer, i.e.,

conductive overburden. If channel 41 is below the zero level, it indicates that a resistive upper layer exists, and this usually implies the existence of a bedrock conductor.

The conductivity contrast channel (#42) highlights local resistivity lows. This channel, and the depth contrast (#43), both yield positive anomalies from conductors at depth. Channel 44 is the multiple  $42 \cdot 43$  and it is highly sensitive to conductors at depth. The interpretation of channels 42 and 44 has to be done carefully, however, because they may also respond in a similar fashion to a local thickening in the conductive cover as, for example, over a buried river channel. Channels 42 and 43 are derived from channels 40 and 41 using digital filter techniques..

Channels 35, 36 and 42 are the anomaly recognition functions. They are used to trigger the conductance channel 37 which identifies discrete conductors. In highly conducting environments, channel 36 is deactivated because it is subject to corruption by highly conductive earth signals. Some of the automatically selected anomalies (channel 37) are discarded by the human interpreter. 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.

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

The resistivity map might be likened to a total field map and the EM map to a horizontal gradient in the direction of flight<sup>3</sup>. Because gradient maps are usually more sensitive than total field maps, the EM map therefore is to be

preferred in resistive areas. However, in conductive areas, the absolute character of the resistivity map usually causes it to be more useful than the EM map.

#### 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 33 for inphase and 34 for quadrature) tend to eliminate the response of conductive overburden. This marked a unique development in airborne EM technology, as DIGHEM<sup>II</sup> 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 33. 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<sup>II</sup> 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<sup>II</sup>. The technique yields channel 50 which displays apparent weight percent magnetite according to a homogeneous half space model. 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.

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 channel 50.

The EM magnetite algorithm is basically quite simple because a linear relationship exists between volume percent magnetite and the negative inphase response in ppm. This linear relationship is true for a fixed survey altitude when

demagnetization effects are disregarded and when a fixed susceptibility-volume percent relationship is assumed. The technique in practice involves, first, correcting the actual EM response for variations in flying altitude and, second, calibrating the negative inphase ppms in terms of volume percent magnetite.

EM magnetite mapping provides another method of airborne geologic mapping. It thus joins resistivity mapping, magnetometer mapping, spectrometry, photogeology, etc., as a possible means by which geologic information can be obtained from airborne techniques. It is not nearly as useful in the general sense as the other airborne mapping techniques, but can be of value in cases where the magnetite content gives an indication of lithology.

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.

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, Ontario, Canada) as well as magnetic (e.g., the Mattabi deposit near Sturgeon Lake, Ontario).

The magnetometer data are digitally recorded in the aircraft to an accuracy of one gamma. The digital tape is processed by computer to yield a standard total field magnetic map which is usually contoured at 25 gamma intervals. The magnetic data also are treated mathematically to enhance the magnetic response of the near-surface geology, and an enhanced magnetic map is produced with a 100 gamma contour interval. The response of the enhancement operator in the frequency domain is shown in Figure 2. The 100 gamma contour interval is equivalent to a 5 gamma interval for the passband components of the airborne data. This is because these components are amplified 20 times by the operator of Figure 2.



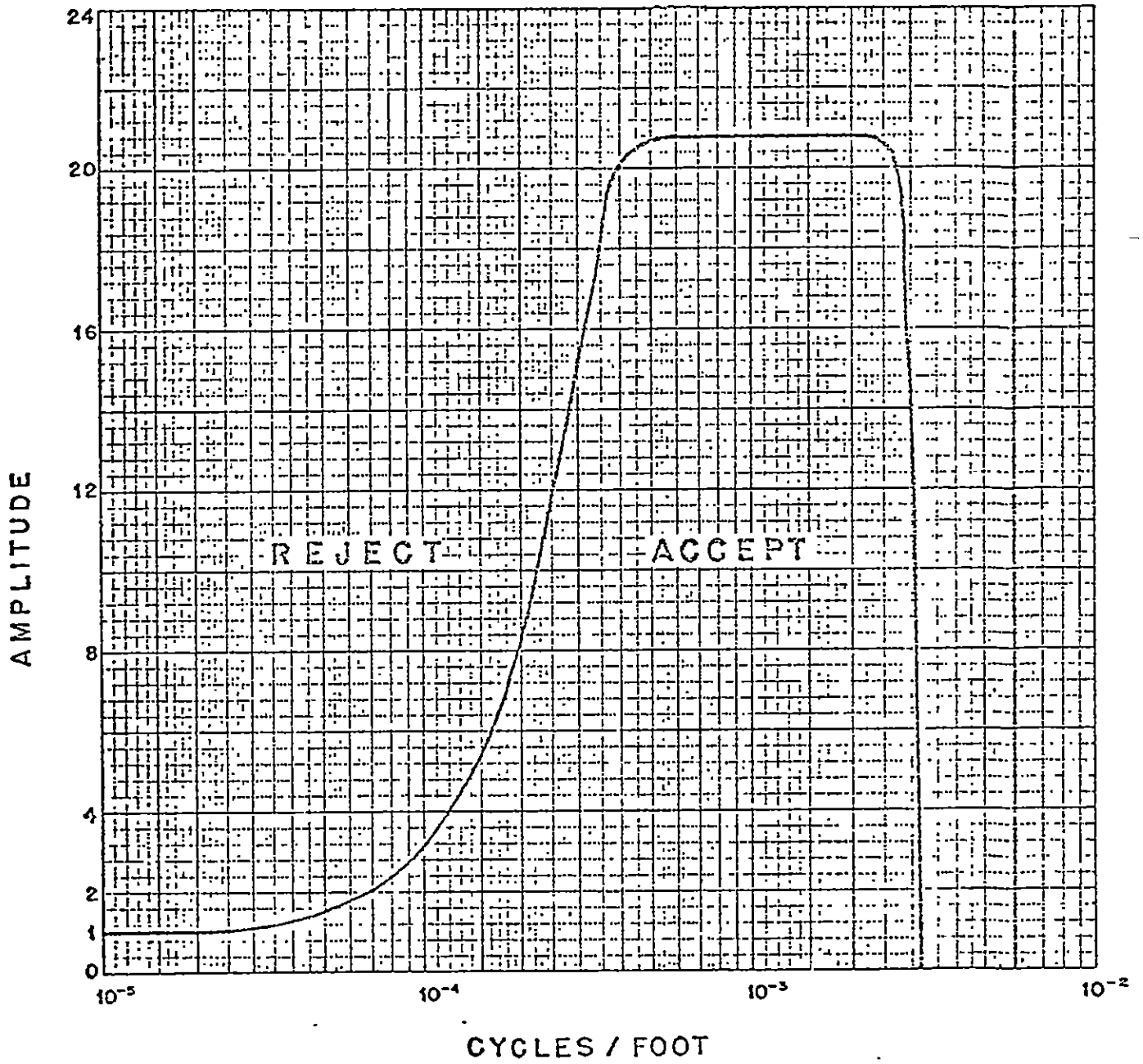


Figure 2 Frequency response of magnetic operator

The enhanced map, which bears a resemblance to a downward continuation map, is produced by digital bandpass filtering 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 geological structure. The contour interval of 100 gammas is suitable for defining the near-surface local geology while de-emphasizing deep-seated regional features.

