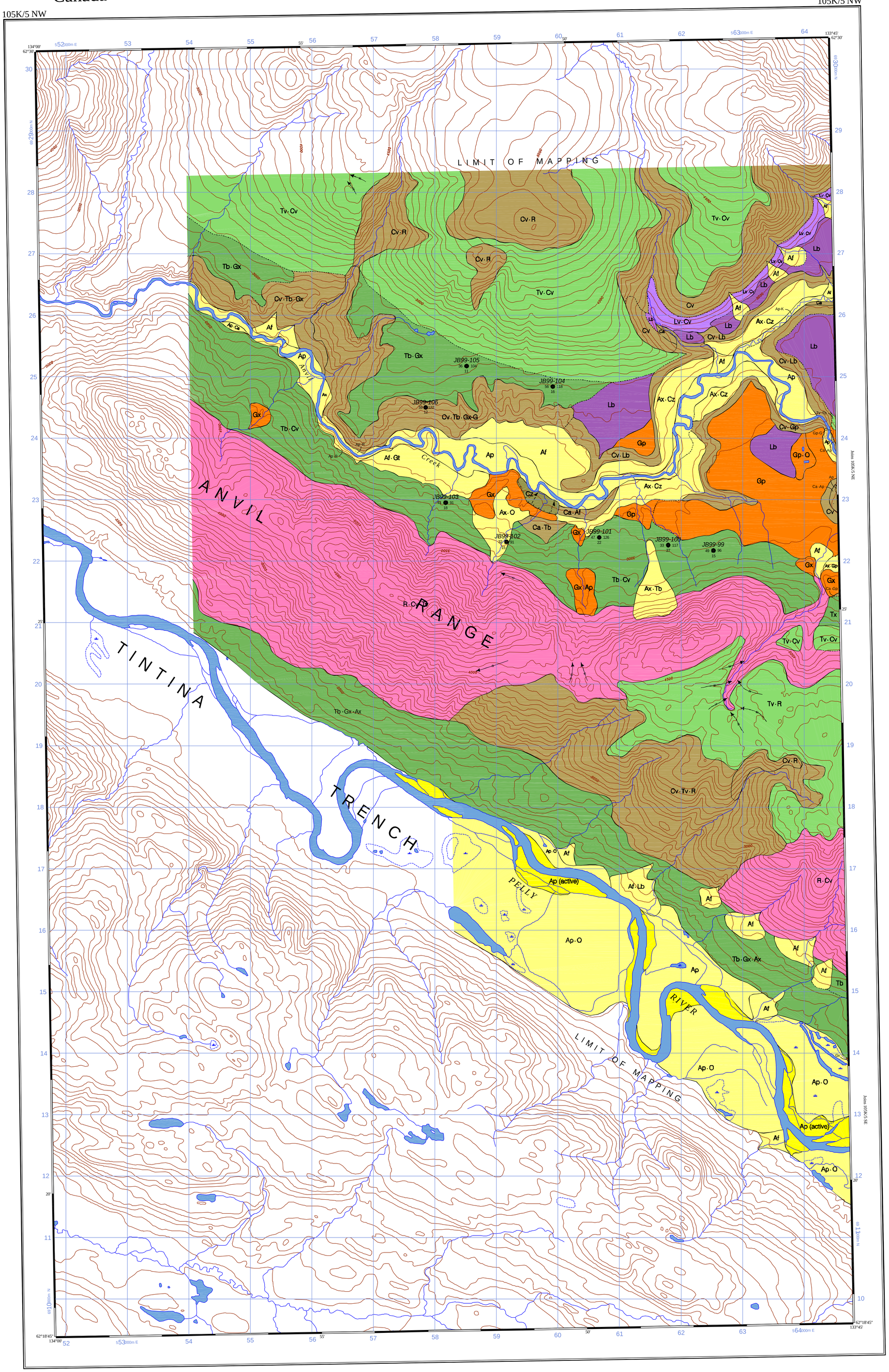
Canada

YUKON GEOLOGY PROGRAM

Yukon Government

105K/5 NW



LEGEND

QUATERNARY

HOLOCENE

ORGANIC DEPOSITS : peat and woody material; occurring as a flat to gently sloping plain; overlie lacustrine, till, or poorly drained glaciofluvial and alluvial deposits but rarely form a dominant geologic unit. Permafrost is commonly present within 1 m of the surface. Localized palsa development occurs in more poorly drained organic deposits.

