In the interpretation of the negative results, the necessary conditions have been indicated. That the assumptions are thoroughly satisfied, can only be inferred from the characteristic properties, by which the surface is bound to the existence of definite areas of definite size and form, since one of these areas is peculiar to the position of the surface, and, if it has been associated to test, by reference, certain subsections.
Interpretation of field work, on extensive drilling campaign will be required to explore the principal structural trends thoroughly.

Between October 17th and December 27th, 1928, extensive surveys were carried out over the property of the Tower Hill Coal Mine and the bordering young group of claims.

Objectives in this were to secure information on the extent of the repository area and the structural trends that might be expected to alter the exploration. Due to the extent of the property and the presence of depositing outcrops, the interpretation of the repository area will be possible after the geological mapping has been done. The information is available for filling the key sections in order to write the report.

The total area covered is approximately 4,200 acres. The present mining property is located on the central portion of the property. The area covered by the mining剥离 is approximately 4,200 acres. The mining operation is designed to extract the coal through the (100-200 feet) deposit.
Tropical vegetation are evidently obstru ed by the large and numerous the property is located north of Log Lake. A belt crop is established on the north slope of the hill. This crop may be reached by boat from the lake via the Grand River, or by trail. At the time of the survey there was a small crop on the property which was reached by trail from the lake camp.

Geography

There are no marked topographic features in the area. Lower portion of the ground are covered by forest; other portions slightly higher are mostly covered by stunted trees. The vegetation is seen and underbrush scattered. There are no noticeable trends of the higher ground that could help to indicate any structure such as solfes, mor and solts.

Geology

The geology of the area has been described by Dogwood in the 18th Annual Report of the Ontario Department of Mines, 'Geology and Mineral Deposits of the Lake Huron Area, 1873. The report has been used together with information obtained from the officers of the Ironton Lake Gold Mines, to aid in making the best possible interpretation of the suspected results. In this report, only those sections which have a bearing on our interpretation of the suspected results are discussed.

It is well known that the bedrock in the immediate by basalt, andesite, rhyolite, andark, and various other rocks and sediments of the Precambrian system, interbedded with these are sediments including sandstone, siltstone and shale formations of the Jurassic period.
A study of the report indicates that generally the dune formation contains more chertite than any of the other rocks. In places, however, those rocks are known to contain highly chertite pieces of high quality and low iron content. In the formation of the beach line, volakemite the kettle and repositioned kettle are rich in chertite but there appears to be little noticeable difference between the other rocks types.

The composition of the dune line varies considerably from place to place. In the formation of conglomerate there is a large amount of ironstone, which the conglomerate and chertite contain only small amounts of ironstone. On the other hand, containing a small amount of ironstone, the conglomerate, especially in its lower levels, is wholly high in ironstone content, whereas the lower levels are wholly ironstone.

It is obvious, therefore, that careful study of weathering in the occurrence of ironstone in order to predict the type of rock which covers the ironstone may be necessary. It may be noted that many of the rocks which have a high ironstone content occur at first, both at 2000, so that the trend of high ironstone rocks should indicate the structure. Furthermore, where such trends are interpreted to affect the presence of ironstone in future may be expected.

On the west side of the sandy ridge property, recent geological work has shown that a belt of ironstone which extends entirely from the east end of sandy ridge has been added directly to the north, extending almost to
O our lake, where the rock strata seem to be tilted northeasterly. It is thought that if this rock strata become more gently and consistently, the sediment bed might possibly persist on to the south lake property.

It is probable that the following structures on the northern bed lake and the bed lake properties are the result of this folding. Therefore, if repetitions of such a fold can be indicated, we will have targets for drilling.

The veins of the above-mentioned properties are along there with a slightly south of east strike. Some of the folds are indicated on both properties surveyed. The problem, therefore, is to locate these veins until they intersect favorable hole or even those, which at each place, we believe the next favorable conditions for ore deposition should exist.

This brief discussion should prepare the reader for the discussion on the magnetic results and why, as it is necessary to do some preliminary outlining to give us enough data to make a detailed interpretation before a more elaborate drilling program can be set out.

