

63.4



32D12SW0124 63.41 HARKER

010



32D12SW0124 63.41 HARKER

010C

REPORT :

INTRODUCTION		Page 1
PROPERTY		Page 1, 2.
	Accessibility	Page 2.
	Topography	Page 2.
	Camps	Page 3.
GEO-MAGNETIC SURVEY		
	Interpretations	Page 4, 5, 6, 7, 8.
CONCLUSIONS AND RECOMMENDATIONS		Page 8, 9, 10.
SURVEY DATA		Page 10, 11.
ACKNOWLEDGMENTS		Page 11.

MAP INDEX

PLAN NO. 1.	Iso-Dynamic Contours of Vertical Intensities.
PLAN NO. 2.	Probable Geological Boundar- ies Interpreted from Magnetic Survey and Topography.

63.4



32D12SW0124 63.41 HARKER

010



32D12SW0124 63.41 HARKER

010C

REPORT :

INTRODUCTION		Page 1
PROPERTY		Page 1, 2.
	Accessibility	Page 2.
	Topography	Page 2.
	Camps	Page 3.
GEO-MAGNETIC SURVEY		
	Interpretations	Page 4, 5, 6, 7, 8.
CONCLUSIONS AND RECOMMENDATIONS		Page 8, 9, 10.
SURVEY DATA		Page 10, 11.
ACKNOWLEDGMENTS		Page 11.

MAP INDEX

PLAN NO. 1.	Iso-Dynamic Contours of Vertical Intensities.
PLAN NO. 2.	Probable Geological Boundar- ies Interpreted from Magnetic Survey and Topography.

Geo-Technical Development Co. Limited

67 YONGE STREET - ROOM 1323
TORONTO, ONT.

April 5th., 1946.

Mr. J.M. Macintosh,
President,
Dale Gold Mines Limited,
Room 504 - 357 Bay Street,
Toronto, Ontario.

Dear Sir:- REPORT ON GEO-MAGNETIC SURVEY ON PROPERTY
OF DALE GOLD MINES LIMITED

The work described in this report, was conducted during the months of February and March, 1946. The party left Val D'Or on February 13th., and arrived at the property with supplies, on the 15th. Due to some sickness, and instrument trouble, resulting from condensation in the optical system of the magnetometer with the sudden climatic change, the survey required more time than was necessary, however, as line-cutting was incompleated at that time, these delays were not serious. Final readings were taken March 12th., requiring in all, approximately four weeks.

PROPERTY

The property of Dale Gold Mines Limited is situated in the Township of Harker, with a minor portion of the claims extending into Garrison Township, Larder Lake Mining Division, District of Cochrane.

The group comprises 33 mining claims, which are numbered on the Government Staking Plan dated March 1st., 1946, as follows:

L-43290-91-92 ✓ ✓ ✓
L-43281-82-83-84-85-86-87-88-89 ✓ ✓ ✓
L-43488-89-90-91-92-93-94-95-96
L-43648-49-50-51
L-40204-05-06-07
L-39931-32-33-34

Of this group, the survey covered all or portions of 24 claims, those which were not included, being shown below.

L-43281-82-83-86-87-88-90-91 and 92.

Your group is bordered on the west by Mining Corporation and ground held under option by Dome Gold Mines Limited, while your eastern boundary is contiguous to claims known as the Bellingham-Graham group, which are again adjacent to Hoyle Mining Corporation Limited.

Accessibility

Your property is not immediately accessible, the best route beginning at the town of Matheson on the Temiskaming and Northern Ontario Railway, some 50 miles north of Swastika. From Matheson it is possible to drive by truck over rough roads to the property of Consolidated Mining & Smelting Company in Garrison Township, in all, about 33 miles. From this point to your claims, some five miles eastward, transportation is not available except by tractor over a rough diamond drill road.

