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SUMMARY

During October and November, 1952, a magnetometer survey was carried out on eleven mining claims of a fifteen claim property group for the Candela Development Company in Strathcona Township, Timagami Area, Ontario. The purpose of the survey was to assist in the direction of diamond drill exploration for sulphide ore bodies by delineating geological structure and locating concentrations of sulphides. The magnetic method was considered applicable for prospecting due to differences of rock appearance and the presence of some pyrrhotite in the surface sulphide occurrences which are pyrite concentrations in the form of replacement sulphides near the footwall of a steeply dipping diorite sill. In spite of the differences in rock appearance the results of the survey show only very low magnetic relief over the whole map sheet and show the diorite contact of interest to be outlined only in a very general way. Pyrite occurrences, with which are associated some chalcopyrite and pyrrhotite do not appear as magnetic highs from which it must be concluded that magnetite is not an associated mineral and the pyrrhotite is either non-magnetic or present in insufficient amounts to be noticed in the survey. A gradual increase in magnetic readings appears from south to north across the property on all picket lines. This is possibly caused by the presence of an extensive band of magnetic iron formation a mile and a half north of the property. The data suggests that the survey is masked by some such neighboring magnetic body. It is concluded that the magnetic method is not applicable to assist exploration for sulphides on the O'Connor-Moher Property.

FOREWORD

A magnetometer survey was carried out in October and November of 1952 concurrently with a diamond drill program on the O'Connor-Mosher Property held by the Candela Development Company at Timagami, Ontario. The property is a pyrite prospect from which limited ore shipments were made during the first world war. Examination of the property showed a mode of pyrite occurrence for which a magnetic survey was considered feasible for structural interpretation and a possible aid in detecting sulphide concentrations. The survey was begun October 1st and completed November 20, 1952. Accompanying this report is a geomagnetic contour map of the land area of the property on a scale of one inch to 200 feet. The survey has been filed to apply as 40 days assessment credit in favor of each of the eleven claims covered.

PROPERTY & ACCESS

The O'Connor-Mosher Property consists of fifteen unpatented mining claims of approximately 40 acres each located in Strathcona Township, Timagami Area, Ontario. The claims are situated on the south shore of the Northeast Arm of Timagami Lake about a mile and a half southwest of Timagami Station on the Ontario Northern Railway. The distance from Toronto to Timagami Station is 300 miles due north.

The property comprises eleven land claims and four water claims filed under the following numbers at the Mining Recording Office at Haileybury, Ontario:

T-30860 - T-30869 inclusive	10 claims
T-31528 - T-31531 inclusive	4 claims
TRT- 6979	1 claim

Claim TRT-6979 has long been known in the area as the O'Connor pyrite showing and the rest of the claims are more or less grouped around this location as a center. The property surface shows numerous rock exposures by which the geology can be fairly well outlined. The surrounding country is one of abrupt rocky hills and valleys but of moderately low relief on the O'Connor-Mosher ground. Tree growth is made up of spruce, birch, jack-pine, poplar, and some large red pine the use of which is restricted. Electric power, highway, and railway, are available within two miles.

Access to the property may be gained by motor boat from Timagami Station requiring about half an hour, or by car drive to the north end of the property. During 1952 the local boating firm of Olive & Sons was used for this service. The car route turns off No. 11 Highway one-quarter mile south of Timagami Station and follows a private road west one and a half miles to the camp of The Timagami Timber Company at the north end of O'Connor-Mosher claim T-30862.

GEOLOGY

The O'Connor-Mosher Property is in an area of Pre-Cambrian rocks composed chiefly of Keewatin volcanics intruded by Algonian granites and pre-Algonian basic intrusives. Locally outliers of Huronian rocks (Cobalt sediments) are found. The Keewatin

