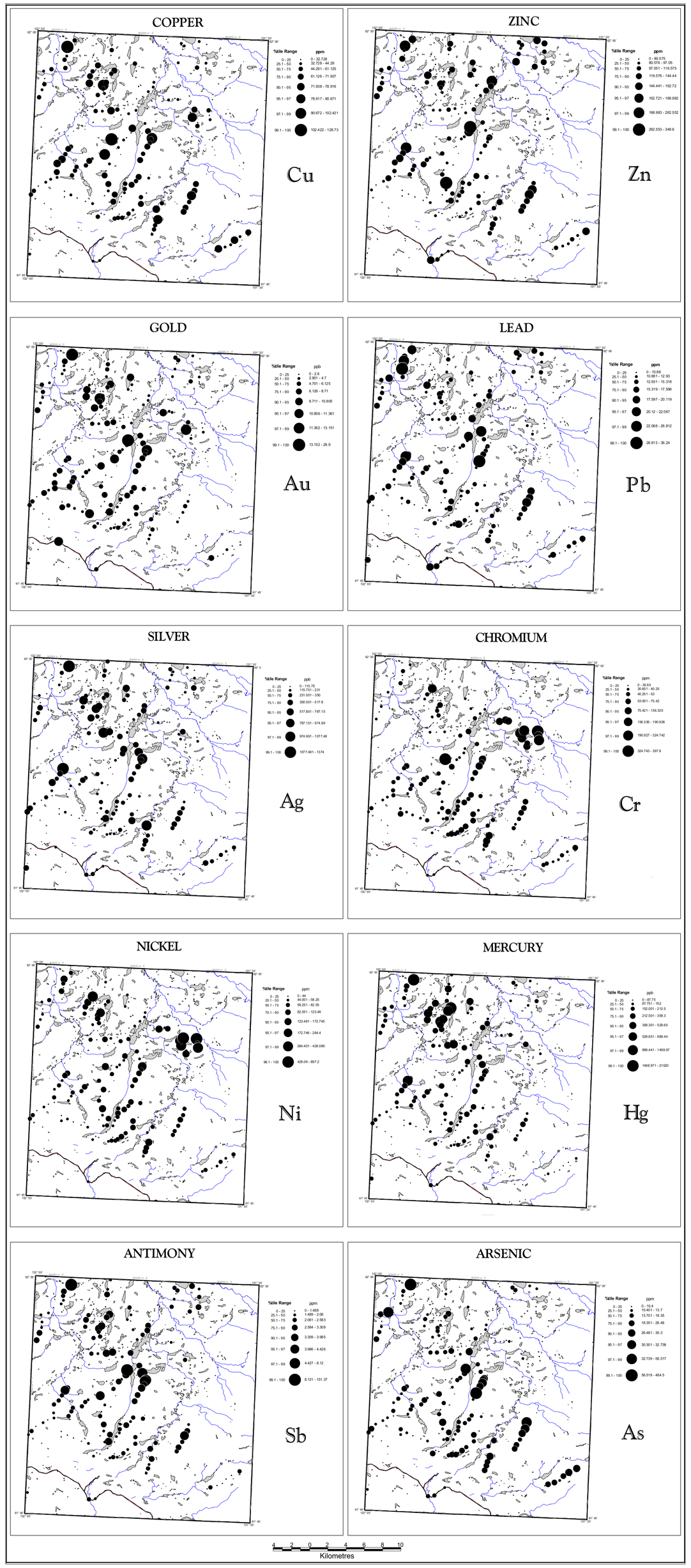
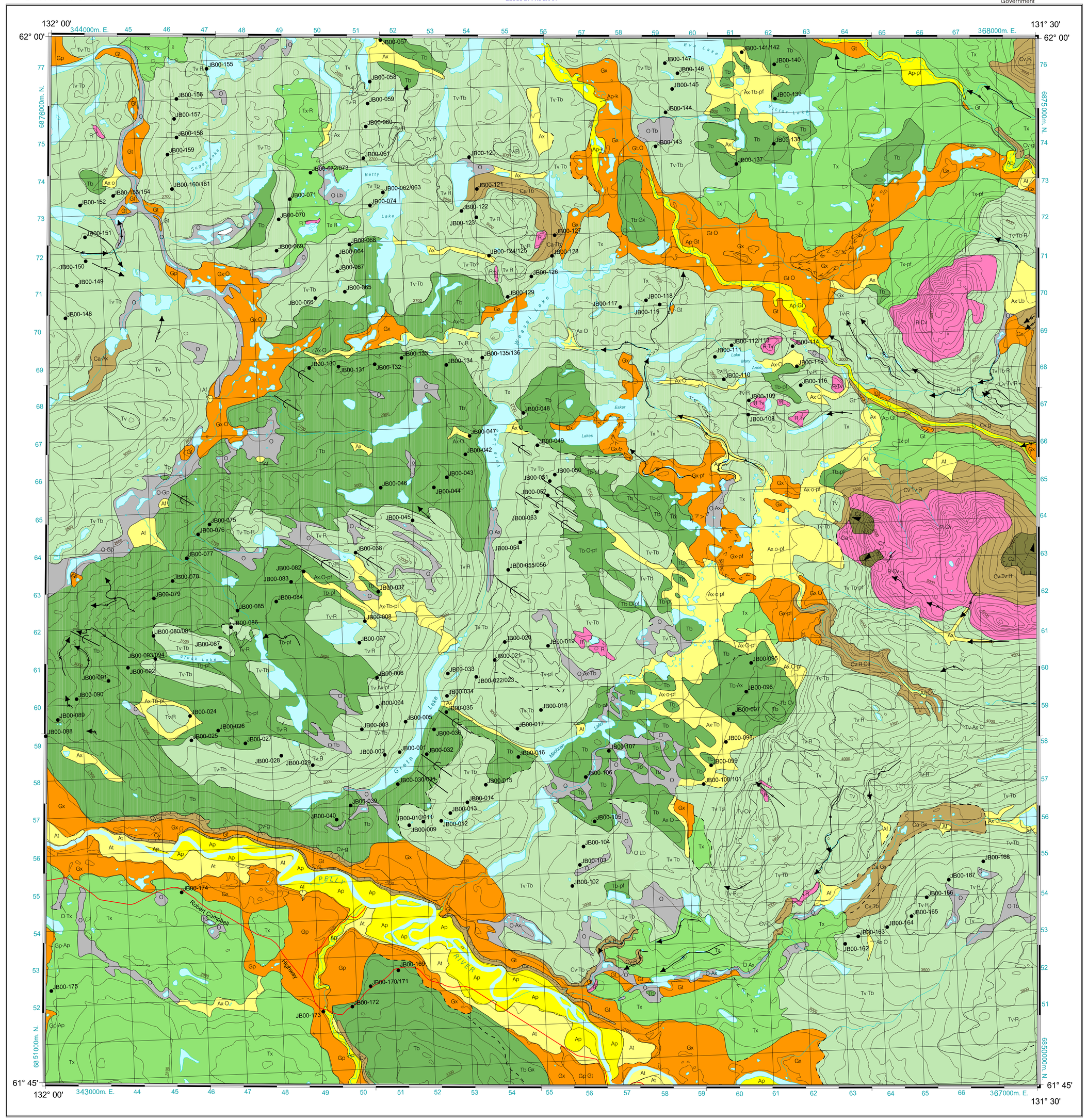
Canada