#### CONDUCTORS IN THE SURVEY AREA

The electromagnetic maps show the location of conductors and their interpreted conductance (i.e., conductivity-thickness product), depth and occasionally dip. Their strike direction and length are also shown when anomalies can be correlated from line to line. When studying the maps for follow-up planning, consult the anomaly listings appended to this report to ensure that none of the conductors are overlooked.

The EM maps indicate which anomalies are believed to be caused by surficial sources. Generally, such anomalies are not commented on below as the discussions are directed to identifying bedrock features.

The survey area, consisting of two map sheets, is very conductive with resistivities ranging from 1 ohm-m to in excess of 1000 ohm-m.

Magnetically the survey area is relatively quiet with only a few, rather localized, magnetic anomalies. All three contour maps (i.e., resistivity, magnetic, enhanced magnetic) indicate northwest-southeast geological trends.

The same trends are also indicated from the line-to-line correlation of the EM anomalies, which occur in abundance in the survey area. Almost all the EM anomalies detected are due to bedrock conductivity with only a few anomalies caused by conductive overburden.

A few of the conductors have thick conductive sections, as indicated on the EM maps at various locations.

Most of the conductors have long strike lengths and similar electromagnetic responses. This in turn makes it

difficult to select conductors suitable for ground exploration based on the geophysical data alone. A knowledge of the geology of the area therefore seems necessary in order to define specific targets. In evaluating conductors for follow-up, attention should also be paid to the resistivity maps which portray the distribution of conductive material in the survey area better than the EM maps.

The following conductors may be of special interest because of their short strike length, magnetic association or their indicated thickness: 5A-6A, 9B, 25I-28F, 49A-50A, 52B, 52C-53xB, 65A, 65B.

Respectfully submitted,  
DIGHEM LIMITED



S. Vergos  
Geophysicist



Z. Dvorak  
Geophysicist

Eight map sheets accompany this report:

Electromagnetics	2 map sheets
Resistivity	2 map sheets
Magnetics	2 map sheets
Enhanced magnetics	2 map sheets

L SV-32 21/01/82

A P P E N D I X A

THE FLIGHT RECORD AND PATH RECOVERY

Both analog and digital flight records are produced. The analog profiles are recorded on green chart paper in the aircraft during the survey. The digital profiles are generated later by computer and plotted on electrostatic chart paper at 1:15,000 or at map scale, whichever is larger. The digital profiles, which may be displayed, are as follows:

<u>Channel Number</u>	<u>Parameter</u>	<u>Scale units/mm</u>
20	magnetics	10 gamma
21	bird height	3 m
22	vertical coaxial coil-pair inphase (freq #1)	1 ppm
23	vertical coaxial coil-pair quadrature (freq #1)	1 ppm
24	horizontal coplanar coil-pair inphase (freq #2)	1 ppm
25	horizontal coplanar coil-pair quadrature (freq #2)	1 ppm
26	VLF-EM total field	1 %
27	VLF-EM vertical quadrature	1 %
28	ambient noise monitor (coaxial receiver)	1 ppm
29	ambient noise monitor (coplanar receiver)	1 ppm
33	difference function inphase from channels 22 and 24	1 ppm
34	difference function quadrature from channels 23 and 25	1 ppm
35	first anomaly recognition function	1 ppm
36	second anomaly recognition function	1 ppm
37	conductance	1 mho
40	log resistivity (at freq #2)	.03 decade
41	apparent depth or thickness (at freq #2)	3 m
42	conductivity contrast (at freq #2)	arbitrary
43	depth contrast (at freq #2)	arbitrary
44	product 42*43 (at freq #2)	arbitrary
45	log resistivity (at freq #1)	.03 decade
46	apparent depth or thickness (at freq #1)	3 m
47	conductivity contrast (at freq #1)	arbitrary
48	depth contrast (at freq #1)	arbitrary
49	product 47*48 (at freq #1)	arbitrary
50	apparent weight percent magnetite	0.5%

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 and 100 mm up from the bottom of the chart are respectively 1, 10, 100 and 1000 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 changes may denote an error in flight path recovery. The resulting flight path locations therefore reflect a more stringent checking than is provided by standard flight path recovery techniques.

The following brief description of DIGHEM<sup>II</sup> illustrates the information content of the various profiles\*.

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\*For a detailed description, see D.C. Fraser, Geophysics, v.44, p.1367-1394.

Single-frequency surveying

The DIGHEM<sup>II</sup> system has two transmitter coils which are mounted at right angles to each other. Both coils transmit at approximately the same frequency. (This frequency is given in the Introduction.) Thus, the system provides two completely independent surveys at one pass. In addition, the digital profiles (generated by computer) include an inphase channel and a quadrature channel which essentially are free of the response of conductive overburden. Also, the EM channels may indicate whether the conductor is thin (e.g., less than 3 m), or has a substantial width (e.g., greater than 10 m). Further, the EM channels include channels of resistivity, apparent depth and conductance. A minimum of 14 EM channels are provided. The DIGHEM<sup>II</sup> system gives information in one pass which cannot be obtained by any other airborne or ground EM technique.

Figure A1 shows a DIGHEM<sup>II</sup> flight profile over a conductive ore body in Australia. It will serve to identify the majority of the available channels.

Channels 20 and 21 are respectively the magnetics and the EM bird height. Channels 22 and 23 are the inphase and quadrature of the coaxial coil-pair. This coil-pair is