rocks are highly folded into anticlinal-synclinal structure with axes striking east-northeast. The patches of Cobalt sediments are flat lying on top of the Keewatin rocks. Just north of the O'Connor-Mosher Property is a synclinal axis in the Keewatin which occupies the basin of the long Northeast Arm of Lake Simagami. The property is thus on the south limb of the syncline with formations dipping north about 60 to 70 degrees. Crossing the O'Connor-Mosher Property and traceable to the southwest for a distance of eleven miles is a pre-Algonian diorite intrusive occurring as sill formation on the south limb of the syncline. The observed surface width of this sill varies from 500 to 1000 feet with a dip of probably 60 to 70 degrees north at the O'Connor-Mosher Property. At the footwall, or south contact of the diorite, several sulphide showings of pyrite bearing some copper, nickel, and zinc, have been known as mining prospects for some years. The O'Connor pyrite showing on the O'Connor-Mosher property is one of these locations. The deposits are replacement sulphides at the contact of the diorite and the country rock with some associated quartz stringers and chloritization of both the diorite and the intruded rock near the contact. In 1952 exploration was carried out along a two mile length of the diorite sill by the Anaconda Copper Company who hold mining claims in the southwest corner of Briggs and the northeast corner of Phyllis Townships. This location is ten miles southwest of the Caudela ground. Results of the past

On the O'Connor-Mesher Property the Keewatin rocks are made up of rhyolite flows and fragmentals, and more basic greenstones of andesitic composition. Near the diorite contact these rocks are locally sheared and offset by minor faulting. As mentioned above, where sulphides are present they are accompanied by chloritization of the host rock. The diorite sill of interest for localizing sulphides on the property is traceable across mining claims TMT-6979 and T-30866 for a length of about 4000 feet showing a surface width of 500 feet. Surface mapping indicates the south contact to be interrupted at several locations by either north-south faulting or abrupt changes of strike. The old O'Connor pit workings are at one of these locations. Sulphide occurrences are composed chiefly of pyrite in massive and disseminated form present at the contact in both the diorite and the adjacent Keewatin rocks. With the pyrite are frequently seen visible amounts of chalcopyrite. Pyrrhotite and probably sphalerite are present as minor constituents.

SURVEY PROCEDURE & RESULTS

The geomagnetic survey was carried out using a Sharpe Vertical Schmidt Type Magnetometer with a sensitivity of 16 gammas per scale division. Readings were made at 100 foot station intervals established on north-south picket lines, the picket lines being spaced at 200 foot distances over the known area of sulphide occurrences and 400 foot distances for the remainder of the property. Closure readings at 100 foot distances were made along three established east-west base lines. During the survey a tie-in was made with the Ontario Government Magnetic

Station at the "Y" in South Porcupine showing a reading of 1670 gammas on November 24th, 1952 at 04:30 P.M. The absolute value at the station is 58,200 gammas and the normal correction for the Candela survey readings is plus 1000 gammas. Eleven claims, approximately 440 acres, were covered by the survey, the other four claims being water claims along the shore of Lake Timagami.

The lay-out of the survey was designed to cross the rock formation and the strike of the diorite in order to closely locate the diorite contact and possibly interpret a relationship between the sulphide occurrences and offsets along the contact. It was also considered a possibility that the presence of magnetic pyrrhotite and magnetite associated with the sulphides of interest would appear as magnetic highs in the survey.

Within the boundaries of the magnetic survey the effect of the topography, including overburden conditions, is negligible as far as survey results are considered. The variation in rock susceptibility as observed from the geology is the difference between a fairly basic diorite sill 500 feet wide intruding fairly acid Keewatin volcanics occurring north and south of the sill.

Examination of the accompanying geomagnetic contour map shows the broad feature of a magnetic directional effect to the north as though caused by a deep seated neighboring feature in that direction. This is assumed to be caused by the presence of a known magnetic Keewatin iron formation horizon a mile and a half north of the property on the north limb of the syncline. Superimposed on these regional contours are several low anomalies of several hundred gammas relief which are not considered to be of significance.

The outline of the south contact of the diorite sill is indicated on the map between the 475 and 525 gamma range in a general way. The north contact of the sill is also indicated by a drop in readings in the 500 gamma range but is not apparent on the map sheet because of the increasing effect of the magnetic feature to the north. Considering the purpose of the survey elimination of the broad regional contours by analytical means would still not leave anomalies of importance for interpretation.

During the survey five exploration diamond drill holes were completed directed under the most favorable sulphide showings on surface but no substantial sulphide bodies were encountered. Magnetic readings taken over these surface sulphide occurrences during the course of the survey did not show any increase over local background.

