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REPORT ON  
TURAM ELECTROMAGNETIC SURVEY  
IN THE  
MAYO DISTRICT, YUKON TERRITORY

for

NORTH LIMB MINES

by

HUNTING SURVEY CORPORATION LIMITED

Toronto, Ontario

September, 1962

## INTRODUCTION

Between August 27th. and September 2nd., 1962 Hunting Survey Corporation Limited carried out a Turam electromagnetic survey on the UR silver-lead property held by North Limb Mines. This claims group is located on the north bank of McQuestin River between UR Creek and Hex Creek in the Mayo District, Yukon Territory.

The survey was carried out by Mr. W. J. Scott and Mr. A. Skeoch of Hunting Survey Corporation Limited and helpers provided by the client.

A total of approximately 8.92 line miles was surveyed using an A.B.E.M. type 1182 Turam electromagnetic prospecting unit. This instrument uses two horizontal search coils, separated by 100 feet, to record the distortions in an electromagnetic field generated by an alternating current which passes through a long grounded cable. The quantities measured are (a) the ratio of the field strength at each coil and (b) the phase difference of the field between the coils. The grounded cable was laid out along a base line and readings were taken along picketed cross lines perpendicular to the base line. Readings were plotted at the centre of the 100-foot spread. The plotting was done in the field and a preliminary interpretation was provided to the client. The data was checked and replotted at the Toronto office of Hunting Survey Corporation Limited and a final interpretation was carried out.

## GENERAL GEOLOGY

The general area is underlain by Precambrian formations which can be divided into three major units:

- Upper Schists - Brown and grey quartz and mica schist or phyllite, beds of blue-grey quartzite near base.
- Central Quartzites - Blue-grey, grey, white, brown quartzites, interbedded grey to graphite schist.
- Lower Schists - Chlorite schist underlain by grey phyllite or schist and graphitic schist, minor beds of dark quartzite.

Mineralization found in the area is usually concentrated in the Central Quartzites and occurs mostly in northeast-trending vein fault systems. The ore tends to be localized in the most massive members, particularly where the vein-faults intersect each other.

Very few outcrops are found in the general area due to the extensive overburden. However, the area covered by the claims group has been mapped by Dr. A. E. Aho. Base Line 1 was oriented so as to investigate a fault contact, between the Upper Schist and Central Quartzite formation, located by Dr. A. E. Aho.

## SURVEY RESULTS

A large number of anomalies were detected during the Turam survey. In many cases these anomalies interfered with each other resulting in a rather complex pattern. We have tried to obtain an accurate location of each individual anomaly but in some cases the pattern was so confusing that the interpretation must be regarded as one of several possibilities.

The survey was divided into two different areas: Base Line 1 and Base Line 2 with approximately 6.42 line miles and 2.5 line miles of survey respectively. Interpretation of the results obtained along each base line is discussed separately below.

### Base Line 1

The major part of the survey is contained within the area of Base Line 1. A number of anomalies have been observed here, many of them of medium to strong intensity. In all a total of 18 possible anomalous trends have been interpreted along with a number of individual anomalies. In most cases an east-northeast strike has been interpreted as the most likely direction of the anomalous trends.

The major trends appear to form a more or less continuous system throughout the survey area which has been cut by a number of cross faults, the location of which are shown on the

accompanying interpretation map.

A number of the anomalies associated with the major trends, particularly in the northern portion of the survey, gave off-scale readings. As the peak of the anomaly could not be located, the exact position of the body is in doubt. However, it is estimated that a variation of up to 50 feet to either side of the indicated conductor is possible.

Depth calculations could also be in error to a certain extent, due to the fact that the anomalies are not completely outlined. The better defined anomalies point to a depth of 150 to 200 feet to the conductor.

It is possible that the major trends form part of the same fault or shear zone which carries either mineralization or graphite. This fault or shear zone being intersected by small cross faults. The geological map of the claims group indicates a fault zone lying along the base line between Line 12N and Line 38N where it swings away from the base line to the west. It is, therefore, possible that Trends 8, 9, 10 and 18 form the southern part of the fault and Trends 1 - 7 lie to the east of the fault zone in the northern part of the survey area. The lines were not surveyed far enough to the west to prove whether or not the fault zone is to be located to the west of Trends 1 - 7.

