MAP No.	ASSESSMENT REPORT ☐ N. M. E. A. P. ☐ CONFIDENTIAL ☐ OPEN FILE ☐	TYPE OF WORK: GEOPHYSICS 01769
115 B 16		

REPORT FILED UNDER	CANADIAN EXPLORATION LTD.	DOCUMENT NO. ~~091720~~
DATE PERFORMED	1961	DATE FILED: 1961
LOCATION – LAT.	$60^{0}55'W$	AREA: KLUANE LAKE
LONG.	$138^{0}15'W$	
CLAIM NO.	GLACIER GROUP	
VALUE $		
WORK DONE BY	R.K. Watson	
WORK DONE FOR	TOURAM E.M. GEOPHSYCIAL	
REMARKS	A description of geophysical survey techniques on the property is given. No geologic information is contained.	

REPORT ON

TURAM ELECTROMAGNETIC SURVEY

IN THE

CUB CREEK AREA, YUKON TERRITORY

for

CANADIAN EXPLORATION LIMITED

by

HUNTING SURVEY CORPORATION LIMITED

Toronto, Canada

October, 1961

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INTRODUCTION

From September 28th. to October 3rd., 1961, Hunting Survey Corporation Limited carried out a Turam E.M. survey on several claims held by Canadian Exploration Limited near Cub Creek, in the Kluane Lake area of the Yukon Territory.

The purpose of the survey was to examine that portion of a claims group previously covered by a resistivity survey in order to confirm a broad conductive zone and also to locate favourable drilling targets.

The survey was carried out by Mr. R. K. Watson of Hunting Survey Corporation Limited and Messrs. L. Adie and R. McKamey of Canex Limited 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 at each coil. The grounded cable was laid out along the base line and readings were taken along cross lines perpendicular to it. Readings were plotted at the center of the 100 foot spread. A total of 156 stations was surveyed over a distance of 3.0 line miles.

An additional one or two days could have been usefully employed to provide detail information over the anomalies at the south end of the grid but a twelve inch snowfall during the last day of the survey made the road into the area from the highway impassible and it was decided to close

down the survey at this point.

The immediate area has not been geologically mapped but G.S.C. map sheets 1019a and 19-1958 provide information to the northwest and southeast of the area. The area is covered by glacial drift and lies on strike with a belt of andesite and basalt of Triassic and/or Jurassic age. Some intrusions of granite and granodiorite and associated rocks of Cretaceous age are seen to the north and south. Outcrops of ultrabasic rocks with a certain amount of rust colouring were observed in the vicinity of Line 68+00N where the overburden is cut through by a small valley.

RESULTS AND INTERPRETATION

The survey commenced at Line 100+00N and progressed southward. The first several profiles were of the "high background" type in which the profiles are relatively flat but are displaced above base level by a small amount. It was at first thought that this was due to topography, high instrument background and/or conductive overburden. However, as the survey progressed it became apparent that a bonafide conductive zone did exist and that the early lines had just not extended across its full width.

The anomalies are all characterized by a broad smooth peak with small sharp peaks superimposed on it, some of which are seen to be continuous from line to line. The conductive zone extends across all

ten lines surveyed and generally coincides with the resistivity anomaly discovered on the previous survey. For all practical purposes the effect of topography on the anomalies has been found to be negligible. A possible fault has been interpreted between Lines 84 and 88 where the conductive trends appear to be offset.

Lines 64, 68 and 72 display much stronger anomalies than the others. The individual peaks on both the ratio and phase measurements have increased in intensity and show definite line to line continuity. Three of these conductors continue across all three lines and the central one of these three appears to be continuous, with varying degrees of intensity, across all ten lines. The anomalies have been graded as strong, medium and weak conductors on the interpretation map which accompanies this report. The center of conductivity on each picket line is shown by an oval and by a broken line between the picket lines. The depth or width of the centers of conductivity could not be accurately calculated in most cases because the anomalies occur so close to each other that their exact shape is obscured through interference of neighbouring anomalies.

The size of the ratio anomaly relative to the phase anomaly gives an indication of the conductivity of the anomalous body. The conductivity increases as the proportion of ratio anomaly to phase anomaly increases. In general the anomalies in this survey are graded as medium conductors. This quality is fairly consistent across most of the lines but generally shows a slight increase northward of Line 84N.

