

LEGEND
Coloured legend blocks indicate map units that appear on this map

QUATERNARY HOLOCENE

NONGLACIAL ENVIRONMENT

ORGANIC DEPOSITS: mainly peats and organic muds occurring in bog and fen environments; typically less than a few metres thick; formed by the accumulation of plant material in various stages of decomposition; generally occurs on flat or gently sloping terrain overlying clay-rich poorly drained till or glaciolacustrine sediments; may be colonized by ground ice or permafrost, creating hummocky or thermokarst terrain; along drainage courses, may be cut by numerous subsurface channels.

- Owb Bog Deposits:** peat mostly typically a few to several metres thick; often dominated by sphagnum mosses or forest peat; occurs in poorly drained terrain; peat masses commonly extend above the water table and when thick insulate underlying permafrost; includes hummocky and thermokarst terrain; may be treeless or partially treed, usually with black spruce; commonly embryonic with water and nutrients mainly from precipitation and acidic (low pH) nutrient-poor soils.
- Owf Fen Deposits:** mainly organic muds less than a few metres thick occurring in marshy wetland areas; fen deposits occur in minerotrophic environments fed by mineral-rich groundwater or streams; the water table is commonly at or near the surface; soils are less acidic than bogs and have relatively high levels of dissolved minerals; vegetation cover is mainly sedges, and rushes, with stands like willow and alder.
- O Undifferentiated Organic Deposits:** along drainage courses, may be cut by numerous subsurface channels.

ALLUVIAL SEDIMENTS: river, stream and alluvial fan deposits up to tens of metres thick; include well sorted sand and gravel, floodplain silts and organic detritus; commonly stratified.

- Ap Alluvial Floodplain Sediments:** mainly overbank silts, clays and organic detritus overlying sands and gravels; occurs at or near modern river levels; sands and gravels occur at surface along active and recently active channels; point bars, scroll bars and chute cut-off channels commonly occur; silt muds commonly at surface; floodplains are unvegetated in recently active areas and with shrub or partial tree cover elsewhere.
- At Alluvial Terraced Sediments:** overbank muds and organics overlying fluvial sands and gravels up to tens of metres thick; occurs on river terraces that rise above frequently inundated modern floodplain levels; along large rivers such as the Fort Nelson River, overbank sediments are up to several metres thick; terraces usually forested or cleared.
- Af Alluvial Fan Sediments:** moderately well to poorly sorted silt, sand, gravel and detritus; usually at least several metres thick forming fans along stream channels at the break of slope in valley bottoms.
- Ab Alluvial Blanket Sediments:** organics and muddy sediments infilling cxbow lakes and abandoned channels on river floodplains and terraces; typically a few to several metres thick.
- A Undifferentiated Alluvial Sediments:** river, stream and alluvial fan deposits, variable thickness, silt to gravel.

COLLUVIAL DEPOSITS: landslide deposits and other mass wasting debris varying from less than a metre to tens of metres thick; unsorted; massive to crudely stratified detritum deposited by gravity-induced movement; composition dependent on source material; occurs mainly along steep river valley walls.

- Cz Landslide Deposits:** landslide debris, mainly from rotational slumps; mainly detritum with coherent blocks of failed source materials (commonly includes glaciolacustrine sediments); slides may be partially stabilized or actively failing; often more than 10 metres thick; characterized by hummocky topography, concave head scarps, secondary slumps and scarp, back-filled slide blocks and sag ponds; occur mainly along steep river slopes, commonly on the outside bend of large meanders.
- Cl Colluvial Blanket:** slope deposits generally up to 10 m thick; mainly detritum including debris flow deposits and landslide debris; slopes moderately steep; slope movements slow or largely inactive.
- Cv Colluvial Veneer:** thin (typically < 2 m), discontinuous cover of slope debris; mainly detritum; occurs on steep river-side slopes; usually overlies shale bedrock or till; may occur as talus below rock or sediment cliffs.
- G Undifferentiated Colluvial Deposits:** landslide deposits and other mass wasting debris, variable thickness.

EOLIAN SEDIMENTS: sand deposited by the wind; very well sorted; may occur as distinct dunes or relatively evenly distributed veneers; derived from sandy glaciolacustrine or glaciolacustrine sediments; mainly stabilized.