The mineralization when found in the area is usually contained in the Central Quartzite formation and occurs in northeast-

trending vein-fault systems. Trends 1-7 appear, therefore, to be favourably located and may be due to vein-faults, whereas Trends 8, 9, 10 and 18 lie in the Upper Schist formation and are likely to be caused by a graphitic zone.

Trends 1, 2 and 3 are closely inter-related and could very well be caused by the same conductor. Trends 1 and 3 indicate a poor conducting part whereas Trend 2 indicates a good conductor. The depth of this combined conductor is in the order of 200 feet, but could be shallower.

Trends 4, 5, 6 and 7 show a similar picture, 5 and 6 being good conductors where 4 and 7 indicate poor conductors. The depth to these complex anomalies is in the order of 150 feet.

Trends 8, 9, 10 and 18 indicate a fairly good conducting zone with a depth of between 100 and 200 feet.

Seven other minor anomalous trends were also located during the survey. These all lie to the east of the base line. Of these, Trend 12 appears to be the strongest and would warrant further investigation along the major trends.

#### Base Line 2

The survey from Base Line 2 comprised a rather small area and consisted of approximately 2 miles of line.

A number of weak anomalies were indicated, however one clearly defined trend, designated by Number 1 on the accompanying map, could be interpreted extending in a northeasterly direction.

The depth to the body causing this anomaly is estimated to vary between 150 and 200 feet.

Three other trends are defined to the west side of the base line and a possible trend of strong intensity is shown to the east of the base line.

A possible cross-fault is outlined between Lines 98N and 100N.

SUMMARY AND RECOMMENDATIONS

The Turam electromagnetic survey carried out over the UR claims of North Limb Mines outlined a number of medium to strong intensity conductors. These anomalous zones, which form a system of trends, warrant further investigation. If the overburden is fairly shallow it is suggested that this investigation take the form of trenching and stripping. Then, should indications be favourable, drilling could follow. However, in most instances it is thought that the overburden will be too deep for carrying out trenching and diamond drilling will be the only means of exploration. In this case it is recommended that the drilling be undertaken to investigate the following zones:

Base Line 1:

Trend 1 - Line 54+00N to intersect at a depth of 200 feet

Trend 2 - Line 54+00N to intersect at a depth of 200 feet

Trend 6 - Line 40+00N to intersect at a depth of 150 feet

Trend 9 - Line 24+00N to intersect at a depth of 150 feet

Should this drilling prove to be encouraging, then, of course, further exploration work on the above-mentioned and the other trends would be warranted.

Base Line 2:

Further exploration on this area should wait until the drilling results of Base Line 1 area are known. Likely targets in