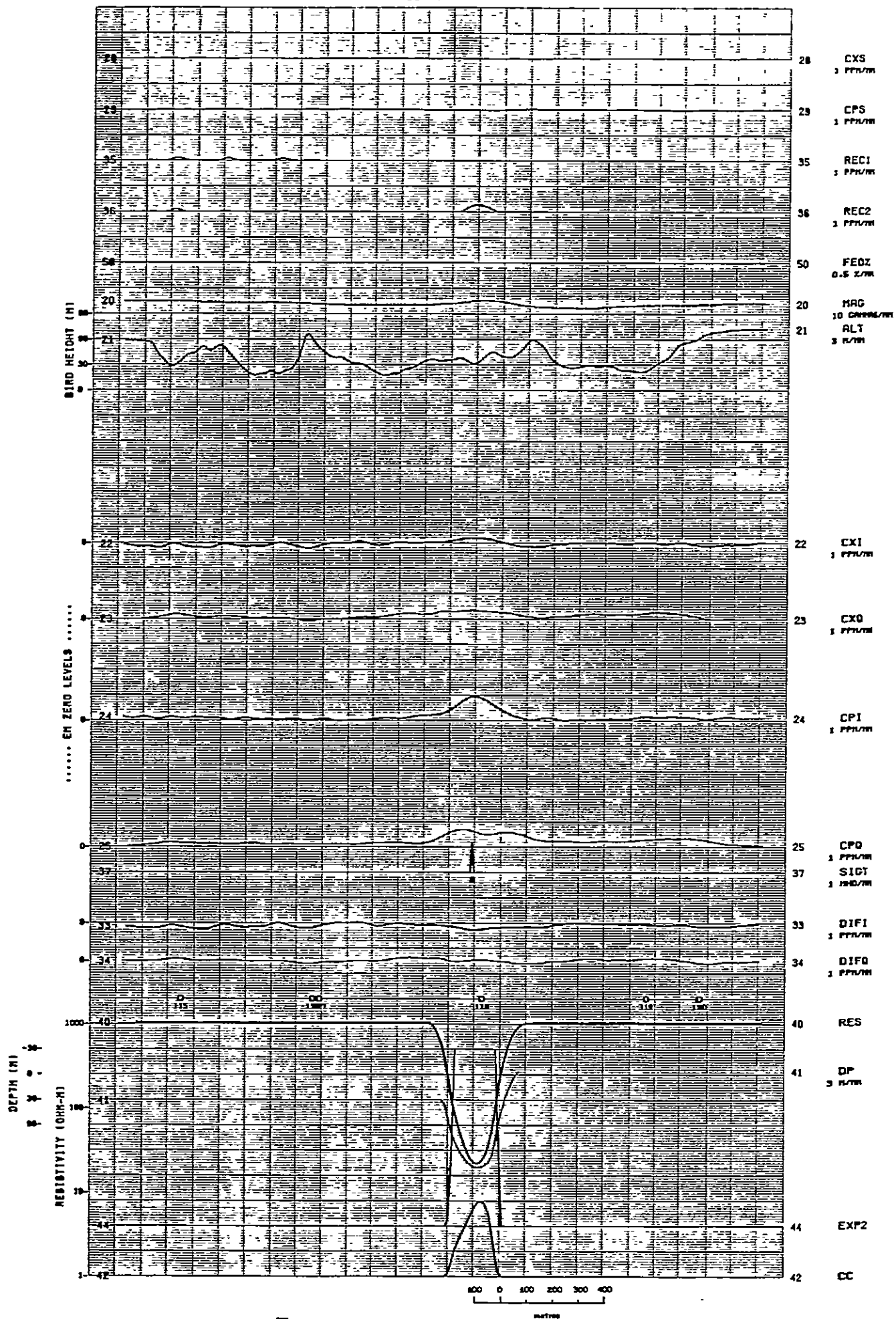


Fig. A1 DIGHEM<sup>II</sup> digital profile.



equivalent to the standard coil-pair of all inphase-quadrature airborne EM systems. Channels 24 and 25 are the inphase and quadrature of the additional coplanar coil-pair.

Channels 33 and 34 are inphase and quadrature difference functions of the coaxial and coplanar channels. The difference channels tend to be free from the response of conductive overburden. Channel 37 is the conductance. The conductance channel essentially is an automatic anomaly picker calibrated in conductance units of mhos; it is triggered by the anomaly recognition functions shown as channels 35, 36, and 42.

Channel 40 is the resistivity, which is derived from the coplanar channels 24 and 25. The resistivity channel 40 yields data which can be contoured, and so the DIGHEM<sup>II</sup> system yields a resistivity contour map in addition to an electromagnetic map, a magnetic contour map, and an enhanced magnetic contour map. The enhanced magnetic contour map is similar to the filtered magnetic map discussed by Fraser.\*

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\*Cdn. Inst. Mng., Bull., April 1974.

Channel 41 is the depth channel. A depth estimate which is negative will occur when conductive overburden exists. A negative depth estimate implies that the conductive material occurs above the daylight surface. This false estimate shows that the EM system has responded to the conductive surface material and had also sensed the underlying resistive rock. In Fig. A1, the positive depth estimate of about 100 m is close to the true depth for this bedrock conductor.

Channel 42 is the conductivity contrast which highlights resistivity lows. Channel 43 is the depth contrast, which usually is not plotted. Both channels 42 and 43 tend to yield positive responses over bedrock conductors at depth. Channel 44 is the multiple of channels 42\*43. Consequently, channel 44 tends to yield large positive responses over bedrock conductors at depth. The interpretation of channels 42 and 44 has to be done with care, however, because they may also respond in a similar fashion to a local thickening in conductive cover, e.g., over a buried river channel.

Channel 50 provides an estimate of the percent by weight of magnetite. This computation is made whenever

the coplanar inphase channel 24 is negative. The negative response shows that magnetic permeability exists.

#### Dual-frequency surveying

For surveys flown primarily for resistivity mapping, as opposed to EM surveying, the two transmitter coils may be energized at two well-separated frequencies (e.g., 900 and 3600 Hz). Apparent resistivity maps can be made independently for each frequency. The interpretation procedure involves comparing the apparent resistivity and apparent depth parameters at the two frequencies.

The use of two different coil-pair orientations (i.e., coaxial and coplanar) for dual-frequency resistivity mapping is an unorthodox procedure. However, as long as the current flow patterns are primarily horizontal, the different coil orientations do not influence the results. Wire fences and other cultural features will produce local deviations, because they usually respond preferentially to one or the other of the coil-pairs.

The difference channels 33 and 34, and the anomaly recognition channel 35, are not produced for dual frequency surveys. This is because the divergent frequencies of the two coil-pairs render them meaningless.