YUKON GEOLOGY PROGRAM

Yukon Government





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. Organic deposits comprise a widespread geologic unit in the southeast part of the map. More restricted organic deposits occur in locally confined depressions where the topography is more variable. Organic veneers (< 1 m thick) are common under old-growth forests that are found on flat upland surfaces. Permafrost is commonly present within 1 m of the surface.

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

ALLUVIAL DEPOSITS: Silt, sand, and gravel with minor cobbles deposited in modern drainages; common along the Pelly River. Drainage basins are small across most of the map area due to the low topography. As a result, water volumes and flow rates are low, which contribute to a low bed-load carried by the streams. Most streams entrain silt, sand and organics.

Ap — ***Ap - alluvial plain;*** silt, sand and gravel with minor reworked cobbles and boulders occurring as bars, overbank floodplain or low terrace deposits, 0 - 10 m thick; floodplain subject to periodic floods. Small valley alluvial plains may not be mapped at this scale.

At, Af, Ax — ***At - alluvial terrace;*** silt, sand and pebbles with reworked cobbles occuring as low terrace deposits, 0-10 m thick.
Af - alluvial fan; coarse sand, gravel, cobbles, and mudflow deposits, up to or >10 m thick; appear as vegetated, often peat covered, landforms developed during post-glacial sedimentation.

Ax - complexes; of Ap and Af undivided. Common when a stream is unconfined and has numerous small channels in a peaty landscape. Permafrost is often associated with these geologic units. Also used to define alluvial environments in narrow valleys where side-entry alluvial fans cannot be differentiated from an alluvial plain.

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 hill-slopes along the eastern border of the map.

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

Cz — ***Cz - mass wasting;*** includes slumping, debris slides, and rockfalls. Rock slides are mapped off the highest summit in the east-central part of the map.

LATE PLEISTOCENE (WISCONSINAN) - McCONNELL GLACIATION

GLACIOLACUSTRINE AND LACUSTRINE DEPOSITS: well stratified sand, silt and minor clay deposited in lakes. 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 and lacustrine deposits are uncommon in this map area.