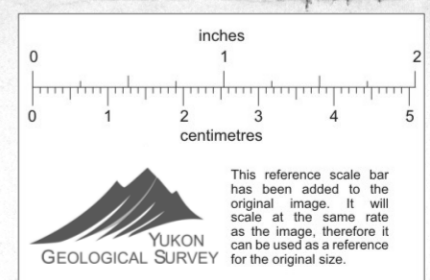
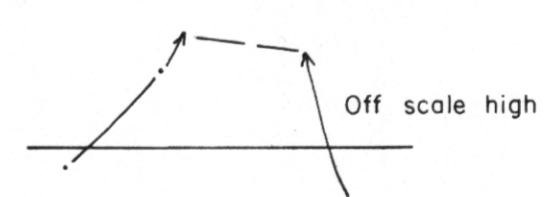
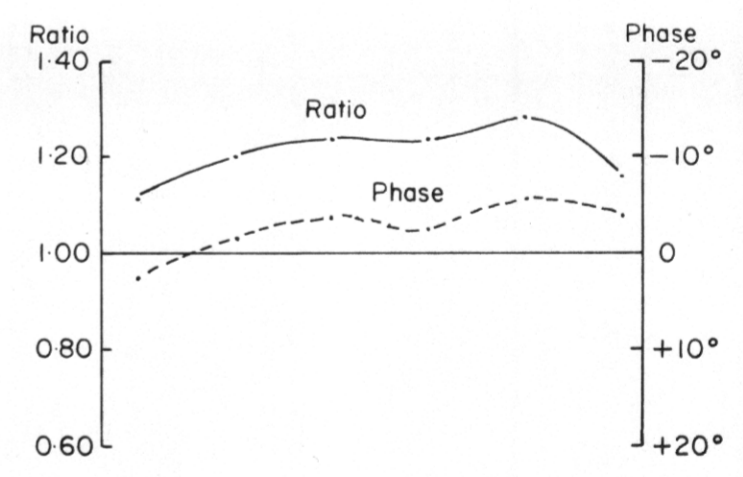
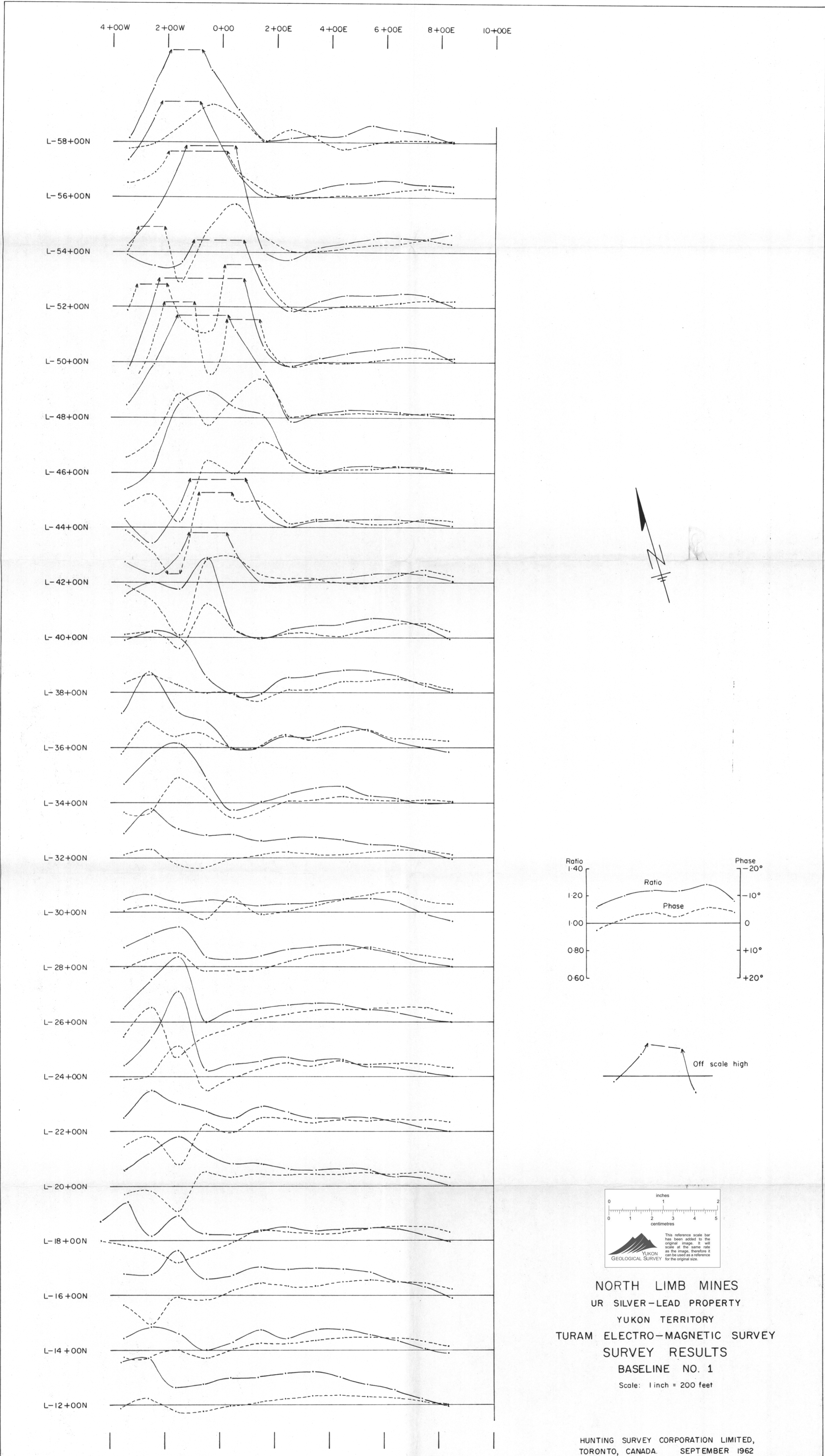
this survey area: Trend 1, Line 104+00N to intersect at a depth of 200 feet and Anomaly at 8+90E on Line 100+00N.

