Province of Ontario
Ontario Ministry of Natural Resources
Ontario Geological Survey

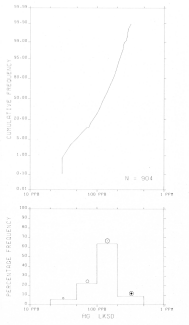
Canada
Department of Energy, Mines and Resources
Geological Survey of Canada

42D and Part of 42E

MERCURY (ppb)

OPEN FILE 506

THUNDER BAY AREA 1977



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 geometrically arranged in order of increasing size from 1 to 15 and the area enclosed by these 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, with the class limits at 1, 2, 5, 10, 20, 50, 100, 200, 500, 1000 etc. 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 (see above). Normally, the first step is the selection of a profile sheets covered in one field season (about). The eligible symbol is used for the modal group as defined by the histogram. This group is then fixed arbitrarily at 40 percent of the total range (i.e. 40 percent on the cumulative frequency plot. Some, or all, of the remaining 14 symbols are chosen so as to achieve as appropriate graphical result. An example of all 15 symbols is given below.

The symbol rules, 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, they may be considered standard for regional surveys. Subsequent inspection of the data for geological significance. To fulfill the needs of a more specific and thorough interpretation, the raw symbol maps should be compared to the multi-element digital data provided in the data listings and any other knowledge available.

The data listings contain notes on survey and analytical methods, raw data listing with legend and statistics for total data as well as for data grouped on the basis of rock type.

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 defining local threshold levels based on the most detailed and up-to-date knowledge available.

Copies of map material and listings of field observations and analytical data from which the material was prepared may be available at users expense by application to:

K.S. Campbell Corporation
808 Bathurst Street
Box 10
Ottawa, Ontario
K1R 6R7

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

The Director
Computer Science Centre
Department of Energy, Mines and Resources
Ottawa, Ontario
K1A 0E4

Elevations in feet above mean sea level

Mean magnetic declination 1976, 2°6.4' West, increasing 2.6' annually. Readings vary from 2°51.2' in the SE corner to 7°12.2' in the SW corner of the squ-area

MERCURY (ppb)
OPEN FILE 506
NATIONAL GEOCHEMICAL RECONNAISSANCE MAP 77-1977
URANIUM RECONNAISSANCE PROGRAM
THUNDER BAY AREA 1977

Scale 1:250,000

Kilometres 5 0 5 10 15 20 Kilometres
Miles 5 0 5 10 Miles

Universal Transverse Mercator Projection
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Base-map assembled by the Geological Cartography Unit from maps published at the same scale by the Surveys and Mapping Branch in 1968, 1969

This map has been supplied from a scanned image of the original map. Reproduction and normalization done by Land Info Worldwide.

This map forms one of a series of 20 sheets released under Open File 506 by the Geological Survey of Canada. The Open Files consist of maps for 11 elements, each for lake sediments, 2 elements for lake waters and sample site locations.

MERCURY (ppb)
OPEN FILE 506
THUNDER BAY AREA 1977

LEGEND

Note: This legend is common for National Geochemical Reconnaissance Maps 75-1977, Open Files 506 and May 76-1977, Open Files 507.

PRECAMBRIAN

LATE PRECAMBRIAN (HELIKIAN) (GREENVILLE)

COMPOSITE - ALKALIC CARBONATITE SERIES*
15 Nepheline syenite, ijolite, melteigite, urtite, nepheline, sodalite syenites, gabbros, diorites, nepheline gabbros

LATE MAFIC IGNEOUS ROCKS
10 Diabase, gabbro, anorthosite

OLDER GROUP
11 Porphyritic rhyolite or dacite, quartz porphyry, felsite

10 Diabase, basalt, minor pyroclastic rocks, conglomerate, sandstone

MAFIC IGNEOUS ROCKS
9 Diabase (1683), porphyritic diabase, gabbro, amorphibolite gabbro (1157-mid-Aphen)

LOCATE GROUP (UMKE)
8 Limestonestone, sandstone, chert, shale, carbonate rocks

MIDDLE PRECAMBRIAN (APHEBIAN)
HURONIAN
7 Nave formation (AMKE): argillite, shale, greywacke

A Gunflint formation: chert (CHRT), chert-carbonate, carbonate rocks, argillite, tuff, taconite

EARLY PRECAMBRIAN (ARCHEAN)
FELSIC IGNEOUS AND METAMORPHIC ROCKS
5 Granite, granodiorite, tonalite (GRNT), granodiorite (GRDR), quartz-feldspar porphyry (QFP), monzonite, migmatite (MGMT), syenite, pegmatite

MAFIC AND ULTRAMAFIC IGNEOUS ROCKS (UMPE)
4 Gabbro, diorite, serpentine, hornblendite, amphibolite

METASEDIMENTS
3 Conglomerate (CGLM); greywacke (GRDA), arkose, quartzite, argillite, slate, mica schist and gneiss, quartz-feldspar schist and gneiss (SCHT), graphitic schist and gneiss (GNSS)

METAVOLCANICS
2 Felsic to intermediate metavolcanics (SEVP): rhyolite, ash tuff, lapilli tuff, pyroclastic rocks, derived schists

1 Intermediate to mafic metavolcanics (SEVS): basalt, andesite, pillow lava, porphyritic and amygdaloidal lava, pyroclastic rocks and derived schists; undifferentiated metavolcanics with some metasediments (MVOL)

* A four letter mnemonic name recorded as rock type as part of Field observations

Geological boundary

Fault

Limit of geological mapping (1969)

The legend modified and geology derived for this geochemical map from Geology Compilation Series maps 2320 and 2321, Ontario Division of Mines and map 2065, Ontario Department of Mines

Geological Survey of Canada
Resource Geophysics and Geochemistry Division
and
Ontario Ministry of Natural Resources
Ontario Geological Survey

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Sample collection by Marshall Macklin Monaghan Ltd.
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Water chemical analyses by Barringer Research Ltd.