Topography

The area is relatively low in comparison with those townships to the west, but is reasonably dry with little typical muskeg. It is well drained by the east and west branches of the Ghost River flowing northward across your property, and this drainage is augmented

by numerous creeks and small tributaries of the main river.

The property is heavily timbered with the usual spruce, jack-pine, and some birch, the growth of these being restricted to the various soil types.

Camps

One small cabin exists on the property, large enough to accommodate not more than two men, however, recent advices indicate that construction of more spacious quarters is now underway.

GENERAL GEOLOGY

The property of Dale Gold Mines Limited lies in an area underlain by volcanics and sediments of Kewatin and Temiskaming age respectively. This sequence has been intruded by granite and gabbros with their associated rock types, as a result of which, the entire belt is extremely favourable prospecting ground. It is most certain that success in earlier efforts to locate economic ore deposits, has been hindered only by the lack of suitable transportation, and the drift covered nature of the area. With the wider acceptance of geophysical prospecting, more particularly the magnetic method, surveys were conducted by Frobisher and Mining Corporation and on the former, at least, satisfactory results were obtained. This method adequately outlined a strongly magnetic contact zone which was presumed to represent the main Porcupine-Beattie break or fault zone. With the paucity of outcrops occurring on your ground and since the projection of the main break appeared to cross the property, it became advisable to prove or disprove the possibility by the cheapest methods known, namely, a magnetic survey. With the completion of this project, the results obtained show

NB
P.

considerably more information than could at first be anticipated, indicating that your property is located in an extremely favourable structural area.

The so-called Porcupine-Beattie "break" has never been adequately traced across country, and the term should be used with reserve until further data has definitely established its continuity.

GEO-MAGNETIC SURVEY.

Interpretations.

The results of the magnetic survey is shown on Plan No. 1, entitled "Iso-Dynamic Contours of Vertical Intensities", while Plan No. 2 depicts the "Probable Geological Contacts" inferred therefrom.

Structurally, your survey is the most interesting ever conducted by the writer and an effort to portray a generalized geological distribution of the rock types has been made on Plan No. 2. Prior to discussing this in detail, some mention is required of the few rock exposures observed in the area by Mr. A.R. Graham, who supplied this information. Less than a dozen outcrops, in all occur, and in widely diverse areas. These rocks are shown below, related to a comparative magnetic susceptibility scale owing to certain eccentricities which have been observed in the magnetic intensities over them.

<u>Rock type</u>	<u>Magnetic susceptibility</u>
Gabbro, Diorite, Diabase	Very high
Iron Formation	" "
Greenstones (Andesite)	Medium to high
Granite and associated acid intrusives	Low to very low
Sediments (greywacke and quartzite)	Very low

The effects of metamorphism on such rocks is variable but

the tendency associated with contact metamorphism is to increase
the intensity by the development of chlorite and magnetite in the
intermediate to basic phases.

NB

On the basis of the above, the granite outlines of the main central mass, its satellitic mass immediately north-west, and the mass in the south-western corner of the group are probably reasonably accurate, as at least, two of these areas have outcrops of this rock type. Other areas indicated as granite, may of course, be any intrusive acid type rock and that intersected by propose drill-hole "A", may be encountered only at depth and may not have broken through to the surface or been exposed by glacial erosion. This inference follows from the increase in intensity as compared with its associated intrusive members. The fact that these are all in or near the main "break" is of extreme importance.

The outline of the basic intrusive, depicted by the interrupted "linear magnetic high" in the north-eastern group area, will also be reasonably accurate and these rocks will probably be gabbro or some such very closely related type.

The main Porcupine-Beattie "break" is outlined, and the position of this when located by drilling, will closely approach that shown on Plan No. 2, however, the rock formations to the south at least, lend themselves to some speculation. It was at first believed that this fault zone represented a strike fault, in and along the sedimentary-volcanic contact and the magnitude of the vertical magnetic field to the north of the "break" equals that of the granite, from which it can

NB

only be inferred that this area is underlain by magnetically inert formations which are obviously sediments. At the "break" an extremely steep magnetic gradient is encountered rising as much as 1500 gamma in a distance of a few hundred feet, and continuing to the south, the gradient increases at a much lesser rate. It is this area of intruded formations south of the "break" and characterized by magnetite "highs", which requires some consideration.

