FIGURE 2.3 TERRAIN INVENTORY LEGEND

SYMBOL	NAME (AGE)	NATURE OF MATERIAL AND THICKNESS	DISTRIBUTION AND STRATIGRAPHY	GEOMORPHOLOGY AND DRAINAGE	PERMAFROST	OTHER ENGINEERING CHARACTERISTICS
Ap-A	Active floodplain (Modern)	Generally cobble and pebble gravel with very coarse to coarse sand; rounded to well rounded; 1 - 5 m thick.	Broad active flood plains are along the Ogilvie and Blackstone rivers; along other streams, the units are too small to map.	Flat flood plain, usually inundated once annually during spring flood. Bars and meanders are active and constantly, though slowly, shifting; unvegetated, well drained.	Aufeis occurs on many streams and rivers. Remanants may last until August. Active layer is very thick.	Flooding and high discharges are a constant hazard. Erosion on the outside of meanders; causes minor failures. Source of aggregate. In many small streams the water flows underground for most of the year.
Ap	Floodplain	Well rounded cobble to pebble gravel with very coarse to coarse sand matrix; in places is capped by up to 1 m of sand and silt and up to 50 cm of organics. In places contains organics. 3 to 10 m thick.	Borders most large streams. Bordered by active floodplains, low terraces or stream-cut scarps. May include some unmapped areas of active floodplain and low terraces in smaller valleys. Floodplains underlain by colluvium, drift or rock.	Generally less than 2 m of relief with slopes less than 2°. Few abandonned channels on the surface; in places shallow thermokarst depressions; depressions may contain up to 1 m of organics. Permeability high in gravels, low in silty areas. Well drained except in channels, depressions and parts adjacent to the valley sides where standing water may occur. Inundated by water during high floods	Active layer is thick (>2m).	Flooding probable at 3-10 year frequency. Surface generally stable. Source of aggregate. Placer mining in Klondike watershed.
Aa, fAa, gAa, fAa-A, fAa-K, bAa	Alluvial apron	Generally fine sand with pebble gravel north of the Ogilvie Mountains (fAa) and pebble to cobble gravel with silty sand matrix in the Ogilvie Mountains. The material is characteristically poorly sorted and stratified, however, in places well sorted and stratified sand may occur. The top of the aprons are commonly capped by 30 to 100 cm of organic material. The mineral material at depth may be rich in organics. The thickness of aprons is highly variable, characteristically 2 to 5 m.	Occur at the base of the valley walls in glaciated areas, and cover most of the lowest parts of valleys in the unglaciated areas. In the unglaciated areas aprons cannot generally be correlated to specific gullies but extend across the valley bottom from the break in slope of the valley wall to the stream;overlie rock in unglaciated areas and drift or rock in unglaciated areas.	In plateau areas slopes are 2° - 5° with less than 1 m of relief on the surface. In mountainous areas the slopes may be up to 15° with surface relief generally less than 2 m. Active aprons (fAa-A) are channeled and unvegetated. Drainage is moderately well to imperfect although some areas may be well drained. In some places, water seeped from the sides of the test pits from 12 - 25 cm above the frost table. The poor drainage is a reflection of the low slopes and poorly sorted material with low to medium permeabilities.	On the Eagle plains, frozen ground was encountered at depths of 7 to 35 cm in the peat capping and up to 1 m in areas without an organic cap. In the Ogilvie mountains, the active layer is generally thicker than one metre in all fans. The ice types encountered were Vr, Vx, Vs, Nbn and massive Ice. Ice wedges and frost cracks are common in these deposits. Non-sorted circles and stripes are a common feature of aprons on the Eagle Plains but absent further south. Thermokarst lakes occur on the thicker parts of many aprons. Because of the constant flow of water through these units, (particularly in fAa-K) they are probably ice rich.	Surface vulnerable to thermokarst subsidence particularly if organic capping is removed. Surface easily disturbed by tracked vehicles. Generally wet and soft. Has been used as a source of aggregate in places along the South Dempster. Solifluction occurs on steep slopes on the Eagle Plains; slow mass wasting in general on all other areas.
