LEGEND

Note: This legend is common to National Geochemical Reconnaissance Map 9-1976, Open File 415; Map10-1976, Open File 416 and Map 11-1976, Open File 417

Legend modified and geology derived for the geochemical map by R.G. Garrett from maps 24-1973, 3-1972 and 4-1972 and G.S.C. Paper 74-54 DY. K.C. Eade

Geological cartography by the Geological Survey of Canada

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

Mean magnetic declination 1977, 16°25.5'E decreasing 4.8' annually. Readings vary from 14°35.4' in the SE corner to 18°22.2' 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. If a sample was collected but there is 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 increase in blackness to the fifteenth. The first symbol is used to show the lowest 10% of the values or concentrations below the analytical detection limit, or in the data group containing the detection limit. The data are grouped on a semi-logarithmic scale, i.e. 1,2,5,10,20,50,100 etc. Flow deviations 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 based on the histogram and cumulative frequency plot for the total survey data from one, or more contiguous, open file sheets covered in one field season. The eighth symbol is used for the modal group as defined by the histogram. The ninth symbol is always 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 chosen so as to achieve an approximate graphical impact. An example with all 15 symbols is given below.

The symbol maps, being based on the total survey data distributions, are unaffected by the geology. They are therefore completely free from any subjective geological and superficial geology and other environmental factors, and the geochemical symbol maps are only intended to assist the rapid inspection of the data for gross 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 available. The following table of data is presented to assist in the appraisal and modification of the data in terms of the symbol map boundaries. The table of summary statistics and proposed threshold values for drainage geology, dominantly 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 to locate, on the symbol maps, the sample locations and data listings to indicate above threshold samples where these occur. In some circumstances, the table will also illustrate, more clearly than the map, the dependence of mean geochemical levels on bedrock type. It may often be also observed that within the total data appears to approximate a log-normal distribution the individual rock units do not. Consequently it is inappropriate to superimpose a normal distribution. The proposed threshold values are to assist the user in the interpreting the data from a mineral exploration viewpoint. Locations of anomalies with concentrations in excess of the threshold for the rock unit they appear to be derived from, should be studied carefully. The above threshold concentration may be due to a change in geological and environmental factors, but one of these could be the presence of abnormal concentrations of the element in a form of interest to the mineral exploration industry.

To comprehensively study an area, all available geological, environmental and recorded data should be utilized. The data separation by bedrock type can be refined by applying the statistical methods to smaller areas. Similarly threshold levels based on the most detailed and up-to-date knowledge available.

The term reliability factor and value that appears below the table 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 the true value for a sample will be between 1/reliability factor and the analysis are used the true value will lie between 1/1.40 and 1.40 times the analytical value obtained. This factor takes into account variability due to both heterogeneity of the centre-lake bottom sediments and sample preparation and analytical causes.

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

105 C

INDEX MAP

NATIONAL GEOCHEMICAL RECONNAISSANCE MAP 11-1976

ARSENIC IN LAKE SEDIMENTS

URANIUM RECONNAISSANCE PROGRAM

Scale 1:250,000

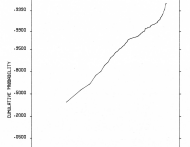
Kilometres 0 5 10 20 Kilometres

Miles 0 5 10 Miles

Universal Transverse Mercator Projection

© Crown Copyrights reserved

This map has been reproduced from a copy supplied by the author. Reproduction per colormatter chart cards our paper



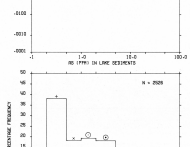


Table of Thresholds by Major Geological Units

Lithology	No. of Samples	Mean	S.D.	C.V.%	Threshold
GBRO	2	27.0	25.5	94	-
GBGT	326	7.0	3.7	132	9
GIMC	618	7.0	3.0	43	10
GBGG	30	8.0	2.5	63	10
GSLM	14	5.4	11.1	206	10
GNSG	76	7.1	2.6	37	10
GNGG	144	6.5	9.2	189	12
GMSZ	13	4.3	3.2	109	12
LGNS	3	17.8	14.2	113	-
DORT	4	1.7	0.9	53	-
PGSS	422	5.5	4.4	109	9
AMPB	126	2.1	2.1	101	7
AMGS	70	3.3	2.5	100	9
GRSS	58	5.2	7.2	136	14
MVCC	74	3.8	6.0	157	14
Unknown	581	1.4	1.0	139	10

Data units are in ppm

Reliability Factor = 3.08

NATIONAL GEOCHEMICAL RECONNAISSANCE MAP 11-1976
OPEN FILE 417

Resource Geophysics and Geochemistry Division

Geological Survey of Canada, Ottawa

Geochemistry by E.H.W. Hornbrook
Analytical chemistry by J.J. Lynch
Data monitoring by R.G. Garrett, N.G. Lund and D.J. Ellwood

Contractors

Sample collection by Trigg, Woollett & Associates Ltd.
Sample preparation by Geochem Associates
Chemical analyses by Chemex Labs Ltd.

This map forms one of a series of 15 sheets released under Geological Survey of Canada, Open Files 413, 414, 415. The Open Files consists of data for 51 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:

The Director,
Computer Science Centre,
Department of Energy, Mines and Resources,
Ottawa, Ontario K1A 0E8

NATIONAL GEOCHEMICAL RECONNAISSANCE MAP 11-1976
OPEN FILE 415
SOUTHERN DISTRICT OF KEEWATIN N.W.T., 1976
ARSENIC