Province of Ontario
Ontario Ministry of Natural Resources
Ontario Geological Survey

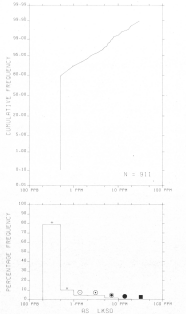
Canada
Department of Energy, Mines and Resources
Geological Survey of Canada

42O and Part of 42E

ARSENIC (ppm)

OPEN FILE 506

THUNDER BAY AREA 1977



Geochemical Symbol and Data Presentation

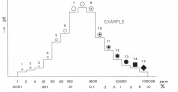
The concentration of an element at a sample site is graphically represented by a symbol. Each symbol is a range of values. Where no data available a dot is plotted. The symbols are symmetrically arranged so that they first increase in size to the eighth symbol and then decrease in size to the sixteenth symbol. The symbols between the low end of the scale are used to repeatedly 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, e.g. 1,2,5,10,20,50,100 etc. Five decades can be spanned and this arrangement of symbols is repeated for each decade. The following 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 areas. Normally, the same symbol arrangement for the total dataset is used for the model groups as defined by the histogram. This group usually includes the median of the data as defined by the 0.5 (50%) probability point on the cumulative frequency plot. The range encompassing 14 symbols are chosen so as to achieve an appropriate graphical impact. An example of all 16 symbols is given below.

The symbol maps, being based on the total survey data distributions, are unaffected by the unreliability 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 reproduce the distribution of the data as accurately as possible. Whether or not the needs of a more specific and thematic 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, the analytical precision, and values used 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 deriving local threshold levels based on the most detailed and up-to-date knowledge available.



Copies of map materail 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
1200 - 1166 Alberni Street
Box No. 1128
Ottawa, Ontario
K1R 6A7

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

The Director
Data Processing Centre
Department of Energy, Mines and Resources
Ottawa, Ontario
K1A 0E4

Elevations in feet above mean sea level

Mean magnetic declination 1979, 15°-0' West, increasing 3'-0' annually. Readings vary from place to place within 2° of corner to 17°-0' to the NW corner of the sub-area.

ARSENIC (ppm)

OPEN FILE 506

NATIONAL GEOCHEMICAL RECONNAISSANCE MAP 17-1977

URANIUM RECONNAISSANCE PROGRAM

THUNDER BAY AREA 1977

Scale 1:250,000

Kilometres 5 0 5 10 Kilometres

Miles 4 0 4 8 Miles

Universal Transverse Mercator Projection

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Base-map assembled by the Geological Cartography Unit, Surveys and Mapping Branch, Department of the Surveys and Mapping Branch in 1982, 1983

The map-backgrounds reproduced from a scanned version of the original map. Reproduction per scanning/print of any kind not permitted.

This map forms one of a series of 28 sheets released under the Geological Survey of Canada, Open Files 506 and 507. Two Open Files consist of maps for 11 elements, each for two quadrangles, 2 elements for each series and sample site location.

ARSENIC (ppm)

OPEN FILE 506

THUNDER BAY AREA 1977

LEGEND

Note: This legend is common for National Geochemical Reconnaissance Map 17-1977, Open File 506 and Map 18-1977, Open File 507.

PHANEROZOIC
LATE PRECAMBRIAN (HELIKIAN)
KIVEKAPIAN

CARBONATITE - ALKALIC COMPLEXES [NOCH]*
15 Carbonatite; nepheline, hornblende, augite syenites, gabbro; ultrama, nepheline gabbro.

LATE MAFIC DIORITIC ROCKS
10 Diabase, gabbro, anorthosite

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

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

MAFIC DIORITIC ROCKS
9 Diabase [DIBS]; porphyritic diabase, gabbro, anorthositic gabbro (olivin and quhas)

SIBLEY GROUP [SIMG]
8 Conglomerate, sandstone, chert, shale, carbonate rocks

MIDDLE PRECAMBRIAN (ARCHEOZOIC)
KEWEENAWAN

7 Rove Formation [ANNL]: amphibite, shale, greywacke

6 Gunflint Formation: chert [CHRT], chert-carbonate, carbonate rocks, amphibite, tuff, taconite

EARLY PRECAMBRIAN (ARCHEAN)
INTRUSIVE GRANITIC AND PORPHYRITIC ROCKS
5 Granite [GRNT], granite gneiss [GRNG], granodiorite [GDRT], quartz-feldspar porphyry [QFRP], monzonite, magnatite [MGRT], syenite, pegmatite

MAFIC AND ULTRAMAFIC DIORITIC ROCKS [UMBS]
4 Gabbro, diorite, serpentine, hornblendite, amphibolite

METASEDIMENTS
3 Conglomerate [CGRT], greywacke [GRCK], arkose, quartzite, [QRZT], slate, phyllite, schist and gneiss; meta-arkose, schist and gneiss [SMSC]

METAVOLCANICS
2 Felsic to intermediate metavolcanics [MDVF]
Rhyolite, pillow lava, porphyritic lava, pyroclastic rocks, derived schists

1 Intermediate to mafic metavolcanics [BICG]:
basaltic, schistose, pillow lava, porphyritic and amygdaloidal lava, pyroclastic rocks, derived schists and differentiated metavolcanics with some metasediments [MBCG]

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

Geological boundary

Fault

Limit of geological mapping [GEOM]

The legend modified and geology derived for this geochemical map from Geology Compilation Series maps 2225 and 2232, Ontario Division of Mines and map 2085, 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.
Samples prepared by Eco-Tech Laboratory
Uranium in water analyses by Geological Survey of Canada Ltd.
Other sediment chemical analyses by Chemex Labs Ltd.
Water chemical analyses by Barringer Research Ltd.

42O and Part of 42E