

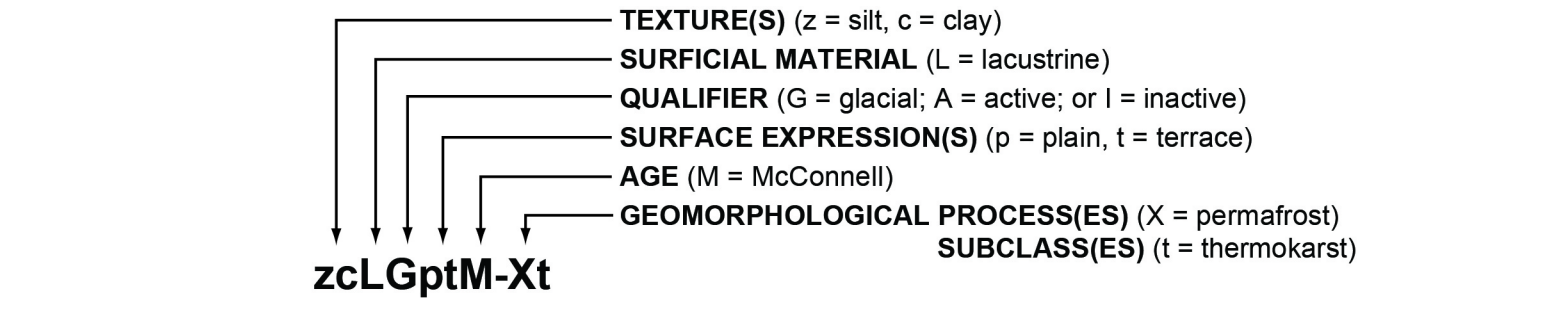
Note: This map accompanies the YGS Open File 2023-1 report, which should be referred to for a complete description of the mapping methodology and definitions of polygon labels.

This map serves as a general guide to surficial materials only, as it is primarily based on remote interpretation with limited field verification, and significant variation may occur within a polygon. Geotechnical field investigations such as test pitting and/or drilling would be required to fully characterize surficial materials prior to site specific activities.

Surficial material polygon map units were classified using the Terrain Classification System for British Columbia (Howes and Ken, 1997) with minor modifications developed for Yukon Geological Survey's mapping standards to include a wider variety of permafrost features and age classifications.

A sample polygon map label or terrain unit is shown below. Surficial material forms the core of the polygon map labels and is represented by the first single upper case letter in each terrain unit. Up to 3 textural codes are written in lower case to the left of each surficial material (listed in order of decreasing dominance), and up to 3 surface expression codes are written in lower case to the right. An upper case activity qualifier (A = active; I = inactive) may be shown immediately following the surficial material. Alternatively, the glacial qualifier "G" may be written immediately following the surficial material to indicate materials that were deposited in close proximity to glaciers. Age is indicated by an upper case letter that follows the surface expression but precedes any geomorphological process modifiers. Up to 3 geomorphological processes (upper case letters) and subclasses (lower case letters) always follow a dash ("-") symbol. Detailed definitions for the polygon map label codes are provided in subsequent sections.

Up to 4 terrain units may be combined in a complex polygon map label if they could not be differentiated at the scale of mapping. Each terrain unit is separated by a delimiter that either indicates relative proportions between the components ("*", ":", ":", "/") or stratigraphic relationships ("^").



