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AGGREGATE MAPS–A DIGITAL APPROACH

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ABSTRACT

In the past, granular-aggregate data has been made available to the general public as blueline reproductions or photocopies of aggregate-resource maps and grain-size analyses. In recent years, the personal computer has significantly improved our ability to search and retrieve an ever-increasing volume of data and to supply that information on disk or as printouts. Computer programs have also been developed to produce grain-size curves and other graphical outputs of the existing data. As more powerful computer hardware and software become available, a tremendous potential exists to increase the quality, speed and variety of the data output. The Geological Survey is now compiling the aggregate datafiles and associated maps into a digital format to be presented using GIS technology. It is anticipated that this will benefit the user group by making all relevant information available from one location, and by structuring that information so that the user group can select the parameters that they wish to view the data.

OBJECTIVES

In 1993, aggregate data was released as an open file with a graph program (Ricketts, 1993), which provided easy access and retrieval of grain-size data and petrographic numbers. This compilation of more than 13 000 aggregate samples into a database provided a tremendous advantage over previous methods of retrieving and presenting aggregate data for the users need. Grain-size data output from the GraphV3 program can be selected by sample, groups of samples or a complete listing for a 1:50 000-scale map sheet. This data can be presented as a percentage, based on individual sieve size, broken down into gravel, sand and silt–clay percentages, or shown as cumulative graphs with petrographic numbers, exposure thickness and estimated deposit thickness at each sample site.

Despite the increased ability of accessing and retrieving aggregate data, there remained several areas where improvements could be made and new information added. The GraphV3 program and datafiles provided an excellent method of manipulating and presenting tabular data but could not present this data in map form. Maps had to be produced and copied separately making them available only as black and white or blueline copies and generally only at one scale. As a result of these limitations, plans are in progress to convert all aggregate maps to a digitized format. The digitized package has many advantages. With the digitized aggregate maps and the added sample data a computer-generated coloured map can be produced showing aggregate zones in relation to sampled deposits, and maps can be produced at different scales suitable to the user.

Besides showing the actual granular-aggregate map and sample data, it can also be used to import surfical and bedrock data (where available), which may be beneficial to the user. Data available from other sources that may effect the users ability to obtain quarry permits in selected areas may also be used. It may show areas where quarry leases or permits exist, areas of silviculture and other land-use data that may save the user time when applying for a quarry permit.

REFERENCE

Ricketts, M.J.
1993: Aggregate resource graph program (GraphV3). Newfoundland Department of Mines and Energy, Geological Survey Branch, Open File NFLD/2270, 5 pages.