O — *O - organics* ; consisting of woody sedge peat, variable thickness. White River ash accumulations are commonly associated with poorly drained peaty areas.

ALLUVIAL DEPOSITS: sand, silt and pebbles with minor cobbles deposited in modern drainages. Common in all drainages in the map area and may intermix with alluvial fan sediments in areas of higher relief.

Ap, Af, Ax — *Ap - alluvial plain* ; silt, sand and pebbles with reworked cobbles and boulders occurring as bars or overbank floodplain deposits, 0 - 10 m thick; floodplain subject to periodic floods. Small valley alluvial plains may not be mapped at this scale.
Af - alluvial fan ; coarse sand, pebbles, cobbles and mudflow deposits, up to or >10 m thick. Appear as vegetated, commonly peat covered, landforms developed during post-glacial sedimentation.
Ax - complexes of Ap and Af undivided. Common when a stream is unconfined and also in narrow valleys where side-entry alluvial fans cannot be differentiated from an alluvial plain.

Ap (active) — *Ap (active) - alluvial plain* ; areas of Pelly River floodplain that have been recently active.

PLEISTOCENE AND HOLOCENE (UNDIVIDED)

COLLUVIAL DEPOSITS: diamicton, gravel, shattered bedrock, and lenses of sand and silt derived from bedrock and surficial sediments by physical and chemical weathering processes. Transport of dislodged debris occurs as surface creep or by mass wasting processes. Permafrost and seasonal freeze-thaw processes often initiate and enhance colluviation. Common on slopes and plateau summits.

Cv, Ca — *Cv - colluvium veneer* ; conforms to bedrock topography, <1 m thick.
Ca - colluvium apron ; coalescing colluvial fans at the base of a slope, >1 m thick.

Cz — *Cz - mass wasting* ; includes slumping, debris slides and rockfalls. Rotational slumping occurs in terraces along Anvil Creek.

LATE PLEISTOCENE (WISCONSINAN) - McCONNELL GLACIATION

GLACIOLACUSTRINE DEPOSITS: well-stratified sand, silt and minor clay deposited in lakes impounded by glacial ice; may have a smooth or kettled surface pattern due to melting of buried glacial ice. Sediments form poorly drained areas with peaty blankets. Thermokarsting is common. Glaciolacustrine deposits are found in an unnamed tributary to Anvil Creek, in the northeast corner of the map.

Lv — *Lv - glaciolacustrine veneer* ; <5 m thick.

Lb — *Lb - glaciolacustrine blanket* ; 1 - 40 m thick.

GLACIOFLUVIAL DEPOSITS: stratified to massive; poorly to well sorted; gravel and sand with minor silt and cobbles; deposited by meltwater originating from glacial ice. Common in Rose and Anvil Creek valleys.

Gp, Gx — *Gp - glaciofluvial plain* ; 3-10 m thick.
Gx - glaciofluvial complex ; composed of deposits of outwash, glaciolacustrine and minor till deposited in an ice contact environment. Hummocky topography is associated with this depositional setting, 1 - 40 m thick.

GLACIAL DEPOSITS (till): unsorted clay, silt, sand, pebbles and cobbles with minor boulders; deposited by or from glacial ice and occurs as subdued veneer and blanket deposits. Till is common as a veneer over much of the map area and grades into blanket deposits on more gentle slopes and valley bottoms.

Tv — *Tv - till veneer* ; conforms to underlying topography, <1 m thick.
Tb - till blanket ; gently to moderately sloping plain controlled by bedrock or underlying surficial deposits, >1 m thick.

Tb, Tx — *Tx - till complex* ; till blanket or veneer composed of meltout till and minor ice contact glaciofluvial deposits.

