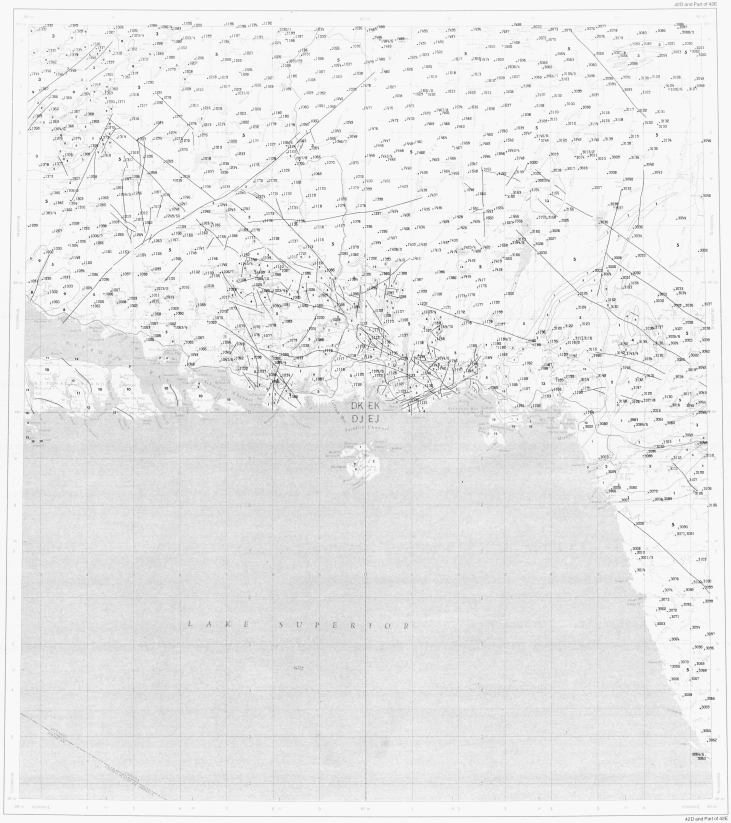
Province of Ontario
Ontario Ministry of Natural Resources
Ontario Geological Survey

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



SAMPLE LOCATION

OPEN FILE 506

THUNDER BAY AREA 1977

Geochemical Symbol and Data Presentation

The concentration of an element at a sample site is graphically represented on one of 15 symbols. If a sample was collected but there is insufficient material for analysis, the symbol is omitted and the interval skipped so that they first increase in size to the eighth symbol and then decrease in blackness to the fifteenth. The two small crosses at the bottom of the symbol are used to represent values that are considered 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 first class (1) being the lowest concentration and this arbitrary division has been chosen for the contouring element on sheets of maps constituting the National Geochemical Reconnaissance.

The choice of symbols and the data groups they represent for any specific element is made after a study of the frequency distribution plot for the total survey data from one, or more contiguous, open file sheets covered in one field season (above). The eighth symbol is used to represent the median value of the data group. The median usually includes the mathem 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 then used to represent the anomalous geochemical 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, they can be used as a consistent framework for the detailed interpretation of the data for areas of particular interest. To fulfill 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.

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, geochemical and geophysical data for the area should be integrated. This by indirect type can often be improved by constructing new data subsets and deriving final threshold levels based on the most applicable of many.

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.D. Campbell Corporation
580 Wellington Street
Bay No. 238
Ottawa, Ontario
K1A 0E7

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

The Director
Computer Sciences Centre
Energy, Mines and Resources
Ottawa, Ontario
K1A 0E4

SAMPLE LOCATION

OPEN FILE 506

NATIONAL GEOCHEMICAL RECONNAISSANCE 1:50 000 (1:250 000)

URANIUM RECONNAISSANCE PROGRAM

THUNDER BAY AREA 1977

Elevations in feet above mean sea level

Scale 1:250,000

Kilometres 0 5 10 15 Kilometres

Miles 0 5 10 Miles

Universal Transverse Mercator Projection
© Crown Copyrights reserved

Mean magnetic declination 1970, 7°0.6' west, increasing 0.0° annually. Readings vary from 6°30' W in the SW corner to 7°12' W in the NE 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 1968, 1969

This map has been reproduced from a copy supplied by the author. Reproduction per authorization (Crown) same as original

This map forms one of a series of 28 sheets released under the Geological Survey of Canada, Open Files 506 and 507, which cover the Thunder Bay area, Ontario, and its Precambrian lake sediments. 2 sheets for lake waters and sample site location.

SAMPLE LOCATION

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

ANORTHOSITIC - ALKALIC COMPLEXES (KNOR)*
16 Carbonatites, nephelinites, kersutidites, augitite syenites, gabbros, olivinites, nepheline gabbros.

LATE MAFIC INTRUSIVE ROCKS
15 Diabase, gabbro, anorthosite

OLIVE GROUP
14 Porphyritic rhyolite or dacite, quartz porphyry, felsite

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

MAFIC INTRUSIVE ROCKS
11 Diabase (DIOR), porphyritic diabase, gabbro, anorthositic gabbro (olTb and dpGa)

SIBLEY GROUP (SMR)
10 Conglomerate, sandstone, chert, shale, carbonate rocks

MIDDLE PRECAMBRIAN (ARCHEAN)
ANIMIKIE
9 Fawn Formation (FAR2): argillite, shale, greywacke

8 Gunflint Formation: chert (CHRT), chert-carbonate, carbonate rocks, argillite, tuff, taconite

EARLY PRECAMBRIAN (ARCHEAN)
FELSIC IGNEOUS AND METAMORPHIC ROCKS
7 Granodiorite, quartz diorite, tonalite (GRDI), granodiorite (GRDR), quartz-feldspar porphyry (QZFP), pegmatite, aplite (PEGT), monzonite, nepheline (MONT), syenite, pegmatite

MAFIC AND ULTRAMAFIC IGNEOUS ROCKS
6 Gabbro, diorite, serpentine, hornblendite, amphibolite

METASEDIMENTS
5 Conglomerate (CGLM, greywacke (GRDU), arkose, quartzite, argillite, slate, mica schist and gneiss, quartz-feldspar schist and gneiss (SCIT), garnet-feldspar schist and gneiss (GRSC)

METAVOLCANICS
4 Felsic to intermediate metavolcanics (MIXV): rhyolite, pillow lava, porphyritic lava, pyroclastic rocks, derived schists

3 Intermediate to mafic metavolcanics (MIXV): basalt, schistose, pillow lava, porphyritic and amygdaloidal lava, pyroclastic rocks and derived schists; undifferentiated metavolcanics with some metasediments (MVIU)

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

Geological boundary

Fault

Limit of geological mapping (BORN)

The legend modified and geology derived for this geochemical map from Geology Compilation Series maps 2226 and 2232, Ontario Division of Mines and map 2003, 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.
Sample preparation by Bondar-Clegg & Company 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.