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REPORT ON THE GROUND GEOPHYSICAL SURVEY ON THE TREBOR MINES LIMITED PROPERTY TIMAGAMI AREA, ONTARIO

INTRODUCTION

Between November 21 and December 14, 1955, a geophysical survey was conducted for Trebor Mines Limited over the Perron claims in Timagami Area, Ontario.

Electrical methods were used. The survey was carried out to investigate the economic possibilities of a sulphide showing and to prospect the surrounding area.

A total of 33,700 feet of profile was surveyed by the electromagnetic method, and 5,450 feet by the ratiograph method.

LOCATION AND ACCESS

The surveyed area is situated in the south central portion of Strathcona Township in Ontario just east of Highway No. 11. It is easily accessible from the village of Timagami which is on the same highway and also on the Northern Ontario Railway.

TOPOGRAPHY

The area surveyed is generally quite rugged with maximum difference in elevation of 200 feet. Hillsides are steep, sometimes with 10 to 75 feet sheer cliffs. The low ground is covered by swamp, muskeg and several small lakes. On most of the high ground the overburden is fairly thin.

GEOLOGY

At the time of the survey heavy snow covered the

ground and no geological observations were taken along the profiles. In this area geological mapping has not been carried out in detail and the only information available for this report was taken from the Ontario Department of Mines, Vol. L1 Part VI, 1942, entitled "The Northeastern Portion of the Timagami Lake Area" by W. W. Moorhouse.

The area is mainly underlain by Keewatin volcanics, intruded from the east, south and southwest by Nipissing diabase, and here and there covered by a thin mantle of Cobalt sediments. The volcanics are schistose in places.

The general strike of the schistosity is predominantly northeast with local shears striking east-west.

THE GEOPHYSICAL SURVEY

General

Concentrations of sulphides are generally good

conductors for electrical currents and respond readily to electromagnetic methods. Some types of schisted or sheared zones are also good conductors and therefore may cause electrical anomalies which only trenching or drilling can identify. However, in areas where the geology is known in detail, it is often possible to evaluate the electrical anomalies by noting their position in relation to geological features.

Two methods were used - electromagnetic and ratiograph. The electromagnetic survey included complete determination of the field component with current supplied by a grounded cable laid out approximately parallel to the regional trend of the formations. Observations were taken at fifty foot intervals along lines normal to the cable lay-out.

In the ratiograph survey observations are made of

the current flow by measuring the potential drop ratio between two adjacent sections of ground. By reading the same line in two directions, with power source at opposite ends of the line, it is possible to cancel out effects of topography and differences in overburden.

THE GEOPHYSICAL RESULTS

Maps Nos. 23-404-1 (South and North Sections)

Two maps accompany this report (scale one inch equal to 100 feet). Map No. 23-404-1 (South Section) covers the southern portion of the property and Map No. 23-404-1 (North Section) the northern portion.

The trend of the conducting zones are indicated with broken lines for weak conductors and full-drawn lines for stronger conductors. Double lines indicate conductors outlined by both the electromagnetic and ratiograph methods.

The conductive zones are coloured orange.

Discussion of the Results

Although there are many conductive zones indicated most of them have been interpreted as caused by schists, changes in depth of overburden or topography. Over the mineralized showing there is only a weak electromagnetic anomaly which, from the results of the ratiograph survey, is likely to be very shallow.

There is, however, one good conductive zone where both a good electromagnetic anomaly as well as a ratiograph indication has been outlined. This indication is located at 25+25E on line 16+00N and extends to the north for at least 400 feet and to the south for approximately the same distance.

This zone is recommended for exploration by drilling

a hole on line 16+00N to investigate a portion of the profile lying between 22+00E and 28+25E.

We would appreciate being informed of the results of any geological work which might be used to make a more detailed interpretation of the results of the survey.

Respectfully submitted,

LUNDBERG EXPLORATIONS LIMITED,

Basil T. Wilson
Chief Geologist

Hans Lundberg
President

Toronto, Ontario,
January 4
1956

REPORT ON A GEOPHYSICAL SURVEY
OF THE
PERRON OPTION - STRATHCONA TWP.
FOR
TREBOR MINES LTD.

