



MINISTRE DU PATRIMOINE ET DES BÂTIMENTS
DEPARTMENT OF HERITAGE AND CULTURE

LEGEND

MAP UNIT		MATERIAL	LANDSCAPE OR LANDFORM		ASSUMED THICKNESS (feet)	ORGANIC DEPOSITS AND PERMAFROST	GENERAL COMMENTS			
Regional Genetic Units	Basic Genetic Morphologic Units		Origin or Feature	Topography						
ALLUVIAL (A)*	Ap	gravel, sand, silt	alluvial floodplain	nearly flat or gently irregular surfaces on the bottoms, sides, or mouths of river valleys; abandoned channels occur in places; local relief is commonly less than 5 feet	5 to 40	fen and some bog occur in places; local patches of permafrost occur in bogs	good to poor source of aggregate; textures are variable and commonly reflect the texture of unconsolidated deposits along the valley sides; sand and gravel are common in valleys cut in till and clay, and silt is common in valleys cut in glacial lake basins			
	At		alluvial terrace		20 to 100	organic deposits are generally absent over gravel and sand but occur on poorly drained parts of silty deposits, where bog is more than 2 feet thick, permafrost commonly occurs at a depth of 1 to 4 feet	along Hayes and lower Nelson rivers the sediments are mainly silt and silty sand estuarine deposits and a succession of small deltas that formed as sea level fell following the time of formation of the highest marine strandlines (about 400 feet a.s.l.) in this region			
	Aa		delta and estuarine valley fill							
MARINE (W)*	Wp	clay, silt	marine nearshore	nearly flat surfaces; widespread organic terrain cover has local relief of 2 to 8 feet and is greatest along the bog-fen margins; includes abandoned beach complexes, beach ridges, spits, and bars with local relief commonly less than 5 feet	4 to 20	bog and fen form an unbroken cover over the plains and between abandoned shoreline features; bog is 6 to 12 feet thick, and permafrost occurs at a depth of 1 to 4 feet; ice content is high and commonly makes up the bulk of samples above the contact with underlying inorganic sediments	these deposits are mainly a silt and clay veneer overlying extensively wave-reworked till plains; gravel and sand designated "g" and "s" are common to abandoned beaches; bouldery surfaces may occur where the veneer is thin or absent; along Nelson River varved clay separates the veneer from the underlying till; beach complexes and ridges are good sources of sand and fine gravel; these deposits are restricted to the Hudson Bay Lowlands, mostly below 400 feet a.s.l.			
	Wt	silt, sand, gravel								
	Wr									
GLACIOFLUVIAL (F)*	Fn	gravel, sand, silt	proglacial outwash	surfaces marked by knolls or pits with local relief from 10 to 50 feet; shallow channel scars are common on nonpitted terrace surfaces	10 to 50	bog, fen, and permafrost generally are absent	good source of sand and gravel; limited amounts where present as a veneer			
	Fr									
	Ft									
LACUSTRINE (L)*	Lp	clay, silt, sand	glacial lake basin and nearshore	nearly flat or gently irregular surfaces with 5 to 25 feet local relief; knolls and ridges of bedrock are common in places	4 to 10	bog and fen form a nearly continuous cover over the plains; in places broken by bedrock outcrops; in the vicinity of hilly bedrock terrain, patches of bog and fen are confined to the low areas between hills and clay-blanketed knolls; bog is generally 2 to 9 feet thick, and permafrost occurs at a depth of 1 to 4 feet; ice content is high and commonly makes up the bulk of samples above the contact with underlying inorganic sediments	varved clays and silts are the most common surficial sediments in this region; generally they are veneered over gently irregular plains of bedrock and till; thicknesses are highly variable; maximum thicknesses may occur in local bedrock hollows and be minimal to zero on the crests of knolls and ridges; within blanketed areas clay and silt commonly overlie bedrock on stoss slopes, and sand or bouldery till are present on lee slopes of bedrock hills and knolls			
	Lb		strongly irregular or hilly clay-mantled terrain within or adjacent to areas of bedrock hills							
	Lr	sand, gravel	glacial lake nearshore	ridge or series of ridges with 4 to 10 feet local relief				bog and fen may occur in areas between beach ridges; cover is generally thin and discontinuous	ridges designated "g" or "s" are good sources of sand and gravel	
