LEGEND

NOTE: This legend is common to Open File 405, 406

PALEOZOIC

MIDDLE ORDOVICIAN
- **35** TRENTON GROUP: limestone
- **34** BLACK RIVER GROUP: limestone
- **33** ROCKCLIFFE sandstone, shale, limestone

LOWER ORDOVICIAN
- **32** OXFORD: dolomite
- **31** MARCH: sandstone, dolomite
- **30** NEPEAN: sandstone

CAMBRIAN
UPPER CAMBRIAN
- **29** THERESA: sandstone, dolomite

PROTEROZOIC

HELIKIAN
- **25** Slate
- **24** Marble
- **23** Conglomerate
- **22** Andesite
- **21** Rhyolite
- **20** 20a Amphibolite
  20b Hornblende gneiss
- **19** Paragneiss
- **18** Migmatite, granitic gneiss
- **17** Amphibole-pyroxene gneiss
- **28** 28a Syenite
  28b Hornblende syenite
  28c Nepheline syenite
- **27** 27a Granite
  27b Potassic granite
  27c Biotitic potassic granite
  27d Hornblende potassic granite
- **26** 26a Gabbro
  26b Diorite

PROTEROZOIC

APHEBIAN OR HELIKIAN
- **16** 16a Granodiorite
  16b Granite
- **15** 15a Migmatite
  15b Biotitic migmatite
  15c Biotitic quartzofeldspathic gneiss
- **14** Quartzofeldspathic gneiss, leucogranulite

APHEBIAN
- **13** 13a Biotite gneiss
  13b Hornblende-biotite gneiss
- **12** Hornblende-garnet-biotite gneiss
- **11** Sillimanite-garnet-biotite gneiss
- **10** Hornblende gneiss
- **9** Biotitic quartzofeldspathic gneiss
- **8** Biotitic migmatite
- **7** Amphibole-hypersthene gneiss

ARCHEAN OR PROTEROZOIC
- **6** 6a Potassic granite
  6b Biotitic potassic granite
- **5** 5a Gabbro
  5b Diorite
- **4** Paragneiss
- **3** Hornblende gneiss
- **2** Migmatite, granitic gneiss
- **1** Amphibole-hypersthene gneiss

Geological contact..
Fault..
Dyke..

Geology derived from the map 1334-A, Rivière Gatineau
at the scale of 1: 1,000,000. Compiled by A.J. Bear, W.H. Poole
and B.V. Sandford, 1971

Geological cartography by the Geological Survey of Canada

Base-map at the same scale published by the Surveys and Mapping
Branch, Department of Energy, Mines and Resources, Ottawa, 1975

Mean magnetic declination 1977, 11°10.2' West decreasing
0.6' annually. Readings vary from 12°04.2' in the S.E.
corner to 10°21.0' in the N.W. corner of the map area

Elevation in feet above mean sea-level

Geochemical Symbol and Data Presentation

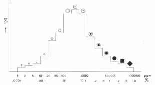
The concentration of an element at a sample site is graphically represented as one of 15 symbols, if a sample was collected but there is no data available a dot is plotted. The symbols are symmetrically arranged so that they first increase in size to the eighth symbol and then increase in blackness to the fifteenth. The two small crosses at the low end of the scale are used to respectively denote concentrations below the analytical detection limit, or, in the data group containing the detection limit. The data are grouped on a semi-logarithmic scale, i.e. 1,2,5,10,20,50,100 etc. Five decades can be spanned and this arbitrary division has been chosen for the continuing Canada wide series of maps constituting the National Geochemical Reconnaissance.

The choice of symbols and the data groups they represent for any specific element is based on the histogram and cumulative frequency plot for the total survey data from one, or more contiguous, open file sheets covered in one field season. The eighth symbol is used for the model group as defined by the histogram, this group usually includes the median of the data as defined by the 0.5 (50%) point on the cumulative frequency plot. Some, or all, of the remaining 14 symbols are chosen so as to achieve an appropriate graphical impact. An example of all 15 symbols is given below.

The symbol maps, being based on the total survey data distributions, are unaffected by the availability of ever increasing levels of knowledge in bedrock and surficial geology, and other environmental factors. Therefore, the raw data symbol maps are only intended to assist the rapid inspection of the data for gross regional features. To fulfil the needs of a more specific and thorough interpretation, the raw symbol maps should be modified using the field and analytical data provided in the data listings and any other knowledge available. To assist in the appraisal and modification of the data in terms of the symbol map bedrock geology, a table of summary statistics and proposed threshold values for each mapped bedrock unit, or broad lithologic unit, again based on the total survey data, is presented below the histogram. This table can be used along, or in conjuction, with the sample location map and data listings to indicate above threshold samples where they occur on the map. In many instances, the table will also illustrate, more clearly than the map, the dependence of mean geochemical levels on bedrock type. It may often be also observed that whilst the total data appears to approximate a log-normal distribution the data for individual map or lithologic units appears to approximate a normal distribution. The proposed thresholds presented are believed to be useful in interpreting the data from a mineral exploration viewpoint. Locations of samples with concentrations in excess of the threshold for the rock unit they appear to be derived from, should be studied carefully. The above threshold concentration can be due to a wide range of geological and environmental factors, but one of these could be the presence of abnormal concentrations of the element in a form of interest to the mineral explorationist.