- Er Dunes:** sands occurring in narrow distinctive ridges interpreted as parabolic dunes; typically a few metres thick; ridges are v-shaped, pointing in the inferred down-wind direction with the arms tapering in the up-wind direction; dunes are generally highest at the apex; adjacent dunes often merge into dune complexes; inter-dune areas are covered by organic deposits and/or an eolian veneer.
- Ev Eolian Veneer:** discontinuous veneer of wind-blown sediments; generally less than one metre thick; occurs mainly in association with dune fields; interspersed with organic deposits.
- E Undifferentiated Eolian Sediments:** sand deposited by the wind.

GLACIOLACUSTRINE SEDIMENTS: clay, silt and sand, with minor debris-flow detritum, invariably overlain by organic deposits; typically at least several metres thick, infilling low areas and creating relatively flat topography; deposited in ice-dammed lakes during late-glacial ice retreat and stagnation; inferred to occur under very poorly drained organic soils up to about 400 m elevation adjacent to the lower Prophet and Muskeg River valleys, and up to 500 m elevation to the Prophet River at the southern edge of the map sheet; commonly associated with extensive slumping (C2) along valley sides and low circular hummocks (GLb) on the adjacent terrain.

- GLb Glaciolacustrine Blanket:** mainly massive clays with low relief circular hummocks; hummocks are typically 100-500 m in diameter and up to a few metres high; some hummocks are ring shaped with a central depression; they are abundant in the low lying plateau area north of the Muskeg River valley.
- GL Undifferentiated Glaciolacustrine Sediments:** clay, silt and sand, may contain debris-flow detritum; variable thickness; deposited in ice-dammed lakes during late-glacial ice retreat and stagnation.

GLACIOFLUVIAL SEDIMENTS: stratified sand and gravel with minor detritum; deposited by glacial meltwater; commonly discontinuous and interspersed with glacial deposits (e.g. Tb, GF); often occurs as a veneer over till or underlies thin drapes of melt-out till, eskers, kames and glaciolacustrine terraces occur locally and provide good potential sources of aggregate.

- GFt Glaciofluvial Terraces:** sand and gravel terraces situated relatively high above modern floodplains; generally a few to several metres thick; usually well sorted and stratified; generally associated with meltwater channels; high terraces are locally associated with kames.
- GFc Ice-contact Glaciofluvial Sediments:** poorly to well sorted sands and gravels with minor detritum; deposited in contact with stagnant or retreating ice; moderately well stratified with strata often deformed and faulted; commonly overlain by melt-out till.
- GFr Eskers:** sands and gravels occurring within long sinuous ridges typically 1-10 metres high; many low-gradient eskers are mainly sand with little gravel; overlying melt-out tills are discontinuous but locally up to a few metres thick.
- GFh Hummocky Glaciofluvial Sediments:** sands and gravels occurring as hills and broad ridges forming kames; deposits typically are up to several metres thick; locally much thicker where underlain by older sand and gravel deposits as in the Ellen Creek area.
- GFp Outwash Plain Sediments:** sand and gravel flood bars occurring along the Jackfish Creek meltwater channel system.
- GF Undifferentiated Glaciofluvial Sediments:** sand and gravel with minor detritum.

GLACIAL SEDIMENTS: glacially derived detritum (mixture of mud, sand and gravel) deposited by the Laurentide ice Sheet; typically clay-rich, massive, matrix-supported and up to several metres thick; includes lodgement till deposited at the base of the glacier as well melt-out till derived from within the ice.