Af, gAf, fAf, Af-K, gAf-A	Alluvial fan	Poorly sorted, poorly stratified silty sandy gravel; generally upper part is finer. Composition and grain size is dependant on the local source; silty sand with pebbles are most common in the northern part of the area, gravel with boulders up to 2 m more common in the Ogilvie Mountains. Clasts are angular to sub-rounded. The surface layer of organics is 30 cm average thickness on the Eagle Plains and 10 cm in the Ogilvie Mountains. Average thickness is 5 m and is in excess of 10 m in places. Fans in the Tintina Trench commonly have a capping of loess. Most fans are loosely compacted, however some fan deposits were found underlying glacial deposits; these were much more compact.	Occur along sides of deep valleys. Commonly overlie Alluvial terrace deposits and in some places impinge on the present flood plain.	Slopes less than 8° on fAf and up to 15° on gAf. Generally well drained, but gently sloping organic covered fine grained sediments (fAf) may be imperfectly drained. Permeabilities are highly variable; generally high to medium. Channels mark the surfaces of the more active fans (gAf-A).	Frozen sediment encountered in pits in the northern part of the area; the frost table 30 cm deep in organics. Ice types Vr, Vs, Vx and massive ice up to 2 cm thick. In the southern part of the area, frozen ground not encountered even at 1 m depth. Evidence of permafrost indicated by the presence of frost cracks, solifluction lobes and non-sorted circles. Ice contents may be high in some places as 3 m of subsidence occurred where the organic cover had been stripped. Thermokarst depressions are frequent on the surface as mapped (K).	Surface vulnerable to moderate thermokarst subsidence particularly if the surface is disturbed. Good source of aggregate.
At^1	Low level Alluvial terrace	Typically less than 20 cm of organics (mainly peat) overlying 10-100 cm of silty sand over 10-200 cm of cobble to pebble gravel. Only at a few places was the total thickness of material over the bedrock noted as being in excess of 4 m. The mineral material is well stratified and sorted, and well round to subrounded; it may contain dissiminated to interbeds of organic material throughout.	These deposits comprise the first major terrace level above (before) the present floodplain to which it is adjacent. It occurs, discontinuously along all major rivers and streams and many of their tributaries. Commonly overlies a rock bench but may overlie colluvium or drift. The silty sand near the top of the deposit may be of eolian origin. In narrower valleys, fans or aprons may encroach onto the top of the terrace and even completely cover it ($\frac{Af}{At^1}$, $\frac{Aa}{At^1}$).	Stands 3-5 m above streams. Surfaces flat except for minor terrace scarps and channel traces. Top slopes are less than 2° whereas fore slopes are greater than 15°. Well to moderately well drained except in old channel traces which are imperfectly drained and may contain standing water. Permeabilities are varied with material.	Frozen ground was encountered at depths between 25 and 40 cm in undisturbed terrain with significant organic covers. Where the surface has been disturbed by winter roads, the frost table is up to 30 cm deeper. In this material the ice types are principally Vs, Vr and Vx with Nbn. Subsidence along winter roads of up to 80 cm was noted. Minor slumping due to thaw of permafrost occurs along the foreslope of some terraces.	These materials may be ice rich in places. Slumping along the foreslope due to thawing of the permafrost and/or oversteepening by undercutting of the present stream is always a hazard. Where these terraces are very low, there is a possibility of them being inundated during exceptional floods. Outer edge of terraces are most favourable locations for development.