Although the various trends, identified in both survey areas, lie in a similar direction to the known vein-faults in the area, the possibility of graphitic shear zones being the cause of the anomalies cannot be ruled out.

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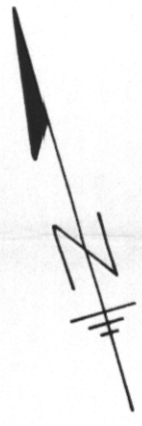
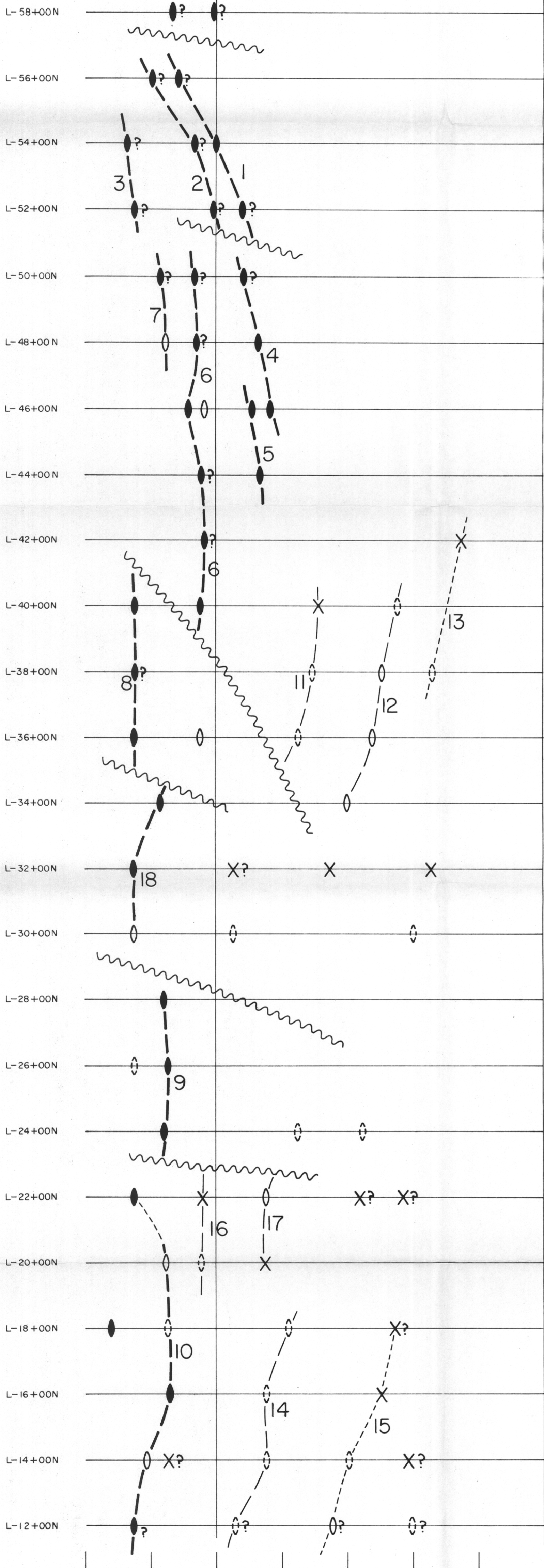
*E. B. Nicholls*