Lb — ***Lb - glaciolacustrine blanket;*** 1-30 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 the Pelly River valley and locally in larger stream channels that acted as conduits for meltwater emitted off stagnating ice. Ice stagnation landforms are most common near Esker Lakes and northeast of Weasel Lake.

Gp, Gt, Gx — ***Gp - glaciofluvial plain;*** 3-10 m thick.
Gt - glaciofluvial terrace; < 10 m thick.
Gx - glaciofluvial complex; 1 - 40 m thick, is composed of deposits of outwash , glaciolacustrine and minor till deposited in an ice contact setting. Kettled terrain in an outwash environment is typical of this unit.

GLACIAL DEPOSITS (till): unsorted clay, silt, sand, gravel, and cobbles, with minor boulders; deposited by or from glacial ice and occurs as subdued veneer and blanket deposits. Till is widespread across the map area. Basal tills are often associated with flutes and crags and tail landforms, whereas melt-out till is associated with the stagnation terrain, predominantly located in the northeast part of the map.

Tv — ***Tv - till veneer;*** conforms to underlying topography, <1 m thick.

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

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

UPPER PALEOZOIC TO LOWER TERTIARY

BEDROCK: The map area is underlain by rocks of Yukon-Tanana Terrane and North American affinity, separated by the Finlayson Lake fault zone (Gordey & Makepeace, 1999). The southern two-thirds of the map area is composed of rocks of Yukon-Tanana Terrane, which consist of Devonian to Mississippian quartzite and micaceous schist in contact with Carboniferous to Permian basalt, diorite, gabbro, greenstone, argillite and minor serpentinite. North American rocks, north of the Finlayson Lake fault zone, are poorly exposed. The most prevalent outcrops consist of lower Tertiary mafic basalt flows, necks and dykes. Graphitic bedrock and a conglomerate were noted in the northwest corner of the map area, west of the Tertiary volcanic rocks.

R — ***R - bedrock;*** small scattered outcrops of resistant rock throughout the map area. More pervasive outcrops can be found on the highlands along the eastern boundary of the map area.

COMBINED MAP UNITS

The surficial geology unit(s) are shown first followed by the terrain modifiers. Combined surficial geology units 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.

NOTE: All water bodies with the exception of "Weasel Lake" and the "Pelly River" have been named by the author for reference purposes only.

SYMBOLS

Geological boundary (defined; assumed)

Glacial meltwater channel

Esker

Aligned landform

Till geochemistry sample — JB00-100

Escarpment

TERRAIN MODIFIERS

Mass Movement

- slow to moderate failure (ie. creep or slump)

- moderate to extreme failure (ie. slides and avalanches)

Sub-arctic, Alpine and Periglacial Processes

pf - permafrost within 1 m of surface
k - thermokarst

Erosional Processes

g - gullying; areas of rapid surface erosion

REFERENCES

Gordey, S.P. and Makepeace, A.J., 1999. Yukon Digital Geology. S.P. Gordey and A.J. Makepeace (comp.), Geological Survey of Canada, Open File D3826, and Exploration and Geological Services Division, Yukon, Indian and Northern Affairs Canada, Open File 1999-1(D).

RECOMMENDED CITATION

BOND, J.D., 2000. Surficial geology and till geochemistry of Weasel Lake (105G/13), central Yukon (1:50,000 scale). Exploration and Geological Services Division, Yukon, Indian and Northern Affairs Canada, Open File 2000-9.

Digital cartography and drafting by G. Stronghill and L. H. Weston, 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.

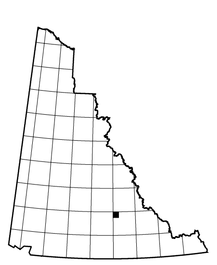
This map was released Nov. 2000.

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

Open File 2000-9

Surficial geology and till geochemistry of Weasel Lake (105G/13), Central Yukon.

J.D. Bond
Yukon Geology Program
Geoscience Office



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

ONE THOUSAND METRE
Universal Transverse Mercator Grid

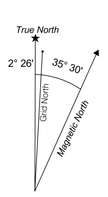
ZONE 9

SURFICIAL GEOLOGY AND TILL GEOCHEMISTRY OF WEASEL LAKE (105 G/13) CENTRAL YUKON

SCALE 1:50 000

Kilometres 1 0 1 2 3 4 5 Kilometres

CONTOUR INTERVAL 100 FEET
Elevations in Feet above Mean Sea Level
North American Datum 1983
Transverse Mercator Projection



Use diagram only to obtain numerical values
APPROXIMATE MEAN DECLINATION 1971
FOR CENTRE OF 105G/13 MAP
Annual change decreasing 4.8'

105K/1	105J/4	105J/3
105F/16	105G/13	105G/14
105F/9	105G/12	105G/11