Introduction

The geophysical survey was performed between Oct. 31 and Nov. 10, 1955 and consisted of:

(a) Reconnaissance along claim lines as shown on attached property map.

(b) A detailed survey of a portion of claims [illegible] 35485 and 35487.

The purpose of the survey was to delineate a mineralized zone as a guide to diamond drilling. An electromagnetic method was used.

A total of 23166 ft. was surveyed along claim lines phase (a) and detailed work along the mineralized zone (b) amounted to 20,900 feet. = 3.95 miles

Two sets of picket lines were laid out across the mineralized zone to provide a base for the geophysical and geological work. One set with lines at 25 to 50 feet intervals was laid out from a short base line along the old highway. The other set at 200 feet intervals was turned off due east-west by transit from a base line offset 8.5 feet from the east edge of the pavement. The bearing of the highway was obtained from the township claim map. Some short intermediate lines at 100-ft intervals were cut near the junction of the two highways.

Accessibility

The major portion of the property lies east of No. 11 Highway at a point about 5.5 miles south of the village of Timagami. At this location portions of the old Ferguson Highway join the new road and provide safe access to the western and northwest central parts of the group.

Accessibility (cont'd)

Timagami is situated on the Ontario Northland Railroad and also on No. 11 Highway at a point 62 miles north of North Bay, which in turn is served by the C.N. & C.P. railways. A power line passes along Highway No. 11 and a branch follows the old highway to Lowell lake. The main high tension line is located about 3/4 to 7/8 mile east of the east boundary of the group.

Topography

The relief is moderate over the central portion of the group but a range of hills about 100 to 500 feet west of the highway show elevations by stadia of 90 feet above the pavement in the southern portion of the property. Those at the north end were not determined. Hills about 80 ft. high are visible in the two north-easterly claims, and these are reported to have some nearly vertical cliffs. A N-S scarp about 75 feet high faces westerly on line 18N about 400 feet east of Smith lake. Small cliffs of the order of 5 to 10 feet can be observed on the ridge east of the old highway south of Smith lake.

Geology

Outcrops observed during the reconnaissance and detailed work are shown on the accompanying geophysical maps. Very little detailed geological mapping was accomplished before snowfall. This was due partly to the magnetic character of some of the exposures, and also to the necessity of providing accurate picket lines for the geophysical surveys. However the following geological column can be given from work to date:

Keweenawan - (Olivine diabase dykes 2-3 feet wide & vertical
(Nipissing diabase sill

Huronian - Cobalt conglomerate

Algoman - Feldspar porphyry
Granite

Keewatin - Andesite and andesitic agglomerate, and black tuff.

Structure

The geological map, No. 51e, of the Northeastern portion of the Timagami Area by W.W. Moorhouse, Ontario Department of Mines, Vol. 51, part 6, 1942 shows a V-shaped mass of Nipissing diabase bounding or nearly surrounding the property on 3 sides,-west, south and east. The westerly portion lies a few hundred feet west of Highway No. 11 and forms the 90 ft. hill mentioned above under TOPOGRAPHY. A detailed examination was made of the rock cuts along Highway No. 11 in the section between picket lines 12 N to 20N. Some sill contacts were found dipping 44 deg. easterly. At 2100N an inclusion of Andesite dips 26 deg. east and at 2200 to 2300N joints and faults dip 32 deg. E and 23 deg. ESE. So this body may be trough-shaped and plunging north.

Outcrops of cobalt conglomerate have been observed along and inside the east boundaries of the two east claims. These form a capping on the lavas.

The feldspar porphyries occur as dykes intruding the lavas nearly parallel to the schistosity. The largest encountered in drilling has a width of 30 feet, and an exposure 20 feet wide occurs in the rock cut on the west side of Highway No. 11 at 1300N.

