# ELEMENT-DISTRIBUTION PATTERNS IN STREAM SEDIMENTS OF THE AREA AROUND BOGAWANTALAWA

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The purpose of the project was to develop a methodology applicable to gem exploration in Sri Lanka. The investigations involved mineralogical, petrographic, geological, and geochemical research on Precambrian bedrock and derived stream sediments.

At present, stream sediments are being analyzed for major, minor, and trace elements using the X-ray Fluorescence Spectrometer (XRF). Analysis of the same samples was done for 25 elements in the Laurentian University of Canada. Upto now, data for 120 samples (for 25 elements) have been received from Canada. In addition to the Canadian data, analysis of 90 samples (for 10 elements) have been completed in our laboratories.

All the analyzed data were entered into the computer for processing. The statistical analysis packages Systat and Sygraph were studied in detail to obtain the most appropriate interpretation method. The contour plotting technique was found to be very useful. This technique was adjusted to best suit the data by using smoothing options available in the Sygraph Package and by rescaling the plottings.

Contour maps were prepared for each element analyzed to indicate their possible distribution and concentration. Following a rough interpretation of these maps it can be shown that in the Bogawantalawa area maximum concentrations of Nb, Ti, Rb, Y, Zr, and Pb focus on the same point. Furthermore, the maximum concentrations of Cu, Mg, Ni, and Zn are found together and maximum concentrations of Sr, Cr, and Na fall on the same part in this area. Local concentrations of other analyzed elements can also be shown using these maps. These distribution patterns are very important in the case of index elements which can be used in mineral exploration.