APPENDIX B

EM ANOMALY LIST

157 SH1 SURVEY MT.

LINE & ANOMALY	COAXIAL COIL		COPLANAR COIL		VERTICAL DIKE		HORIZONTAL SHEET		CONDUCTIVE EARTH	
	REAL PPM	QUAD PPM	REAL PPM	QUAD PPM	COND MHOS	DEPTH# M	COND MHOS	DEPTH M	RESIS OHM-M	DEPTH M
1A	3	9	2	13	2	9	1	39	797	0
1B	5	3	3	4	9	64	1	85	306	34
1C	5	4	5	4	11	43	1	107	188	52
1D	14	10	33	25	16	16	2	84	31	54
2A	5	7	3	11	3	17	1	41	285	0
2B	4	4	2	5	5	37	1	87	163	39
2C	2	3	1	5	2	30	1	75	384	21
2D	17	10	18	10	19	23	1	96	86	52
2E	6	7	6	7	6	13	1	101	118	49
3A	4	11	4	14	2	6	1	48	255	5
3B	4	9	4	9	3	14	1	68	222	21
3C	17	12	17	16	14	16	1	75	88	34
3D	3	3	1	3	5	31	1	118	454	36
4A	5	7	6	12	4	19	1	62	156	21
4B	8	14	8	19	4	12	1	59	111	21
4C	2	4	1	3	3	40	1	71	297	21
4D	33	18	28	20	24	13	2	75	37	44
4E	4	7	3	10	3	12	1	72	217	24
4F	0	5	0	0	1	16	1	95	398	32
5A	3	5	5	9	3	23	1	62	106	23
5B	4	7	3	10	3	15	1	67	147	24
5C	36	16	35	27	28	12	3	70	21	46
5D	2	10	3	18	1	0	1	57	303	10
5E	3	2	4	9	5	30	1	95	143	44
6A	6	10	7	16	4	16	1	53	115	17
6B	5	7	4	8	4	19	1	65	121	23
6C	2	6	0	5	1	18	1	62	230	17
6D	41	19	27	18	29	10	2	72	31	43
6E	7	12	7	20	4	3	1	72	86	31
7A	3	3	0	0	5	59	1	81	249	30

\* 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.

157 SH1 . SURVEY MT.

LINE & ANOMALY	COAXIAL COIL		COPLANAR COIL		VERTICAL DIKE		HORIZONTAL SHEET		CONDUCTIVE EARTH	
	REAL PPM	QUAD PPM	REAL PPM	QUAD PPM	COND MHOS	DEPTH* M	COND MHOS	DEPTH M	RESIS OHM-M	DEPTH M
7B	29	15	30	21	24	9	2	72	38	40
7C	4	10	3	17	2	0	1	44	197	1
8A	4	5	1	9	3	2	1	52	230	4
8B	3	10	2	15	1	4	1	38	626	0
8C	4	9	4	15	2	7	1	50	256	6
8D	3	4	2	4	4	42	1	91	275	38
8E	9	4	9	4	24	41	1	121	84	74
8F	3	6	3	9	3	11	1	104	141	51
8G	3	4	1	3	3	17	1	59	218	11
9A	18	8	26	11	32	12	4	77	13	54
9B	5	5	3	7	5	21	1	74	313	19
10A	5	6	3	8	4	23	1	51	331	4
10B	2	3	2	0	4	64	1	97	404	37
10C	22	7	30	9	52	9	5	79	8	58
11A	3	6	3	6	3	25	1	95	191	43
11B	5	5	2	8	4	18	1	55	173	12
11C	2	1	5	1	35	74	2	141	52	102
11D	10	17	6	22	4	8	1	50	171	11
12A	3	8	2	10	2	4	1	53	236	7
12B	3	4	5	3	8	52	1	117	92	69
12C	9	8	4	11	7	4	1	58	256	7
13A	2	6	3	12	2	13	1	60	640	1
13B	4	6	3	5	4	24	1	114	102	64
13C	12	18	10	22	5	4	1	55	107	17
14A	11	13	7	14	6	9	1	71	169	25
15A	2	11	3	16	1	0	1	52	491	0

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157 SH1 SURVEY MT.

LINE & ANOMALY	COAXIAL COIL		COPLANAR COIL		VERTICAL DIKE		HORIZONTAL SHEET		CONDUCTIVE EARTH	
	REAL PPM	QUAD PPM	REAL PPM	QUAD PPM	COND MHOS	DEPTH* M	COND MHOS	DEPTH M	RESIS OHM-M	DEPTH M
15B	20	5	29	16	39	23	5	89	8	68
15C	4	4	3	5	6	31	1	107	218	49
16A	2	4	2	4	3	28	1	75	284	21
16B	3	5	2	6	3	19	1	47	244	2
16C	2	5	3	3	3	20	1	45	240	0
16D	35	17	57	39	28	0	4	46	10	27
16E	4	4	0	3	4	41	1	118	209	59
17A	4	14	3	25	1	1	1	31	391	0
17B	8	18	12	23	4	5	1	43	133	7
17C	7	12	13	24	5	15	1	57	67	24
17D	7	12	4	18	3	7	1	43	155	6
17E	33	29	43	46	14	8	2	55	26	29
17F	40	34	30	25	16	6	2	60	28	33
17G	1	4	1	2	3	28	1	56	284	6
18A	2	9	2	15	1	1	1	35	290	0
18B	0	2	0	3	1	16	1	47	178	7
18C	16	31	15	37	5	0	1	36	89	6
18D	48	47	41	56	13	10	2	46	33	21
18E	57	31	40	27	30	13	3	61	17	39
18F	13	30	3	28	3	6	1	36	193	2
19A	2	7	0	3	2	9	1	37	352	0
19B	3	9	2	8	2	1	1	42	192	1
19C	16	31	14	42	5	0	1	32	88	2
19D	2	3	1	0	4	45	1	98	436	29
19E	55	24	72	39	39	5	5	51	7	34
20A	2	13	1	19	1	0	1	27	202	0
20B	8	21	6	34	3	6	1	31	111	2
20C	13	19	15	25	6	7	1	41	69	10
20D	5	6	4	4	7	32	1	96	401	34
20E	7	4	2	4	10	24	1	97	90	49
20F	43	19	80	49	34	0	6	41	5	26

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157 SH1 SURVEY MT.

LINE & ANOMALY	COAXIAL COIL		COPLANAR COIL		VERTICAL DIKE		HORIZONTAL SHEET		CONDUCTIVE EARTH	
	REAL PPM	QUAD PPM	REAL PPM	QUAD PPM	COND MHOS	DEPTH* M	COND MHOS	DEPTH M	RESIS GHM-M	DEPTH M
21A	11	21	14	36	4	3	1	23	102	0
21B	5	14	13	16	4	12	1	33	121	1
21C	14	22	15	29	6	0	1	40	54	10
21D	6	9	3	8	4	6	1	46	334	0
21E	3	0	5	5	15	71	1	132	863	24
21F	5	4	5	6	7	35	1	76	337	22
21G	4	3	5	4	9	0	4	111	14	82
21H	5	7	6	7	5	0	1	81	137	29
21I	4	4	6	6	7	30	2	136	59	95
22A	6	12	6	21	3	4	1	28	101	0
22B	16	26	12	28	5	3	1	40	61	10
22C	2	5	0	3	3	20	1	53	263	6
22D	3	3	3	0	9	37	1	85	158	32
22E	8	12	4	13	4	18	1	74	124	32
22F	16	24	35	52	7	0	2	38	23	13
22G	18	24	35	52	8	0	2	33	34	6
23A	10	24	15	36	4	3	1	46	73	15
23B	2	11	3	15	1	0	1	55	409	5
23C	12	15	6	15	6	0	1	52	136	10
23D	6	3	3	3	12	52	1	98	211	45
23E	3	5	4	10	3	18	1	48	92	13
23F	13	13	18	27	8	5	1	41	55	10
24A	9	11	6	8	6	17	1	48	75	14
24B	3	13	2	16	1	0	1	47	269	4
24C	14	20	10	24	5	0	1	47	94	11
24E	2	5	7	8	4	15	1	81	81	37
24F	4	4	5	7	6	12	1	65	123	18
24G	8	9	5	14	5	22	1	65	93	28
25A	6	4	5	10	7	32	1	44	135	8
25B	11	19	7	24	4	7	1	39	97	8
25C	4	16	4	23	2	0	1	29	472	0
25D	3	12	4	22	2	1	1	45	284	3

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157 SH1 SURVEY MT.