Regarding this area of strong magnetic intensity in two sections, to the west and east of the main granite plug respectively, Plan No. 1, shows the field to vary from 1500-2500 gamma while to the east of the plug it reached 5000 gamma increasing steadily from the "low" representing granites and sediments. Outcrops on the east show only "greenstone" which can readily explain the existing conditions especially if much alteration has accompanied the contact metamorphism. However, to the west, Mr. A.R. Graham indicates the presence of arkose and iron formation in the center of the magnetically active zone and over these outcrops, the intensity reaches 2000 gamma, i.e., increasing over a rock such as arkose which is usually inert magnetically, and which must be surrounded by more basic types.

In consequence of the foregoing, it can be inferred that the geologic period marking the close of volcanism in this area was intermittent, permitting the deposition of sedimentary deposits to become intercalated in the volcanics. It is therefore suggested that these sediments under question, will probably occur as narrow lenses and

N.B.

N.B.
??
P.

will not define any particular horizon. An inference of shallow depth is obtained from the iron formation associated with the so-called arkose. Immediately south of this rock on Plan No. 1, the intensity drops to 400 gamma. This is a di-pole effect and the down dip-pole is sufficiently close to the surface, and of opposite intensity to decrease the normal field. The iron formation will here dip to the south and it is probable that the "main break" also dips south.

✓
?

NR

With further reference to the "main break" it can be inferred to be older than the granite which has intruded it and the small intrusive bodies along its strike have in two places produced minor drag-folds which will be intersected by drill-holes "A" and "F". While it is most improbable that any north-south faulting, even of small displacement, has occurred in this area, the presence of any which may be located unrelated to the granite, will be pre-break, since this structure follows an unbroken east-west trend except where interrupted and bent by the granite.

✓

No!
///

It has been stated above that this "break" probably does not lie in the main volcanic-sedimentary contact and if an intercalated contact is encountered as suggested above, the "break" will probably be found to have occupied the most incompetent member of the sequence with the main volcanic phase occurring 100-200 feet south of that shown on Plan No. 2. Two probable shears or faults are shown on Plan No. 2, but they are by no means definite. That shown near the western boundary of the main granite plug is suggested by

|

the linearity of the contact and a slight displacement of the "main break".

In the northern area, the probable displacement is equally small, if the shear exists at all.

CONCLUSIONS AND RECOMMENDATIONS.

While the foregoing interpretations will not be correct in all details, the results are sufficiently well defined to warrant some speculation, and it is the writer's belief that the property of Dale Gold Mines Limited, is exceptionally well located structurally. While no ore bodies are shown, it will be realized that the function of such surveys is to locate structure. While all structures do not contain related ore-bodies, it can be stated without reserve, that no mine exists without them. It is surprising how infrequently such favourable conditions are encountered, and your property warrants a thorough diamond-drilling program of at least 25,000 feet.

Summarizing the foregoing interpretations, the structural conditions consist of a main east-west contact zone between two widely different magnetic phases, probably volcanics on the south and sediments on the north, along which occurs a major shear or "break". The age of this shear is pre-granite and with the advent of this intrusive into the volcanic phase, numerous satellitic plugs have been intruded in and along the "break", which have been accompanied by minor drag-folds in several localities. The existence of the "break" accompanied by the intrusive plugs associated with it, should supply numerous favourable places for ore deposition if such occurs in the

area.

A limited preliminary program of diamond-drilling has therefore been proposed as set forth on Plan No. 2. This will involve some 9,200 feet and it is recommended that reinterpretations of the drill-hole data be carried out as each hole is completed. Since the present program is based on inference, however well founded that may be, some variations will certainly be encountered and by following the above suggestion, it may be possible to save one if not more, of the recommended drill-holes.

