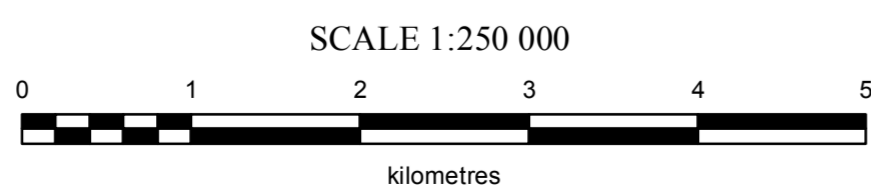


Intrusion-related Au Deposits Weighted sums model (Geology Levelled) Sheet 3 of 17



Grid reference table with columns for X and Y coordinates (e.g., TAY, SHELDON LAKE, LITTLE NAHANNI RIVER).

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 subdivide the influence of background lithological variation and secondary absorption on the composition of stream sediments...

The other uses residuals calculated from regression against selected principal components. Weighted sums models (WSM) have been generated using the processed data. Importance rankings used in the WSM for a variety of deposit types are summarized in Table 2.

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 first principal component, accounting for ~30% of the total variation, shows high positive loadings for Cd, Se, Sb, Hg, Ba, Ag, Mo and Zn...

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). Catchments that cover larger areas (shown on the map with bold outlines) are interpreted to have been under-sampled and thus require further sampling to properly evaluate the area for geochemical anomalies.

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

Table with 17 columns (Target Deposit Type, Other Deposit Types, Mn, Fe, Co, Ni, Cu, Mo, Zn, Pb, Ag, Au, As, Ba, Cd, Sn, Sb, Te, Hg, Tl, Bi, W) and rows for various deposit types like VMS (Zn-rich), VMS (Cu-rich), Epithermal Au-Ag, etc.

*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
— River
□ NTS Map Sheet
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). Geological Survey of Canada, Open File 1648.
Friske, P.W.B., Hornbrook, E.H.W., McCurdy, M.W., Day, S.J.A. and McNeil, R.J., 2008a. Regional stream sediment and water geochemical data, Finlayson Lake area, southeastern Yukon (NTS 105G). Geological Survey of Canada, Open File 5696.

RECOMMENDED CITATION

MACKIE, R., ARNE, D. AND PENNINGE, C., 2015. Weighted sums model for intrusion-related Au 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 3 of 17.

Catchment basin polygons generated by the Yukon Geological Survey (J. O. Bruce). Any revisions or additional geological information noted to the user would be welcomed by the Yukon Geological Survey. 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, Ph. 867-867-3201, Email geology@gov.yk.ca.

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

Table with 4 columns (Number, Name, Type, Commodities) listing 151 mineral occurrences with details like '105G 001 IMONT', '105G 003 BLUEBERRY', etc.

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

Weighted sums model for intrusion-related Au deposits levelled by geology (NTS 105G) Sheet 3 of 17

by Rob Mackie, Dennis Arne, and Chris Penninge

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