LOWER CAMBRIAN TO CRETACEOUS

BEDROCK: The map area is underlain by rocks of North American affinity and the Anvil plutonic suite. North American rocks underlie Anvil Creek valley and consist of the Lower Cambrian Mt. Mye formation, the Cambrian to Lower Ordovician Vangorda formation, and the Lower Ordovician to Silurian Menzie Creek formation. Late- and post-metamorphic Cretaceous intrusions of the Anvil plutonic suite cut the metamorphic stratigraphy in the northeast corner of the map area (Jennings and Jilson, 1986).

R — *R - bedrock* ; common on plateau summits and ridges north and south of Anvil Creek.

COMBINED MAP UNITS

The surficial geology unit(s) are shown first followed by the terrain modifiers. Combined surficial geology untis are used where, for reasons of scale, two or more deposits cannot be delineated individually. The dominant unit (>50 % of polygon coverage) is shown first and the subordinate units (<50 % of polygon coverage) are shown second and third. A dot separates the surficial units and a dash separates the terrain modifier from the surficial geology.

TERRAIN MODIFIERS

SUB-ARCTIC, ALPINE AND PERIGLACIAL PROCESSES

Pf - permafrost within 1 m of surface
K - thermokarst
S - solifluction

EROSIONAL PROCESSES

G - gullying ; areas of rapid erosion

SYMBOLS

Geological boundary (defined, assumed).....

Glacial meltwater channel.....

Mass movement failure - slow to moderate (i.e., creeps or slumps).....

Till geochemistry sample (ppm).....

Sample Number
Cu Zn
Pb

REFERENCES

JENNINGS, D.S. and JILSON, G.A., 1986. Geology and sulphide deposits of Anvil Range, Yukon. In: Mineral Deposits of Northern Cordillera, Proceedings of the Mineral Deposits of Northern Cordillera Symposium, J.A. Morin (ed.), Canadian Institute of Mining and Metallurgy, Special Volume 37, p. 319-361.

RECOMMENDED CITATION

BOND, J.D., 1999. Surficial geology map and till geochemistry of Rose Mountain (105K/5 NW), central Yukon (1:25,000 scale). Exploration and Geological Services Division, Yukon, Indian and Northern Affairs Canada, Open File 1999-18.

Digital cartography and drafting by P.S. Lipovsky, Yukon Geology Program.

Any revisions or additional geological information known to the user would be welcomed by the Yukon Geology Program.

Copies of this map may be purchased from Geoscience Information and Sales, c/o the Whitehorse Mining Recorder, Indian and Northern Affairs Canada, Room 102-300 Main St., Whitehorse, Yukon, Y1A 2B5, Ph 867-667-3266, Fax 867-667-3267.

Keep this map stored in a dark area to prevent map colours from fading.

This map was released January 2000.

Use diagram only to obtain numerical values
APPROXIMATE MEAN DECLINATION 1972

Topographic base produced by SURVEYS AND MAPPING BRANCH, DEPARTMENT OF ENERGY, MINES AND RESOURCES.

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ONE THOUSAND METRE
Universal Transverse Mercator Grid
ZONE 8

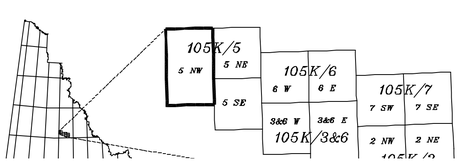
SURFICIAL GEOLOGY MAP AND TILL GEOCHEMISTRY OF ROSE MOUNTAIN

(105K/5 NW), CENTRAL YUKON

SCALE 1:25 000

CONTOUR INTERVAL 100 FEET
Elevations in feet above mean sea level
North American Datum 1983
Transverse Mercator Projection

1000 0 1000 2000 3000 4000 Metres



Indian and Northern Affairs Canada
Exploration and Geological Services Division
Yukon Region

Open File 1999-18

SURFICIAL GEOLOGY MAP AND TILL GEOCHEMISTRY OF ROSE MOUNTAIN (105K/5 NW), CENTRAL YUKON

by

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