LINE & ANOMALY	COAXIAL COIL		COPLANAR COIL		VERTICAL DIKE		HORIZONTAL SHEET		CONDUCTIVE EARTH	
	REAL PPM	QUAD PPM	REAL PPM	QUAD PPM	COND MHOS	DEPTH* M	COND MHOS	DEPTH M	RESIS OHM-M	DEPTH M
25E	2	3	4	0	6	28	1	102	244	40
25F	10	17	10	18	5	0	1	56	83	15
25G	9	17	10	18	5	0	1	36	133	0
25H	5	5	1	9	4	20	1	45	327	0
25I	6	3	2	1	17	24	1	86	198	28
25J	7	10	12	19	5	3	1	47	76	12
25K	6	10	8	9	4	13	1	50	76	15
25M	18	20	23	36	8	0	1	34	65	3
26A	7	5	2	7	7	21	1	46	113	8
26B	9	17	9	28	3	1	1	39	83	7
26C	9	12	9	28	3	8	1	48	85	15
26D	4	15	0	13	1	0	1	34	447	0
26E	11	21	10	29	3	5	1	45	135	9
26F	7	14	5	14	3	8	1	47	164	3
26G	5	13	2	17	2	7	1	25	554	0
26H	31	14	23	15	30	4	2	71	29	42
26I	3	0	8	10	9	39	2	63	43	30
26J	12	7	7	12	10	27	1	59	58	26
26K	3	5	7	31	2	4	2	65	40	34
26M	8	19	8	33	3	0	1	35	83	5
26N	14	22	10	36	4	0	1	43	76	11
27A	8	14	8	18	4	6	1	42	113	8
27B	2	7	1	8	1	9	1	37	904	0
27C	19	32	23	46	6	0	1	30	109	0
27D	4	8	3	10	3	7	1	55	147	14
27E	4	7	1	9	2	24	1	32	483	0
27F	3	9	1	9	1	14	1	50	336	7
27G	388	365	466	396	34	0	8	25	2	16
27H	9	8	12	15	8	19	2	63	49	29
27I	6	8	12	14	6	11	2	51	37	21
27J	7	7	8	13	6	7	2	50	54	16
28A	7	18	7	26	3	2	1	42	104	9
28B	8	12	3	13	4	11	1	25	652	0
28C	20	29	25	43	7	3	1	41	70	11
28D	4	3	5	4	10	19	1	56	101	13

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157 SH1 SURVEY MT.

LINE & ANOMALY	COAXIAL COIL		COPLANAR COIL		VERTICAL DIKE		HORIZONTAL SHEET		CONDUCTIVE EARTH	
	REAL PPM	QUAD PPM	REAL PPM	QUAD PPM	COND MHQS	DEPTH* M	COND MHQS	DEPTH M	RESIS OHM-M	DEPTH M
28E	3	11	2	19	1	0	1	32	307	0
28F	7	6	5	6	8	38	1	53	321	8
28G	1	10	0	10	1	12	1	28	844	0
28H	24	28	25	38	9	0	2	34	42	7
28I	12	8	12	12	13	19	2	51	55	18
28J	17	22	22	37	7	8	1	38	57	10
28K	10	16	22	37	6	9	2	64	47	32
28M	9	12	8	13	6	7	1	50	88	14
29A	4	8	1	9	2	3	1	43	392	0
29B	12	16	21	32	7	0	2	39	43	8
29C	4	12	3	12	2	20	1	36	519	0
29D	4	9	1	7	2	18	1	43	875	0
29E	2	10	2	13	1	1	1	44	299	1
29F	58	49	46	56	16	0	3	43	22	19
29G	12	12	12	17	8	8	1	64	71	26
29H	8	8	12	17	7	10	2	66	40	33
29I	10	6	6	8	11	10	1	60	69	21
30A	2	5	0	5	2	6	1	72	1035	0
30B	14	19	26	41	7	0	2	39	39	11
30C	15	27	19	43	5	2	1	41	70	11
30D	4	8	1	7	3	22	1	38	589	0
30E	2	14	0	13	1	1	1	38	311	0
30F	57	80	64	117	10	0	2	33	24	12
30G	5	7	0	7	3	17	1	59	102	20
30H	3	6	7	10	4	14	1	56	68	20
31A	3	5	1	5	3	8	1	81	1035	0
31B	25	38	44	72	8	1	2	37	39	11
31C	10	21	14	28	5	0	2	52	50	19
31D	3	4	0	3	3	17	1	71	142	23
31E	11	9	6	8	10	11	1	68	121	23
31G	13	24	23	35	6	2	1	49	56	13
31H	19	23	23	35	8	6	1	53	58	21
31I	25	39	19	51	6	0	1	33	64	6
31J	10	17	19	21	6	11	1	55	89	19

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157 SH1 SURVEY MT.

LINE & ANOMALY	COAXIAL COIL		COPLANAR COIL		VERTICAL DIKE		HORIZONTAL SHEET		CONDUCTIVE EARTH	
	REAL PPM	QUAD PPM	REAL PPM	QUAD PPM	COND MHOS	DEPTH* M	COND MHOS	DEPTH M	RESIS OHM-M	DEPTH M
31K	9	16	8	22	4	3	1	49	84	14
32A	2	6	0	4	2	21	1	59	580	4
32B	15	21	26	43	7	0	2	38	52	9
32C	13	22	14	33	5	0	1	45	62	12
32D	0	6	0	5	2	15	1	58	231	13
32E	15	13	8	11	10	15	1	62	156	20
32F	6	3	14	12	11	12	2	57	47	22
32G	10	8	8	11	9	9	2	56	47	22
32H	11	13	7	21	5	0	1	35	78	0
32I	5	6	7	21	3	0	1	57	66	19
32J	7	11	6	15	4	6	1	55	82	18
33A	2	7	1	6	1	9	1	49	1028	0
33B	14	18	18	32	7	2	1	43	88	9
33C	8	15	8	27	3	7	1	40	109	8
33D	8	16	6	23	3	0	1	37	94	5
33E	79	61	118	118	21	1	4	38	9	22
33F	5	16	2	12	2	14	1	34	372	0
33G	12	26	23	36	5	8	1	39	51	12
33H	40	37	56	64	14	1	2	40	27	15
33I	37	28	56	64	16	2	3	38	21	15
33J	12	9	17	42	6	17	1	66	69	32
33K	16	32	17	46	5	0	1	35	72	5
34A	4	11	3	11	2	4	1	48	489	0
34B	33	41	37	69	9	0	2	31	49	4
34C	6	10	7	14	4	13	1	44	81	12
34D	6	11	6	21	3	8	1	40	96	9
34E	7	14	7	21	4	0	1	41	67	9
34F	14	10	19	18	13	17	2	77	51	41
34G	12	10	23	19	12	15	2	53	52	21
34H	25	14	23	26	17	5	2	48	31	20
34I	45	39	39	68	13	0	2	28	28	5

\* 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.