The lavas have a rather complicated structure which may require careful mapping and accurate survey control. Moorhouse shows an east-west schistosity dipping 48 deg. south in the vicinity of 800'S. at 1457'S a 9" shear zone was observed striking N 74 deg. E and dipping 62 deg. S. On the west side of the old highway north of the main showing the schistosity strikes N 25 to 30 deg. E and dips 27 deg. to 44 deg. easterly. These dips are confirmed by the drilling in this vicinity.

Structure (cont'd)

The accompanying geological sketch shows the variation in schistosity from SSW-NNE in the north-central part of claim 35485 to E-W in claims TRT 35489 and 35490, and NW-SE in the southwestern part of claim TRT 35763. In the north-central part of TRT 35486 the strike is N-S with dips of 60 deg. to 57 deg. E. The mineralized zone as seen in the rock trench appears to follow the NNE direction.

In the main pit the mineralisation consited of a bank of nearly solid pyrrhotite 2 to 3 feet wide which appeared to have an east-west strike and dip about 70 deg. S. This section was bordered on the north by disseminated chalcopyrite. When the pit was extended northward, the chalcopyrite stringers were observed to dip about 35 deg. easterly.

Faulting

A post-diabase fault was found cutting the diabase on the west side of the highway in the vicinity of line 18N. This structure strikes about S 73 deg. E and dips about 80 deg. N. The movement is north side to the west with a minimum displacement of about 20 feet.

Geophysical Survey

The geophysical survey was performed with a portable electromagnetic instrument developed by the writer. Mineralized bodies manifest themselves as positive and negative anomalies. Positive anomalies indicate the proximity of the mineralized zones whereas negative anomalies indicate the actual location of the conductor. Negative anamalies usually indicate the width of the conductor. Strikes, dips, plunges, faulting and folding may be delineated.

Results of the Geophysical Survey

Anomalies located during the reconnaissance are shown on the accompanying plan of the property. This work was done for the purpose of locating the anomalies and no details are available. Further work should be done in order to evaluate them.

At location (1) a magnetic as well as electromagnetic anomaly was observed. Zone A, a mineralized band appears to extend with a few interruptions from Smith lake to at least as far south as the rock cut at line 2N on No. 11 Highway a distance of approximately 2000 feet. Where observed the indicated dip was 35 deg. SE. Intensity of the anomalies over Zone A were from medium to high. Particulars as to the mineralization of this zone and geological features are mentioned in the geological section of this report.

Zone B parallels Zone A on the northwest. Its responses are not as pronounced as those of Zone A. Its width varies considerably along strike.

Zone C has a length of approximately 600 feet and gives a very strong EM response, particularly at its south end.

Between lines 6N and 10N a number of parallel conductors were located. These have been designated A, D, E, F, etc. General EM response from this zone is strong. Some of the conductors along the strike of the above zones may be seen in the rock cut on Highway No. 11 between lines 0/00 and 2N.

Recommendations

Investigate section L-M on Conductor "C"

Investigate section N-O.

Recommendations (cont'd)

Carry out detailed mapping from line 0/00 to line 6N in the vicinity of No. 11 Highway.

Map outcrops AND prospect in the vicinity of Conductors A, I, J, K.