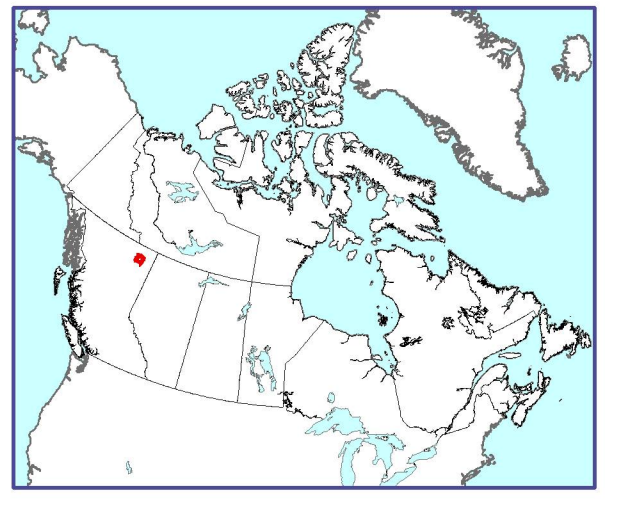
- Tb Till Blanket:** glacial sediment (mainly basal till), typically a few to several metres thick, forming flat to gently undulating topography; generally fine-grained (silt and/or clay rich) and poorly drained; cists commonly stratified; drumlins and flutes rare in the map area; commonly overlain by, and interspersed with, organic deposits.
- Tr Ridged Till Moraine:** till occurring in elongate irregular ridges; ridges are typically one to several metres high and may be either narrow or broad; oriented both parallel and perpendicular to the inferred ice flow direction and often intersect; intervening low areas commonly filled with organic deposits; ridges are inferred to be mainly cross-ice (squeeze-up ridges) and minor moraines.
- Th Hummocky Till:** glacial sediments forming hilly topography with interspersed till hummocks and organic-filled depressions; hummocks up to several metres high; melt-out tills relatively common at surface; depressions usually occupied by kettle lakes, bogs or swamps.
- T Undifferentiated Till:** glacially derived detritum, variable thickness.

PRE-QUATERNARY

- R Bedrock:** mainly gently-dipping shale and lesser sandstone; outcrops almost exclusively confined to deeply incised valley walls; interspersed with colluvial sediments (Cv, R); exposed shale cliffs occur mainly above river cutbanks; bedrock-controlled topography with a till blanket occurs in hilly areas in the western most part of the map sheet.

Geological boundary (defined, approximate)
Dunes
Minor meltwater channel or gully (direction unknown)
Major meltwater channel (defined, approximate)
Drumlinoid
Moraine
Minor moraine
Escarpment (defined, approximate)
Esker (direction unknown)
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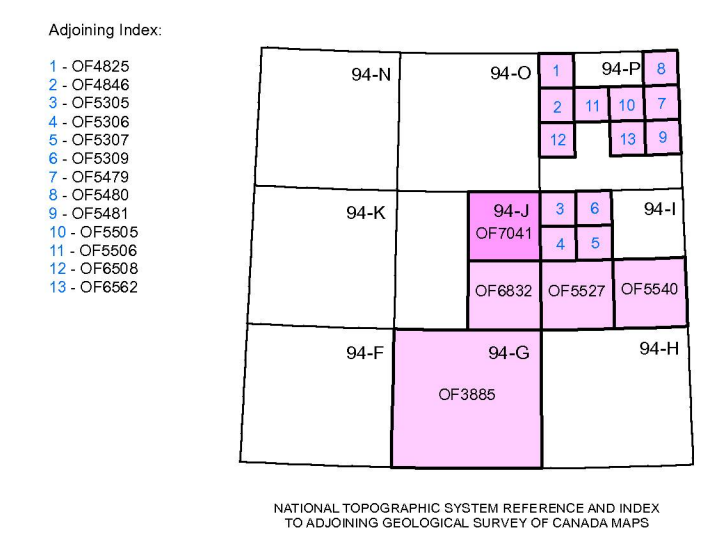
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 Any revisions or additional geological information known to the user would be welcomed by the Geological Survey of Canada

GSC OPEN FILE 7041
 BCGS GEOSCIENCE MAP 2011-06
SURFICIAL GEOLOGY
FORT NELSON
 NTS 94-J/NE
 BRITISH COLUMBIA
 Scale 1:100 000

Initiative of the Geological Survey of Canada, conducted as part of the Natural Resources Canada's Geomapping for Energy and Minerals (GEM) program
 Digital base map at the scale of 1:50 000 from Natural Resources Canada, with modifications
 Magnetic declination 2012 varies from 15° 23' West in the southeast corner to 17° 16' West in the northwest corner



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 2012

