

TASEKO

Owners:

Geophysical

Jo Mineral Claims 1-61 inclusive,
Jo Mineral Claims 63, 65, 67, 69, 71, 73, 75,
77, and 79,

PHELPS DODGE CORPORATION
of CANADA, LIMITED,

92-0/5E

Location:

6 miles north of Taseko Lake, 51° 123° S.W.,
Clinton M.D.

Author:

John H. Ratcliffe, B.A. Sc., Prof. Eng. Ont.

Endorsed by:

D.C. Malcolm, B.A. Sc., P. Eng. No. 2568

Dates of Work:

April 30th to August 25th, 1961.

Vancouver, B.C.

September 13th, 1961.

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369

T A S E K O

Project No. 36

Geophysical Report by

John H. Ratcliffe, B.A. Sc., Prof. Eng. Ont.

Endorsed by

D.C. Malcolm, B.A. Sc., P. Eng. No. 2568

Vancouver, B.C.

September 13th, 1961.

T A S E K O

Owners:

Jo Mineral Claim numbers 1 to 61 inclusive,
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Magnetometer Maps 369-1 In pocket

Department of	
Mines and Petroleum Resources	
ASSESSMENT REPORT	
NO. <u>369</u>	MAP <u>1</u>

TASEKO - Claim GroupGeophysical ReportSummary

A ground magnetometer survey covering 70 claims held by the Phelps Dodge Corporation of Canada, Limited, was carried out by Company personnel during the summer of 1961. The geology of the area is poorly defined, outcrops being confined to the southwestern and extreme eastern portions of the area. Those rocks which are exposed suggest the presence of flat lying basalt flows overlying a succession of porphyritic diorites, andesites, limestone, and conglomerates or pebble arkoses. The purpose of the magnetometer survey was to define the areas of basalt flows so that exploration could be concentrated in those areas which were devoid of basalt. In this respect, the survey appears to be successful, since the basalt produces erratic magnetic data, as contrasted to the generally flat, featureless areas which are believed to be underlain by the more interesting diorite porphyries and sediments. Further work in specific areas is recommended in an attempt to determine whether the diorite porphyries contain disseminated sulphides.

Location

The Taseko claim group lies in the valley of Fish Creek, which drains Fish Lake, part of which is located in the southernmost portion of the map area. The centre of the group lies some 7 miles due north of the

northernmost part of Lower Taseko Lake, at latitude $51^{\circ} 28'$ North, longitude $123^{\circ} 38'$ West.

Geology

(a) Topography

The relief in the area is not great, sloping downwards from the northeast and southwest to the valley of Fish Creek.

The northeastern slope is particularly gentle. The southwestern slope is somewhat steeper due to a thin basalt capping which breaks off quite suddenly in the vicinity of Fish Creek. Fish Lake itself is at an elevation of 4,800 feet above sea level.

(b) General Geology

Much of the area is overlain by overburden. Only in the area south of Fish Creek, where a basalt capping overlies the older rocks, is outcrop reasonably plentiful. Fortunately, Fish Creek Canyon has exposed some of the underlying rocks which consist of diorite porphyry, andesite, limestone, and conglomerate or pebble arkose. Trenches near the centre of the common boundary between claim Jo No. 50 and Jo No. 48 some 1,100 feet southwest of Fish Creek indicate the presence of highly fractured porphyritic rocks containing disseminated sulphides. Similar rocks were found in trenches in the vicinity of the common boundary between claims Jo No. 26 and Jo No. 28.

Trenching in the eastern corner of claim Jo No. 23 revealed a highly metamorphosed, light coloured rock

of indeterminate origin. On Jo No. 8 to the north, another highly metamorphosed rock, consisting essentially of dark ferromagnesian minerals was found. Two small outcrops of basalt were located in the central portion of the claim group in claim Jo No. 32. Elsewhere to the west, basalt float was found.

Geophysical Survey

(a) Method

The survey was conducted on northeast-southwest pace and compass traverses, the profiles being located 300 feet apart. Three northwest-southeast claim lines 3,000 feet apart were cut and chained, to provide control for the pace and compass traverses. Each 100 foot station on the pace and compass traverse was marked by a coloured tape in order that its location could be re-established. In three areas of particular interest, picket line grids were cut and chained. The three grids were then tied together by means of a net of control lines which were also cut and chained.

All magnetometer readings were observed by a Sharpe A-4 vertical field portable magnetometer having a scale constant of 20 gamma per scale division. A total of 5,406 stations were observed on 102.2 miles of traverse during the course of the reconnaissance survey.