E. B. Nicholls,  
Geophysicist.



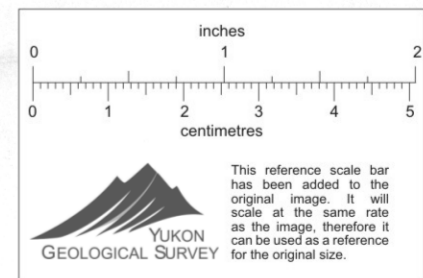
NORTH LIMB MINES  
 UR SILVER-LEAD PROPERTY  
 YUKON TERRITORY  
 TURAM ELECTRO-MAGNETIC SURVEY  
 SURVEY RESULTS  
 BASELINE NO. 1  
 Scale: 1 inch = 200 feet

4+00W 2+00W 0+00 2+00E 4+00E 6+00E 8+00E 10+00E

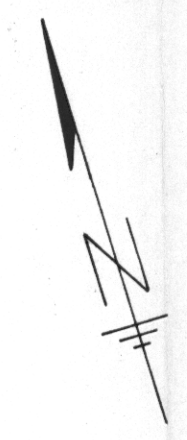
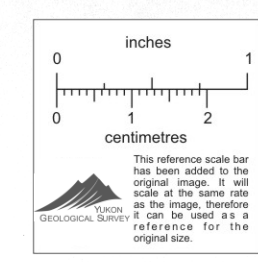
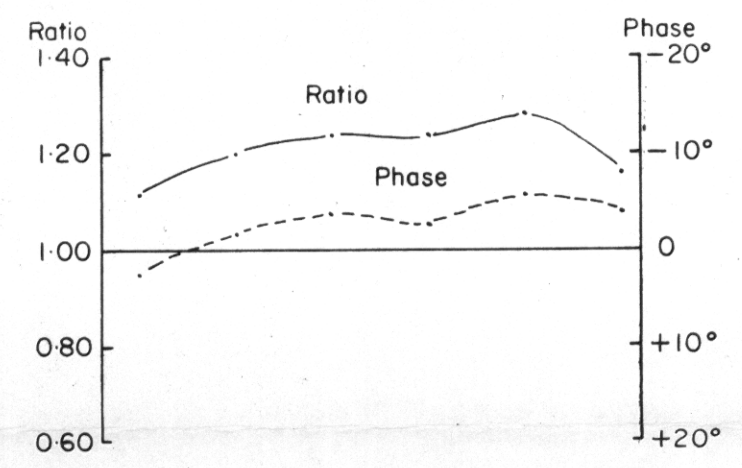
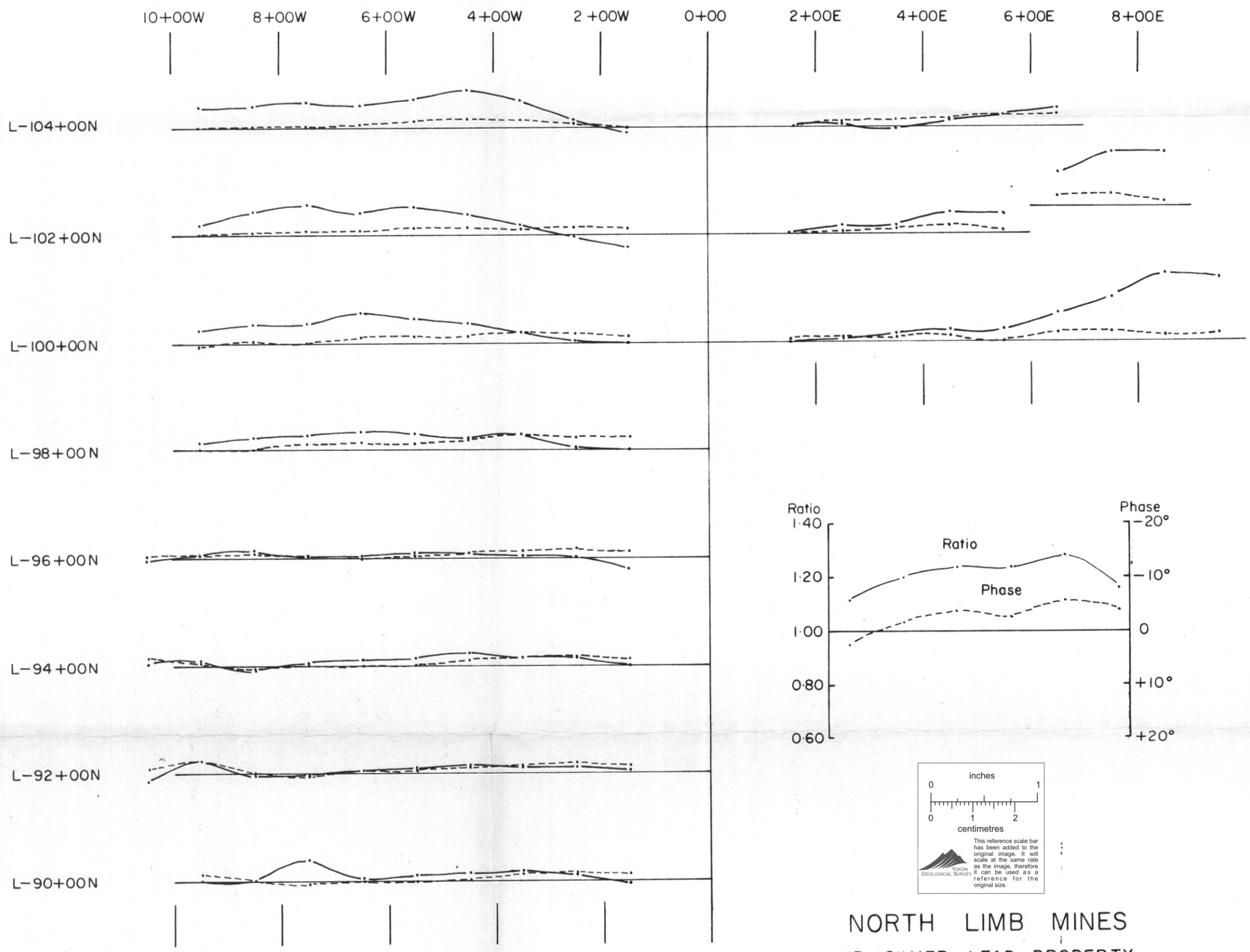