At the south end a deep valley cuts the area and the overburden is observably shallow here. At the north end no definite outcrop is visible and previous drilling has shown the overburden to be greater than 140 feet in depth. It appears therefore, that the conductive band may be of uniform strength along the length of the area and that the increase in anomaly size toward the south is due to the conductive zones approaching the surface as the overburden thickness decreases. This fact also illustrates that the cause of the anomalies, or at least the sharp peaked anomalies, is not due to conductive overburden alone. If the overburden were conductive enough to respond to electromagnetic methods it would produce a larger anomaly to the north where the overburden is the thickest. It is quite possible that the overburden contributes to the broad anomaly on the lines north of 72 but the small peaks which continue from line to line appear more typical of banded mineralization in the bedrock than of linear concentrations of conductive overburden. It is believed therefore that the broad anomaly on each line could be caused by a wide zone of weak mineralization and that narrow bands of more concentrated mineralization may lie within this and be reflected by the peaks on the general broad anomaly.

COMPARISON WITH RESISTIVITY SURVEY

The previous resistivity survey shows values of apparent resistivity measured at one electrode spacing but no indication has

been given of what this spacing is. An evaluation of the true resistivity of bedrock requires data from several electrode spacings, and thus little information on the quality of the bedrock can be deduced from the present resistivity data. It should be noted however that the resistivity and Turam anomalies do coincide rather well and in fact the eastern boundary of the Turam anomalous zone lies very close to the 0.20 contour of the resistivity anomaly. It is very probable that both anomalies are caused by the same feature.

RECOMMENDATIONS

It is believed that the anomalies are of sufficiently good quality to warrant further investigation. Although the geophysical survey did not completely outline the extent of the conductive zone several good targets were located and it is recommended that they be drilled to determine their cause before additional geophysical work is done.

The anomaly at 62+30W on Line 68+00N is considered to be the most favourable and it is recommended that further exploration be commenced at this point. The center of conductivity is estimated to be 90±50 feet below the surface and would constitute the optimum drilling target drilled from the east.

Second priority would be given to the anomalies at 67+00W on Line 68+00N and at 61+50W on Line 72+00N. These also should be drilled from the east unless the results of the previous hole indicate otherwise. The target should again be about 100 feet below the surface.

Third priority is given to the anomaly at 56+50W on Line 92N. No accurate depth determination can be made but the center of conductivity is likely of the order of 200 feet deep.

If the results of drilling prove to be of interest a continuation of the geophysical program could be used to outline its width and strike length.

FURTHER GEOPHYSICAL WORK

A sample containing about 70% of sulphides was taken from a large boulder in Cub Creek and its Induced Polarization response was tested at the Toronto office. The sample showed very high electrical conductivity and low I.P. response, both of which results could be expected from the massive sulphide content. It is therefore concluded that a geophysical method which utilizes the conductive properties of mineralization such as E.M., resistivity or Turam, rather than I.P., which utilizes the "chargeability" property associated with disseminated mineralization, be used for any future work.

The northern part of the area appears to be covered by a considerable thickness of glacial drift which might hinder a drilling program to some extent. A portable reflection/refraction seismograph could be usefully employed to determine overburden thickness and to rule out areas having excessive cover.

SUMMARY

1. The survey has confirmed a broad conductive zone striking northwest-south and containing several conductive trends. The zone coincides well with a resistivity anomaly discovered in a previous survey.

2. The anomalies are of sufficient high quality to warrant additional investigation and three drilling locations have been recommended.

3. Additional geophysical surveying would be useful to completely outline the zone if the drilling results are promising.

HUNTING SURVEY CORPORATION LIMITED

Roger K. Watson

R. K. Watson,
Geophysicist.

INVOICE

HUNTING SURVEY CORPORATION LIMITED

1409 West Pender Street Vancouver 5 B.C. Canada • MUtual 3-6501 Cables: Canhunt

Canex Aerial Exploration Limited,
700 Burrard Building,
1030 West Georgia Street,
Vancouver 5, B.C.

