Open-File Report 93-280

This disk contains data files of the grades and tonnages of mineral deposits that were used to construct grade and tonnage models presented in Cox and Singer (1986), Mosier and Page (1988), and Bliss (1992). A total of 3310 deposits grouped into 50 different types of mineral deposits are included. The purpose of this publication is to make this information available in digital form. Many of the data sets have been previously published in paper form (Berger and Singer, 1992; Cox and Singer, 1992; Mosier, and others, 1983; Mosier, and others, 1986a; Mosier, and others, 1986b; Mosier, and others, 1992; Menzie and Mosier, 1985; Menzie and others 1988; Menzie and others, 1992; Menzie and Singer, 1993; Singer and others, 1980; Singer, 1992; Theodore and Menzie, 1983).

A mineral deposit is a mineral occurrence of sufficient size and grade that it might, under the most favorable circumstances, be considered to have economic potential (Cox, and others, 1986). Deposits sharing a relatively wide variety and large number of attributes come to be characterized as a "type," and a model representing that type can evolve.

Grade and tonnage models of mineral deposits are useful in quantitative resource assessments and exploration planning. Construction of grade and tonnage models involves multiple steps (Singer, in press), the first of which is the identification of a group of well-explored deposits that are believed to belong to the mineral deposit type being modeled. A descriptive model is commonly prepared as well, and the attributes of each deposit in the group are compared with it to ensure that all are of the same type. Data gathered for each deposit include average grades of each metal or mineral commodity of possible economic interest and the associated tonnage based on the total production, reserves, and resources at the lowest possible cutoff grade. All further references to tonnage follow this definition. All tonnages reported here are in millions of metric tonnes. Grades not available (always for by-products) are treated as zero. Country codes are listed in a separate file.

An important consideration at the data gathering stage is the question of what the sampling unit should be. Grade and tonnage data are available to varying degrees for districts, deposits, mines, and shafts. For the most part the data included here represent individual deposits, but in some instances such data are mixed with data representing districts. In addition, for some of the deposit types, a special rule was used to determine which ore bodies were combined. For example, ore bodies of both kuroko and Cyprus type massive sulfides were combined into single deposits based on a 500-m rule of adjacency (Mosier and others, 1983). Information about such rules is available in the references listed below.

Several of the data sets have had a few deposits added (for example, kuroko) or have had a small number of the grades or tonnages changed from data used in published models by recent information (for example, kuroko, Sierran kuroko, Homestake). Five deposits were removed from the kuroko and Sierran kuroko models because of questions about their correct classification. In no case should these modifications result in significantly different summary statistics than those presented in Appendix B in Cox and Singer (1986) or in Singer (1993).

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