At^2	Intermediate level Alluvial terrace	Typically these terrace deposits are comprised of peat overlying sands and gravels. The thickness of peat was commonly in excess of 1 m particularly in Engineer Creek valley where 3 m or thicker was common. In places however thicknesses less than 1 m were noted. Although the peat may lie directly on rock, in most cases it lies on a fluvial sequence of gravels with, in some localities, interbeds of sand or silty sand. These materials are well to subrounded and well stratified with moderate sorting. Along Tintina Trench, commonly 10 to 20 cm of silt between gravels and peat. This may be eolian in origin. Moreover the alluvial sequence may be sand or silty sand rather than gravel	Mainly identified along the major rivers and creeks, occurs as discontinuous deposits between the present floodplain or the lowest terrace deposits and the valley wall or more rarely the highest terrace deposits. Does not occur within the limit of Reid glaciation. Overlies rock in most places, but may overlie drift or colluvium. In narrower valleys, fans or aprons may encroach onto the terrace top and even completely cover it ($\frac{Af}{At^2}$, $\frac{Aa}{At^2}$).	Stand 5-10 m above streams. Surfaces flat. Top slopes less than 2°, foreslopes 8°-15°. Moderately well to well drained. Permeabilities are moderate in the peat and moderate to high in the underlying gravels.	Frozen ground was encountered at depths of 25-40 cm in peat, and in excess of 50 cm where the peat was absent or thin. Ground ice types are principally Vs, Vr, and Nbn with some massive ice particularly in frost wedges. Nonsorted circles, polygons and ice wedges were noted on some deposits. Subsidence due to thawing of permafrost caused by disturbance of the peat cover is of the order of 0.5-1.5 m on trails and winter roads and even greater if the road caused channelling of overland flow of water. In one locality, 2-5 m of subsidence was noted over thawed ice wedges.	Thick peat, particularly when frozen is a very unstable foundation base. The surface can be easily disturbed by tracked vehicles. Peat may be a useable resource. The gravels may be used as a source of aggregate.
At^3	High level terrace	Typically these terraces are composed of 20-50 cm of peat overlying 5 m alluvial gravels. The gravels may be up to 50 m in thickness and in places may be capped by 10-20 cm of silty clay of possible eolian origin. Along the Titina trench, 15 m of silt overlies the gravel in a few locations. The gravel is well rounded but poorly stratified.	Occurs in discontinuous deposits along all the major rivers and streams and along some of the minor stream. Does not occur within the glaciated region. Overlies rock between the lower valley terraces and the colluvial deposits on the valley sides. May be overlain in part by colluvial deposits and rarely by alluvial fans and aprons.	Stands 10-50 m above streams. Top surfaces flat with slopes of 2°-5°. Moderately well to well drained though imperfect drainage was noted where clay underlay the organics. Permeabilities are moderate in peat, moderate to high in gravels.	Depth to frost was 20-40 cm except in the Tintina Trench where it is greater than 2 m. Ground ice types: Vr, Vx and massive ice. Nonsorted polygons and circles are present on many deposits. Disturbance of the surface along winter roads has resulted in average subsidence of 0.5-0.7 m and up to 1.5 m where run-off was channelled by the road. On some roads, the disturbance had cause increased cryoturbation and the formation of nonsorted circles. In another area the road disturbance had thawed the permafrost in the organic cover and had caused a very loose spongy mat with depressed non-sorted circles.	Due to the ice rich nature of these materials, thawing permafrost is a major problem. The surface can easily be disturbed by tracked vehicles. May be useable as a source of aggregate.
Lp, fLp, Lp-K	Lacustrine plain	Stratified silt and fine sand containing minor amounts of clay and organics. May be capped by up to 50 cm of organics. Generally 3 to 5 m thick.	Only of sufficient areal extent to be mapped in the upper Blackstone River and O'Brien Creek valley, minor deposits are common in areas of morainal and glaciofluvial sediments over which they most commonly occur. Also are commonly associated with alluvial terrace deposits.	Flat to gently rolling. In areas of high ice contents, thermokarst depressions are common. Generally moderately well to poorly drained. Permeability is low.	Active layer is generally 30 to 50 cm thick in areas of organic cover and deeper where organics not present. Ice rich areas are common, particularly where thermokarst depressions are present (Lp-K).	Vulnerable to thermokarst subsidence and erosion where sediments with high ice contents are present. Slumps and flows may follow disturbance on steep slopes.