Respectfully submitted,

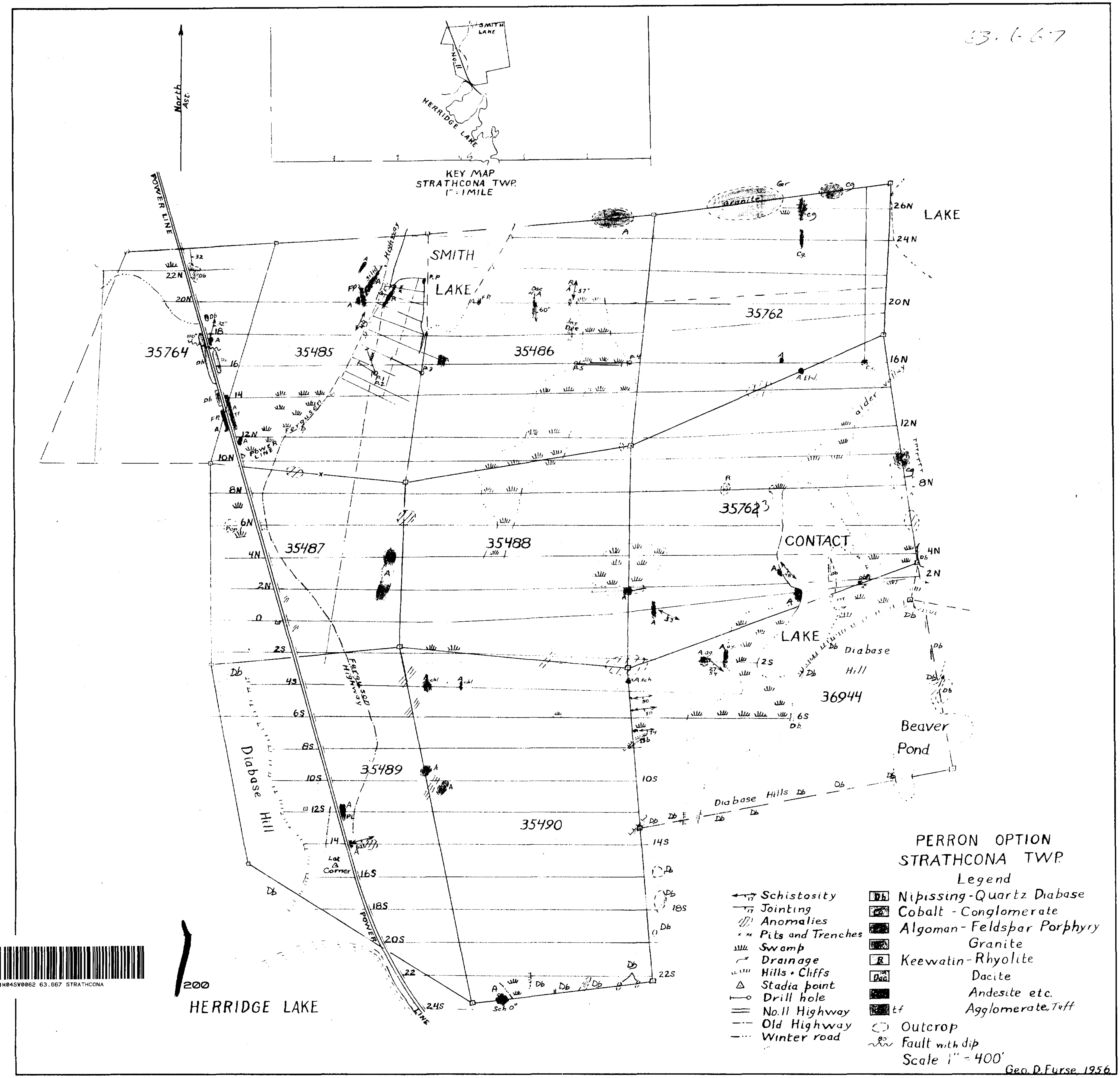
For Treber Mines Ltd.