TEXTURE	SURFICIAL MATERIAL	SURFACE EXPRESSION
Specific clastic textures	Anthropogenic	a apron
b boulders (>256 mm, angular)	Colluvium	b lobate (>2m thick)
c cobbles (64-256 mm, rounded)	Eolian	d depression(s)
p pebbles (2-64 mm, rounded)	Fluvial	f fan(s)
s sand (<0.075 mm)	FA Active Floodplain	h hummock(s)
w silt (<0.002 - 0.002 mm)	FG Glaciofluvial	i delta
c clay (<0.002 mm)	L Lacustrine	m rolling
Grouped clastic textures	GL Glacio-lacustrine	p plain
x angular fragments (>2 mm, mix of s, c, p)	M Marine (gl)	r ridge(s)
g gravel (>2 mm, rounded, mix of s, c, p)	MO Organic	t terrace(s)
r rubble (2-256 mm, angular particles)	O Bedrock	u undulating
m mud (mix of silt and clay)		w wear (<1 m thick)
z mixed fragments (>2 mm, rounded and angular)		wf wedge of variable thickness
u silt (evaporite crystals)		

MASS MOVEMENT PROCESS SUBCLASSES (follows -, L or R)

- = initiation zone
- c soil creep
- e rock creep
- k tension cracks
- j lateral spread in bedrock
- p lateral spread in surficial material
- r rockfall
- d debris flow
- f debris fan
- t debris torrent
- slow or rapid mass movement (follows -, L or R)
 - m slump-in bedrock
 - u slump-in surficial material
 - x slump-earthflow
 - s debris slide
 - p rockslide
 - S soilfuction
 - X permafrost
 - O Organic
 - t thermokarst
 - channeled by glacial meltwater
 - H kettle
 - T ice-contact

GEOMORPHOLOGICAL PROCESS

Erosional processes

- V gully erosion
- fluvial and hydrological processes
 - M meandering floodplain
 - U inundation
 - slow landslide
 - R rapid landslide
 - L undifferentiated landslide

Periglacial processes

- W inversion
- S soilfuction
- X permafrost
- O Organic
- t thermokarst
- channeled by glacial meltwater
- H kettle
- T ice-contact

COMPOSITE SYMBOL DELIMITERS

- terrain unit(s) on either side of the symbol are of approximately equal proportion.
- terrain unit(s) before symbol is more extensive than the following one(s).
- (Also denotes partial/discontinuous cover if located at front of label.)
- terrain unit(s) before symbol is much more extensive than the following one(s).
- terrain unit(s) before the symbol stratigraphically overlies the following one(s).

SYMBOLS

GEOLOGICAL BOUNDARIES:

- defined
- approximate
- assumed
- limit of mapping

GEOLOGICAL FEATURES:

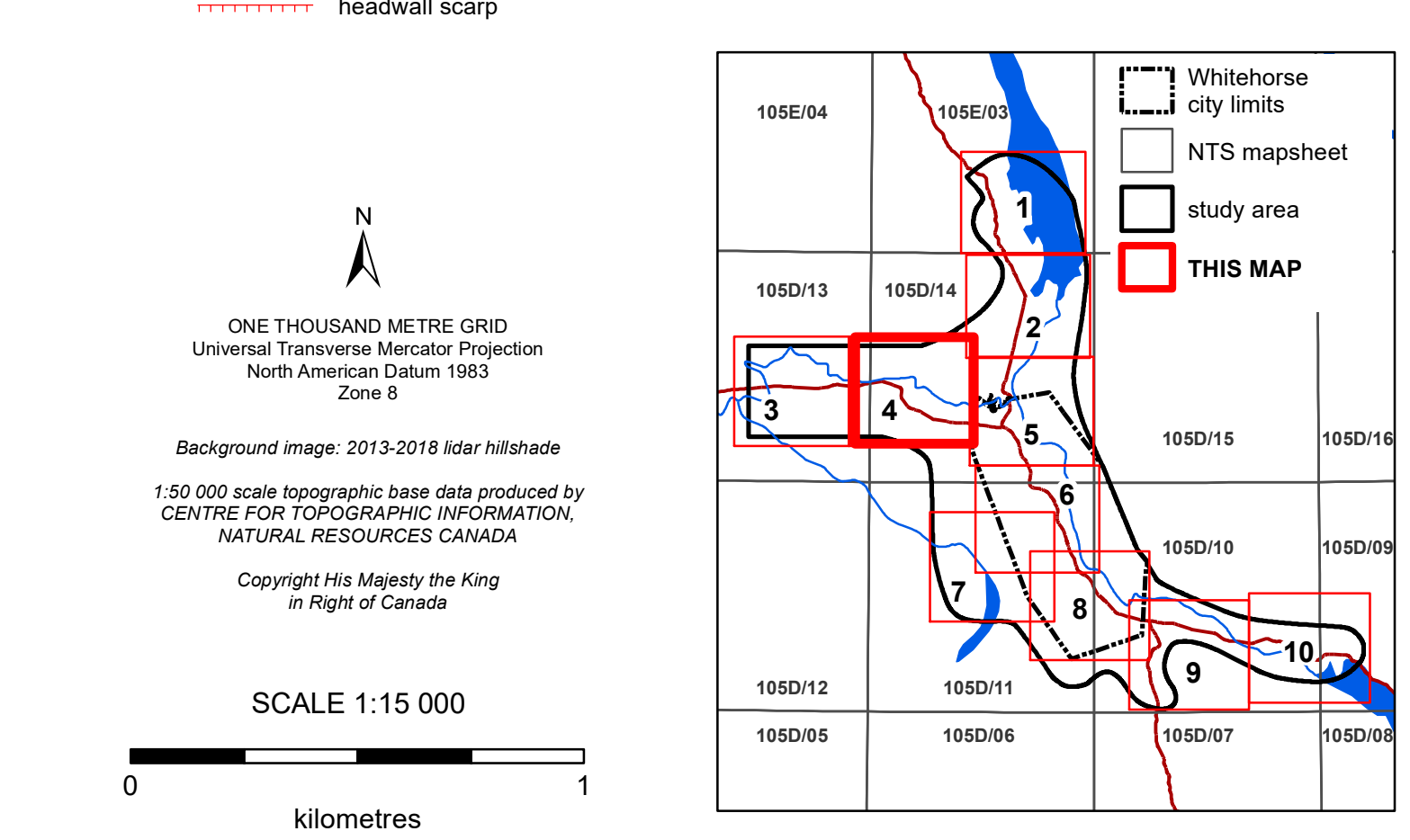
- berm or dyke
- cross section profile, ERT transect
- cross section profile, unclassified
- escarpment, unclassified
- gravel pit
- gully
- esker, direction known
- lineament
- melwater channel, minor, direction known
- melwater channel, minor, direction unknown
- melwater channel, major
- medwater channel, major, flow direction
- moraine ridge
- sand dunes
- shoreline (Holocene)
- glacial lake shoreline
- streamlined landform
- water track

LANDSLIDES:

- old
- recent
- direction of movement
- headwall scarp

Other symbols:

- ground observation site
- stratigraphic section
- gravel pit, active or recently active
- gravel pit, historical
- open pit mine
- drill hole
- water well (from Yukon water well registry; overburden depth in m)
- spring
- home
- kettle
- permafrost mound
- thermokarst depression
- sand dune, cliff-top
- landslide, active layer detachment
- landslide, debris flow
- landslide, retrogressive flow slump
- landslide, unclassified



REFERENCES

Howes, D.E. and Ken, E., 1997. Terrain classification system for British Columbia. Version 2. B.C. Ministry of Environment and BC Ministry of Crown Lands, Victoria, BC.

RECOMMENDED CITATION

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Any revisions or additional geological information known to the user would be welcomed by the Yukon Geological Survey. Paper copies of this map may be obtained from Yukon Geological Survey, Energy, Mines and Resources, Government of Yukon, Room 102 - 300 Main St., Whitehorse, Yukon, Y1A 2B5. E-mail: geology@yukon.ca.

A digital PDF file of this map may be downloaded free of charge from the Yukon Geological Survey website: <https://yukon.ca/en/science-and-natural-resources/geology>.

Yukon Geological Survey
Energy, Mines and Resources
Government of Yukon

Open File 2023-1
Sheet 4

Surficial geology of the greater Whitehorse area