CONCLUSION

It is concluded that the magnetic method of prospecting is not applicable to determine rock differences or outline sulphide deposits of the type found on the property.

Respectfully submitted by



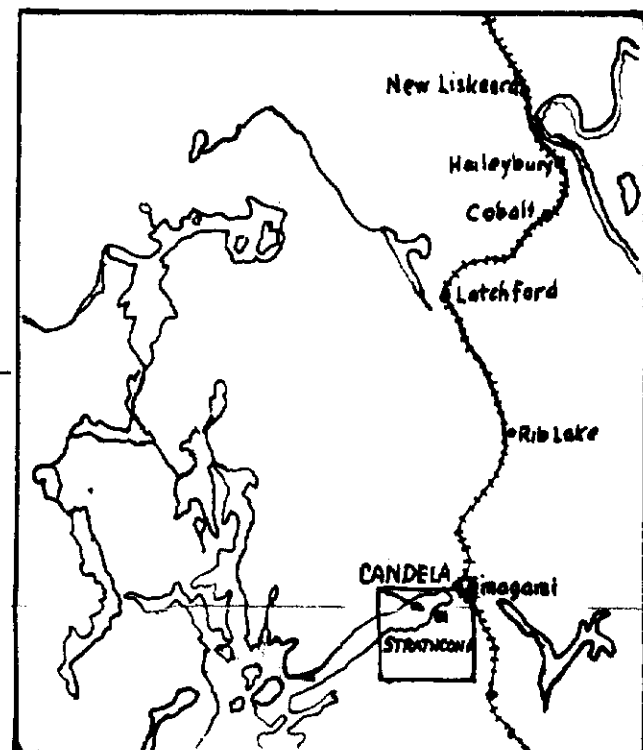
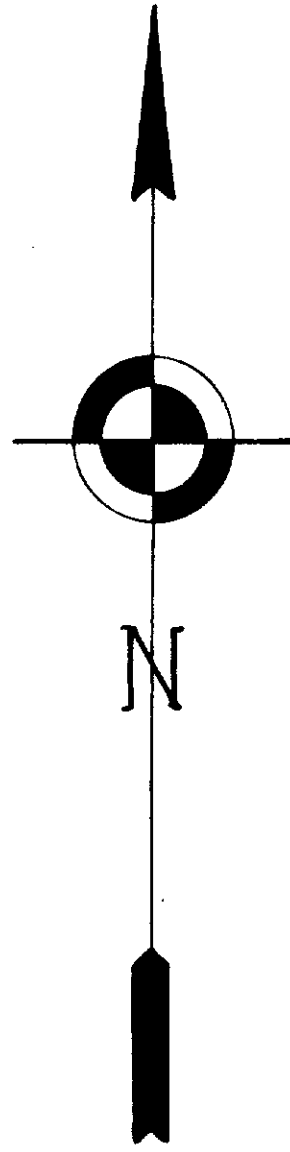
E. L. MacVeigh B.A., M.S.

January 12th, 1953
Haileybury, Ontario.