First (Introduction) (General)

The successful application of magnetic methods to prospecting for ore deposits and the solution of structural problems in our covered areas depend upon the fact that all the minerals and rocks forming the earth's crust possess characteristic magnetic susceptibilities. Therefore, whenever deposits of magnetic minerals are encountered in large enough quantities, reasonable magnetic anomalies will occur. The exact form of these anomalies and their relation to the deposits of iron ore being their ore bodies that
...depending on the shape, size, distribution, depth, magnetic susceptibility and orientation of the body with respect to the earth's magnetic field, as well as the latitude in which it occurs and the amount of residual magnetism which may be present. In the final analysis, it is the complete anomaly and the relation of the magnetic high and low studied in conjunction with all available geological data that govern the final interpretation.

Due to the many factors listed above which may influence the form of a magnetic anomaly, it is not practically possible to arrive at a correct quantitative prediction of the size and amount of mineralization under the disturbance by merely examining the character of the anomaly to which it gives rise. A magnetic survey will locate concentrations of magnetic minerals. In some cases, these magnetic minerals may form one body. In others, they may be a constituent of an important rock formation which can be used as a horizon marker to deduce the location and trend of such structural feature as faults, folds and unconformities. Where the magnetic susceptibility of the adjacent formations is sufficiently different, the approximate location of the contact may be determined.

It is obvious that in order to complete the geological picture by means of a magnetic survey, at least one such body has to be observed at key points. If, therefore, there are no outcrops, it is necessary to drill a number of short holes at certain key places to make a final interpretation of any magnetic survey.
The land survey was carried out under the direction of Colonel and Lieutenant. It did not appreciate the fact that a certain degree of accuracy was required. Therefore, after the survey had been completed, it was found that the accuracy of the survey was not sufficient to meet the requirements. If it was only required for the survey to outline major features, the error of a few feet one way or another would not matter so much, but there it is hoped to locate known points which may be recognized by offsets of a little or ten feet (in the old works even there are many of the points). It is obvious that the detail as well as the relative location of the stations is of the greatest importance.

On account here the line was laid out and cut for a distance of 20,000 feet from the bays, possible three squares at 300 feet intervals were turned off at right angles and extended to the north and to the south. A total of 200,000 feet of profile was cut and observed.

For the magnetic method, we used a sensitivegalvanometer, another type, attached to a consistency of 60,000 feet, to measure the vertical intensity of the earth's magnetic field. Control stations were maintained throughout the property to make the necessary corrections due to diurnal variation or changes in the centre of gravity of the earth, so that the observations were not distorted by magnetic storms.

A total of 100,000 feet of profile were used.
Mr. J. Hector carried out the magnetic survey.

The map, therefore, shows the results of the magnetic survey and gives to a scale of 1 inch equal to 300 feet. On these maps, the vertical intensity in terms of units is plotted at each point of observation.

The interpretation is shown by means of the dynamic lines outlining areas of similar intensity. The normal vertical intensity for this district has been assumed to lie between 600 and 800 parts and these areas are left uncoloured on the map. Areas above 800 parts are coloured blue and areas below 600 parts are coloured red. Greater deviation from normal is shown by more intense colours.

In order to show the trend of the breccia in the magnetic zone, a heavy broken line is referred to as a trend, if used. Locations of drill sections are shown by a heavy solid line and are numbered from one to thirteen.

The magnetic results:

Study of the figures showing the values in parts units at each point of observation reveals that the magnetic intensity ranges from the high of plus several thousand parts, to the low of minus several thousand parts. These
extreme values found over limited areas indicate the presence of strong magnetic bodies near the surface. The exact cause of this dipole condition varies for different areas. Sometimes it may be the cause of irregular topography, but in other areas there are no topographic conditions that could cause this, and it is more probable that these extreme conditions give hint as to the existence of faults cutting rock of very high magnetic susceptibility, i.e. containing considerable magnetite.

This conclusion is further supported in many places by small but definite effects of the general trend of the magnetic zone just above high and low magnetic intensities are observed. These have been the reason for interpreting the lack of effect or being slight or subtle. It is obvious that only those areas which are more or less transverse to the gravitational trends will be revealed this way and therefore the southerly striking areas which are known to occur, are not reflected by the magnetic survey. To locate such trends, an electrical method would have to be used.

