

Multi-Element Stream Sediment Data Plot:
Copper, Lanthanum, Molybdenum, Tin, Uranium and Tungsten
Northwest New Brunswick, NTS 210 /12 and /13



ELEMENTAL RANGES

Element units median	Copper ppm 1.7	Lanthanum ppm 3.4	Molybdenum ppm 1.25	Tin ppm 1.25	Uranium ppm 3.8	Tungsten ppm <1
0 (< 2) X Median	<34 (N=764)	<68 (N=766)	<3 (N=717)	<3 (N=763)	<3.8 (N=731)	<2 (N=718)
1 (2 to 3) X Median	34 to 41 (N=4)	68 to 70 (N=1)	3 (N=44)	3 (N=2)	7.6 to 11.3 (N=33)	2 (N=48)
2 (>3 to 5) X Median	(N=0)	(N=0)	4 to 6 (N=5)	4 to 6 (N=1)	11.4 to 18.9 (N=2)	3 (N=1)
3 (>5 to 8) X Median	(N=0)	(N=0)	7 (N=1)	7 (N=1)	19.0 to 23.3 (N=1)	(N=0)
4 (>8) X Median	(N=0)	(N=0)	(N=0)	(N=0)	(N=0)	(N=0)

NGR SURVEY - NORTHWEST NEW BRUNSWICK

This open file map illustrates data from a joint Geological Survey of Canada (GSC) and New Brunswick Department of Natural Resources and Energy (NB DNRE) Open File (GSC OF 3889 and NB DNRE OFR 2000-6). The open file provides analytical and statistical data for 35 elements plus loss-on-ignition (LOI) in sediments from 767 stream sites collected from northwest New Brunswick during the summer of 1999. Sample sites were distributed over the 2 020 km² survey area at an average density of one sample per 2.6 km². The Geological Survey of Canada, either independently or in cooperation with provinces and territories, under various funding arrangements.

Large areas of Canada have been covered by stream and lake surveys carried out under the National Geochemical Reconnaissance (NGR) program. The mandate of the program is to establish and maintain a nationally consistent database of field and analytical data derived from drainage sediment and water samples. Toward this goal, systematic surveys have been conducted since 1973. To date (2000), more than 200 surveys have been completed to NGR standards, representing over 190 000 sites covering 2.3 million km² throughout Canada (see accompanying figure). These surveys were carried out mainly by the Geological Survey of Canada, either independently or in cooperation with provinces and territories, under various funding arrangements.

Consistent methods of sample collection, sample preparation and chemical analysis developed and employed at the GSC are the hallmark of NGR surveys (Friske and Hornbrook, 1991). Currently, data for each NGR survey are available in hard copy and digital form. However, to simplify access to such a substantial collection of diverse information, a digital database has been created using Microsoft® ACCESS® software. As entry of large contiguous blocks of data (e.g., all Labrador or Ontario lake sediment and water data) is completed, geochemical maps and reports are being produced that display and summarize the data (e.g., Friske et al. 1997). The aim of the second generation of publications is to increase awareness of NGR data and enhance applications not only to mineral exploration but in other areas as well, such as public health and environmental studies.

DATA PRESENTATION

For this map, relative concentrations of selected elements in sediments at sample sites are illustrated in two different ways: shaded contour plots and multi-element proportional spot plots ('beachball' plots). Contour plots depict broad regional trends. From the irregular grid of sample sites, a regular grid is generated by the Vertical Mapper™ module in MapInfo® using the following parameters:
Inverse Distance Weighting (IDW) function:
Exponent = 2.0
Cell size = 100 metres
Search radius = 5000 metres
Display Radius = 2500 metres

The resultant grid is then coloured based on percentiles. A hill-shading effect is also added to enhance the surface of the regular grid.

'Beachball' plots, a variation of proportional spot plots, represent multi-element anomalies at specific sites. Individual analytical values of selected elements are reassigned with integer 'scores' of between 0 and 4, depending on the value of each analytical result relative to the median value for each element. Specific scores assigned to element ranges for this map are shown in the accompanying table.

The total score establishes the size of the individual spot, with the size of the spot proportional to the sum of the score, the value of which is shown at each site with a value =1 or >1. The proportion of the total value represented by one element (elements are assigned different colours) is indicated by the size of the wedge within the spot.

SELECTED REFERENCES

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1991. Canada's National Geochemical Reconnaissance programme; Transactions of the Institution of Mining and Metallurgy, Section B, Volume 100, p.47-56
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- Friske, P.W.B., Day, S.J.A., Pronk, A.G., McCurdy, M.W. and Boldon, R.
1999. Multi-element stream sediment data plots, Restigouche Area, New Brunswick NTS 210/10, 11, 14, 15, 16(w); Geological Survey of Canada Open File 3820, scale 1:100 000.
- Ogilvie, K. (compiler)
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1979. New Brunswick Geological Map; Department of Natural Resources and Energy, Minerals and Energy Division, Map Number N.R. - 1 (second edition).
- Pronk, A.G., Friske, P.W.B., Day, S.J.A., and McCurdy, M.W.
1998. National Geochemical Reconnaissance - regional stream sediment and water geochemical data, northwestern New Brunswick (NTS 210/10, 210/14, 210/15, 210/16) Geological Survey of Canada Open File D3617.

- DEVONIAN
D1 Shale, limestone, sandstone; minor greywacke, tuff and volcanic rocks
- SILURIAN
S Greywacke, slate, siltstone, sandstone, conglomerate and limestone; minor ferruginous and manganeseiferous chert and argillite; minor volcanic rocks
- ORDOVICIAN AND/OR SILURIAN
OS1 Calcareous and argillaceous sedimentary rocks

Background geological information from New Brunswick Department of Natural Resources and Energy - Map N.R. - 1 (second edition, 1979)

Digital topographic base map from Geomatics Canada, modified by Regional Geochemical Studies Section.

UTM Projection
Zone 19
NAD83

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Scale 1:100 000

Kilometres 1/2 0 1 2 3 4 5 Kilometres

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DOSSIER PUBLIC
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COMMISSION GÉOLOGIQUE DU CANADA
OTTAWA
2000-06
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