

### ONTARIO COMPILATION ARSENIC IN LAKE SEDIMENT

Scale 1:1 500 000 - Echelle 1/1 500 000

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Geological Survey of Canada / Commission géologique du Canada

Open File 3379d

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Open File Numbers & Analytical Methods (As)

Instrumental Neutron Activation / Atomic Absorption Spectrometry / Colorimetry

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### INTRODUCTION

Large areas of Canada have been covered by stream and lake surveys carried out under the National Geochemical Reconnaissance (NGR) program. The goal of this program is to establish and maintain a nationally consistent database of field and analytical data derived from drainage basins and water bodies...

### ACKNOWLEDGEMENTS

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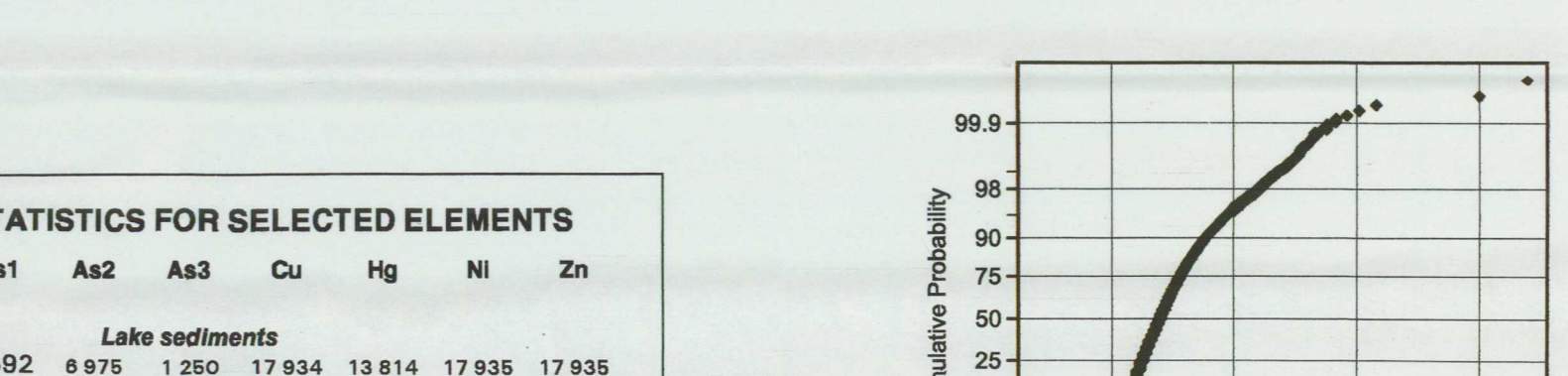
### SELECTED REFERENCES AND SUGGESTIONS FOR FURTHER READING

Alain, G.E.M. 1976. The determination of arsenic and antimony in geological materials by flameless atomic absorption spectrometry. Journal of Geochemical Exploration, Volume 6, p. 321-330.

### QUALITY CONTROL

One of the most important characteristics of NGR surveys is the structure of the sampling program. Each block of 20 consecutive field numbers consists of 17 routine field samples, a field duplicate sample, a blind (analytical) duplicate sample and a control reference sample...

### CUMULATIVE PROBABILITY PLOTS



### SUMMARY STATISTICS FOR SELECTED ELEMENTS

|                    | As1   | As2   | As3   | Cu     | Hg     | Ni     | Zn     |
|--------------------|-------|-------|-------|--------|--------|--------|--------|
| Number of Values   | 9 692 | 6 975 | 1 250 | 17 934 | 13 814 | 17 935 | 17 935 |
| Detection Limit    | 0.5   | 0.5   | 1     | 2      | 10     | 2      | 2      |
| Units              | ppm   | ppm   | ppm   | ppm    | ppb    | ppm    | ppm    |
| Analytical Method  | AAS   | AAS   | COL   | AAS    | CV-AAS | AAS    | AAS    |
| Mean               | 2.4   | 4.0   | 1.6   | 37.8   | 119    | 24.1   | 108    |
| Standard Deviation | 15.7  | 32.2  | 4.0   | 54.4   | 188    | 97.8   | 77.2   |
| Median             | 1     | 2.5   | 0.5   | 29     | 110    | 16     | 100    |
| Minimum Value      | <1    | <0.5  | <1    | <2     | <10    | <2     | 4      |
| 90th Percentile    | <1    | 1.2   | <1    | 19     | 26     | 6      | 49     |
| 10th Percentile    | <1    | 1.4   | <1    | 8      | 47     | 8      | 64     |
| 25th Percentile    | <1    | 1.8   | <1    | 20     | 70     | 11     | 77     |
| 75th Percentile    | 1.1   | 2.5   | <1    | 39     | 150    | 16     | 109    |
| 95th Percentile    | 2.1   | 3.7   | 1.6   | 42     | 160    | 25     | 129    |
| 98th Percentile    | 4.1   | 6.3   | 2.8   | 64     | 222    | 37     | 161    |
| 99th Percentile    | 6.1   | 8.9   | 4.5   | 85     | 280    | 46     | 189    |
| Maximum Value      | 10.2  | 16.5  | 8.6   | 124    | 280    | 87     | 236    |
| Minimum Value      | >0.5  | 2.0   | 0.0   | 3.00   | 21.00  | 8.00   | 7.00   |

AAS - atomic absorption spectrometry; NAA - instrumental Neutron Activation Analysis; COL - colorimetry; CV-AAS - cold vapour atomic absorption spectrometry