157 SH2 SURVEY MT.

LINE & ANOMALY	COAXIAL COIL		COPLANAR COIL		VERTICAL DIKE		HORIZONTAL SHEET		CONDUCTIVE EARTH	
	REAL PPM	QUAD PPM	REAL PPM	QUAD PPM	COND MHOS	DEPTH* M	COND MHOS	DEPTH M	RESIS OHM-M	DEPTH M
35A	5	14	2	16	2	2	1	24	791	0
35B	33	53	42	82	8	2	1	25	110	0
35C	12	31	22	48	4	2	1	34	66	8
35D	6	8	9	10	6	19	1	44	70	11
35E	42	45	38	42	13	10	2	58	31	31
35F	10	25	0	26	2	0	1	41	182	4
35G	1	6	0	0	1	0	1	122	1035	0
35H	28	40	42	64	9	4	2	38	41	12
35I	21	40	42	64	7	0	2	43	40	15
35J	31	35	28	57	9	7	2	36	43	11
36A	2	10	2	13	1	0	1	40	644	0
36B	18	26	25	43	7	6	1	37	120	4
36C	14	14	13	29	7	8	1	41	103	8
36D	11	25	19	39	4	6	1	46	64	16
36E	9	16	15	11	7	4	1	61	133	18
36F	11	11	15	17	9	19	1	84	101	41
36G	2	7	0	2	1	11	1	124	1035	0
36H	9	14	11	10	7	21	1	76	153	32
36I	11	13	19	18	10	9	1	46	59	13
36J	12	2	19	18	24	13	2	49	56	14
36K	40	58	38	85	8	3	2	35	43	11
37A	3	22	3	25	1	0	1	18	755	0
37B	21	30	17	38	6	1	1	30	162	0
37C	21	21	27	46	9	0	1	34	57	5
37D	24	34	27	40	8	1	2	37	32	12
37E	10	30	14	49	3	1	1	32	78	5
37F	26	30	16	29	9	12	1	53	119	18
37H	1	7	1	1	2	7	1	64	1035	0
37I	5	14	4	9	3	3	1	45	279	0
37J	16	28	12	27	5	5	2	41	50	13
37K	10	28	12	27	3	0	2	40	51	12
37M	10	16	7	11	5	10	1	39	53	10
37N	5	9	7	11	4	18	2	55	45	24
38A	4	9	3	15	2	5	1	39	451	0

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LINE & ANOMALY	COAXIAL CGIL		COPLANAR CGIL		VERTICAL DIKE		HORIZONTAL SHEET		CONDUCTIVE EARTH	
	REAL PPM	QUAD PPM	REAL PPM	QUAD PPM	COND MHOS	DEPTH* M	COND MHOS	DEPTH M	RESIS OHM-M	DEPTH M
38B	17	21	17	31	7	1	1	32	138	0
38C	18	22	26	52	7	2	1	32	81	3
38D	20	26	26	52	7	0	2	46	35	18
38E	4	7	7	16	4	8	1	47	65	13
38F	4	3	4	5	8	15	1	68	210	15
38G	4	4	10	14	5	40	1	86	96	46
38H	3	11	2	8	2	6	1	49	481	1
38I	7	26	3	19	2	7	1	39	452	1
38J	31	34	23	34	10	8	2	43	48	15
38K	10	16	7	15	5	12	1	47	74	15
38M	5	9	3	13	3	9	1	44	108	10
39A	18	26	15	35	6	4	1	40	119	6
39B	16	26	24	37	6	0	2	39	35	12
39C	3	6	6	11	4	19	1	46	66	13
39D	16	18	5	16	6	11	1	61	177	18
39E	16	23	19	29	7	3	1	58	83	21
39F	3	2	2	2	9	42	2	73	54	35
39G	6	7	5	7	6	16	2	60	53	25
39H	6	12	6	17	3	0	1	51	64	14
39I	6	11	6	17	3	1	1	50	109	12
40A	2	4	3	6	3	19	1	69	334	14
40B	12	15	10	25	6	1	1	38	127	2
40C	9	11	9	17	6	2	1	46	134	7
40D	8	11	10	22	5	0	2	42	53	9
4000A	22	38	25	89	5	1	1	47	99	15
4000B	21	57	17	55	4	9	1	50	146	16
4000C	6	57	3	38	1	3	1	60	105	27
4010A	35	39	31	55	10	10	1	46	66	17
4010B	11	20	4	13	4	13	1	63	216	19
4010C	6	9	4	0	6	32	1	59	222	15
4010D	11	15	10	21	6	5	1	47	55	15
4010E	5	6	5	4	7	30	1	60	102	20
41A	2	8	1	3	2	8	1	36	993	0

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OF THE CONDUCTOR MAY BE DEEPER OR TO ONE SIDE OF THE FLIGHT  
LINE, OR BECAUSE OF A SHALLOW DIP OR OVERBURDEN EFFECTS.

157 SH2 SURVEY MT.

LINE & ANOMALY	COAXIAL COIL		COPLANAR COIL		VERTICAL DIKE		HORIZONTAL SHEET		CONDUCTIVE EARTH	
	REAL PPM	QUAD PPM	REAL PPM	QUAD PPM	COND MHOS	DEPTH# M	COND MHOS	DEPTH M	RESIS GHM-M	DEPTH M
41B	20	27	19	37	7	8	1	42	75	12
41C	354	350	322	369	27	0	5	0	5	0
41D	2	7	0	9	1	0	1	59	146	15
41E	7	19	5	17	3	2	1	47	205	5
41F	55	47	45	66	15	0	2	35	41	9
41G	9	8	11	14	8	19	1	50	128	13
41H	12	25	8	17	4	13	1	30	280	0
41I	9	18	21	26	6	11	1	63	57	29
41J	17	19	21	26	9	4	1	38	60	7
42B	20	37	27	54	6	5	1	35	93	6
42C	18	34	34	72	6	0	1	23	88	0
42D	3	18	4	25	1	0	1	46	72	16
42E	7	18	0	22	2	0	1	35	202	0
42F	6	25	1	31	1	1	1	17	640	0
4200A	113	197	73	224	9	12	1	43	73	18
4210A	60	62	44	59	14	4	2	60	26	33
4210B	5	13	2	6	3	17	1	67	191	24
4210C	37	45	26	61	8	0	1	27	64	1
4210D	11	14	15	30	6	0	2	38	51	7
4210E	4	8	8	12	4	0	1	33	139	0
43A	20	30	7	17	6	20	2	47	41	21
43B	10	19	7	25	4	4	1	36	101	5
43C	5	13	3	11	2	1	1	39	260	0
43D	32	64	47	68	7	8	1	40	112	10
43E	53	56	47	68	13	0	2	36	49	9
43F	12	34	10	10	4	25	1	50	940	6
43G	31	45	26	51	8	12	1	42	80	14
43H	20	38	15	52	5	4	1	35	90	6
43I	3	1	7	4	15	61	2	107	64	65
4300A	12	14	16	18	8	8	1	55	77	19

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157 SH2 SURVEY MT.