The program calls for 13 holes, all of which should be drilled at 45°, a distance of 700 feet or more if conditions permit. This will give a horizontal cross-section per hole of 500 feet.

In order that the reader may understand why the various locations have been selected, each is itemized below with a brief description of what structural conditions might be anticipated. The outline following, will be more easily comprehended by constant inspection of both Plans No. 1 and 2.

Hole "A" To intersect the "break" where drag-folding has occurred associated with a possibly deep acid intrusive.

Hole "B" To intersect another possible acid intrusive also associated with the "break".

Holes "C" & "D" To intersect the "break", sediments, volcanics and granite intrusive.

Hole "E" To investigate the "break" east of the largest satellite intrusive.

Will set forth

Hole "F" To investigate the "break" and another possible intrusive where drag-folding in the sediments has taken place.

Holes "G" & "H" Should intersect similar conditions to "F" except that the intrusive will here be south of the break.

Holes "I" & "J" To investigate a drag-folded area off the nose of the largest satellitic intrusive.

Holes "K" & "L" To cross-section the area off the nose of another granite mass.


Hole "M" To investigate the main granite contact zone where a slight embayment occurs.

SURVEY DATA

The survey was conducted with a Wolfson, vertical type Variometer, having a sensitivity of 34.0 gamma per scale division. This instrument was perfectly compensated for temperature and all field results were corrected for diurnal changes. All circuits showing closures exceeding 25 gammas were discarded and the lines re-run.

Line-cutting was done by Dale Gold Mines Limited, and the survey conducted on those lines. The total number of stations observed is shown as follows, on lines cut at 300 and 400 foot intervals.

Field observations		1,688
Control	"	131
Check	"	<u>75</u>
TOTAL	-	<u><u>1,894</u></u>



For the purpose of recording assessment, the time spent on the survey is shown below.

Survey party (2 men)	38 man-days
Office and drafting	21 " "
Supervision	<u>10</u> " "
TOTAL -	<u>69</u> " "

Not included with this report.
NB

An additional map of the survey on Mining Corporation's ground, enlarged from a scale of 400 feet to the inch, to 200 feet to the inch, accompanies this report. As the conditions existing on your property have been traced easterly through the Graham-Bellingham group without change, it is most improbable that difference showing on the boundary between your property and that of Mining Corporation, really occurs. Their eastern line was re-run by our party and except for the first four stations, failed to coincide with the results shown on their plan. It is thus to be inferred that their survey is useless, probably due to faulty equipment, however, until their results have been re-checked, any interpretations based thereon would be undependable. As it was the writer's intention to join these surveys for a composite plan, this must now await further information from Mining Corporation, or until our parties have had an opportunity to check a few more of their lines.

???

ACKNOWLEDGMENTS.

Thanks are due to Mr. A.R. Graham, who afforded the party every possible assistance, and which was greatly appreciated by the writer.

Yours very truly,

GEO-TECHNICAL DEVELOPMENT COMPANY LIMITED.