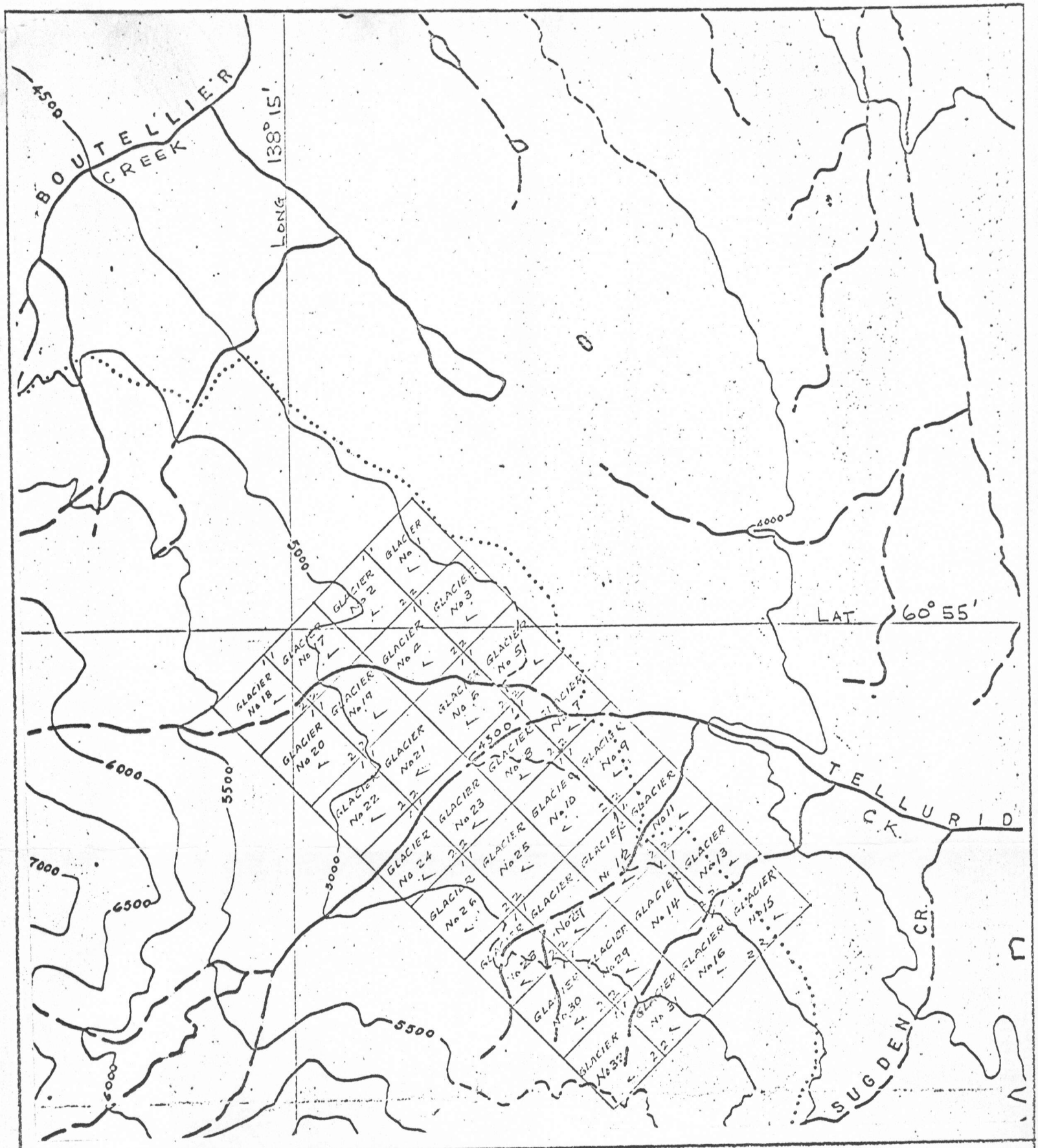
Attention; Mr. W.D. McDermott

INVOICE No	779
DATE	30th November 1961
YOUR ORDER No	
JOB No	61-218
TERMS: NET CASH	
SHIPPED VIA	

QUANTITY	DESCRIPTION	UNIT PRICE	TOTAL
	TO:		
	Completion, Turam Survey of your property West of Whitehorse, Y.T., 26th September to 5th October 1961 inclusive:		$2,512.38