Gt, Gt-K, Gp, Gf	Outwash plains, outwash fans, valley trains	Sorted, stratified, subrounded medium to coarse sand and gravel. Gravel is composed mainly of pebbles and small cobbles, but material up to 30 cm diameter may be present. Commonly overlain by up to 30 cm of organics and silts, particularly in depressions. Deposits generally greater than 5 m thick and commonly over 10 m thick.	Restricted to valley floors south of latitude 65° 10'. Incised into older drift or adjacent to valley walls. Commonly incised by more recent glaciofluvial or alluvial deposits. Age as designated by modifier. Underlain by rock or older drift; in places overlain by thin veneers of loess (unmapped), younger drift, lacustrine or alluvial fans and aprons (in narrow valleys).	Flat to gently sloping (1°-5°) on the upper surface; where incised by streams slopes up to 30° may occur. Average relief on the upper surface of 1 m. Well drained except in depressions. Permeability high to moderate.	Ice generally not encountered in test holes except under peat accumulations where ice rich permafrost (Vs) was encountered at depths of 32-52 cm. Permafrost occurs at depth in these deposits as indicated by the presence of ice wedge cracks and thermokarst depressions. Dry permafrost may exist in some of these materials.	Vulnerable to moderate erosion on steep slopes if disturbed. Generally not susceptible to permafrost degredation, however ice rich areas may be present and are hazardous. Some small landslides were noted on some of these units on steep scarps. Source of aggregate.
Gh, Gh-K, Gr	Kames, kame and kettle complexes	Well rounded, medium to coarse grained sand and fine gravel, rarely coarse bouldery gravel. Average thickness of 5 m but may be up to 20 m. Depressions commonly have thin veneers of silt and peat.	Restricted to valley floors south of latitude 65° 10'. Adjacent to morainal land forms; Alluvial terraces commonly incised within this unit. May contain unmapped areas of till and lacustrine. Age as designated by modifier. Commonly underlain by till or bedrock. In places overlain by thin veneer of loess, generally not mapped.	Hummocky (h) to ridged (r). In places channeled by melt-water. Well to moderately well drained except for depressions and broad flat areas having veneers of silt or organics. Permeability generally high.	Frost table generally deeper than one metre as was not encountered in test pits. Active thermokarst depressions identified in some area (Gh-K).	Vulnerable to moderate erosion on steep slopes if disturbed. Source of aggregate.
Gb	Glaciofluvial blanket	Subrounded, sorted and poorly stratified gravel with small patches of sand. May include patches of glaciofluvial veneer. Overlying organics and silt is generally less than 10 cm thick.	Occurs along valley slopes and overlies older drift, colluvium or rock.	Relief of 1-5 m and slopes of 5°-10° is mainly a reflection of the underlying topography. Well drained. Moderate to high permeability.	Permafrost not encountered in test holes. Active layer may be thicker than unit. Dry permafrost may be present.	Generally stable. Hazard potential more probably related to underlying material. Source of aggregate.
Mh, Mh-K	Disintegration moraine	Diamicton. Subangular to subrounded pebbles and cobbles of various lithologies in hard, dense, silty, fine sand matrix. Where rich in fines is plastic and sticky. Coarse clasts are striated. In places crudely sorted and stratified. May be capped by less than 10 cm of organics; rarely loess. From 3 to 30 m thick; average 5 m.	Locally present on valley floors south of 65° 15'. Frequently contains unmapped patches of outwash and lacustrine deposits. Fine grained pond sediments and organics in many depressions. Generally underlain by drift or rock.	Hummocky generally 5-10 m relief, but up to 50 m in places. Gentle to moderate slopes (5-15°). Channelled in places. Well drained on hills and ridges; imperfectly to poorly drained in swales and depressions. Medium to high permeability.	Permafrost not encountered in test pits. Presence of permafrost indicated by extensive thermokarst activity (K) and skin detachment flows on some slopes. Material may be ice rich in places.	Locally areas with moderate ground ice contents vulnerable to thermokarst subsidence. Locally a source of construction material, including aggregate, especially when processed, e.g. crushed, screened, etc.