The data were observed, calculated and mapped in the field by Company staff then transmitted to the Vancouver office of the Phelps Dodge Corporation of Canada, Limited. The basic data were then sent to the Toronto office

of the Company for contouring and basic interpretation. The contoured data using a contour interval of 100 gamma, are shown on a map at a scale of 1 inch equals 300 feet, accompanying this report.

(b) Interpretation

The map area may be divided into eight distinct units, each of which has a magnetic character different from that of its neighbours. For ease in reference each unit has been assigned a number, which is prominently displayed on the accompanying map. Units 1, 2, 3, and 4 are believed to represent basalt cappings in various forms. Units 5, 6, and 7 appear to be representative of a mixture of diorite porphyry, andesite, and sediments. Unit 8 is a magnetically complex zone which is known to contain in part porphyritic rocks in which disseminated sulphides have been found. Each zone is discussed individually in the following paragraphs.

Zone 1, located in the southwestern portion of the area, is the most prominent from a magnetic point of view, the area being characterized by the highest density of contours. A number of outcrops of basalt have been found in the area, and these together with the most extreme topography on the claim group combine to produce a succession of intense magnetic anomalies, both positive and negative. The entire anomalous area, therefore, may be attributed to a fairly thick, flat lying, basalt capping.

Zone 2, to the northeast, is somewhat

similar to Zone 1. Zone 2, however, is more widespread, and the anomalies, again both positive and negative, are not quite so intense as those found in Zone 1. In Zone 2, the topography is much more gentle and probably has comparatively little influence on the magnetic data. Also, Zone 2 is almost entirely covered by overburden, only one small outcrop of basalt being found in the southwest corner of the area. It is therefore believed that Zone 2 must also be attributed to a flat lying basaltic flow, similar to Zone 1, the differences in magnetic intensities being attributed to both flatter topography and greater depths of overburden.

Zone 3, lying north of Zone 2, is characterized by broad, but rather high, magnetic anomalies, which suggest the presence of highly magnetic rocks lying some distance below the surface. The highest magnetic anomalies are located in the northernmost portion of the map area, the magnetic intensities gradually decreasing to the southwest. Even in the southwest portion of the zone, however, there is a marked difference in base level between Zone 3 and the neighbouring Zone 7. No outcrops were found in Zone 3, but two occurrences of basalt float have been recorded. It is therefore suggested that Zone 3 is also representative of a flat lying basalt capping, which is quite thick in the extreme northern part of the area and tends to wedge out and become thinner in the southwestern part of the zone. Overburden, or depth of burial of the top

surface of the basalt capping in this zone is probably relatively deep compared to Zone 1 and even to Zone 2.

Zone 4, located in the extreme southernmost part of the area, is again characterized by erratic magnetic data, the magnetic anomalies in this zone, however, are much lower in intensity than those encountered in Zones 1, 2, and 3. A number of basalt outcrops in the zone testify to the fact that the magnetic anomalies are caused by a basalt capping. In order to explain the lower magnetic intensities, however, it is suggested that the basalt in this area is much thinner than elsewhere, or that the basalt of Zone 4 is of a slightly different composition (less magnetite) and therefore probably of a different age from those encountered in Zones 1, 2, and 3.

Zone 5 occupies a large area in the southeastern part of the map area. It is characterized by generally flat, low amplitude magnetic anomalies with no well defined trends, with two exceptions. In the vicinity of the contact of Zone 5 with Zone 2, there is a remarkably linear, northeasterly trending magnetic anomaly, which persists for at least 4,500 feet. It is suggested that this anomalous zone within Zone 5 could represent an ancient river channel which has been filled in with basalt associated with Zone 2, and then covered by overburden. In the extreme southeastern corner of the area, an elliptically shaped anomalous zone may represent a metamorphic halo around a small acid intrusive plug. For the rest of Zone 5, only two outcrops are available to aid the interpretation. Each of these is so highly meta-

morphosed that it is very difficult to determine their origin. However, a dark ferromagnesian rock seems to be associated with a slightly higher magnetic anomaly, while a light coloured, acid rock is associated with a magnetic low.

Zone 6, lying between Zone 1 and Zone 4, is quite similar in magnetic expression to Zone 5. Here again the magnetic values are broad and flat, the anomalies seldom exceeding 300 gamma. No outcrops are available for comparison purposes, so any attempt to ascribe rock types to the zone would be completely conjectural. It is sufficient to state that the underlying rocks contain little or no magnetite or pyrrhotite.