INTEREST MAY BE CHARGED ON OVERDUE ACCOUNTS

FERMAC



CANEX AERIAL EXPLORATION LIMITED

LOCATION MAP

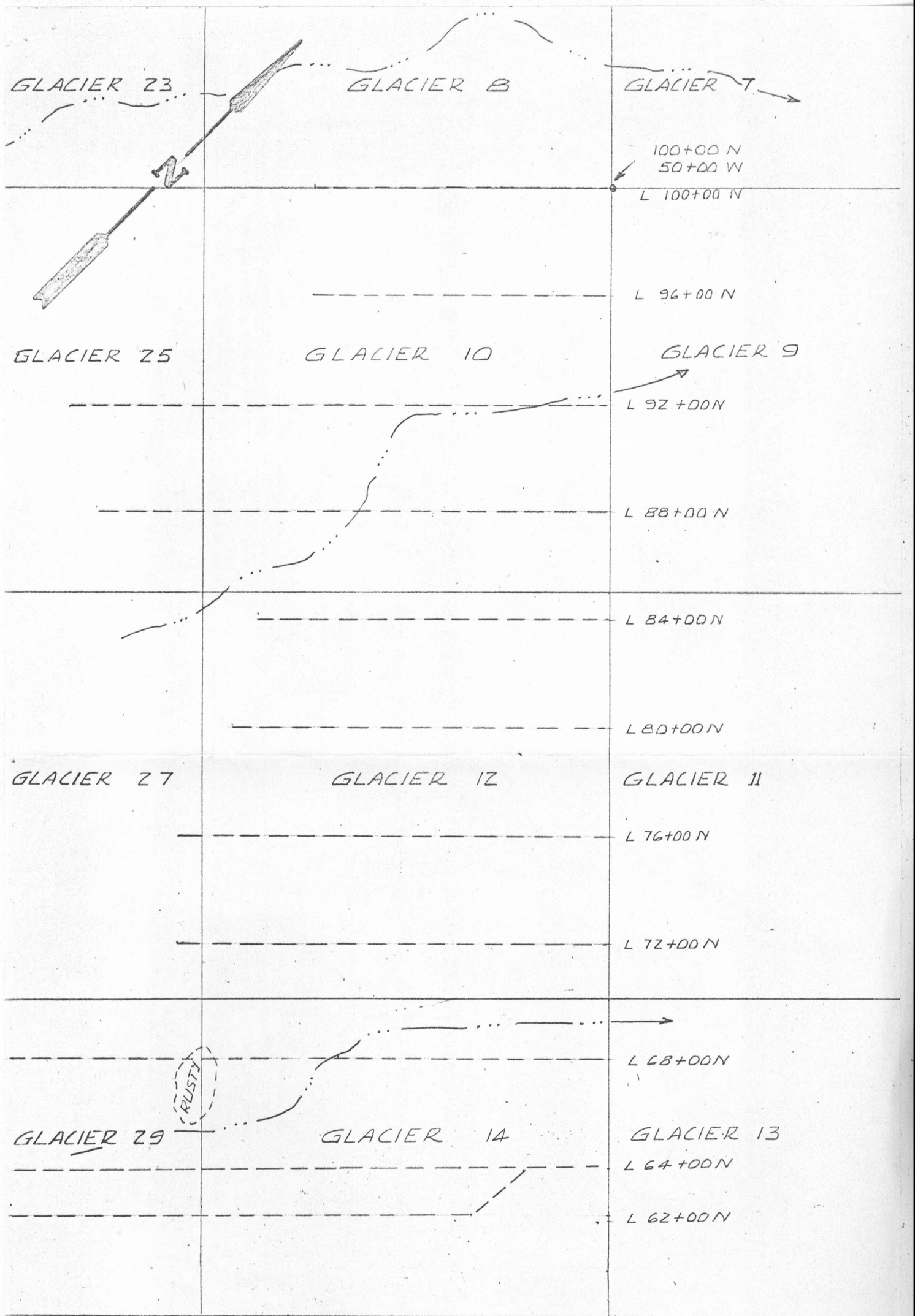
GLACIER 1-32 MC

YUKON TERR.

115 B/16

Scale ½ INCH = 1 Mile

AUG 1961.



CANEX AERIAL EXPLORATION LTD.