Mr, Mr-K	Morainic ridges	Diamicton; subangular to subrounded boulders, pebbles and cobbles of various lithologies in hard, dense, silty, sand matrix. Where rich in fines, it is plastic, sticky, and thixotropic. May contain patches of crudely sorted and stratified, loose material (ablation till). May be capped by less than 10 cm of organics; rarely loess. Typically 5 to 10 m thick.	Individual ridges and groups of ridges common at limit of each glaciation. Colluvium and till or drift common up-slope from ridges; drift or alluvium common down-slope from ridges. Underlain by drift (commonly glaciofluvial gravel), colluvium or rock.	5-10 m of relief, in places up to 50 m. Slopes 2-10°. Variable drainage and permeability depending on slope and material.	Permafrost was only observed at one location below 2 m depth, the deposit is ice rich. Other evidence of the existance of permafrost included nonsorted circles, and 0.5-1.0 m of subsidence along the Dempster Highway due to thawing of ice wedges.	Subsidence due to thaw of ground ice is possible in areas of high ice contents. Locally a source of construction material, including aggregate, especially when processed.
Mm, Mm-K, Mp, Mp-K, Mn	Till plain	Diamicton; angular to subrounded boulders, cobbles and pebbles of various lithologies in a silty sand matrix. Very hard and dense. Where deficient in fines it may include poorly sorted and stratified material (ablation till). Commonly capped with up to 30 cm of organics, particularly in depressions. Typically 5 - 10 m thick.	Common throughout valleys south of 65° 16' and in the extreme north-east corner of the area (Mm²a); usually associated with other glacial deposits. Unit may contain unmapped patches of outwash. Fine grained pond and organic deposits overlie it in depressions; colluvial deposits, alluvial fans under steep slopes. Underlain by drift and bedrock.	Flat (Mp) to gently rolling (Mm) to irregular (Mn) surfaces with relief up to 5 m and slopes of 2°-10°. Moderately well to well drained except in depressions where it is poorly drained. Medium permeability.	Active layer was generally thicker than 75 cm, however in a few places frozen ground was encountered at 35-65 cm depth. Ice types are variable. Very ice rich till was found in one active retrogressive slump. Thermokarst depressions, ice wedge cracks, nonsorted circles indicated to presence of permafrost in other areas.	Some slopes are very active with solifluction and slumping. Ground ice thawing may be a problem if the organic cover is disturbed, particularly in ice rich deposits. Locally a source of construction material, including aggregate, especially when processed.
Mb	Till blanket	Diamicton; angular to subrounded boulders, cobbles and pebbles of various lithologies in silty sand matrix. Generally loose. Rarely contains patches of poorly sorted material. May be capped by up to 30 cm of organics.	Common on slopes within the glacial limits. Up slope of till blankets is colluvium or rock; down slope are other glacial deposits. Generally underlain by rock. May contain unmapped patches of outwash, colluvium and bedrock.	Relief and slopes (indicated by modifier) is commonly a reflection of the underlying surface. Moderately well drained; low to medium permeability.	Permafrost not encountered in test pits. In places where unit is thin the frost table may be in the underlying material. Some nonsorted circles, frost cracks, and solifluction lobes present.	Mass washing a problem on steeper slopes. Material generally stable. Locally a poor source of construction material, including aggregate, especially when processed.