Zone 7, in the western corner of the map area between Zone 1, and Zone 3, is again similar to Zone 5 and Zone 6. Here, however, a number of rock outcrops are exposed in the Fish Creek Canyon. From these exposures, it would appear that the diorite porphyry, andesite, and sediments are all relatively non magnetic. This would suggest that Zone 7, and by extrapolation Zone 5, and Zone 6, could easily be underlain by these rock types. Any attempt to further define the underlying rocks would be dangerous, however.

Zone 8, located in the middle of the claim group, is very complex consisting essentially of sharp, local anomalies of medium intensity lying within an area of generally higher magnetic base level than either of Zones 5, 6, or 7, but lower than those of Zones 1, 2, 3, and 4.

Zone 8, therefore, appears to be a type of transition zone magnetically. Geologically, however, such a condition in this case is most unlikely. Two areas within Zone 8 have been trenched revealing disseminated sulphide mineralization in a porphyritic rock. In one of these areas at least, magnetite was found to be associated with the better grade of mineralization. It is, therefore, suggested that Zone 8 is potentially the most fruitful ground for further exploration activities.

Recommendations

On the basis of the ground magnetometer survey, it would appear that further exploration should be concentrated on Zone 8. Due to the type of mineralization which has been found in two trenched areas within this zone, it is recommended that a trial Induced Polarization survey should be conducted over the trenched zones and in the area lying between them.

Report by:


John H. Ratcliffe, B.A. Sc., Prof. Eng. Ont.

Endorsed by:


D.C. Malcolm, B.A. Sc., P. Eng. No. 2568

Vancouver, B.C.
September 13th, 1961.

Expenditure - Jo Claims, Taseko Lake, B.C.Magnetometer SurveyWages:

Project Chief	- C.E. Dunn, B.A.	April 30 to Aug. 1/61	\$2,191.89
Geophysical operator	- W. Meyer	April 30 to July 1/61	858.71
Geophysical operator	- J. P. Henry	April 30 to May 13/61	199.18
Line cutting	- G. H. Irving	May 3 to May 13/61	156.12
Line cutting	- M. J. Beley	May 3 to June 19/61	683.18
Line cutting	- Arndt Erasmus	April 30 to June 19/61	733.33
Line cutting	- L. Kiss	May 3 to June 21/61	712.51
Geophysical Consultant	- J.H. Ratcliffe B.A. Sc. Prof.Eng. Ont.	Aug. 1 to Aug. 22/61	1,050.00
Supervision	- D. C. Malcolm B.A. Sc. P.Eng.No.2568		800.00
<u>Camps and Cookery</u>			3,506.32
<u>Transportation</u>			1,550.64
<u>General Field Expense</u>			77.08
TOTAL			<u><u>\$12,518.96</u></u>

Verna M. Scott
Accountant

Claims - TASEKO LAKE

Fish Lake, 6 miles north of Taseko Lake,
 Latitude 51° Longitude 123°,
 Clinton Mining Division, B.C.

Owner - Phelps Dodge Corporation
of Canada, Limited.

Jo Mineral Claims - Numbers 1 to 61 inclusive

Record Numbers - 83921 to 83981 inclusive

Jo Mineral Claim No. 63	-	Record No. 83983
" " 65	-	" " 83985
" " 67	-	" " 83987
" " 69	-	" " 83989
" " 71	-	" " 83991
" " 73	-	" " 83993
" " 75	-	" " 83995
" " 77	-	" " 83997
" " 79	-	" " 83999

Dominion of Canada
PROVINCE OF ONTARIO

COUNTY OF YORK

**In the Matter of The Mines Act of British Columbia, and
IN THE MATTER OF Phelps Dodge Corporation of Canada Limited.**

TO WIT:

I, VERNA MARIE SCOTT,

of the City of Toronto, in the County of York,
Province of Ontario,

DO SOLEMNLY DECLARE THAT :-

- 1) The list of expenditures set forth on Page 9 of the annexed report, totalling \$12,518.96, truly and accurately reflect the cost to Phelps Dodge Corporation of Canada Limited of completing the Magnetometer Survey on the mining lands which are the subject of said report.

AND I make this solemn Declaration conscientiously believing it to be true, and knowing that it is of the same force and effect as if made under oath, and by virtue of "The Canada Evidence Act."

DECLARED before me at the City
of Toronto,
in the County
of York,
this 19th day of September,
A.D. 19 61.