J.T. Randell

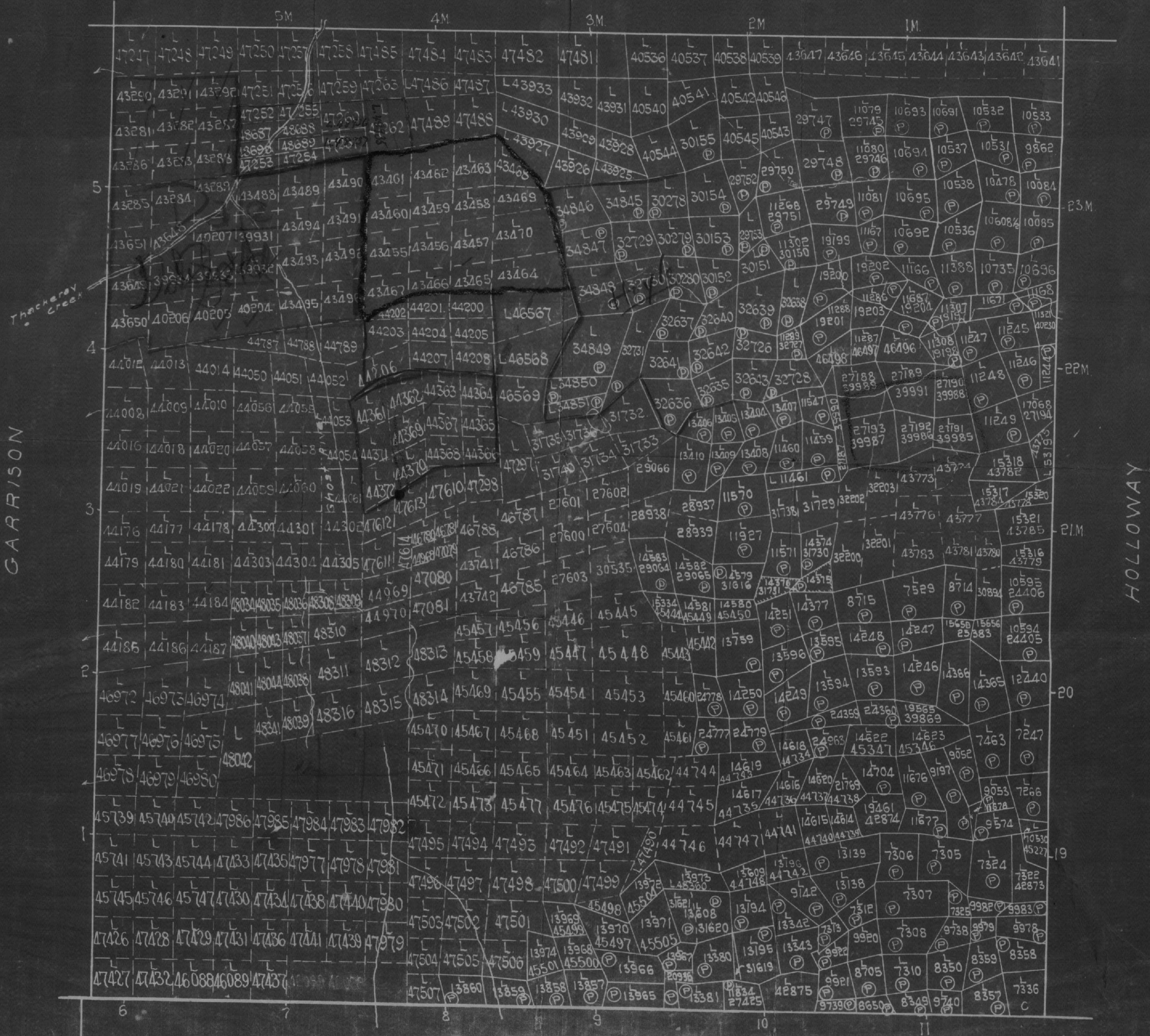
J.T. RANDELL - President.

HARKER

LARDER LAKE MINING DIVISION

Scale 40 Chains = 1 inch

LAMPLUGH



ELLIOTT

63-41



32D125W0124 63.41 HARKER

200

To accompany
site No. 63-41

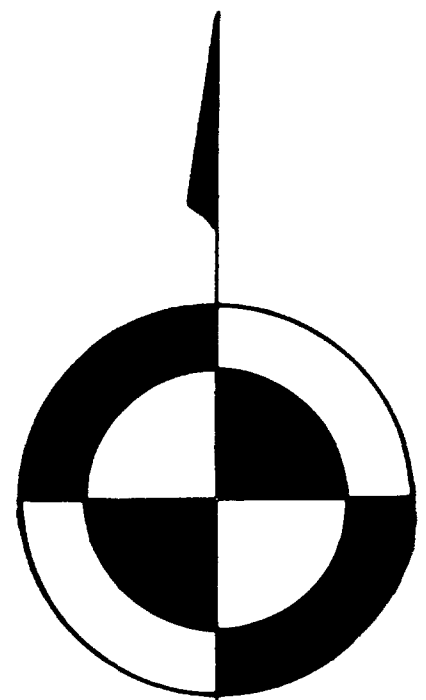
SCALE: 1 IN. = 200 FT. DALE GOLD MINES LIMITED MARCH 1946.