Mv	Till veneer	Diamicton; angular to subrounded boulders, cobbles and pebbles of various lithologies in silty sand matrix. Generally loose. Rarely contains patches of poorly sorted material. May have incorporated some of the underlying material by frost action. Organic cover generally less than 10 cm.	Common on slopes within the limit of glaciation. Morainal deposits common down slope from till veneer; colluvium up slope. Unit may contain unmapped patches of outwash, colluvium and bedrock.	Relief and slopes (indicated by modifier) is a reflection of the underlying material. Moderately well drained; low to medium permeability.	Active layer generally thicker than unit.	Vulnerable to increased erosion if disturbed on steep slopes. Mass movement may be a hazard to development.
aDp	Drift plain	Rounded, sorted and stratified silty sand to cobble gravel. Commonly overlain by up to one metre of loess and rarely up to 10 cm of organics. Top surface is oxidized. Gravels are over 4 m thick.	Uppermost unit of the Flat Creek Beds. May be of glaciofluvial origin; underlain in one exposure by silty diamicton (till?); generally underlain by Tertiary silts, silty sands and sands.	Flat top surface, incised by steep sided gullies in places. The unit ends in steep scarps which are very prone to rotational slumps, and active layer detachment slides. Generally well drained.	Permafrost not seen in this unit. Dry permafrost may occur.	Apart from slope instabilities along the edges of the unit; it is generally a very stable area. Good source of aggregate.
Db	Drift blanket	Undifferentiated till and outwash.	Occurs only along Brewery Creek on the valley wall in an area of rCb.	Bench or terrace like deposit along the valley wall. May be rock controlled. Moderately well drained.	Permafrost probably present.	Further investigation required to determine exact composition of unit. Probably a stable unit but due to steep slopes on edges of unit, mass movement may be a problem. Possibly a source of construction material especially if processed.
Ct, bCt	Altiplanation terraces	Clayey diamicton with cobbles. Flaggy cobbles of sandstone are concentrated on the surface of the treads. Thickness estimated at 1-3 m.	Only mapped in the extreme northern part of the area. Other small areas are included within other units.	Fronts of terraces are 2-4 m high with 35° slopes, tread surface has 5° slope. Springs originate in scarp fronts and streams flow across the upslope edges of active terraces. Poorly drained.	Sorted stripes on treads. Solifluction and cryoturbation are active.	Surface of tread is spongy and active too soft for heavy land use. Mass wasting in hazard to construction.
Ca, rCa	Talus aprons	Angular cobbles and boulders having relatively narrow size range in any one area. Lithology of fragments same as in adjacent cliffs. Greater than 6 m thick except near edges.	Occurs in the Ogilvie mountains in steep sided glaciated valleys and particularly in cirques. Overlies rock or drift.	Steep slopes at the angle of repose of the material. Well drained.	Permafrost present, but due to coarseness of material (talus) not bound by ice.	Looseness of talus, steep slopes and mass movement a hazard to development. Potential source of aggregate, but will probably require crushing.
Cb, aCb, bCb, rCb, fCb, fCb-K, rfCb	Colluvial blanket	Variable composition from silty clay with fine sand (fCb) to poorly sorted cobble diamicton (rCb) to bouldery diamicton (bCb). The matrix of the diamicton is commonly silty sand. May contain significant proportions of organics and lenses of stratified gravel or sand particularly in valley bottoms. Generally less than 3 m thick except in valley bottoms where it may be thicker. Fine grained colluvium is tough sticky and plastic; typically it is capped by 10-40 cm of organics. Coarse grained material is angular.	Ubiquitous on slopes underlain by bedrock in unglaciated terrain. Common on moderate to steep slopes in glaciated terrain. Usually overlies bedrock; more rarely terrace deposits and drift. May contain small unmapped areas of drift and alluvium. The contact between colluvium and weathered bedrock is gradational, particularly in unglaciated terrain.	The overall relief and slopes exhibited by these units is a reflection of the underlying bedrock surface. The slopes are indicated by a modifier. The surface of the colluvium is smooth. Generally well to moderately well drained on slopes. Imperfectly to very poorly drained in depressions and valley bottoms where standing water may exist. Rilled colluvium (Cb-K) has much surface runoff. Permeability high in very bouldery colluvium (bCb) to low in fine colluvium (fCb).	In areas of organic cover, frost occurred at depths of 25-40 cm; where no organics were present at the surface, frost was deeper than 60 cm, commonly in excess of 100 cm.. Common ice types are Vs, Vr, and massive ice as lenses and wedges. Man-induced thawing of the permafrost generally due to winter roads, has caused general subsidence of 0.3 - 0.6 m, on ice wedges of 0.5 to 1.0 m and if water channelling occurred of 1.0 - 3.0 m. Colluvium tends to be ice rich in low lying areas, at concave breaks in slope, and in rilled units (Cb-K) in such places several metres of ice has been reported from drill holes. Ice contents are generally excess near the surface and decrease with depth, however in some locations several metres of ice is reported between the base of the colluvium and the top of the bedrock.	Active layer detachment slides occurred on steep slopes in fine grained colluvium (fCb2) after heavy rains. Retrogressive thaw flow slides occurred on all types of colluvium on moderate to steep slopes. Subsidence due to thaw of permafrost is very variable and is generally greatest in low lying areas. Thawing of this material produces very unstable terrain as the material has very little shear strength. Care should be taken not to pond surface runoff by linear construction projects particularly in areas of Cb-K. Gentle to moderate slopes are characterized by solifluction lobes and nonsorted and sorted circles. Creep and solifluction common form of mass movement in active layer; isolated active layer detachment flows especially in fine colluvium (fCb).