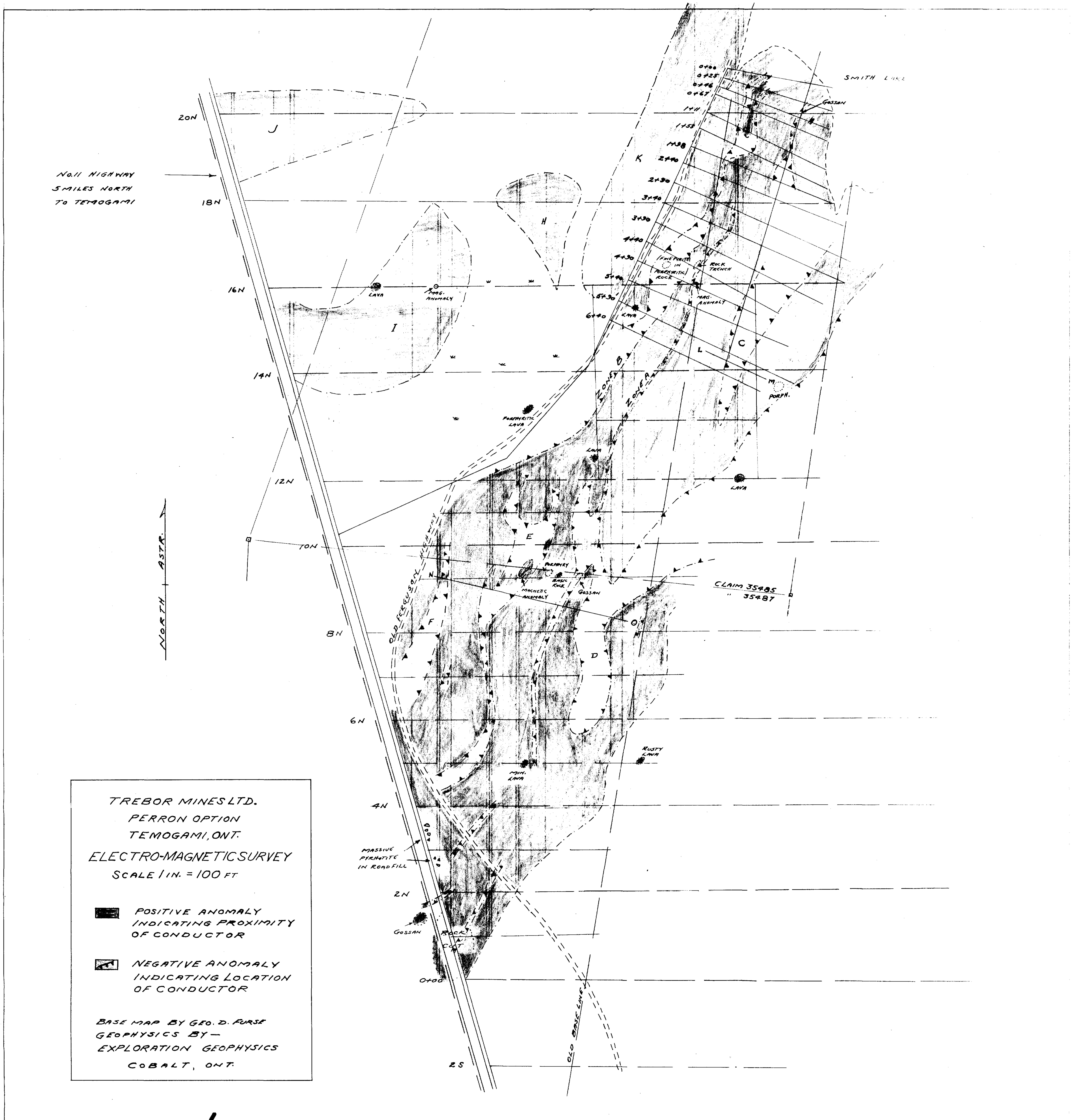
Geo. D. Furse

Geo. D. Furse, Geologist.