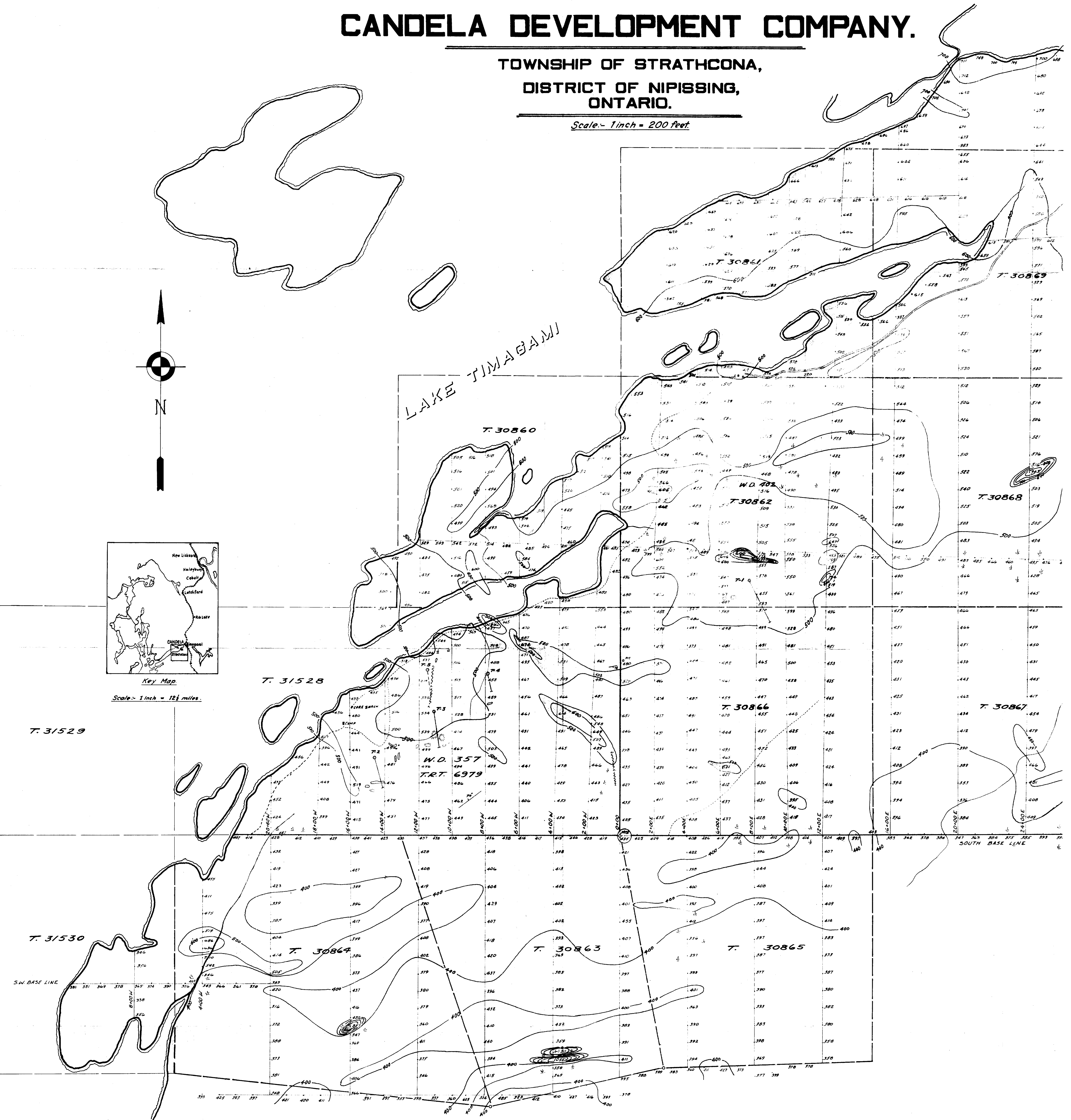
CANDELA DEVELOPMENT COMPANY.

TOWNSHIP OF STRATHCONA,
DISTRICT OF NIPISSING,
ONTARIO.

Scale - 1 inch = 200 feet.



Key Map
Scale: 1 inch = 12 1/2 miles.



LEGEND.

- Low Ground & Swamp
- Contours of equal vertical intensities
- Magnetometer Reading
- Main Control Station
- Diamond Drill Hole
- Trench
- Open Pit
- Road
- Trail
- Claim Post

Dept of Mines Magnetometer Station
at South Porcupine near junction of
Highway 101 and the road to South
Porcupine (From Timmins).
Reading 58,435 gamma (absolute)
Nov. 24th, 1952 at 4.45pm. Reading = 1670 σ
Scale Constant = 16 σ per Scale Division.
Normal Correction = +1000 gamma.

	-100 - 0
	0 - 500
	500 - 1000
	1000 - 2000

MAGNETOMETER S
NOV. 30, 1952.

