

Preface

The deposit models project is an attempt to classify the many known metallic mineral deposits and occurrences in Yukon into specific *mineral deposit models*. This work began with the initiation of regional mineral potential assessments by the Yukon government (e.g., Bradshaw and vanRanden, 2004). The quantitative method used for regional mineral assessments in Yukon is based on a method developed by the United States Geological Survey (USGS), which uses the mineral deposit models of Cox and Singer (1986). The reader is encouraged to consult this reference for further discussion on the fundamental purpose for defining mineral deposit models. In general terms, resource assessments require that tracts of land be assessed on the basis of probability for the occurrence of one or more specific deposits of a particular type with previously defined grades and tonnages. In the course of conducting regional mineral potential assessments, grade and tonnage information for deposit types that occur or potentially could occur in Yukon was compiled, grade and tonnage curves were constructed, and deposit models were assigned to known mineral deposits and occurrences (i.e., Yukon MINFILE occurrences; Deklerk, 2003).

Many of the mineral deposit types that occur in Yukon are the same as those that occur in British Columbia, therefore the written descriptions of Yukon deposit types within this Open File contribution are essentially the same as the respective BC deposit profiles (Lefebure and Ray, 1995; Lefebure and Hoy, 1996). The descriptions written by scientists from the British Columbia Geological Survey (BCGS) are presented here in their entirety, with some additional information and references relevant to Yukon deposits and occurrences distinguished by **boldface type**. In addition to the deposit model descriptions, the spectrum of mineral deposits and their grade and tonnage curves used in the regional mineral assessments for each deposit model are presented. Yukon and BC deposits with defined resources were used where available, though paucity of information for some occurrences required best estimates and/or use of data from other jurisdictions. This contribution also includes a list of Yukon examples for the respective deposit profile (from Yukon MINFILE; Deklerk, 2003) organized by status (i.e., past producer, deposit, drilled prospect, showing, etc.). Finally, one or more compilation maps are included with each deposit model. They integrate the MINFILE occurrences with additional public data, including Yukon Digital Geology (Gordey and Makepeace, 2003), regional geochemistry (Héon, 2003) and regional geophysics (Lowe et al., 1999).

This Open File is the result of data compilation done from 1999-2003 as part of the ongoing Yukon regional mineral assessment process. This compilation will be useful to the mineral exploration industry, despite the fact that the information is incomplete in some areas. The deposit profiles included herein represent most of the major deposit types that occur, or could occur, in Yukon but with several notable absences: flood basalt-associated Ni-Cu (e.g., Wellgreen; Yukon MINFILE 115G 024); carbonate-hosted disseminated Au-Ag or Carlin-type Au (e.g., Hyland gold; Yukon MINFILE 095D 006); and Superior-type iron formation (e.g., Crest; Yukon MINFILE 106F 008). Also missing are models for sedimentary and/or intrusive rock hosted uranium deposits, shale-hosted Ni-Zn-Mo-PGE deposits, and some classes of vein and skarn deposits (e.g., Sn veins and greisens; manto and stockwork Sn; W veins; Mo skarns). Coal, hydrocarbon and industrial mineral deposits were not part of the quantitative mineral assessment process.

BCGS profiles and USGS deposit models exist for some of these deposit types. Furthermore, the assignment of deposit model types to individual mineral occurrences is seldom clear-cut, and is more problematic for those occurrences for which specific characteristics are poorly known. We hope to address these shortcomings in future editions of Yukon Deposit Profiles.

Citation and Acknowledgements

This volume is heavily based on the deposit models developed by the BCGS. The authors of these individual models are indicated and should be cited, where possible, rather than referring to this compilation. The scientists and staff who were part of the BCGS Mineral Potential Project, particularly Dave Lefebure, are gratefully acknowledged for contributing their mineral deposit profiles.

References

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