

TERRAIN CLASSIFICATION AND SENSITIVITY SERIES  
LEGEND

To accompany map sheets NTS 95N (Dahadinni River), NTS 95O (Wrigley), NTS 95K (Root River), NTS 95J (Camsell Bend), NTS 95I (Bulmer Lake), NTS 95G (Sibbeston Lake), NTS 95H (Fort Simpson), NTS 95B (Fort Liard), NTS 95A (Trout Lake), NTS 85E (Mills Lake), and NTS 85D (Kakisa River).

Table with 8 columns: Map Unit, Name, General Description, Local Description, Permafrost, Ground Ice Conditions, Drainage (thaw season), Hazards, Sources of Construction Material. Rows include Organic Terrain, Silt-clay plains, Thermokast Lake Beds, Beaches, River Deposits-Fine, River Deposits-Coarse, Gravel-Sand Hills, Silt-clay Hills, Till Plains, Moscovy Till, Upland and Piedmont Complex, Upland and Piedmont Complex, Eroded and/or Eroding River Banks, Eroded and/or Eroding River Banks, Upland and Piedmont Complex, Eroded and/or Eroding River Banks.

TERRAIN SENSITIVITY AND PERFORMANCE RATING TABLE

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Large performance rating table with columns for Zone, Map Unit, Slopes, and Performance Rating (1-5) for various terrain types. Includes a key for performance rating 3.

\* Performance rating 3 applies for areas of shales in all climatic zones.

KEY TO PERFORMANCE RATING TABLE - EXPLANATORY NOTES

Sensitivity - Performance Scale table with columns: Rating Number, General, Degradation (D), Performance (P), Flooding Hazard.

Permafrost Occurrence: (0)

- a extensive permafrost; abundant ground ice
b localized permafrost, moderate content of ground ice chiefly on north facing or shaded areas, higher elevations poorly drained areas, or areas with thick organic cover.
c minor permafrost with moderate to low ground ice, chiefly in areas of organic cover.
d permafrost and ground ice in fine-grained materials.
e ground ice not seen but permafrost conditions (<32°F) may occur.

Degradation of Permafrost Areas (D)

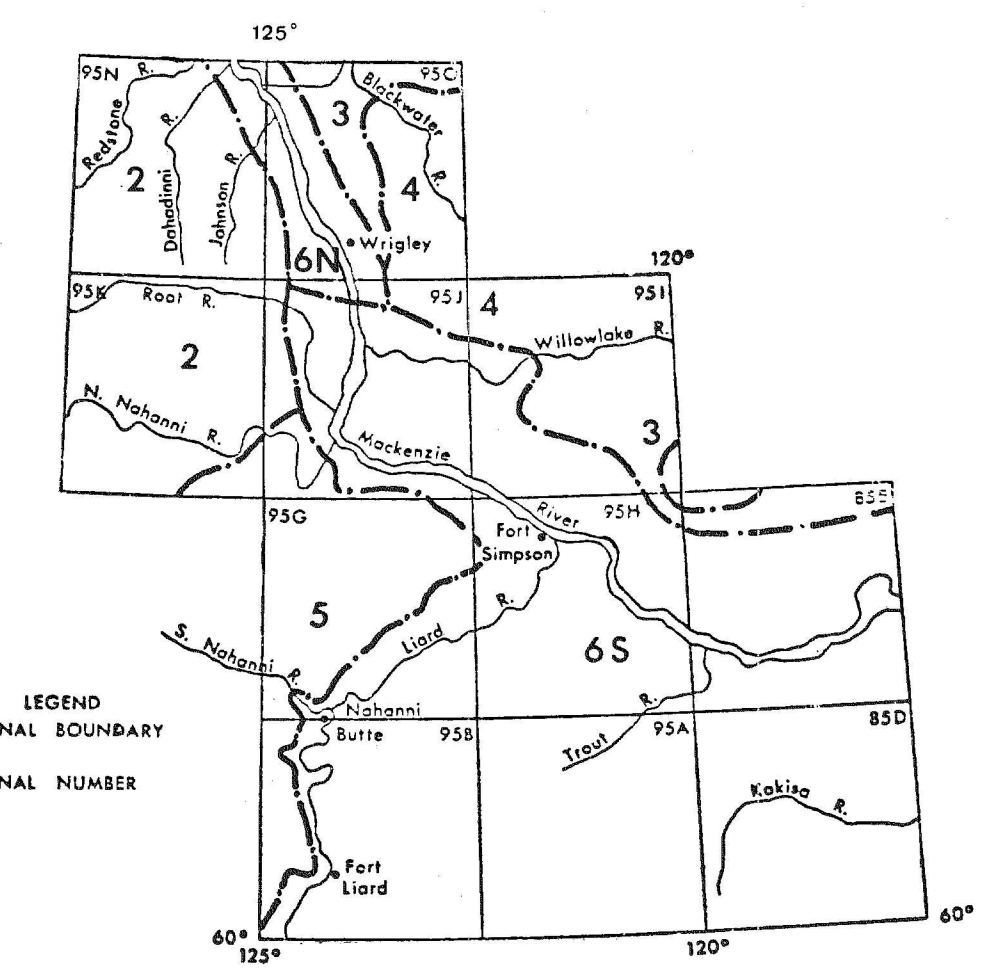
Rating applies to thermokast subsidence on flat or gently sloping sites and to gully or slope failures on sloping sites resulting from man-induced disturbance of frozen ground such as stripping of the surface down to mineral soil, long term ponding of water on surface, or re-routing of flowing water for substantial periods. Degradation of somewhat lesser intensity and/or frequency results from compaction or mechanical disturbance of the surface vegetation mat or peat. Earthflows may develop in sloping sites following fire on units rated as 2 or 3.

Performance of Newly Thawed Material (P)

The rating is for performance of thawed materials under worst conditions (i.e. immediately after melting of constituent ice) when subjected to load in place, when exposed as a cut slope. Rating also applies to "normal" active layer materials under the same conditions.

Performance of normal unfrozen material

The rating is for performance of materials under typical field moisture conditions when subjected to load in place, when used as fill, or when exposed on a cut slope.



Climatically Significant Zones (after Tarnocai, 1973)

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Produced for Indian and Northern Affairs  
by Department of Energy, Mines and Resources as part of the Environmental-Social Program, Task Force on Northern Oil Development

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1 Segregated ice: ice as distinct lenses, layers, veins, and masses in soils, commonly, but not always, oriented normal to direction of heat loss.
2 Thermokast: Heat from water in thin films, veins and ponds results in melting of ground ice in areas of saturated peat and underlying mineral soils. The thin basins may enlarge to the point of coalescing. They are usually steep-sided and flat-bottomed and are best developed in peat-covered, stratified, water-laid silt and fine sand.
3 Clay, silt, and fine sand are commonly poor borrow materials under permafrost conditions because of their instability under the high moisture conditions that result from thawing of contained ground ice. Some improvement in properties for use as fill could be achieved by artificial drying.
4 See bedrock map insert and legend on individual map sheets.
5 Excess ice: Ice in excess of the quantity that would be retained as water in the soil voids upon thawing.
6 Little data available.

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