ISO-DYNAMIC CONTOURS
OF
VERTICAL INTENSITIES

DRAWN BY: A.G.S.
T. Fisher.

HARKER TOWNSHIP
DISTRICT OF COCHRANE
ONTARIO

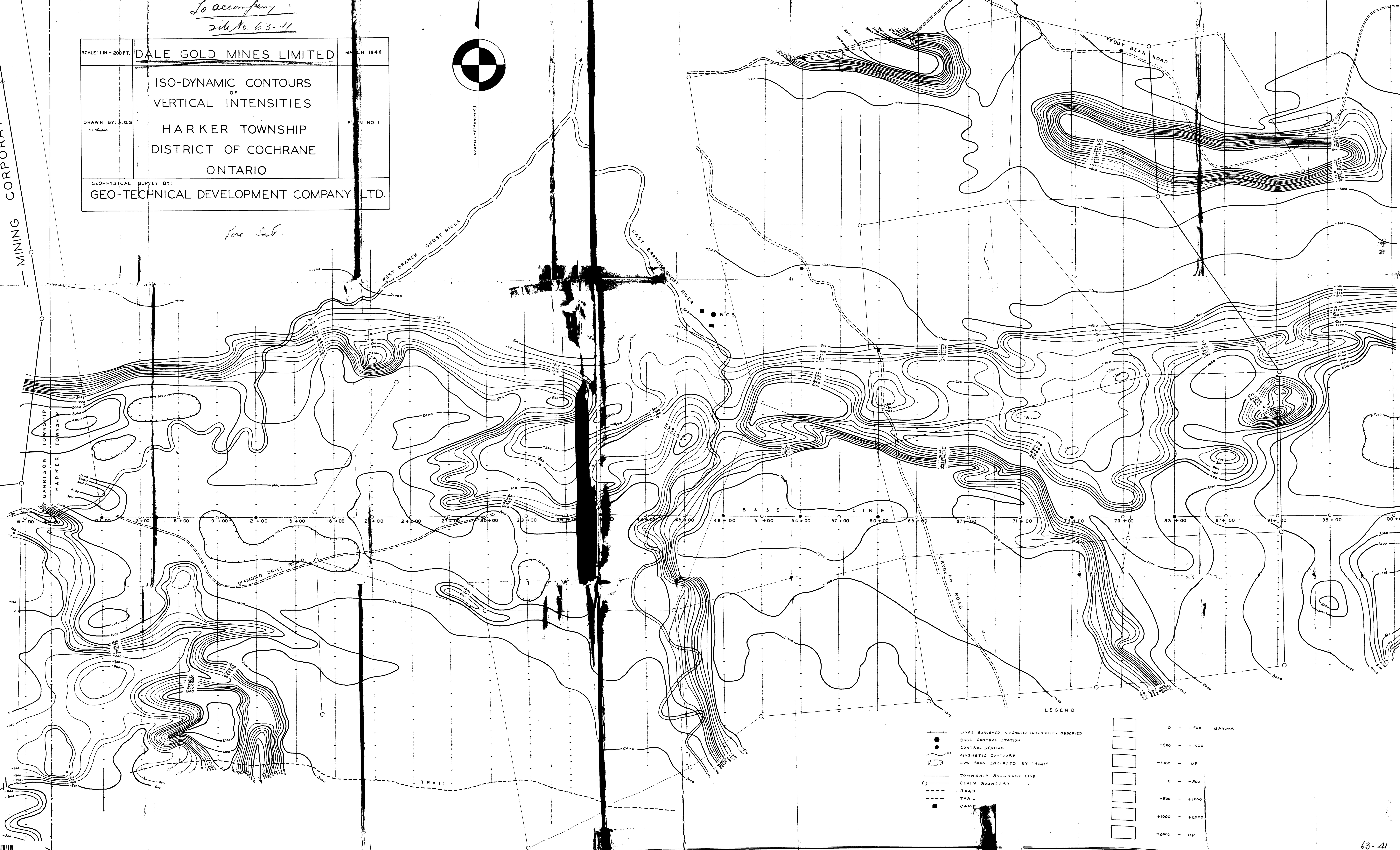
GEOPHYSICAL SURVEY BY:
GEO-TECHNICAL DEVELOPMENT COMPANY LTD.