Exploration Geophysics

John Sinclair





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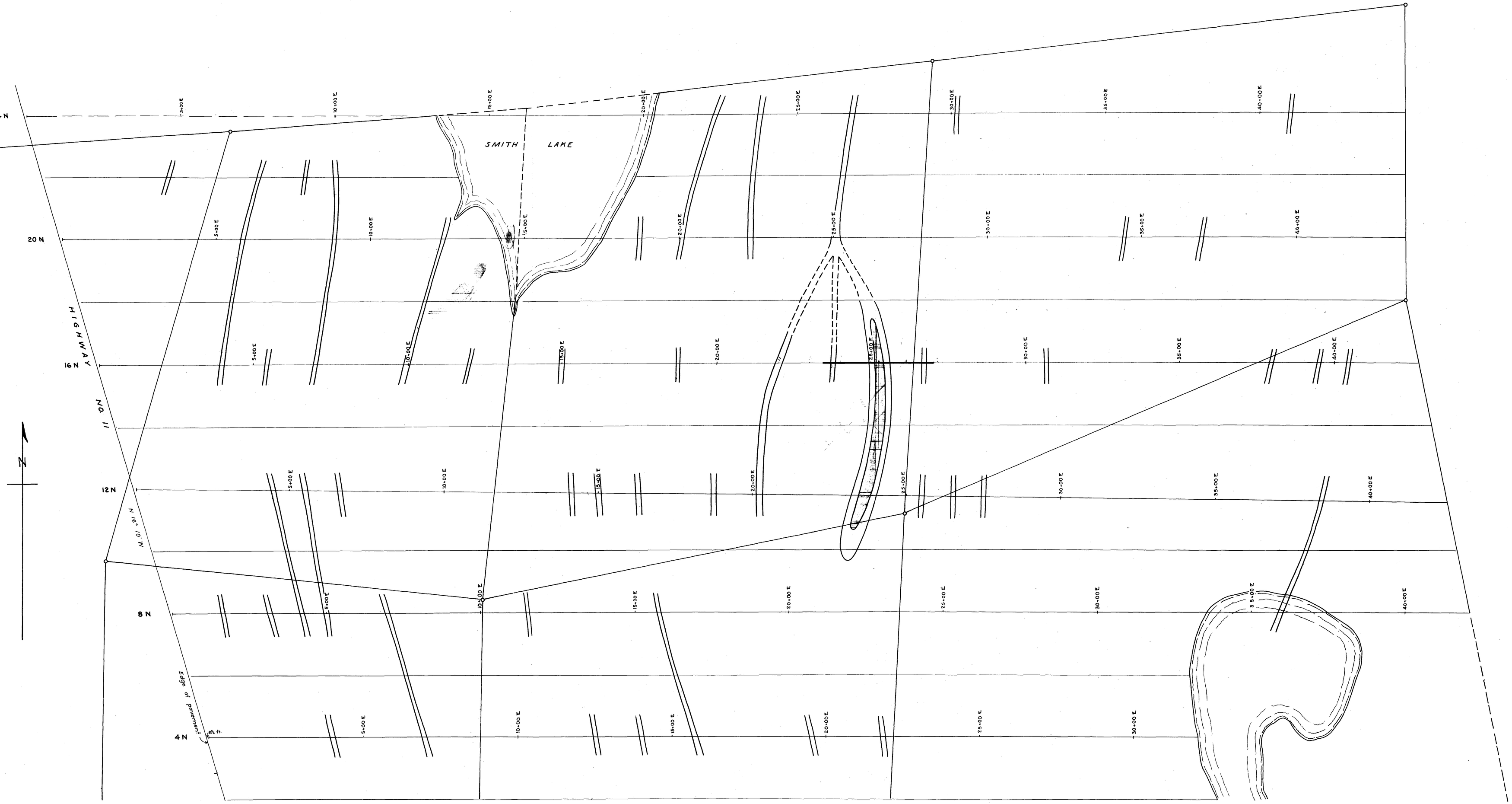

TREND OF CONDUCTIVE ZONES
SECTION RECOMMENDED FOR DRILLING

100 50 0 500 1000
SCALE OF FEET

MAP SHOWING
AN INTERPRETATION
OF THE
RESULTS OF THE ELECTRO-MAGNETIC SURVEY
ON THE PROPERTY OF
TREBOR MINES LIMITED
TIMAGAMI AREA, ONTARIO

SCALE 1 INCH = 100 FEET

TO ACCOMPANY REPORT BY
LUNDBERG EXPLORATIONS LIMITED
TORONTO, JAN. 1956

Hans Lundberg

NORTH SECTION
23-404-1

MAP SHOWING

AN INTERPRETATION

OF THE

RESULTS OF THE ELECTRO-MAGNETIC SURVEY

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SOUTH SECTION

23-404-1