LINE & ANOMALY	COAXIAL CGIL		COPLANAR CCIL		VERTICAL DIKE		HORIZONTAL SHEET		CONDUCTIVE EARTH	
	REAL PPM	QUAD PPM	REAL PPM	QUAD PPM	COND MHOS	DEPTH# M	COND MHOS	DEPTH M	RESIS CHM-M	DEPTH M
4300B	32	42	52	95	9	5	2	40	26	17
44A	6	11	5	16	4	0	1	43	159	2
44B	17	24	34	56	7	5	1	37	140	3
44C	19	28	34	56	7	12	2	61	30	34
44D	7	12	10	26	4	9	1	47	89	14
44E	4	13	5	13	2	1	1	41	224	0
44F	12	16	7	20	5	1	1	37	161	0
44G	1	10	4	10	1	7	1	87	224	38
44H	22	17	22	24	13	21	1	58	111	23
44I	5	10	4	10	3	12	1	63	174	20
45A	3	3	8	8	8	31	1	38	178	0
45B	19	22	21	41	7	0	1	34	134	0
45C	8	13	11	26	4	0	1	36	94	3
45D	0	6	0	3	1	29	1	153	1035	0
45E	0	4	0	9	1	8	1	46	652	0
45F	15	18	9	30	5	3	1	34	96	3
45G	11	21	7	20	4	8	1	39	133	5
45H	30	24	27	35	13	6	1	46	55	16
45I	11	35	27	34	5	9	1	45	94	14
45J	7	13	3	13	3	4	1	49	107	13
45K	4	6	5	11	4	23	1	73	103	32
46A	10	10	11	22	6	14	1	61	109	22
46B	17	23	33	63	7	5	1	34	91	5
46D	8	45	7	25	2	6	1	38	74	12
46E	9	25	19	46	4	0	1	40	55	12
46F	27	37	16	52	6	0	1	29	73	1
46G	30	31	25	40	10	6	1	51	55	20
46H	6	10	6	11	4	17	1	68	110	27
47A	16	15	14	20	9	17	1	65	93	28
47B	15	22	27	48	7	2	1	32	68	4
47C	17	38	22	51	5	3	1	38	82	9
47D	3	5	3	13	2	9	1	47	286	1

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157 SH2 SURVEY MT.

LINE & ANOMALY	COAXIAL COIL		COPLANAR COIL		VERTICAL DIKE		HORIZONTAL SHEET		CONDUCTIVE EARTH	
	REAL PPM	QUAD PPM	REAL PPM	QUAD PPM	COND MHOS	DEPTH* M	COND MHOS	DEPTH M	RESIS CHM-M	DEPTH M
47E	1	9	1	5	1	7	1	63	1035	0
47F	14	26	23	53	5	0	1	36	112	4
47G	40	64	22	65	7	5	1	37	64	11
47H	10	22	20	34	5	5	1	67	76	30
47I	48	46	41	48	14	0	2	41	33	15
47J	7	15	6	20	3	10	1	58	102	23
48A	11	8	13	19	10	21	1	72	85	33
48B	20	27	24	49	7	8	1	35	74	7
48C	22	60	18	85	4	0	1	26	68	2
48D	9	19	17	43	4	3	1	39	55	12
48E	6	13	5	15	3	5	1	51	171	11
48F	2	3	1	2	3	27	1	109	186	49
48G	27	43	16	44	6	0	1	34	58	6
48H	17	20	15	13	9	8	1	58	61	23
48I	26	26	15	20	11	3	2	50	41	19
48J	6	15	8	27	3	0	1	48	80	14
48K	5	19	10	28	2	2	1	47	113	13
49A	3	2	2	4	6	54	1	111	330	49
49B	17	16	16	26	9	9	1	53	73	19
49C	22	41	21	63	5	1	1	30	79	3
49D	9	19	20	34	5	6	1	38	80	9
49E	5	9	10	21	4	11	1	58	63	23
49F	9	21	10	29	4	4	1	47	163	9
49G	2	8	1	5	2	18	1	79	1035	0
49H	9	27	9	31	4	2	1	49	212	8
49I	19	35	26	31	7	0	1	34	62	6
49J	31	32	26	24	12	3	2	46	40	17
49K	26	34	19	32	8	0	2	35	44	7
49M	5	9	4	17	3	0	1	60	172	16
50A	4	6	2	2	4	13	1	113	286	46
50B	10	10	13	17	8	1	1	59	78	20
50C	9	13	13	18	6	11	2	50	49	19
50D	10	24	15	33	4	1	1	35	82	6
50E	6	15	6	22	3	6	1	44	88	12
50F	4	4	4	5	6	31	1	78	277	25

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LINE & ANOMALY	COAXIAL COIL		COPLANAR COIL		VERTICAL DIKE		HORIZONTAL SHEET		CONDUCTIVE EARTH	
	REAL PPM	QUAD PPM	REAL PPM	QUAD PPM	COND MHOS	DEPTH* M	COND MHOS	DEPTH M	RESIS OHM-M	DEPTH M
50G	3	2	3	10	6	17	1	70	131	22
50H	22	36	21	44	6	0	2	47	44	18
50I	5	6	1	9	4	0	1	48	235	0
50J	3	6	1	9	3	13	1	57	244	10
50K	2	5	5	6	4	24	1	80	107	35
51A	7	7	9	12	7	25	1	84	60	46
51B	2	0	4	5	13	41	2	68	60	29
51C	5	10	4	14	3	2	1	61	79	23
51D	4	5	6	6	6	2	1	61	125	14
51E	1	4	2	3	2	8	1	96	344	32
51F	1	6	4	0	2	9	1	93	491	20
51G	6	5	1	20	6	30	1	75	243	28
51H	9	22	11	27	4	4	1	39	102	7
51I	27	35	19	37	8	8	1	61	59	28
51J	21	45	8	37	4	4	1	44	72	15
51K	5	9	3	9	3	9	1	42	258	0
52A	6	8	5	10	5	18	1	86	126	39
52B	3	2	4	6	7	44	1	114	173	58
52C	2	2	4	6	5	31	1	107	75	62
52D	5	11	7	19	3	37	1	98	123	57
52E	7	11	10	19	4	5	1	43	100	7
52F	11	21	12	29	4	0	1	31	182	0
52G	2	6	0	3	2	15	1	61	1035	0
52H	2	6	0	1	2	9	1	71	819	0
52I	9	14	6	12	5	0	1	57	100	15
52J	8	5	5	5	11	30	1	73	146	28
52K	12	24	5	15	4	6	1	35	326	0
52M	4	12	2	18	2	2	1	21	834	0
53A	7	14	10	23	4	6	1	54	71	20
53B	7	17	6	19	3	0	1	37	164	0
53C	16	28	11	25	5	4	1	56	96	20
53D	25	39	19	50	6	5	1	43	97	12
53E	14	14	11	15	9	22	1	77	94	37
53F	12	27	7	26	4	3	1	43	253	2
53G	2	8	1	8	1	7	1	42	437	0

