Province of Ontario
Ontario Ministry of Natural Resources
Ontario Geological Survey

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

420 and Part of 421

LEAD (ppm)
OPEN FILE 506
THUNDER BAY AREA 1977

Geochemical Symbol and Data Presentation

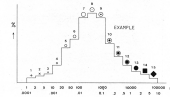
The concentration of an element at a sample site is graphically represented as one of 16 symbols. If a sample was collected but there is no data available a dot is plotted. The symbols are symmetrically arranged about the sample site and change in size as the concentration of them increase in thickness to the fifteenth. The two small crosses at the top and of the scale are used to respectively denote concentrations that are below the detection limit and those that are above the maximum 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 arrangement has been adopted for Geochemical Data 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. The histogram is printed on the computer output sheets of Probit sheets covered in one Field Session (issued). The eighth symbol is used for the modal group as defined by the histogram. This group is usually the largest group of data and is found at the 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 considered to be a valid basis for regional interpretation in relation to surficial and surficial geology, and other environmental factors. Therefore, the raw data symbol maps are only intended to assist the rapid location of local anomalous geochemical features. To fulfill the needs of a more specific data interpretation, the raw symbol maps should be modified using the Field and analytical 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 of anomalous from background is performed by symbolic shading symbols and deriving local threshold levels based on the most detailed and up-to-date knowledge available.

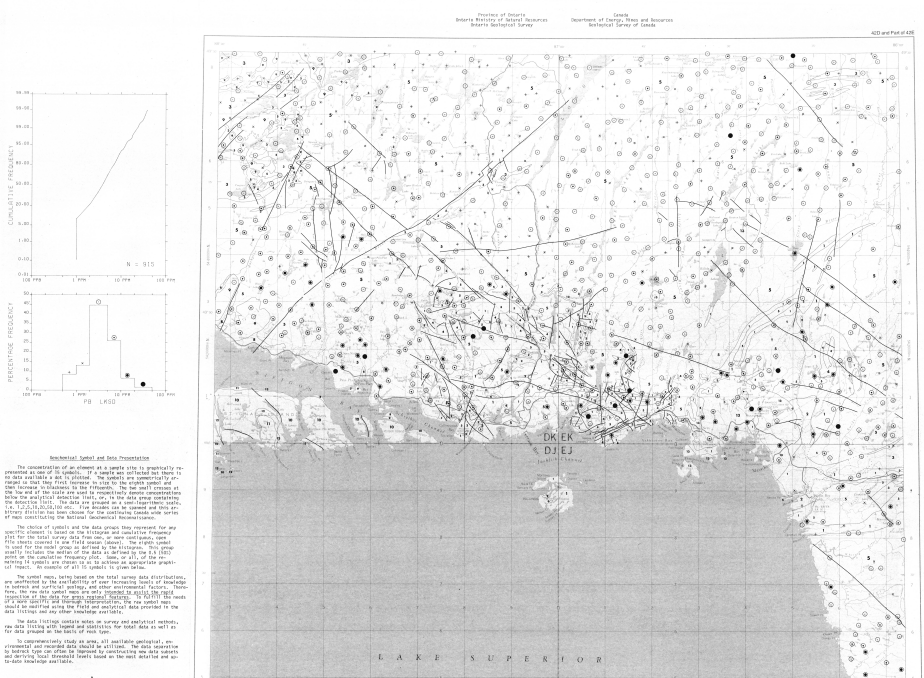


Copies of map material and listings of field observations and analytical data for which this Open File was prepared may be available at users expense by application to:

K.D. Campbell Corporation
280 Wellington Street
Bay No. 230
Ottawa, Ontario
K1A 0A2

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



420 and Part of 421

Elevations in feet above mean sea level

Mean magnetic declination 1975, 2°0.5' West, increasing 0.8' annually. Readings vary from 1°30' to 2°30' in the year 1980.
To find 2° in the SW corner of the map-area

Base-map assembled by the Geological Cartography Unit from maps published at the same scale by the Surveys and Mapping Branch in 1960, 1963

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Scale 1:250,000

Kilometres 0 5 10 15 Kilometres

Miles 0 2 4 6 8 Miles

Universal Transverse Mercator Projection
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This map forms one of a series of 20 sheets released under the Geological Survey of Canada, Open Files 506 and 507. The Open Files consist of maps for 19 elements, each for lake sediments, 2 elements for lake waters and sample site location.

LEAD (ppm)
OPEN FILE 506
THUNDER BAY AREA 1977

LEGEND

Note: This legend is common for National Geochemical Reconnaissance Map 31-1977, Open File 506 and Map 30-1977, Open File 507.

PRECAMBRIAN
LATE PRECAMBRIAN (HELIKIAN)
KEWEENAWAN

GABBROIDS - ALKALIC COMPLEXES (KGAB)*
12 Carbonatites, nepheline, hornblende, augite syenites, gabbro; olivine, nepheline gabbros

LATE MAFIC INTRUSIVE ROCKS
10 Diabase, gabbro, anorthosite

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

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

MAFIC INTRUSIVE ROCKS
9 Diabase (DIBS), porphyritic diabase, gabbro, anorthositic gabbro (sills and dykes)

STRUCK GROUP (SMK)
8 Conglomerate, sandstone, chert, shale, carbonate rocks

MIDDLE PRECAMBRIAN (ANIMIKIAN)
ANIMIKIE
7 Rove Formation (ARGL): argillite, shale, greywacke

6 Gunflint Formation: chert (GUNT), chert-carbonate, carbonate rocks, argillite, tuff, taconite

EARLY PRECAMBRIAN (ARCHEAN)
FELSIC IGNEOUS AND METAMORPHIC ROCKS
5 Granite (GRNT), granite gneiss (GRNG), granodiorite (GRDR), quartz-feldspar porphyry (QZFP), monzonite, magnetite (MNZT), syenite, pegmatite

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

METASEDIMENTS
3 Undifferentiated (SSLM), greywacke (GRCK), arkose, quartzite, argillite, slate, mica schist and gneiss, quartz-feldspar schist and gneiss (SCST), garnet-feldspar schist and gneiss (GMSC)

METAVOLCANICS
2 Felsic to intermediate metavolcanics (MZVC): rhyolite, pitlow tuff, porphyritic lava, pyroclastic rocks, derived schists

1 Intermediate to mafic metavolcanics (MZVI): andesite, basalt, diabase, tuff, agglomerate and agglobolcial lava, pyroclastic rocks and derived schists, undifferentiated metavolcanics with some metasediments (MVCC)

* A four letter mnemonic mnem recorded as rock type as part of field observations

Geological boundary.....

Fault.....

Limit of geological mapping (INTRU).....

The legend modified and geology derived for this geochemical sun from Geology of Ontario, Report 123 (1974) Ontario Division of Mines and map 2301, Ontario Department of Mines.

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

CONTRACTORS
Sample collection by Marshall Macklin Monaghan Ltd.
Analytical work by Chemex Labs Ltd.
Uranium in sediment chemical analyses by Atomic Energy of Canada Ltd.
Other sediment chemical analyses by Chemex Labs Ltd.
Water chemical analyses by Barringer Research Ltd.