ICE CONTACT (I)*	It	sand, gravel	kame moraines and kame-eskerine complexes, in part gradational into deltas	hills, knolls, and ridges that occur as complexes along linear trends continuous for tens of miles; the highest parts are 50 to 300 feet above adjacent terrain; surfaces commonly are pitted with depressions up to 100 feet deep	50 to 300	bog, fen, and permafrost generally are absent	good source of mainly sand and some gravel; bouldery surfaces indicative of gravel occur in places and gravel probably occurs at depth within parts of the sandy landforms, particularly in the vicinity of partly buried channels			
	In		kames	knolls that occur in clusters or as isolated features generally less than 50 feet above adjacent terrain	10 to 50					
	Ie		eskers	sinuous ridges generally less than 50 feet above adjacent terrain						
MORAINIC (M)*	Mp	sandy till derived mostly from Precambrian granitic bedrock and silty till derived mostly from Paleozoic carbonate bedrock	ground moraine	gently irregular or broadly rolling till plains with 5 to 25 feet local relief; bedrock commonly is exposed, particularly on knolls and ridges	0 to 100	bog and fen form a nearly continuous cover over the regional plains; in places broken by bedrock outcrops, knolls, drumlins, and drumloids; patches of bog and fen are confined to the low areas between outcrops, knolls, and drumlins; bog is generally 2 to 9 feet thick, and permafrost occurs at a depth of 1 to 4 feet; ice content is high and commonly makes up the bulk of samples above the contact with underlying inorganic sediments	sandy till generally overlies Precambrian bedrock and is fairly stony and loose at the surface, particularly on the higher parts of knolls and drumlins that have been reworked by lake water; at depth and where older tills are preserved (i.e. lee slopes of knolls), it is very hard, compact, and resistant to ripping; silty till generally overlies carbonate bedrock and is typically dense and compact but less resistant to ripping than the hard sandy fill; most ground moraine was inundated by glacial lakes of variable duration; deposition and erosion resulted in extensive veneers or patches of clay and silt or coarse lag veneers on ridges and knolls			
	Mn		hummocky moraine; strongly irregular ground moraine	broadly hummocky; commonly with 15 to 50 feet relief between knolls and depressions; areas of scattered knolls and hills with 25 to 100 feet relief	15 to 100	bog and fen occur in local flats and depressions; bog is 2 to 9 feet thick, and permafrost occurs at a depth of 1 to 4 feet; ice content is high and commonly makes up the bulk of samples above the contact with underlying sediments				
	Md		drumlins or drumloids	knolls or ridges with distinctive, streamlined aspect imparted by glacier flow; common to ground moraine	10 to 25	bog and fen are absent, although generally present over adjacent flats; local patches of permafrost may occur on wooded, north-facing slopes				
	Mt		water erosion	escarpments or valley walls with fairly steep slopes and about 50 to 100 feet local relief	50 to 100					
BEDROCK (B)*	cR	Paleozoic carbonate bedrock	not applicable	mainly flat to gently irregular plains; scarps and knolls with 10 to 30 feet relief occur in places	not applicable	bogs are generally absent; grassy fens occur in places	loose rock rubble 1 to 3 feet thick veneers much of the bedrock; in places it provides limited amounts of gravelly aggregate			
	R	Precambrian bedrock		mostly gently irregular to broadly rolling plains and/or areas of knolls and ridges with 15 to 50 feet relief; in the western part of the region hilly bedrock terrain with up to 500 feet relief is interspersed with clay-blanketed terrain of lower relief		bog and fen cover low areas between bedrock outcrops; bog is 2 to 9 feet thick, and permafrost occurs at a depth of 1 to 4 feet beyond the bog margins; ice content is high and makes up the bulk of samples above the contact with underlying inorganic sediments	extensive outcrop surfaces or numerous small exposures between bog and fen covered low areas occur on the plains; a veneer of drift underlies much of the bog and fen on the plains and may be considerably thicker in the low areas between bedrock hills and knolls; prominent bedrock hills and intervening lower relief terrain are a preglacial landscape somewhat modified by glaciation			

*Upper case letters used without morphologic descriptors in a complex unit indicate that the regional genetic unit occurs as a veneer (see complex units)

SURFICIAL GEOLOGY OF PROJECT AREA

