LEGEND

Note: This legend is common to National Geochemical Reconnaissance Map 6-1970, Open File 415; Map18-1976, Open File 414 and Map19-1976, Open File 415

PALEOZOIC

[Dy] Gabbro, meta-gabbro and diabase dykes [DGAB]

Granite, quartz monzonite and granodiorite (hadrite late granite) [GRNT]

PROTEROZOIC

Granite, quartz monzonite and granodiorite [GLYNZ]

Lithic greywacke to subgreywacke [EGSG]

Conglomerate [EGLM]

Arkose to subgreywacke [EARS]

Lutite, quartz lutite,biolite and tuff [EUTT]

Paragneiss, paraschist, calc-silicate bands derived from 14 [EMAS]

Undivided 11, 12 and 13 [EMU]

Dolomite, limestone and other argillite, phyllite [EMDL]

Subarkose [EUBS]

Argillite, phyllite, greywacke, some minor dolomite [EMU]

Quartzite, orthoquartzite [ERQU]

Greywacke-conglomerate, greywacke, protoquartzite [EGAC]

ARCHEAN

Meta-gabbro dykes [MGAB]

Quartz monzonite, granodiorite and granite, massive to foliated [GLYNZ]

Diorite and gabbro [DIOR]

Grey biotite granodiorite-gneiss [GGNS]

Paragneiss, minor paraschist [MMGS]

Amphibolite, amphibolite gneiss [AMPG]

Greywacke, greywacke-conglomerate, argillite, phyllite, minor tuff [GAGC]

Meta-volcanic rocks [MVCC]

Drift covered area.....

Geological contact.....

Fault.....

Trend of geological mapping.....

Lakes (direction of flow known).....

Mineral occurance.....

Legend modified and geology derived for the geochemical map by R.B. Garrett from maps 24-1970, 3-1972 and 4-1972 and G.S.C. Paper 74-54 BY. K.E. Eade

Geological cartography by the Geological Survey of Canada

Base-map at the same scale published by the Mapping and Charting Establishment, M.C.E., 1963

Mean magnetic declination 1977, 16°25.5'E decreasing 6.8' annually. Readings vary from 14°58.4' in the SE corner to 18°32.2' in the NW corner of the map area

Elevation in feet above mean sea-level

Geochemical Symbol and Data Presentation

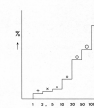
The concentration of an element at a sample site is graphically represented as one of 15 symbols. The 15 symbols are based on a geometric progression of the data to plotted. The symbols are symmetrically arranged so that they first increase in size to the eighth symbol and then increase in blackness 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 14 symbols, the lowest 7% of the concentrations. The values 1.25,1.75,2.25,2.75,3.25,3.75,4.25,4.75,5.25,5.75,6.25,6.75,7.25,7.75,8.25,8.75,9.25,9.75,10.25,10.75 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 governed by the statistical character of the data for the total survey area 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 used to fill in the histogram as 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 maps, unmodified by geological factors, are the most objective form of presenting regional features. 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 to assist in the appraisal and modification of the data in terms of the symbol map bedrock geology. The most useful modification is the separation of anomalous data populations, obviously derived from 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 alone, or in conjuction, with the sample location map and data listings to indicate above threshold samples where they occur on the map. In many terranes, the bedrock units will be found to underlie areas of distinctive differences 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 units or lithologic units appears to approximate a normal distribution. The proposed thresholds presented are believed to be useful in interpretation of the data in terms of mineralization potential. Single values with concentrations in excess of the threshold for the rock units 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 economic interest to the mineral industry.

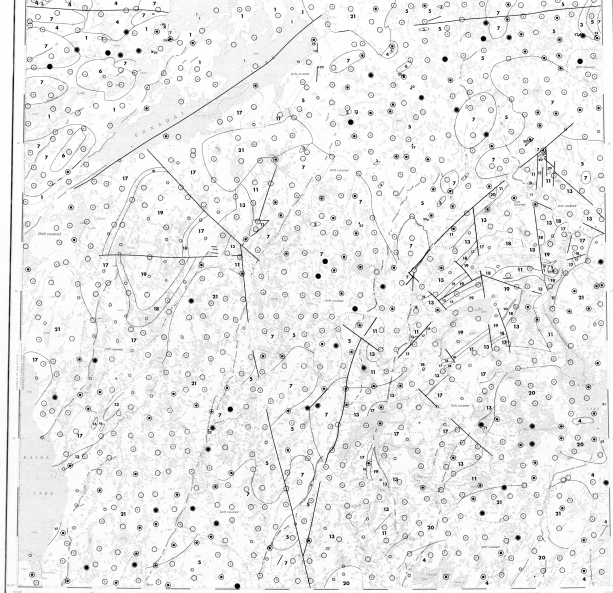
To comprehensively study an area, all available geological, environmental and recorded data should be utilized. The data separation by bedrock type can often be improved by constructing new data subsets and deriving local threshold levels based on the most detailed and up-to-date knowledge available.

The value of the 98th percentile of the above threshold data sample is an estimate of the reliability of the geochemical map. On the basis of duplicate sampling 51 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 3 ÷ Rf and 3 x Rf where X is the original value and Rf is the 98th percentile reliability factor. The trace and bedrock geometry of the centre-lake bottom sediments and sample preparation and analytical causes.



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

65-C



NATIONAL GEOCHEMICAL RECONNAISSANCE MAP 11-1976
IRON IN LAKE SEDIMENTS
URANIUM RECONNAISSANCE PROGRAM

Scale 1:250,000

Kilometres 0 5 10 15 Kilometres
Miles 0 5 10 Miles

Universal Transverse Mercator Projection

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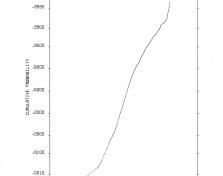

Table of Thresholds by Major Geological Units

Lithology	No. of Samples	Mean	S.D.	C.V.%	Threshold
GGNS	2	1.3	0.3	27	-
GRNT	335	1.8	2.0	107	8.0
GLYNZ	93	1.4	1.0	69	5.0
DIOR	35	0.7	0.4	54	3.0
EGLM	14	0.8	0.6	72	3.0
EMDL	70	1.0	0.9	86	4.0
EMAS	167	1.5	1.3	86	5.0
EMU	13	1.3	0.8	58	4.0
LGNT	3	2.0	1.8	90	-
DORT	4	1.3	0.5	41	-
EMSG	422	1.8	1.9	103	8.0
MMGS	105	1.8	1.8	97	8.0
AMPG	118	1.8	1.8	97	8.0
GMCK	58	1.5	0.8	52	4.0
MVCC	74	1.9	2.3	125	9.0
Unknown	481	1.7	1.6	96	9.0

Data units are percent Reliability Factor = 1.51

NATIONAL GEOCHEMICAL RECONNAISSANCE MAP 11-1976
OPEN FILE 415

Geological Survey of Canada, Ottawa

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Analytical chemistry by J.J. Lynch
Data monitoring by R.G. Garrett, B.G. Lund and D.J. Ellwood

Contractors

Sample collection by Trigg, Woolfitt & Associates Ltd.
Sample preparation by Delker Associates
Chemical analyses by Chemex Labs Ltd.

This map forms one of a series of 46 sheets released under Geological Survey of Canada, Open Files 413, 414, 415. The Open Files consists of data for 11 elements each for lake sediments, percent loss on ignition, two elements for lake waters 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 11-1976
OPEN FILE 415
SOUTHERN DISTRICT OF KEEWATIN N.W.T., 1976
IRON