**LEGEND**

- ----- Strong anomaly
- ----- Medium to strong anomaly
- ⊖ ----- Weak to medium anomaly
- X ----- Very weak anomaly
- ? ----- Location of anomaly, uncertain
- Major anomalous trend
- Weak anomalous trend
- Possible anomalous trend
- Possible fault zone

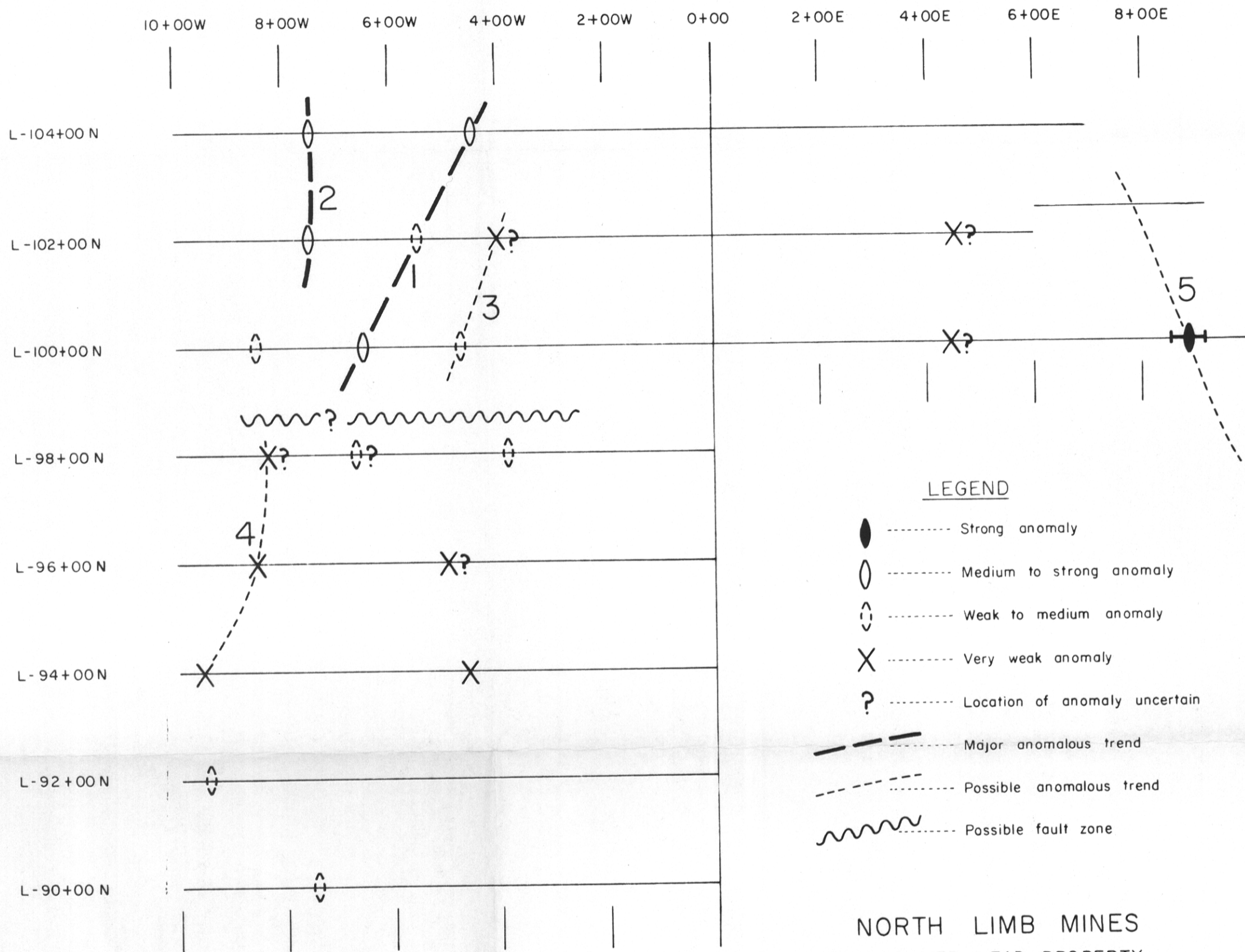


NORTH LIMB MINES  
 UR SILVER-LEAD PROPERTY  
 YUKON TERRITORY  
 TURAM ELECTRO-MAGNETIC SURVEY  
 INTERPRETATION  
 BASELINE NO. 1  
 Scale: 1 inch = 200 feet











NORTH LIMB MINES  
 UR SILVER-LEAD PROPERTY  
 YUKON TERRITORY  
 TURAM ELECTRO-MAGNETIC SURVEY  
 SURVEY RESULTS  
 BASELINE NO. 2  
 Scale: 1 inch = 200 feet

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 TORONTO, CANADA.      SEPTEMBER 1962

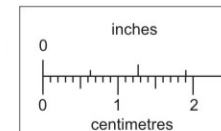


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NORTH LIMB MINES  
 UR SILVER-LEAD PROPERTY  
 YUKON TERRITORY  
 TURAM ELECTRO-MAGNETIC SURVEY  
 INTERPRETATION  
 BASELINE NO. 2

Scale: 1 inch = 200 feet



This reference scale bar has been added to the original image. It will scale at the same rate as the image, therefore it can be used as a reference for the original size.

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 TORONTO, CANADA. SEPTEMBER, 1962