Cv, bCv, rCv, fCv	Colluvial veneer	Poorly sorted diamicton. Silty clay with very angular granules to small pebbles of shale (fCv) develops on shale. Silty sand with cobbles (rCv) or blocks (bCv) develops on sandstone, limestones and other coarse grained rocks. Surface organics generally less than 5cm although one site recorded 30 cm. Generally less than 0.5 m thick though may be locally thicker than 1 m. In unglaciated areas, the contact with the underlying weathered rock is difficult to differentiate.	Ubiquitous in the area particularly on steep slopes, ridge crests and glacially scoured rock. Overlies bedrock. Commonly includes unmapped areas of rock and more rarely areas of drift.	Variable slope as indicated by modifier; slopes and relief dependant on the underlying rock surface. Generally well drained. Permeability dependant on the composition, fine colluvium having low and coarse having high permeability.	Active layer generally thicker than the veneer. Nonsorted circles and polygons are very common features of these units. At one locality ice wedges occurred within 10 cm of the surface. In places where they had melted out the resulting trough is 90 cm deep.	Detachment slides and rock falls may occur on steep slopes. Creep and sheetwash common forms of mass wasting and may be a hazard to development. Proximity of bedrock and abundance of large blocks may make development difficult. Thawing produces very unstable material with very low shear strength.
Ȼ, Ȼm, Ȼh, Ȼr	Landslides	Landslide debris; extremely variable textures; large blocks of shattered bedrock and unsorted coarse-grained diamicton most common. Clasts generally angular to subangular. Variable thicknesses to 30 metres common.	Although small landslides, particularly retrogressive thaw flow slides, active layer detachment slides occur throughout the area, particularly associated with shale bedrock, they are generally too small to be mapped. Large, mappable landslides, mainly rotational slumps, occur mainly in the Ogilvie Mountains and the Tintina Trench; these are mainly formed in rock along the steep valley side. Note that along the Tintina Trench many landslides are in unlithified Tertiary sediments. Generally overlie bedrock but may encroach on drift in the lower parts.	Surface may be hummocky (Ȼh), ridged (Ȼr), rolling (Ȼm) or irregular (Ȼ). Generally occur on slopes greater than 25°, though small unmapped detachment slides may occur on very low slopes. Moderately well to well drained except in depressions which are imperfectly drained. Permeabilities are highly variable.	Permafrost generally present, probably ice rich. Many old slides seem to have been reactivated as rock glaciers.	Slopes adjacent to landslides are a potential site of future failures. Old landslides may still be active and moving by creep or as rock glaciers. Areas should generally be avoided.