A detailed description of the magnetic trends is given here as their location on the ground is shown on the map which accompanies the report.

The nature of magnetic intensity do not have to be described in detail for the interpretation.

There are three major zones of magnetic highs and all, if our present interpretation is correct, that the presence of rounded structures similar to that north the area of Homer Lake, discussed in the geology section.

The rock underlying these zones of magnetic high could be horn formation, conglomerate, basaltic lava, or possibly basaltite, since all of these types carry
In most of the sections cut, ore completely hidden and none of the sections are drilled, it should be possible to complete a more detailed magnetic interpretation and over in the geological context. The drilling will also give clues as to the structure indicated magnetically, and with this information, a detailed drilling program may be worked out.

Recommedations

It is recommended that the following sections be drilled to intersect the structural zone of high magnetic intensity at points where they appear to be offset by THROW. The core should be carefully logged with special attention paid to shear and fracture zones and to hydrothermal alteration.

Section No. 1 - from 1600 to 2000 ft., horizontal distance 1200 feet.
Section No. 2 - from 2000 to 2400 ft., horizontal distance 1200 feet.
Section No. 3 - from 2400 to 2800 ft., horizontal distance 1200 feet.
Section No. 4 - from 2800 to 3200 ft., horizontal distance 1200 feet.
Section No. 5 - from 3200 to 3600 ft., horizontal distance 1200 feet.
Section No. 6 - from 3600 to 4000 ft., horizontal distance 1200 feet.
Section No. 7 - from 4000 to 4400 ft., horizontal distance 1200 feet.
Section No. 8 - from 4400 to 4800 ft., horizontal distance 1200 feet.
Section No. 9 - from 4800 to 5200 ft., horizontal distance 1200 feet.
Section No. 10 - from 5200 to 5600 ft., horizontal distance 1200 feet.
Section No. 11 - from 5600 to 6000 ft., horizontal distance 1200 feet.
Section No. 12 - from 6000 to 6400 ft., horizontal distance 1200 feet.
Section No. 13 - from 6400 to 6800 ft., horizontal distance 1200 feet.
Section No. 14 - from 6800 to 7200 ft., horizontal distance 1200 feet.
Section No. 15 - from 7200 to 7600 ft., horizontal distance 1200 feet.
Section No. 16 - from 7600 to 8000 ft., horizontal distance 1200 feet.
Section No. 17 - from 8000 to 8400 ft., horizontal distance 1200 feet.
Conclusion

The magnetic survey outlined a large folded structure cut by sheets of faults. Drilling of the sections recommended will probably eliminate most of these sheets from future prospecting, so that detailed drilling can be concentrated along the sheets most favourable for ore deposition.

The results of the drilling should be forwarded to this office, and as data are accumulated, a more detailed interpretation of the results can be made.

This report is respectfully submitted,

Toronto, Ont.
P. 11th
S. H. G.

[Signature]
Chief Geologist

[Signature]
John Hamilton

[Signature]

MAP SHOWING MAGNETIC RESULTS OF THE GEOPHYSICAL SURVEY ON FOUND LAKE GOLD MINES, LTD. POOLER AND YOUNG GROUP OF CLAIMS BALMER TOWNSHIP, RED LAKE MINING DISTRICT, ONTARIO SCALE 200' = 1' JANUARY, 1982.
EAST HALF
MAP SHOWING
MAGNETIC RESULTS
GEOPHYSICAL SURVEY
ON
FOUND LAKE GOLD MINES, LTD.
AND
POOLER AND YOUNG GROUP OF CLAIMS
BALMER TOWNSHIP, RED LAKE MINING DISTRICT, ONTARIO
SCALE 200' = 1
JANUARY, 1948
13-230-2
Above normal intensities below normal trends. Sections recommended for drilling.

Legend:
- Dynamic lines of vertical magnetism.

Map showing magnetic results of the geophysical survey on the Found Lake Gold Mines Limited and the Pooler and Young Group Balmer and Ranger Twp., Red Lake Mining District, Ontario.