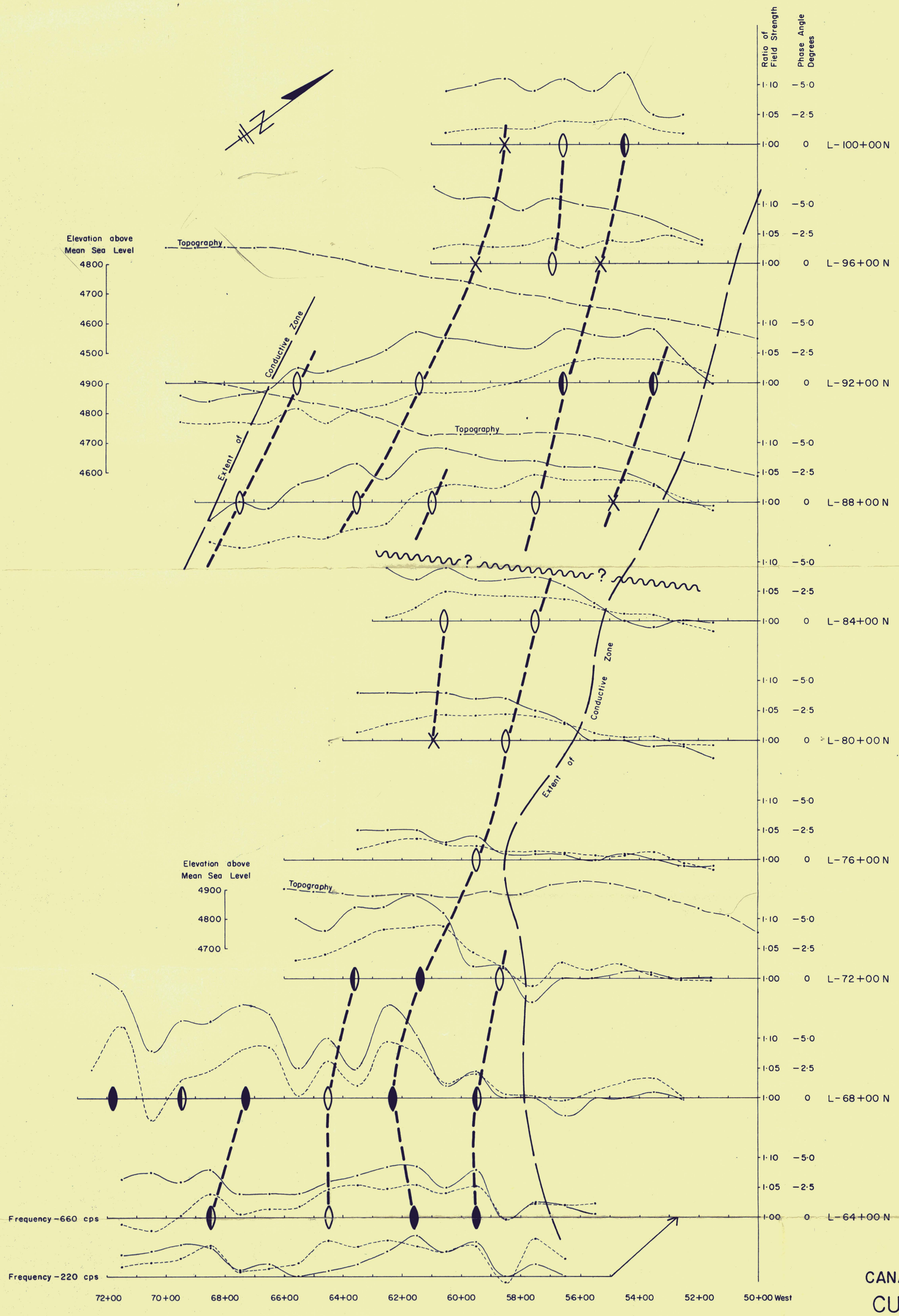
LOCATION MAP FOR TURAM E.M. SURVEY ON GLACIER MINERAL CLAIMS, KLUANE LAKE AREA, YUKON TERR.

SEPT. 28 — OCT. 3, 1961.

SCALE: 1" = 400'

SEPT. 1962.

---/-- LOCATION OF EM SURVEY LINES



LEGEND

TURAM RESULTS

- Ratio of field strength between coils
- Phase shift

INTERPRETATION

- Strong Conductor
- Medium Conductor
- Weak Conductor
- Indication
- Conductor Axis
- Fault

SCALES

Horizontal ----- 1" = 200'

Vertical ----- 1" = 0·10 ratio
--- 1" = 5·0 degrees phase shift
-- 1" = 200'

CANADIAN EXPLORATION LIMITED

CUB CREEK PROPERTY
YUKON TERRITORY

TURAM SURVEY
SHOWING
TURAM PROFILES & INTERPRETATION

OCTOBER 1961

HUNTING SURVEY CORPORATION LIMITED
TORONTO, CANADA