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 OF THE CONDUCTOR MAY BE DEEPER OR TO ONE SIDE OF THE FLIGHT  
 LINE, OR BECAUSE OF A SHALLOW DIP OR OVERBURDEN EFFECTS.

157 SH2 SURVEY MT.

LINE & ANOMALY	COAXIAL COIL		COPLANAR COIL		VERTICAL DIKE		HORIZONTAL SHEET		CONDUCTIVE EARTH	
	REAL PPM	QUAD PPM	REAL PPM	QUAD PPM	COND MHQS	DEPTH# M	COND MHQS	DEPTH M	RESIS CHM-M	DEPTH M
54A	10	17	10	27	4	1	1	41	75	9
54B	8	16	10	20	4	14	1	55	91	21
54C	8	14	8	19	4	3	1	42	135	5
54D	13	22	10	23	5	0	1	50	104	11
54E	6	4	4	3	10	30	1	108	90	60
55A	9	12	9	19	5	4	1	50	71	15
55B	9	16	8	24	4	2	1	35	178	0
55C	26	28	34	50	10	2	2	43	35	16
55D	20	13	2	7	11	37	1	82	80	44
56A	8	9	15	13	9	11	1	58	82	20
56B	12	18	10	23	5	4	1	48	87	13
56C	4	13	10	23	3	6	1	51	109	16
56D	7	21	8	32	3	2	1	28	250	0
56E	53	57	33	62	11	1	2	39	38	13
56F	1	4	0	0	2	51	1	120	189	63
56G	5	6	2	4	4	30	1	98	136	48
57A	15	10	21	27	11	1	1	47	57	13
57B	7	10	8	21	4	4	1	47	71	13
57D	4	4	3	4	6	33	1	70	184	23
57E	52	51	28	56	12	3	1	38	65	10
57G	6	10	4	8	4	22	1	91	239	39
58A	3	4	17	14	8	33	2	66	34	36
58B	25	32	35	47	9	8	1	40	74	11
58C	19	26	35	47	8	7	2	54	27	28
58D	2	8	1	8	1	12	1	29	579	0
58E	5	1	6	10	9	47	1	51	186	11
58F	4	4	6	10	6	31	1	48	224	6
58G	19	15	24	20	15	11	2	66	39	34
58H	4	13	3	10	2	11	1	75	378	21
59A	31	44	34	73	7	1	1	32	62	6

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157 SH2 SURVEY MT.

LINE & ANOMALY	COAXIAL COIL		COPLANAR COIL		VERTICAL DIKE		HORIZONTAL SHEET		CONDUCTIVE EARTH	
	REAL PPM	QUAD PPM	REAL PPM	QUAD PPM	COND MHOS	DEPTH* M	COND MHOS	DEPTH M	RESIS CHM-M	DEPTH M
59B	31	32	39	59	10	0	1	35	59	7
59C	3	12	2	12	1	3	1	44	516	0
59D	44	53	40	57	11	4	1	41	65	13
59E	5	7	3	5	4	0	1	76	285	16
60A	20	20	23	37	9	0	1	38	70	6
60B	30	46	41	73	8	0	1	32	76	4
60C	13	18	13	20	7	0	1	47	78	11
60D	4	6	2	6	3	8	1	50	297	0
61A	24	32	30	59	7	0	1	32	62	5
61B	1	4	1	2	1	18	1	96	1035	0
61C	10	10	12	18	7	15	1	66	69	29
61D	3	7	1	15	1	8	1	61	315	13
62A	6	5	8	10	7	10	1	69	153	20
62C	14	13	14	19	9	9	1	62	60	27
62D	5	5	4	8	5	24	1	67	190	21
62E	2	3	1	5	2	23	1	43	209	1
63A	9	9	10	14	7	13	1	86	77	43
63B	5	4	8	7	9	32	1	94	99	47
63C	4	5	8	6	8	25	1	109	116	57
63D	3	3	2	4	5	48	1	131	228	68
63E	11	5	9	9	17	26	1	85	74	43
63F	3	6	1	2	3	32	1	98	233	43
63G	3	5	2	2	4	45	1	111	217	55
63H	6	6	2	6	5	25	1	66	252	17
64A	5	4	8	9	7	32	1	97	91	52
64B	4	4	8	3	10	33	1	103	201	46
64C	9	8	7	6	10	25	1	91	103	45
64D	1	4	2	4	2	26	1	103	363	42
64E	5	6	5	7	5	7	1	66	125	20
65A	5	7	8	10	6	21	1	100	101	53

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157 SH2 SURVEY MT.

LINE & ANOMALY	COAXIAL COIL		COPLANAR COIL		VERTICAL DIKE		HORIZONTAL SHEET		CONDUCTIVE EARTH	
	REAL PPM	QUAD PPM	REAL PPM	QUAD PPM	COND MHOS	DEPTH* M	COND MHOS	DEPTH M	RESIS CHM-M	DEPTH M
65B	6	7	8	10	7	21	2	97	52	59
65C	6	6	7	9	7	18	1	87	92	42
65D	4	7	3	10	3	18	1	74	194	27
65E	10	9	9	10	10	22	1	93	75	50
65F	4	5	3	5	5	30	1	97	149	46
66A	7	5	4	8	7	15	1	85	148	34
66B	5	5	2	7	4	29	1	78	522	12
66C	11	8	13	17	10	23	2	78	52	43
67A	6	3	3	7	8	25	1	104	120	52
67B	12	10	11	16	9	12	1	66	76	27
68A	15	10	13	19	11	16	2	63	53	29
69A	3	3	7	6	9	21	1	84	82	39
69B	14	9	9	18	10	23	1	67	83	30
69C	5	13	3	16	2	12	1	56	184	16

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