To accompany

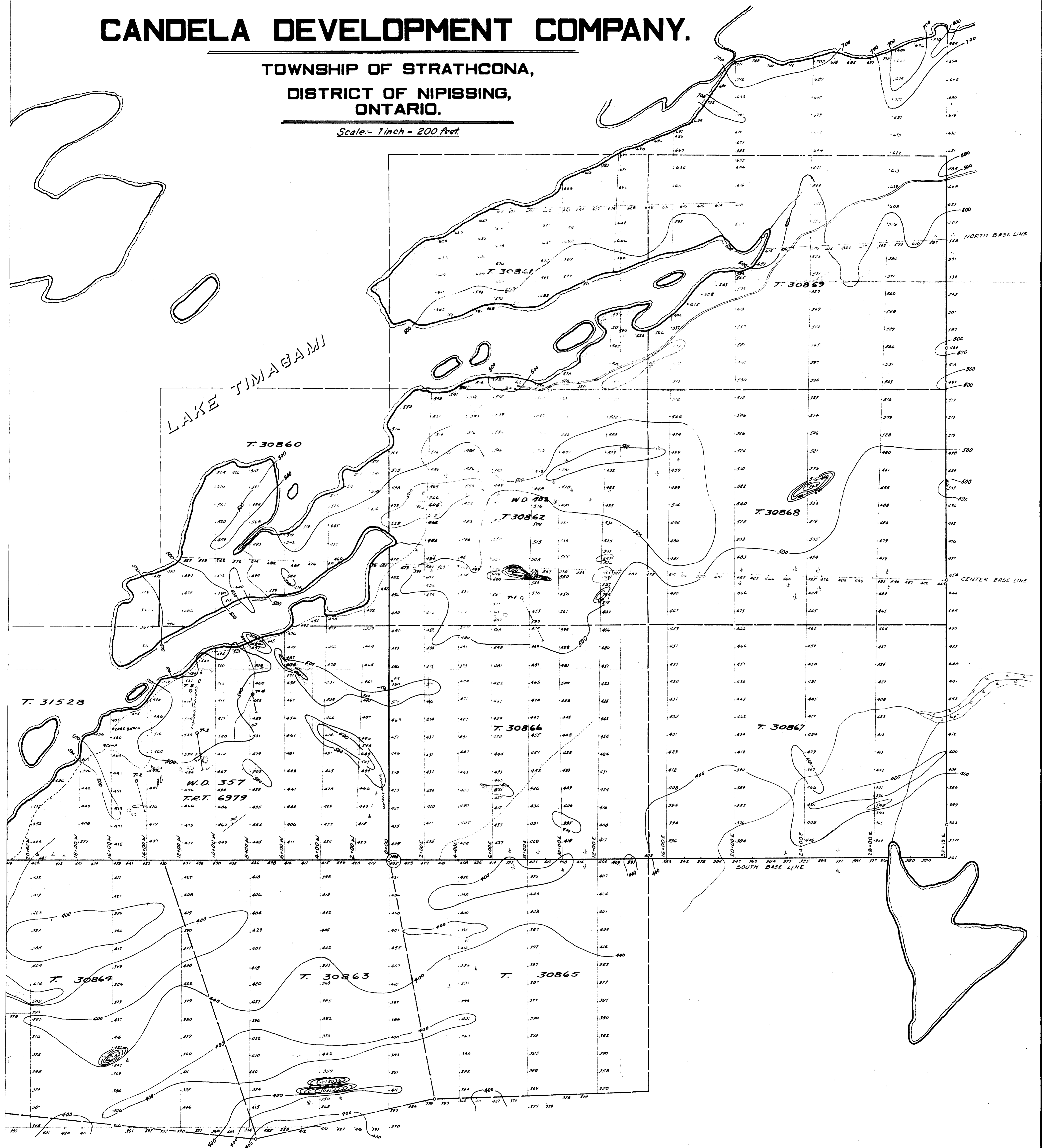
GEOMAGNETIC R.
by
E.L. MacVeigh, B.A. I



CANDELA DEVELOPMENT COMPANY.

TOWNSHIP OF STRATHCONA,
DISTRICT OF NIPISSING,
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Scale: 1 inch = 200 feet.



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□	-100	-	0
□	0	-	500
□	500	-	1000
□	1000	-	2000

MAGNETOMETER SURVEY
NOV. 30, 1952.

To accompany

GEOMAGNETIC REPORT
by
E.L. MacVeigh, B.A., M.S.