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Report on a Geomagnetic Survey of the Property

of

MORDEY COPPER MINES LIMITED

Godfrey Township, Ont.

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SUMMARY

A geomagnetic survey of the property of Mordey Copper Mines Limited has outlined several anomalies which may be resolved into three main classes:

(1) Narrow, linear anomalies trending slightly west of north indicative of diabase dikes.

(2) High, discontinuous anomalies on the flanks of dikes and distortion of a dike anomaly, possibly indicative of sulphide mineralization.

(3) East-west trending, broad anomaly zones considered indicative of magnetic zones in andesitic volcanics.

Two faults are suggested in the northwestern corner of the property by offset of anomalies.

Report on a Geomagnetic Survey of the Property of

MORDEY COPPER MINES LIMITED

Godfrey Township, Ont.

INTRODUCTION

The property of Mordey Copper Mines Ltd. is situated in the south-western corner of Godfrey Township on the southern fringe of the Kamiskotia copper area in which deposits of gold-copper mineralization have been found in association with some of the numerous diabase dikes which transect the region, trending usually in a direction about north-south.

While the rocks are fairly well exposed in the northern and eastern parts of the property, exposures are few in the southern portions. The geomagnetic survey was undertaken, therefore, with the object of aiding in correlating the geological data obtainable from outcrops and of determining the geological conditions beneath the overburdened portions of the property.

LAND SURVEY

The control grid for the magnetic survey was laid out by Mordey Copper Mines Ltd. and consists of a series of north-south picket lines extending from two east-west baselines. The north baseline extends across lots 10 and 11 in the middle of Concession 3; the south baseline extends across lots 8 and 9 and coincides with the Concession2-Concession 3 line. Picket lines are spaced at various intervals as shown on the maps accompanying this report.

GEOMAGNETIC SURVEY

Observations of vertical magnetic intensity were made at 50 foot intervals along the lines with closer spacing of observations over anomalies. All values of intensity were corrected for diurnal variation of the earth's magnetic field by periodic checking of control stations and converted into gammas, the

unit of magnetic intensity. Results have been shown in two forms; first, a magnetic profile map showing variations in intensity encountered along individual traverse lines in which a profile scale of 200 gammas to the inch was employed, except for high anomalies which have been plotted as broken lines at 800 gammas to the inch; second, a geomagnetic contour map which emphasizes the connection between anomalies on different traverse lines, the contours being lines of equal magnetic intensity.

RESULTS OF THE GEOMAGNETIC SURVEY

Several anomalies were encountered, some of which, no doubt, are accentuated by the shallow depth of overburden in parts of the property.

North-South Anomalies - The anomaly pattern is best seen on the geomagnetic contour map on which the most striking features are the long, narrow, north-south trending anomalies, five of which were encountered. Two of these trend slightly west of north completely across the eastern part of the map area, a distance of some 4800 feet and obviously extend beyond the limits of the property in both directions.

A third very narrow anomaly extends slightly east of south to about 1500 feet south of the north boundary across lines 12E and 14E, and may extend as far south as 350' North on line 18E, but was not encountered on the south baseline between lines 18E and 22E.

The two other north-south anomalies occur in the western part of the property on line 32W and 36W again striking slightly west of north. These may be parts of the same zone offset along an oblique fault.

All these anomalies undoubtedly indicate the presence and extent of diabase dikes.

Several short but pronounced anomalies were encountered on the flanks of the two main diabase dikes which occur in the east block of claims between 400 and 800 feet north on line 0; between 700 and 1000 feet north on line 4E and between 800 and 1100 feet north on line 8E. Also, between 400 feet north on line 8E and 500 feet south on line 10E, there is considerable distortion and widening of the diabase anomaly. These areas were suggested as possible loci of sulphide mineralization.

In addition to these areas, a narrow anomaly trends northwest across the north ends of lines 0, 2W, 4W and 6W between the two major diabase anomalies which may indicate mineralization but more likely a narrow diabase dike.

East-West Anomalies - Several wide anomaly zones trend in an east-west direction across the northwestern block of claims, to the south and west of Ruby Lake, as shown on the geomagnetic map. These are apparently due to magnetic horizons in andesite and the approximate contact between andesite and rhyolites, which are less active magnetically, have been drawn on the basis of these results.

not indicated on map. P. = Lockett Lake ?

Two similar anomaly zones appear in the southeastern corner of the property and suggest that this area is also underlain by andesite. Since traverse lines were spaced at 800 feet in this part of the property detail is lacking on which to base more conclusive interpretation.

A third anomaly area interpreted as underlain by andesites occurs in the southwestern corner of the east block crossing lines 0, 4W, 8W and 12W, between about 1800 and 2500 feet south of the south baseline.

Faulting - A fault striking about N 20° E across lines 36 and 32 (north baseline) is suggested by offset of both a north-south trending anomaly zone and an east-west trending zone. Apparent offset of the portions of the diabase dike have been greatly magnified by the obliquity of the fault with respect to the dike.

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A second fault may occur trending about N 20° E across lines 44 and 48 (north baseline). Evidence for the existence of this fault is less reliable

than for the previous case but is suggested by the fact that the anomaly of a diabase dike which outcrops a short distance west of 1800' north line 48 does not occur on line 44 or on the north baseline.

Respectfully submitted,

MINING GEOPHYSICS CORPORATION LIMITED

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KEELEY LAKE

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ACONDA LAKE

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LOCKETT LAKE

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PROFILE 32

GEOMAGNETIC CONTOUR MAP

ACONDA PROPERTY

FROBISHER EXPLORATION CO. LTD.

Godfrey Township Ontario

Scale 1"–200'

(MORDEY COPPER MINES LTD.)

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