Verna M. Scott

John F. Hogan
NOTARY PUBLIC IN AND FOR THE PROVINCE OF ONTARIO
A Commissioner, etc.

Dated September 19th, 19 61.

IN THE MATTER OF

The Mines Act of British
Columbia, and
IN THE MATTER OF Phelps
Dodge Corporation of Canada
Limited.

Statutory Declaration

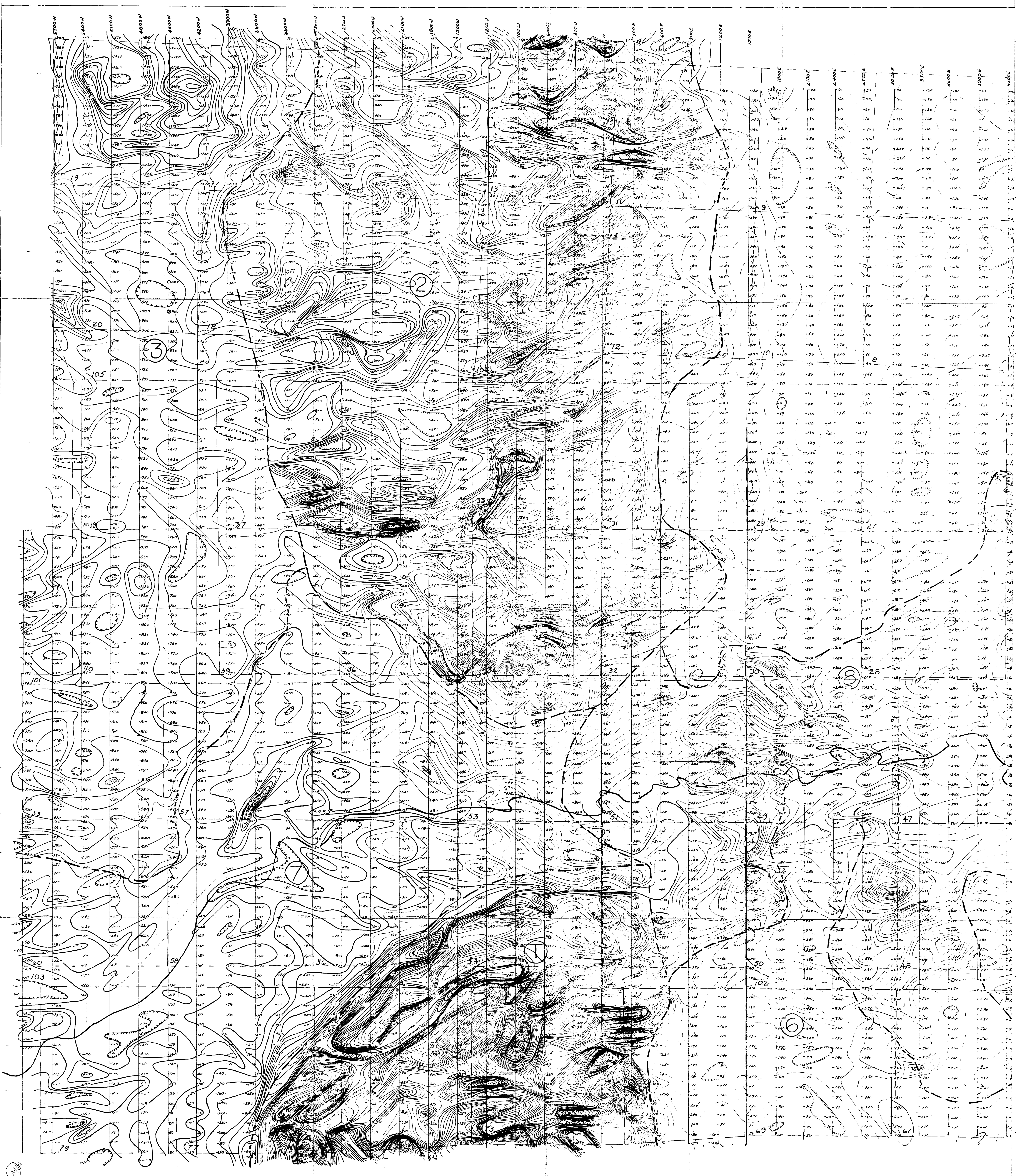
of

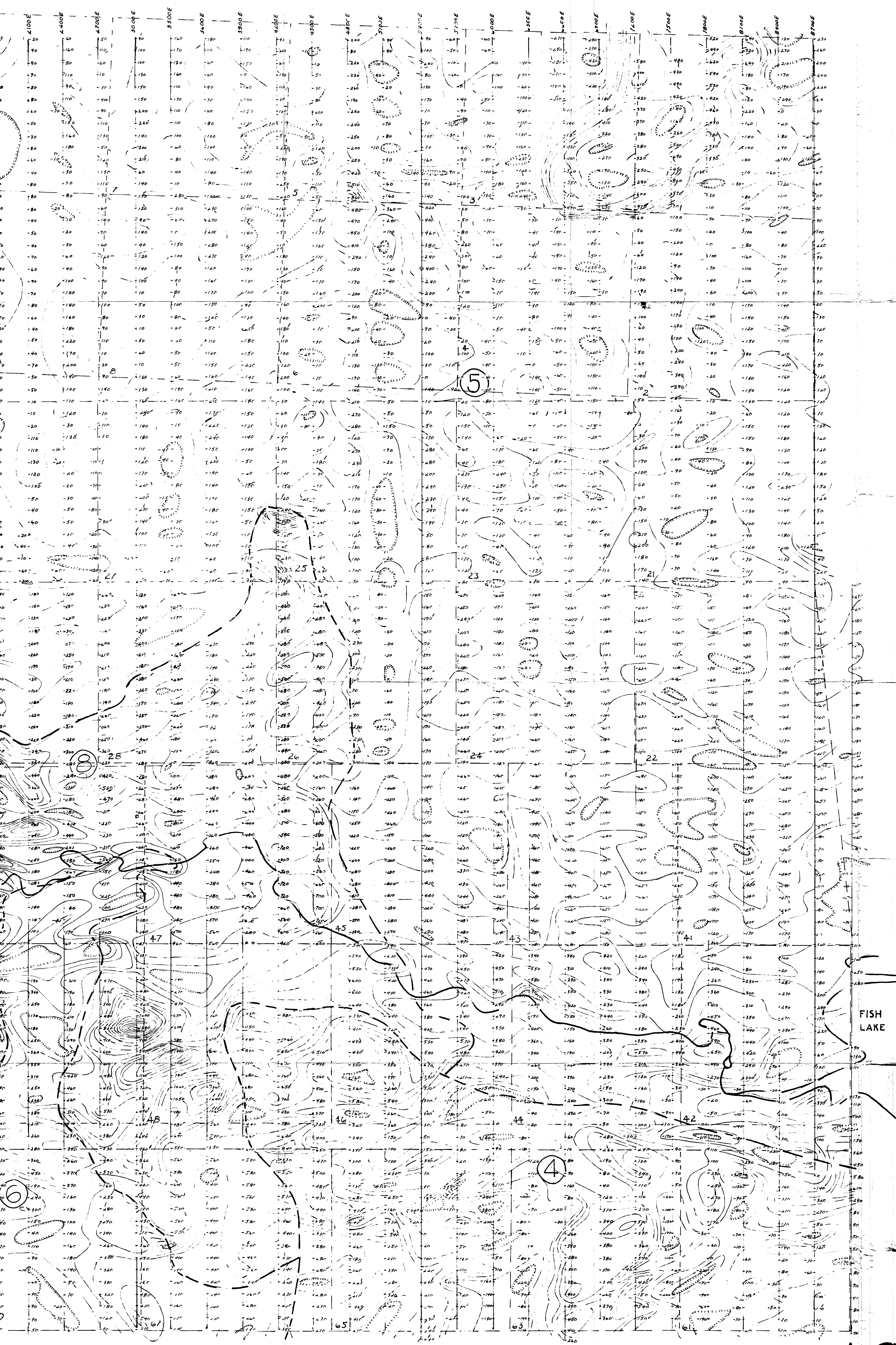
VERNA MARIE SCOTT

Dye & Durham Limited, 10 Adelaide Street West, Toronto, Canada
Law and Commercial Stationers

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Barristers & Solicitors,
Suite 2402-44 King Street West,
TORONTO 1, Ontario.







Department of
Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 369 MAP 1

PHELPS DODGE CORP. OF CAN., LTD.	
MAGNETOMETER SURVEY	
PROJECT 36	AREA TASEKO
CLAIM GROUP - JO	
MAP NO.	DRAWN BY - J.H.R.
	CHECKED BY -
SCALE 1 inch = 300 feet	DATE Sept. 21, 1951

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D. C. Malcomson, P. Eng.
John H. Reddy, B. Sc., P. Eng. Ont.