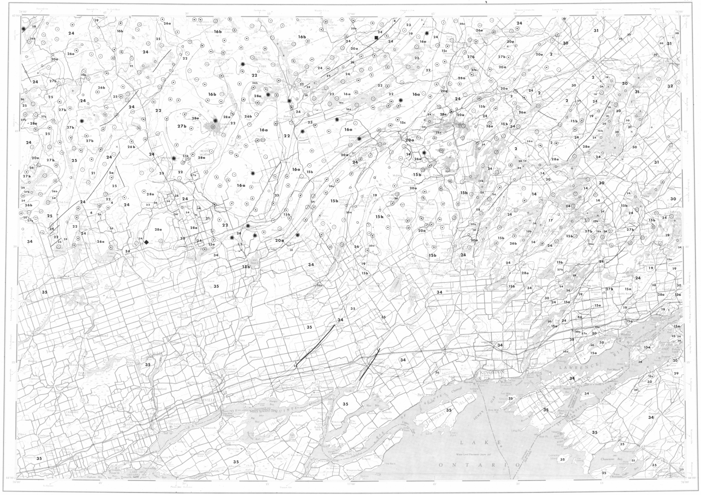
To comprehensively study an area, all available geological, environmental and recorded data should be utilized. The data separation by bedrock type can often be improved by constructing new data subsets and deriving local threshold levels based on the most detailed and up-to-date knowledge available.

The term reliability factor and value that appears below the table is an estimate of the reliability of the geochemcial map. On the basis of duplicate sampling 5% of all lakes sampled it can be stated that there is a 95% chance that if any lake is resampled and identical methods of sample preparation and analysis are used the new value will lie between X ÷ RF and X x RF where X is the original value obtained. This factor takes into account variability due to both heterogeneity of the centre-lake bottom sediments and sample preparation and analytical causes.



Province of Ontario
Ministry of Natural Resources
Geological Branch

Canada
Department of Energy, Mines and Resources
Geological Survey of Canada



NATIONAL GEOCHEMICAL RECONNAISSANCE MAP 1-1976
MERCURY IN LAKE SEDIMENTS

CANADA-ONTARIO SUBSIDIARY AGREEMENT ON MINERAL EXPLORATION AND DEVELOPMENT

Scale 1:250,000

Kilometres 6 0 6 12 18 Kilometres
Miles 4 0 4 8 Miles

Universal Transverse Mercator Projection

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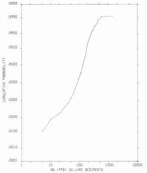
31 L
31 K
31 J
31 E
31 F
31 G
31 D
31 C
31 B
NATIONAL TOPOGRAPHIC SYSTEM REFERENCE



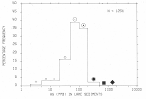


Table of Thresholds for Major Geological Units

Lithology	No. of Samples	Mean	S.D.	C.V.%	Threshold
Limestone	13	103	103	100	200
Sandstone	27	54	39	72	200
Dolomite	2	70	14	20	200
Slate	21	94	38	41	200
Marble	263	79	57	72	200
Conglomerate	3	150	53	35	200
Andesite	79	105	57	54	250
Rhyolite	2	90	113	126	200
Syenite	29	153	244	159	200
Granite	187	97	45	46	200
Granodiorite	47	136	60	44	250
Gabbro	51	102	50	49	200
Diorite	5	120	39	33	200
Amphibolite	43	100	57	57	250
Gneiss	307	96	47	49	200
Paragneiss	71	68	42	62	200
Migmatite	93	101	66	65	250
Unknown	8	116	43	37	200

Data units are ppb

Reliability Factor = 1.65

NATIONAL GEOCHEMICAL RECONNAISSANCE MAP 1-1976
OPEN FILE 405

Resource Geophysics and Geochemistry Division

Geological Survey of Canada, Ottawa

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Field operation supervised by C.C. Durham
Analytical chemistry by J.J. Lynch
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Contractors
Sample preparation by Golder Associates
Chemical analyses by Chemex Labs Ltd.

This map forms one of a series of 28 sheets released under Geological Survey of Canada, Open Files 405-406. The open files consist of data for 12 elements each, per cent loss on ignition and sample site location.

The data are also available in digital form. For further information please contact:

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NATIONAL GEOCHEMICAL RECONNAISSANCE MAP 1-1976
OPEN FILE 405
SOUTHEASTERN ONTARIO, 1976
MERCURY