NORTH (ASTRONOMICAL)

MINING CORPORATION

See Cont.

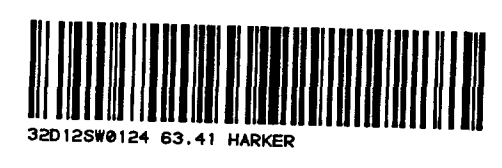


LEGEND

- LINE SURVEYED, MAGNETIC INTENSITIES OBSERVED
 - BASE CONTROL STATION
 - CONTROL STATION
 - MAGNETIC CONTOURS
 - LOW AREA ENCLOSED BY "HIGH"
 - TOWNSHIP BOUNDARY LINE
 - CLAIM BOUNDARY
 - == ROAD
 - - - TRAIL
 - CAMP
- | | | |
|---|---------------|-------|
| □ | 0 - -500 | GAMMA |
| □ | -500 - -1000 | |
| □ | -1000 - UP | |
| □ | 0 - +500 | |
| □ | +500 - +1000 | |
| □ | +1000 - +2000 | |
| □ | +2000 - UP | |

63-41

63-41



To accompany
file 63-41

#41

SCALE: 1 IN. = 200 FT. MARCH 1946.

DALE GOLD MINES LIMITED

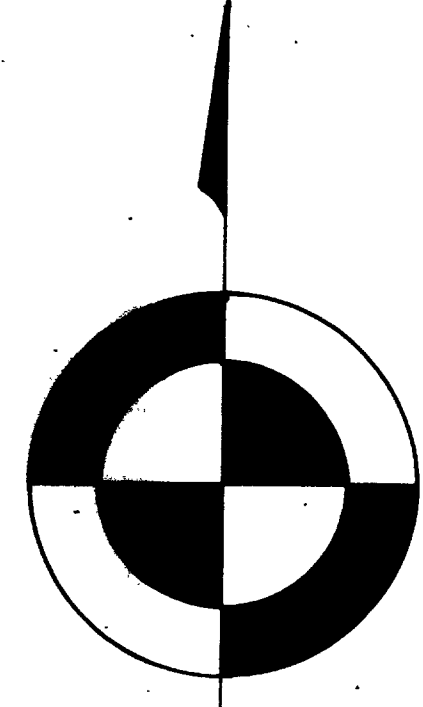
PROBABLE GEOLOGICAL BOUNDARIES
INTERPRETED FROM MAGNETIC SURVEY
AND
TOPOGRAPHY

DRAWN BY: A.G.S.
J.F. Randell.