fCb/Rp, fCb/Rp-K, fCp/Rp	Colluvium overlying rock pediment	Up to 3 m (fCb) or over 3 m (fCp) of fine grained colluvium overlying a flat rock controlled surface. The colluvium is primarily silty fine sand with minor amounts of clay and very angular to subangular fragments of local bedrock most commonly shale but also sandstone and limestone. In local occurrances, the colluvium can be up to 100% blocks of sandstone. The surface is commonly covered by 30 cm of organics. In places up to 1 m of gravel may occur between the colluvium and the rock surface.	Extensive well developed deposits occur on the Eagle Plains and in the northern Ogilvie Mountains; less well developed and sparsely disturbed in the southern Ogilvies and Tintina Trench. Occurs above the highest alluvial terrace, generally up slope of alluvial deposits and downslope from or intermixed with colluvial blankets and veneers. Thawing produces very unstable material with very little shear strength.	Smooth to gently rolling with slopes up to 8° and relief generally less than 5 m. May be rilled (fCb-K/Rp) by gullies up to 1 m deep by 2-5 m across. Moderately well drained except near concave breaks in slope and beneath steep slopes which are poorly drained. Permeability is low to medium. Surface may be pitted by isolated thermokarst lakes or depressions.	Frozen ground was encountered beneath 25 to 35 cm of organic cover, and at depths greater than 60 cm when organics not present. Ice types included Vr, Vs and massive ice commonly in the form of ice wedges. Nonsorted circles, stripes, solifluction lobes and thermokarst depressions indicate the presence of permafrost; the material may be ice rich in places, particularly where rilled or at concave breaks in slope. Ice contents are excess at the surface generally decreasing with depth, however several metres of ice have been reported in drill holes.	Vulnerable to thermokarst subsidence, particularly if surface organics are disturbed. Surface organics are very prone to disturbance. Ice rich areas are particularly prone to thermokarst subsidence. Care should be taken not to pond surface runoff in areas of fCb-K/Rp by linear construction projects.
fEb/Rp, fEp/Rp	Loess overlying rock pediment	Up to 3 m (fEb) or over 3 m (fEp) of silt and fine sand overlying flat rock controlled surface. The silts rarely contain coarse sand or pebbles. Organic cover is generally less than 5 cm.	Extensively developed on the north side of the Tintina Trench beyond the limit of Reid Glaciation, it does not occur elsewhere in the area. It dies above all alluvial terraces and below the colluvial blankets and veneers which cover the mountain tops.	Smooth to very gently sloping with slopes less than 3°. May be incised by channels and gullies. Moderately well to poorly drained; very poorly drained in swales. May be pitted by rare thermokarst lakes. Permeability is low.	Active layer is greater than 2 m thick. Permafrost is only indicated by the presence of thermokarst lakes.	Susceptible to wind and gully erosion if surface is disturbed. May be ice rich in places and hence vulnerable to thermokarst subsidence.
MR	Rock glacier	Primarily bouldery rubble, rarely substantial content of sand or fines. Generally 10 to 30 metres thick.	Common throughout the Southern Ogilvies; rarer in the Northern Ogilvies; do not exist on the Eagle Plains or Richardson Mountains. Underlain by bedrock.	Range from tongue-shaped to lobate-shaped to spatulate-shaped. Surfaces either gently to moderately sloping or with many ridges and furrows. Distal edges generally marked by steep slope. All are subject to continuous downslope movement. Well drained.	Permafrost present. Moderate to high ice contents.	Mass movement possible problem if developed. Potential source of construction material, including aggregate; crushing probably required.
R	Bedrock outcrop	Varied bedrock types; mainly sedimentary throughout the northern part of the area. Metamorphic rocks only in the Southern Ogilvies and to the south. See text for more information concerning bedrock lithologies.	Large areas of bedrock outcrop common in the Southern Ogilvies. Small scarps of bedrock sparsely distributed throughout the rest of the area.	Cliffs, aretes, horns and ridge crests. Slopes generally steep or precipitous. Rockfalls and avalanches common in areas of steep bedrock. Well drained.	May contain permafrost as veins of ice in fractures. Evidence of frost shattering is ubiquitous in this unit.	Rock generally an impediment to economic development. Certain rock types are a source of aggregate if crushed, see text.