



INTRODUCTION

New geochemical data from re-analysis of archived stream sediment samples have been assessed using weighted sums modeling and catchment basin analysis...

SAMPLING AND ANALYSIS PROGRAMS

Regional stream sediment and water samples from the Finlayson Lake map area (105G) were collected at a reconnaissance scale in 1987 as part of the National Geochemical Reconnaissance program...

MINERAL OCCURRENCES

A variety of types of base and precious-metal mineralization have been documented in the map sheet as summarized in Table 1 (Yukon MINFILE, 2015).

WEIGHTED SUMS MODELING

As described in the report accompanying this map (Mackie et al., 2015), two approaches have been used to subdue the influence of background lithological variation...

The other uses residuals calculated from regression against selected principal components. Weighted sums models (WSM) have been generated using the processed data...

Exploratory data analysis of both raw element data and principal components indicates that the distribution of many commodity and pathfinder elements is strongly controlled by lithological variation.

The effectiveness of historical sampling coverage has been assessed empirically using graphs of WSMs plotted against catchment surface area to determine the ideal maximum catchment size (10 km²).

Table 2: Importance rankings for weighted sums models using data levelled by dominant mapped geology.

Table with 13 columns: Target Deposit Type, Other Deposit Types, and 13 elements (Mn, Fe, Co, Ni, Cu, Mo, Zn, Pb, Ag, Au, As, Ba, Cd, Sb, Sn, Te, Hg, Tl, Bi, W). It provides numerical rankings for various deposit types like VMS (Zn-rich), Epithermal Au-Ag, and Porphyry Cu-Mo.

*Polymetallic Ag-Pb-Zn type includes vein and mantle styles; SEDEX = sedimentary exhalative; VMS = volcanic-hosted/associated massive sulphide deposits

† Au data are not levelled by dominant geology, instead log10 transformed raw data are used.

LEGEND

- Town
▲ Mineral Occurrence
— Road
— Contour
— Water Body
— Wetland
● Sample Location
○ Catchment
○ Catchment > 10 km²

REFERENCES

Friske, P.W. and Hornbrook, E.H., 1988. National Geochemical Reconnaissance Stream Sediment and Water Geochemical Data, South-Central Yukon (NTS 105G).

RECOMMENDED CITATION

MACKIE, R., ARNE, D AND PENNIMPEDE, C., 2015. Weighted sums model for VMS Zn-rich deposits levelled by geology. In: Enhanced interpretation of stream sediment geochemical data for NTS-105G, Yukon Geological Survey, Open File 2015-26, scale 1:250 000, sheet 6 of 17.

Catchment basin polygons generated by the Yukon Geological Survey (J. O. Bruce).

Paper copies of this map and the accompanying report may be purchased from the Yukon Geological Survey, Energy, Mines and Resources, Government of Yukon, Room 102-300 Main St., Whitehorse, Yukon, Y1A 2B5.

A digital PDF (Portable Document File) file of this map may be downloaded free of charge from the Yukon Geological Survey website: http://www.geology.gov.yk.ca.

Table 1: List of Mineral Occurrences for NTS map sheet 105G (Yukon MINFILE, 2015)

Table with 3 columns: Number, Name, and Type. It lists 151 mineral occurrences with details on their names and types.

Yukon Geological Survey, Energy, Mines and Resources Government of Yukon Open File 2015-26

Weighted sums model for VMS Zn-rich deposits levelled by geology (NTS 105G) Sheet 6 of 17 by Rob Mackie, Dennis Arne, and Chris Pennimpe