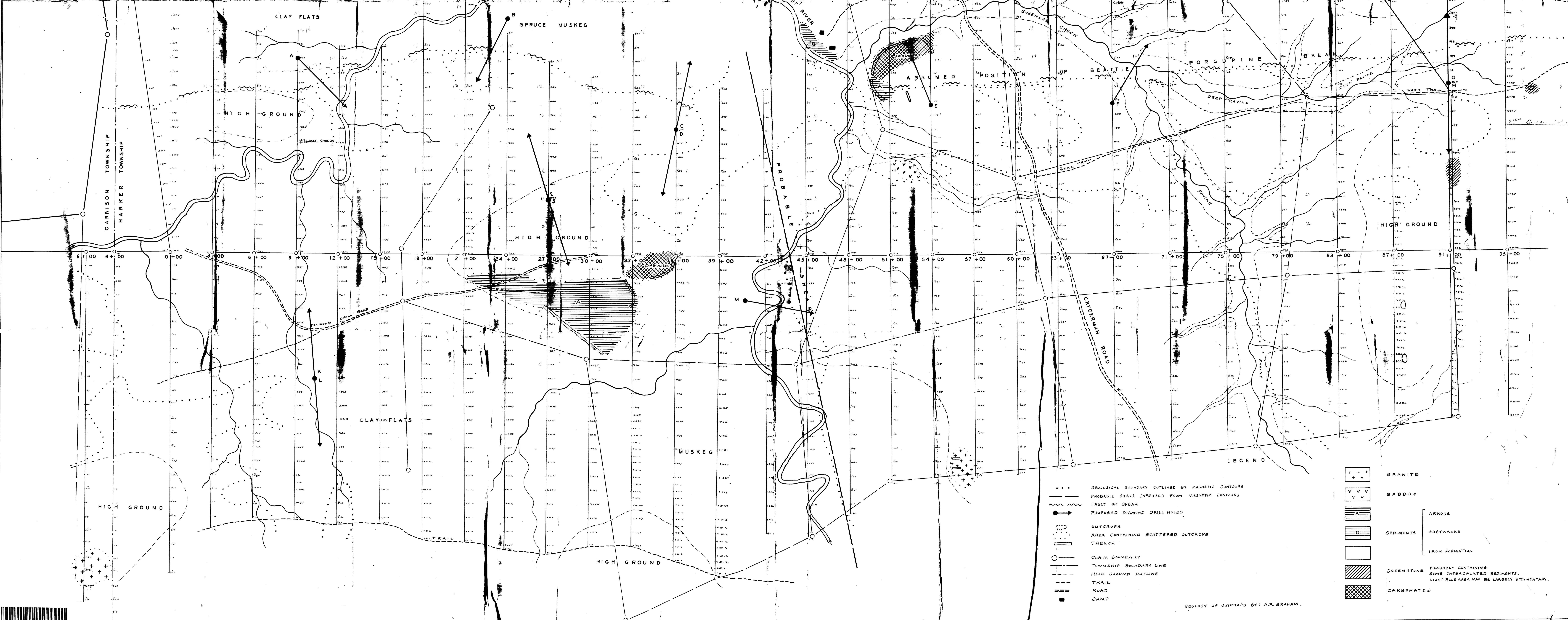
HARKER TOWNSHIP
DISTRICT OF COCHRANE
ONTARIO

PLAN NO. II

GEOPHYSICAL SURVEY BY:
GEO-TECHNICAL DEVELOPMENT COMPANY LTD.



MINING CORPORATION



LEGEND

- GEOLOGICAL BOUNDARY OUTLINED BY MAGNETIC CONTOURS
- PROBABLE SHEAR INFERRED FROM MAGNETIC CONTOURS
- FAULT OR BREAK
- PROPOSED DIAMOND DRILL HOLES
- OUTCROPS
- AREA CONTAINING SCATTERED OUTCROPS
- TRENCH
- CLAIM BOUNDARY
- TOWNSHIP BOUNDARY LINE
- HIGH GROUND OUTLINE
- TRAIL
- ROAD
- CAMP

	GRANITE
	GABBRO
	ARROSE
	SEDIMENTS
	IRON FORMATION
	GREENSTONE
	CARBONATES

PROBABLY CONTAINING
SOME INTERCALATED SEDIMENTS.
LIGHT BLUE AREA MAY BE LARGELY SEDIMENTARY.

GEOLOGY OF OUTCROPS BY: A.R. GRAHAM.